

KOVES®
科维丝工具

车削刀片 | 铣削刀片 | 螺纹刀片 | 钻削刀片

硬质合金刀片

Carbide inserts series

2018

www.kovestool.cn

ABOUT US

关于我们



科维丝公司是一家专注于切削工具生产与销售的企业。

公司成立于2009年，从成立之初就注重技术服务为基础，公司建有“高性能数控刀具与工具系统技术联合实验室”，同时我们根据客户的产品和工艺需求：制定和优化加工工艺方案；选择合理切削参数；计算加工节拍；选择工具、刀具、刀片及附件；量身定做非标刀具；提供与机械加工相关的全套技术服务。

koves is a global service-oriented enterprise, specialized in developing and selling industrial products. since established in 2009, from the very beginning, koves pay attention to technical service as basement, we have "high performance cnc cutting tools and systems technology laboratory", also according to the customer's product and process requirements formulation and optimization of manufacturing process; reasonable selection of cutting parameters; calculating cycle times; select tools, cutters, blades and accessories; customized non-standard tool; provide a full range of technical services related to mechanical processing.



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刀片材质一览表 Summary of Insert Grades

普通车削加工 General Turning

材质符号 Workpiece Material	P	钢 Steel					M	不锈钢 Stainless steel					K	铸铁 Cast Iron				N	有色金属 Nonferrous			S	耐热合金 NRSA				H	高硬材料 Hardness		
ISO	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20						
CVD 涂层硬质合金 CVD Coated Carbide	KC1115										KC3110																			
	KC1125																													
PVD 涂层硬质合金 PVD Coated Carbide	KP2120					KP2120					KP2120											KP2130								
						KP2130																								
硬质合金 Uncoated Carbide																		KW20												
金属陶瓷 Cermet	KT20					KT20					KT20																			

整体合金内孔镗刀 Solid Carbide Mini Boring Bar

材质符号 Workpiece Material	P	钢 Steel					M	不锈钢 Stainless steel					K	铸铁 Cast Iron				N	有色金属 Nonferrous			S	耐热合金 NRSA				H	高硬材料 Hardness		
ISO	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20						
PVD 涂层硬质合金 PVD Coated Carbide	KTX																													
	KVX							KVX				KVX																		
硬质合金 Uncoated Carbide																KW20														

小零件加工刀片 Small Part Cutting Inserts

材质符号 Workpiece Material	P 钢 Steel					M 不锈钢 Stainless steel					K 铸铁 Cast Iron				N 有色金属 Nonferrous			S 耐热合金 NRSA				H 高硬材料 Hardness		
ISO	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20
PVD 涂层硬质合金 PVD Coated Carbide	KTX																							
	KVX							KVX				KVX												
硬质合金 Uncoated Carbide																KW20								

刀片材质一览表 Summary of Insert Grades

切断切槽加工 For Grooving, Parting off

材质符号 Workpiece Material	P	钢 Steel					M	不锈钢 Stainless steel					K	铸铁 Cast Iron				N	有色金属 Nonferrous			S	耐热合金 NRSA				H	高硬材料 Hardness		
		ISO	P01	P10	P20	P30		P40	M01	M10	M20	M30		M40	K01	K10	K20		K30	N10	N20		N30	S01	S10	S20		S30	H01	H10
PVD 涂层硬质合金 PVD Coated Carbide		KTX										KTX																		
		KVX							KVX																					
硬质合金 Uncoated Carbide																	KW20													

螺纹加工 Threading Turning

材质符号 Workpiece Material	P 钢 Steel					M	不锈钢 Stainless steel					K	铸铁 Cast Iron				N	有色金属 Nonferrous			S	耐热合金 NRSA				H	高硬材料 Hardness		
ISO	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20					
PVD 涂层硬质合金 PVD Coated Carbide		KTX										KTX																	
								KKX																					
		KVX						KVX																					
硬质合金 Uncoated Carbide																	KW20												

钻削加工 Drilling

材质符号 Workpiece Material	P 钢 Steel					M 不锈钢 Stainless steel					K 铸铁 Cast Iron				N 有色金属 Nonferrous			S 耐热合金 NRSA				H 高硬材料 Hardess		
ISO	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20
PVD 涂层硬质合金 PVD Coated Carbide		KP1320										KP1320												
			KP2330					KP2330																
硬质合金 Uncoated Carbide																KW20								

刀片材质一览表 Summary of Insert Grades

铣削加工 Milling

材质符号 Workpiece Material	P	钢 Steel					M	不锈钢 Stainless steel					K	铸铁 Cast Iron				N	有色金属 Nonferrous			S	耐热合金 NRSA				H	高硬材料 Hardness		
ISO	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20						
PVD 涂层硬质合金 PVD Coated Carbide			KP1230					KP1230				KP1230							KP2220					KP1110						
硬质合金 Uncoated Carbide																KW20														
金属陶瓷 Cermet		KT20					KT20				KT20																			

刀片材质说明

Inserts Material Construction

K P 21 20

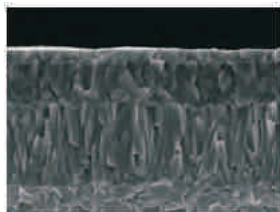
	注册品牌 (Manufacturer brand)
	KOVES品牌
	刀片材料 (Cutting material)
	W:超细颗粒硬质合金(Carbide uncoated) C:硬质合金CVD涂层(Carbide coated CVD) P:硬质合金PVD涂层 (Carbide coated PVD) T:金属陶瓷 (Cermet uncoated) E:金属陶瓷PVD涂层 (Cermet coated PVD) D:聚晶金刚石 (PCD) B:立方碳化硼 (CBN)
	被加工材料 (Main application material)
	1: 钢 (Steels) 2: 不锈钢 (Stainless steel) 3: 铸铁 (Cast iron) 4: 有色金属 (Light and non-ferrous metal) 5: 铝合金 (Aluminium) 6: 钛合金及高温合金 (Hard materials)
	加工方式 (Main application method)
	1: 车削加工 (Turning) 2: 铣削加工 (Milling) 3: 钻头 (Drilling)
	ISO材质标准 (ISO 513 application range)
	05:ISO K05/P05 10:ISO K10/P10 15:ISO K15/P15 20:ISO K20/P20 25:ISO K25/P25 30:ISO K30/P30 35:ISO K35/P35 40:ISO K40/P40

车削刀片材质简介 Turning Insert Grades

CVD涂层硬质合金系列 CVD coating carbide inserts

KC1115

适用类型：精，半精加工
Cutting Range: Finishing and Semi-finishing



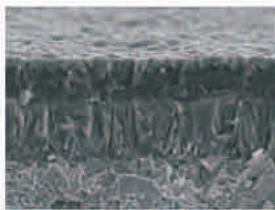
超精细MT-TiCN, Al₂O₃和表面光滑的TiN涂层结构与良好耐磨性的硬质合金基体结合，具有良好的抗磨损性能，适合于钢，合金钢的精，半精加工。

Super fine MT-TiCN, Al₂O₃ and TiN coating on carbide substrate, smooth surface and superior wear resistance, Application: Suitable for the cutting of steel and alloy steel.



KC1125

适用类型：半精到轻微粗加工
Cutting Range: Semi-finishing to Light Roughing



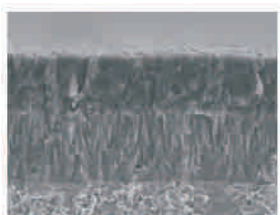
超精细MT-TiCN, Al₂O₃和表面光滑的TiN涂层结构与良好韧性的表面硬质合金基体结合，具有良好的抗磨损性能的同时韧性比较好，适合于钢，合金钢的半精到轻微粗加工。

Super fine MT-TiCN, Al₂O₃ and TiN coating on carbide substrate, smooth surface, superior wear resistance and improved toughness upgraded from KC1125, Application: Suitable for the cutting of steel and alloy steel under interrupted conditions.



KC3110

适用类型：铸铁加工的半精，粗加工
Cutting Range: For Cast iron Semi-finishing to Roughing



专为铸铁切削加工推出的新牌号。高耐磨性细晶粒基体与厚的Al₂O₃涂层完美结合，在具有良好耐磨性的同时，韧性大幅度提高，适用于韧性要求高的恶劣工况。

New grade, special for iron cutting. Al₂O₃ and coated on thick micro-grain carbide substrate, superior wear resistance and greatly improved toughness Suitable for bad machining conditions which require high toughness.



车削刀片材质简介 Turning Insert Grades

PVD涂层硬质合金系列 PVD coating carbide inserts

KP2120 适用类型：精，半精加工 Cutting Range: Finishing and Semi-finishing

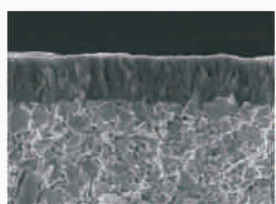


TiAlN涂层与超细颗粒的强韧性基体相结合,具有良好的抗积屑瘤特性,能延长刀具寿命,适合于不锈钢的精加工及半精加工

TiAlN coating on super micro-grain carbide substrate with good toughness, superior adhesion resistance and longer tool life
Application: Suitable for stainless steel cutting



KP2130 适用类型：半精到轻微粗加工 Cutting Range: Semi-finishing to Light Roughing



韧性好的基体和TiCN, TiN涂层相结合, 具有良好耐热冲击性和耐机械冲击性, 适合于不锈钢的半精加工和粗加工, 亦可用于断续切削。

TiCN and TiN coating on good toughness carbide substrate, superior resistance to thermal shock and mechanical shock,
Application: Suitable for stainless steel cutting and interrupted cutting.

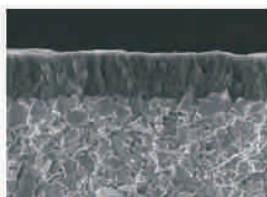


车削刀片材质简介 Turning Insert Grades

PVD涂层硬质合金系列 PVD coating carbide inserts

KTX

适用类型：精，半精加工
Cutting Range: Finishing and Semi-finishing



高硬度的硬质合金基体,具有较好的高温红硬性,匹配通用性良好的 TiCN PVD涂层,推荐用于钢件材质的车削

With highly hard substrate, favorable red hardness and .Use TiCN PVD coating with excellent versatility
Application: Suitable for steel cutting



KKX

适用类型：精，半精加工
Cutting Range: Finishing and Semi-finishing



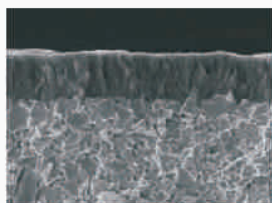
高硬度的硬质合金基体,具有较好的高温红硬性,匹配通用性良好的 TiAlN PVD涂层,推荐用于不锈钢材质的车削

With highly hard substrate, favorable red hardness and .Use TiAlN PVD coating with excellent versatility
Application: Suitable for stainless steel cutting



KVX

适用类型：精，半精加工
Cutting Range: Finishing and Semi-finishing



高硬度的硬质合金基体,具有较好的高温红硬性,匹配通用性的PVD复合涂层,推荐用于不锈钢和钢件材质的车削

With highly hard substrate, favorable red hardness and excellent versatility
Application: Suitable for stainless steel and steel cutting



车削刀片材质简介 Turning Insert Grades

金属陶瓷牌号
Cermet Grades

KT20



钢, 铸铁, 不锈钢通用牌号; 车, 铣削兼用, 高耐磨损性及韧性兼备.

For turning and milling of steel, cast iron and stainless,
High wear resistance and good roughness



加工 N 类材料牌号
Grades for N applications

KW20



细颗粒硬质合金基体, 具有高的硬度和良好的耐磨性, 适合于铜, 铝合金的加工, 表面抛光处理, 减少积屑瘤的产生。

Micro-grain carbide substrate with high hardness and superior wear resistance
Application: copper alloys and aluminum alloys
Buffed on top face reduced built-up edge



刀片编号说明

Insert Identification System

C	N	M	G	12
1	2	3	4	5

1 刀片形状 Insert shape	
A 85° B 82° K 55°	
H 120°	
L 90°	
O 135°	
P 108°	
C 80° D 55° E 75° M 86° V 35°	
R -	
S 90°	
T 60°	
W 80°	

2 刀片后角 Insert clearance angle	
	α
	a
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	特殊 Special

3 精度代号 Tolerance						
	d (±mm)	m (±mm)	s (±mm)	d=6.3/9.525	d=12.7	d=15.8/19.05
A	0.025	0.005	0.025	•	•	•
C	0.025	0.013	0.025	•	•	•
E	0.025	0.025	0.025	•	•	•
F	0.013	0.005	0.025	•	•	•
G	0.025	0.025	0.130	•	•	•
H	0.013	0.013	0.025	•	•	•
J	0.050	0.05	0.025	•	•	•
	0.080	0.05	0.025			
	0.100	0.05	0.025			
K	0.050	0.013	0.025	•	•	•
	0.080	0.013	0.025			
	0.100	0.013	0.025			
M	0.05	0.08	0.13	•	•	•
	0.08	0.13	0.13			
	0.10	0.15	0.13			
N	0.05	0.08	0.025	•	•	•
	0.08	0.13	0.025			
	0.10	0.15	0.025			
U	0.08	0.13	0.13	•	•	•
	0.13	0.20	0.13			
	0.18	0.27	0.13			

4 切削槽及夹固形式 Chip-breaker and clamp type	
R 无中心孔 Without hole	Q 圆柱孔 + 双面倒角 40°60° Cylindrical hole+double countersink
F 无中心孔 Without hole	C 圆柱孔 + 双面倒角 70°90° Cylindrical hole+double countersink
N 无中心孔 Without hole	G 圆柱孔 Cylindrical hole
A 圆柱孔 Cylindrical hole	T 圆柱孔 + 单面倒角 40°60° Cylindrical hole+ countersink
M 圆柱孔 Cylindrical hole	H 圆柱孔 + 单面倒角 70°90° Cylindrical hole+ countersink
U 圆柱孔 + 双面倒角 40°60° Cylindrical hole+double countersink	W 圆柱孔 + 单面倒角 40°60° Cylindrical hole+ countersink
J 圆柱孔 + 双面倒角 70°90° Cylindrical hole+double countersink	B 圆柱孔 + 单面倒角 70°90° Cylindrical hole+ countersink
X 特殊设计 Special	

5 切削刃长度 Insert size							
d mm	C	D	R	S	T	V	W
5.56	05	-	-	05	09	-	03
6.0	-	-	06	-	-	-	-
6.35	06	07	-	06	11	11	04
6.65	-	-	-	-	-	-	-
7.94	07	-	-	07	-	-	-
8.0	-	-	08	-	-	-	-
9.525	09	11	-	09	16	16	06
10.0	-	-	10	-	-	-	-
12.0	-	-	12	-	-	-	-
12.7	12	15	-	12	22	22	08
15.875	16	19	-	15	27	-	10
16.0	-	-	16	-	-	-	-
16.74	-	-	-	16	-	-	-
19.05	19	-	-	19	33	-	13
20.0	-	-	20	-	-	-	-
25.4	25	-	25	25	-	-	-

04
6

04
7

PM
8

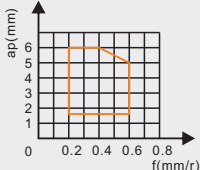
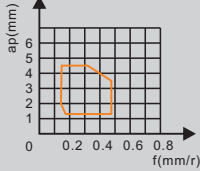
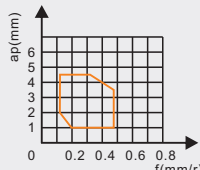
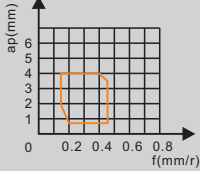
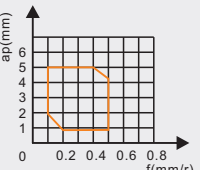
6 刀片厚度 S(mm) Insert thickness		
	01	S=1.59
	T1	S=1.98
	02	S=2.38
	03	S=3.18
	T3	S=3.97
	04	S=4.76
	05	S=5.56
	06	S=6.35
	07	S=7.94
	09	S=9.52

7 刀尖圆角半径 R Corner radius		
		R (mm)
	02	0.2
	04	0.4
	05	0.5
	08	0.8
	12	1.2
	16	1.6
	20	2.0
	24	2.4
	32	3.2
圆形刀片 Round insert		
00 内切圆 (英制) Inch		
MO 内切圆 (公制) Metric		

8 断屑槽型 Chip breaker	
KM	
PM	
MM	
APK	

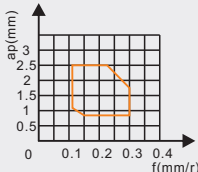
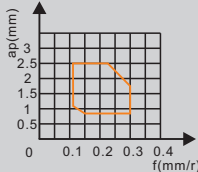
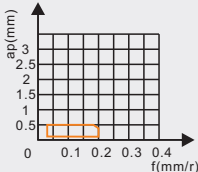
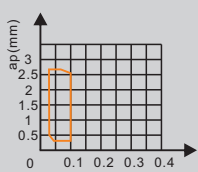
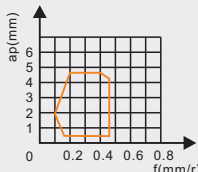
车削刀片一览表 Features of Turning Insert

车削刀片(负型) Turning Inserts (Negative)

槽型 Chipbreaker	刀片外形 Shape	断屑范围 Applicable Chipbreaker Range	特点 Features
无 None			无断屑槽，平板刀片 刀尖强度高，刀片落位稳定，最适于断续切削等不稳定切削 Without chip breaker, Flat-top. Stable placement Strong edge design for intermittent cutting coinditions .
KM			双面断屑槽 切削刃口强度高,中等切削条件下加工表现优越 Double-sided chip breaker Strong cutting edge and wide land for improved performance
PM			普通钢，合金钢半精加工用 双面断屑槽 扁平棱边刀形，切削强度高 For semi-finishing of general steel and alloy steel Double-sided chip breaker Strong flat cutting edge
MM			不锈钢，软钢中切削用 双面断屑槽 尖锐切削刃，切削锋利度高 For medium cutting of stainless steel and mild steel Double-sided chip breaker Sharp cutting edge
AH			双面断屑槽 刀尖锋利和切削刃强劲 Double-sided chip breaker Sharp tool nose and strong cutting edge

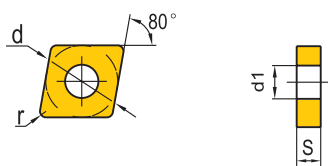
车削刀片一览表 Features of Turning Insert

车削刀片(正型) Turning Inserts (Positive)

槽型 Chipbreaker	刀片外形 Shape	断屑范围 Applicable Chipbreaker Range	特点 Features
GPK			扁平棱边与双角组合， 同时确保刀尖强度与切削锋利度 Strong tool nose due to flat cutting edge and sharp cutting edge due to double rake angle.
TMP			独特的槽型设计在保证刃口锋利的基础上,增加了刀片的抗冲击力 能够有效避免刀片切削堆积,适用于钢件,不锈钢的半精加工 Special chip breaker design to keep both sharp cutting edge and good impact resistance which can efficiently avoid accumulated and suited for semi-finishing steel and stainless steel.
R/L-F			精加工 控制切屑流向,切削阻力小 Finishing control cutting flow direction which can reduce the cutting resistance
R/L-U			适用于精加工和半精加工 低进给条件下,即使切深变化也能控制切屑, Suitable for finishing and semi-finishing, it can control the chip even under low feed conditions.
APK			铝合金切削用 大前角,刀尖锋利度高 For aluminum alloy cutting Sharp tool nose due to large rake angle

车削刀片(负型) Turning Inserts (Negative)

CN..



型号 Model	尺寸 Size (mm)		
	d	s	d1
CN..0903 ..	9.525	3.18	3.81
CN..1204 ..	12.7	4.76	5.16
CN..1606 ..	15.88	6.35	6.35
CN..1906 ..	19.05	6.35	7.94
CN..2509 ..	25.4	9.53	9.12

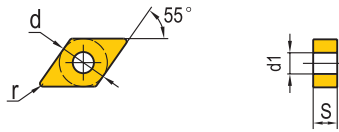
刀片外形 Insert shape		型号 Model	刀片材质及适用加工材料 Insert grades and application									
			r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
粗加工 Roughing		CNMA120408	0.8	0.25-0.70	3.0-7.0	●						
		CNMA120412	1.2	0.25-0.70	3.0-7.0	●						
半精加工 Semi-Finishing		CNMG120408KM	0.8	0.17-0.55	1.2-5.0	●						
		CNMG120412KM	1.2	0.20-0.55	1.5-5.0	●						
半精加工 Semi-Finishing		CNMG120404PM	0.4	0.12-0.52	0.7-4.8		●	●				
		CNMG120408PM	0.8	0.12-0.52	0.7-4.8		●	●				
		CNMG120412PM	1.2	0.12-0.52	0.7-4.8		●	●				
半精加工 Semi-Finishing		CNMG120404MM	0.4	0.10-0.50	0.5-5.0				●	●		
		CNMG120408MM	0.8	0.12-0.50	0.5-5.0				●	●		
半精加工 Semi-Finishing		CNMG120404MT	0.4	0.15-0.40	1.0-5.0						●	
		CNMG120408MT	0.8	0.17-0.55	1.2-5.0						●	
半精加工 / 精加工 Semi-finishing/Finishing		CNMG120402AH	0.2	0.05-0.20	0.8-3.5							●
		CNMG120404AH	0.4	0.10-0.40	0.8-3.5							●
		CNMG120408AH	0.8	0.13-0.55	0.8-3.5							●
钢 Steel							★	★	☆		★	
不锈钢 Stainless Steel										★	★	
铸铁 Cast Iron							★					
有色金属 Nonferrous Metal												★
耐热合金 Heat Resistant Alloy											☆	
淬硬钢 Hardened Steel												

★首选 ☆可选

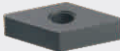
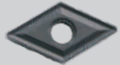
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车削刀片(负型) Turning Inserts (Negative)

DN..



型号 Model	尺寸 Size (mm)		
	d	s	d1
DN..1104..	9.525	4.76	3.81
DN..1504..	12.7	4.76	5.16
DN..1506..	12.7	6.35	5.16

刀片外形 Insert shape		型号 Model	刀片材质及适用加工材料 Insert grades and application									
			r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
粗加工 Roughing		DNMA150408	0.8	0.25-0.70	3.0-7.0	●						
		DNMA150412	1.2	0.25-0.70	3.0-7.0	●						
半精加工 Semi-Finishing		DNMG150408KM	0.8	0.17-0.50	1.0-4.0	●						
		DNMG150412KM	1.2	0.20-0.50	1.3-4.0	●						
半精加工 Semi-Finishing		DNMG150404PM	0.4	0.12-0.52	0.7-4.8		●	●				
		DNMG150408PM	0.8	0.12-0.52	0.7-4.8		●	●				
		DNMG150604PM	0.4	0.12-0.52	0.7-4.8		●	●				
		DNMG150608PM	0.8	0.12-0.52	0.7-4.8		●	●				
		DNMG150612PM	1.2	0.12-0.52	0.7-4.8		●	●				
半精加工 Semi-Finishing		DNMG150404MM	0.4	0.10-0.50	0.5-5.0				●	●		
		DNMG150408MM	0.8	0.12-0.50	0.5-5.0				●	●		
半精加工 Semi-Finishing		DNMG150404R-VF	0.4	0.15-0.40	0.8-4.0						●	
		DNMG150408R-VF	0.8	0.17-0.50	1.0-4.0						●	
钢 Steel							★	★	☆		★	
不锈钢 Stainless Steel									★	★		
铸铁 Cast Iron						★						
有色金属 Nonferrous Metal												★
耐热合金 Heat Resistant Alloy												☆
淬硬钢 Hardened Steel												

★首选 ☆可选

●标准库存 ○订单生产

车削刀片(负型) Turning Inserts (Negative)

SN..



型号 Model	尺寸 Size (mm)		
	d	s	d1
SN..1204 ..	12.7	4.76	5.16
SN..1506 ..	15.88	6.35	6.35
SN..1906 ..	19.05	6.35	7.94
SN..2509 ..	25.4	9.53	9.12

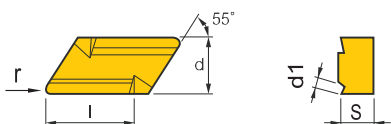
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
粗加工 Roughing		SNMA120408	0.8	0.25-0.70	3.0-7.0	●					
	SNMA120412	1.2	0.25-0.70	3.0-7.0	●						
半精加工 Semi-Finishing		SNMG120408KM	0.8	0.17-0.55	1.2-5.0	●					
	SNMG120412KM	1.2	0.20-0.55	1.5-5.0	●						
半精加工 Semi-Finishing		SNMG120404PM	0.4	0.15-0.50	1.2-5.0		●	●			
	SNMG120408PM	0.8	0.15-0.50	1.2-5.0		●	●				
半精加工 Semi-Finishing		SNMG120404MM	0.4	0.10-0.50	0.5-5.0				●	●	
	SNMG120408MM	0.8	0.12-0.50	0.5-5.0				●	●		
半精加工 Semi-Finishing		SNGG120404R-C	0.4	0.15-0.30	1.0-4.0					●	
	SNGG120408R-C	0.8	0.15-0.35	1.0-4.0						●	
钢 Steel						★	★	☆		★	
不锈钢 Stainless Steel								★	★		
铸铁 Cast Iron						★					
有色金属 Nonferrous Metal										★	
耐热合金 Heat Resistant Alloy									☆		
淬硬钢 Hardened Steel											

★首选 ☆可选

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车削刀片(负型) Turning Inserts (Negative)

KN..



型号 Model	尺寸 Size (mm)				
	l	d	s	d1	r
KN..160405..	19.2	9.525	4.76	2.2	0.5
KN..160410..	18.8	9.525	4.76	2.2	1.0

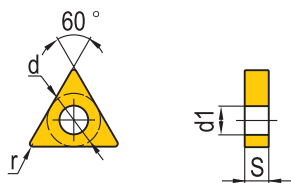
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
半精加工 Semi-Finishing 	KNUX160405R-11	0.5	0.20-0.35	1.0-6.0			●		●		
	KNUX160405L-11	0.5	0.20-0.35	1.0-6.0			●		●		
	KNUX160410R-11	1.0	0.30-0.60	1.5-6.0			●		●		
	KNUX160410L-11	1.0	0.30-0.60	1.5-6.0			●		●		
钢 Steel						★	★	☆		★	
不锈钢 Stainless Steel								★	★		
铸铁 Cast Iron					★						
有色金属 Nonferrous Metal											
耐热合金 Heat Resistant Alloy											
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

车削刀片(负型) Turning Inserts (Negative)

TN..



型号 Model	尺寸 Size (mm)		
	d	s	d1
TN..1604..	9.525	4.76	3.81
TN..2204..	12.7	4.76	5.16

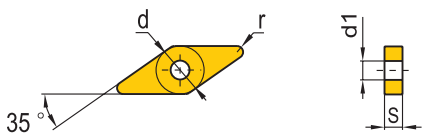
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
粗加工 Roughing		TNMA160408	0.8	0.25-0.70	3.0-7.0	●					
		TNMA160412	1.2	0.25-0.70	3.0-7.0	●					
半精加工 Semi-Finishing		TNMG160408KM	0.8	0.17-0.50	1.2-3.5	●					
		TNMG160412KM	1.2	0.20-0.50	1.5-3.5	●					
半精加工 Semi-Finishing		TNMG160404PM	0.4	0.05-0.30	0.5-2.0		●	●			
		TNMG160408PM	0.8	0.07-0.30	0.5-2.0		●	●			
半精加工 Semi-Finishing		TNMG160404MM	0.4	0.05-0.30	0.8-5.0				●	●	
		TNMG160408MM	0.8	0.10-0.50	1.0-5.0				●	●	
半精加工 Semi-Finishing		TNMG160404MT	0.4	0.10-0.50	0.5-5.0						●
		TNMG160408MT	0.8	0.12-0.50	0.5-5.0						●
半精加工 / 精加工 Semi-finishing/Finishing		TNMG160402AH	0.2	0.04-0.28	0.5-3.0						●
		TNMG160404AH	0.4	0.05-0.30	0.8-3.5						●
		TNMG160408AH	0.8	0.10-0.40	0.8-3.5						●
半精加工 Semi-Finishing		TNMG160404R-C	0.4	0.12-0.30	1.0-3.5				●		●
		TNMG160404L-C	0.4	0.12-0.30	1.0-3.5				●		●
		TNMG160408R-C	0.8	0.15-0.35	1.3-3.5				●		●
		TNMG160408L-C	0.8	0.15-0.35	1.3-3.5				●		●
									●		●
精加工 Finishing		TNGG160402R-F	0.2	0.03-0.20	0.1-1.5				●		●
		TNGG160402L-F	0.2	0.03-0.20	0.1-1.5				●		●
		TNGG160404R-F	0.4	0.05-0.25	0.3-2.0				●		●
		TNGG160404L-F	0.4	0.05-0.25	0.3-2.0				●		●
钢 Steel						★	★	☆		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron						★					
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy										☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

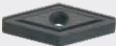
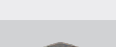
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车削刀片(负型) Turning Inserts (Negative)

VN..



型号 Model	尺寸 Size (mm)		
	d	s	d1
VN..1604..	9.525	4.76	3.81

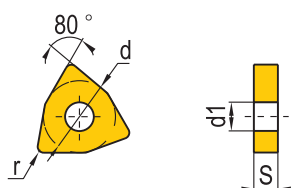
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
半精加工 Semi-Finishing	 VNMG160404KM	0.4	0.15-0.36	0.8-3.0	●						
	 VNMG160408KM	0.8	0.17-0.36	1.0-2.5	●						
半精加工 Semi-Finishing	 VNMG160404PM	0.4	0.15-0.50	1.2-5.0		●	●				
	 VNMG160408PM	0.8	0.15-0.50	1.2-5.0		●	●				
半精加工 Semi-Finishing	 VNMG160404MM	0.4	0.05-0.30	0.5-2.0				●	●		
	 VNMG160408MM	0.8	0.07-0.30	0.5-2.0				●	●		
半精加工 Semi-Finishing	 VNMG160404MT	0.4	0.15-0.36	0.8-3.0						●	
	 VNMG160408MT	0.8	0.17-0.36	1.0-2.5						●	
钢 Steel					★ ★ ☆ ★						
不锈钢 Stainless Steel					★ ★ ★ ★						
铸铁 Cast Iron					★						
有色金属 Nonferrous Metal											
耐热合金 Heat Resistant Alloy					☆ ★						

★首选 ☆可选

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车削刀片(负型) Turning Inserts (Negative)

WN..



型号 Model	尺寸 Size (mm)		
	d	s	d1
WN..0604 ..	9.525	4.76	3.81
WN..0804 ..	12.7	4.76	5.16

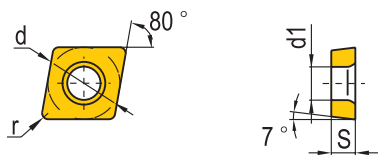
刀片外形 Insert shape		型号 Model	刀片材质及适用加工材料 Insert grades and application									
			r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
粗加工 Roughing		WNMA080408	0.8	0.25-0.70	3.0-7.0	●						
		WNMA080412	1.2	0.25-0.70	3.0-7.0	●						
半精加工 Semi-Finishing		WNUMG080408KM	0.8	0.17-0.55	1.2-4.0	●						
		WMMG080412KM	1.2	0.25-0.55	1.5-4.0	●						
半精加工 Semi-Finishing		WNUMG080404PM	0.4	0.12-0.52	0.7-4.8		●		●			
		WNUMG080408PM	0.8	0.12-0.52	0.7-4.8		●		●			
半精加工 Semi-Finishing		WNUMG080404MM	0.4	0.10-0.50	0.5-5.0					●	●	
		WNUMG080408MM	0.8	0.12-0.50	0.5-5.0					●	●	
半精加工 Semi-Finishing		WNUMG080404MT	0.4	0.12-0.40	1.0-4.0							●
		WNUMG080408MT	0.8	0.17-0.55	1.2-4.0							●
半精加工 / 精加工 Semi-finishing/Finishing		WNUMG080402AH	0.2	0.04-0.28	0.5-3.0							●
		WNUMG080404AH	0.4	0.05-0.30	0.8-3.5							●
		WNUMG080408AH	0.8	0.10-0.40	0.8-3.5							●
钢 Steel							★		★	☆		★
不锈钢 Stainless Steel											★	★
铸铁 Cast Iron							★					
有色金属 Nonferrous Metal												
耐热合金 Heat Resistant Alloy												
淬硬钢 Hardened Steel											☆	

★首选 ☆可选

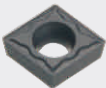
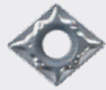
●标准库存 ○订单生产

车削刀片(正型) Turning Inserts (Positive)

CC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
CC..0602..	6.35	2.38	2.8
CC..09T3..	9.525	3.97	4.4
CC..1204..	12.7	4.76	5.5

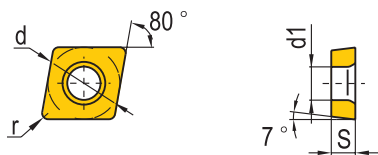
刀片外形 Insert shape		型号 Model	刀片材质及适用加工材料 Insert grades and application									
			r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
半精加工 Semi-Finishing		CCMT060204GPK	0.4	0.06-0.15	0.3-2.0	●						
		CCMT060208GPK	0.8	0.08-0.21	0.5-2.0	●						
		CCMT09T304GPK	0.4	0.08-0.21	0.3-2.5	●						
		CCMT09T308GPK	0.8	0.10-0.30	0.6-3.0	●						
		CCMT120404GPK	0.4	0.09-0.27	0.3-3.5	●						
		CCMT120408GPK	0.8	0.12-0.35	0.6-3.5	●						
半精加工 Semi-Finishing		CCMT060204TMP	0.4	0.06-0.17	0.2-2.4		●	●	●			
		CCMT09T302TMP	0.2	0.07-0.22	0.1-2.0		●	●	●			
		CCMT09T304TMP	0.4	0.08-0.23	0.3-3.0		●	●	●			
		CCMT09T308TMP	0.8	0.10-0.30	0.5-3.0		●	●	●			
		CCMT120404TMP	0.4	0.09-0.27	0.3-3.6		●	●	●			
		CCMT120408TMP	0.8	0.24-0.36	1.0-3.6		●	●	●			
半精加工 / 精加工 Semi-finishing/Finishing		CCMT060204FG	0.4	0.07-0.15	0.4-2.0						●	
		CCMT060208FG	0.8	0.08-0.18	0.4-2.0						●	
		CCMT09T304FG	0.4	0.07-0.20	0.4-2.0						●	
		CCMT09T308FG	0.8	0.10-0.25	0.6-2.0						●	
钢 Steel						★	★	☆		★		
不锈钢 Stainless Steel									★	★		
铸铁 Cast Iron						★						
有色金属 Nonferrous Metal											★	
耐热合金 Heat Resistant Alloy										☆		
淬硬钢 Hardened Steel												

★首选 ☆可选

●标准库存 ○订单生产

车削刀片(正型) Turning Inserts (Positive)

CC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
CC..0301..	3.5	1.4	1.9
CC..0401..	4.3	1.8	2.3
CC..0602..	6.35	2.38	2.8
CC..09T3..	9.525	3.97	4.4

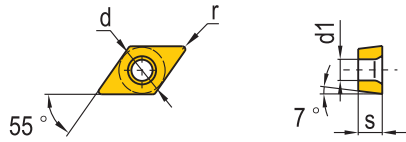
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
精加工 Finishing 	CCGT0301005L-F	0.05	0.01-0.05	0.1-0.3							
	CCGT030101L-F	0.1	0.01-0.05	0.1-0.3				●		●	●
	CCGT030102L-F	0.2	0.01-0.05	0.1-0.3				●		●	●
	CCGT0401005L-F	0.05	0.01-0.10	0.1-0.5							
	CCGT040101L-F	0.1	0.01-0.10	0.1-0.5				●		●	●
	CCGT040102L-F	0.2	0.01-0.10	0.1-0.5				●		●	●
	CCGT0602005R-F	0.05	0.01-0.06	0.04-1.3							
	CCGT0602005L-F	0.05	0.01-0.06	0.04-1.3							
	CCGT060201R-F	0.1	0.02-0.08	0.05-1.5				●		●	
	CCGT060201L-F	0.1	0.02-0.08	0.05-1.5				●		●	
	CCGT060202R-F	0.2	0.03-0.11	0.06-1.7				●		●	
	CCGT060202L-F	0.2	0.03-0.11	0.06-1.7				●		●	
	CCGT09T3005R-F	0.05	0.02-0.08	0.05-1.5							
	CCGT09T3005L-F	0.05	0.02-0.08	0.05-1.5							
	CCGT09T301R-F	0.1	0.03-0.11	0.06-1.7				●		●	
	CCGT09T301L-F	0.1	0.03-0.11	0.06-1.7				●		●	
	CCGT09T302R-F	0.2	0.04-0.15	0.08-2.0				●		●	
	CCGT09T302L-F	0.2	0.04-0.15	0.08-2.0				●		●	
半精加工 / 精加工 Semi-finishing/Finishing 	CCGT060201R-U	0.1	0.02-0.08	0.05-1.5				●	●	●	
	CCGT060201L-U	0.1	0.02-0.08	0.05-1.5				●	●	●	
	CCGT060202R-U	0.2	0.03-0.11	0.06-1.7				●	●	●	●
	CCGT060202L-U	0.2	0.03-0.11	0.06-1.7				●	●	●	●
	CCGT060204R-U	0.4	0.05-0.15	0.08-2.0							
	CCGT060204L-U	0.4	0.05-0.15	0.08-2.0							
	CCGT09T301R-U	0.1	0.03-0.11	0.06-1.7				●		●	●
	CCGT09T301L-U	0.1	0.03-0.11	0.06-1.7				●		●	●
	CCGT09T302R-U	0.2	0.04-0.15	0.08-2.0				●		●	●
	CCGT09T302L-U	0.2	0.04-0.15	0.08-2.0				●		●	●
	CCGT09T304R-U	0.4	0.05-0.20	1.0-2.5				●		●	●
	CCGT09T304L-U	0.4	0.05-0.20	1.0-2.5				●		●	●
钢 Steel					★		★	☆	★		
不锈钢 Stainless Steel								☆			
铸铁 Cast Iron					★						
有色金属 Nonferrous Metal											
耐热合金 Heat Resistant Alloy											
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

车削刀片(正型) Turning Inserts (Positive)

DC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
DC..0702 ..	6.35	2.38	2.8
DC..11T3 ..	9.525	3.97	4.4

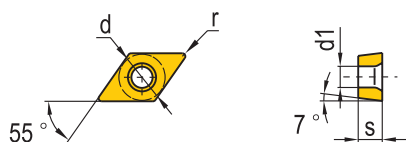
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
半精加工 Semi-Finishing		DCMT070204GPK	0.4	0.06-0.15	0.3-2.0	●					
		DCMT11T304GPK	0.4	0.08-0.21	0.3-2.5	●					
		DCMT11T308GPK	0.8	0.10-0.26	0.5-3.0	●					
半精加工 Semi-Finishing		DCMT070202TMP	0.2	0.03-0.12	0.1-1.5		●	●	●		
		DCMT070204TMP	0.4	0.06-0.17	0.2-2.3		●	●	●		
		DCMT11T302TMP	0.2	0.04-0.22	0.1-2.0		●	●	●		
		DCMT11T304TMP	0.4	0.08-0.23	0.3-3.0		●	●	●		
		DCMT11T308TMP	0.8	0.10-0.30	0.5-3.0		●	●	●		
半精加工 / 精加工 Semi-finishing/Finishing		DCMT070204FG	0.4	0.07-0.20	0.4-1.5						●
		DCMT070208FG	0.8	0.08-0.25	0.5-2.5						●
		DCMT11T304FG	0.4	0.07-0.20	0.4-2.0						●
		DCMT11T308FG	0.8	0.10-0.25	0.6-2.0						●
钢 Steel						★	★	☆		★	
不锈钢 Stainless Steel								★	★		
铸铁 Cast Iron					★						
有色金属 Nonferrous Metal										★	
耐热合金 Heat Resistant Alloy									☆		
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

车削刀片(正型) Turning Inserts (Positive)

DC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
DC..0702 ..	6.35	2.38	2.8
DC..11T3 ..	9.525	3.97	4.4

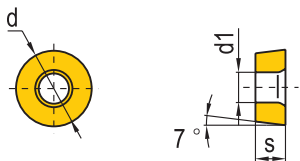
刀片外形 Insert shape		型号 Model	刀片材质及适用加工材料 Insert grades and application									
			r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
精加工 Finishing		DCGT0702005R-F	0.05	0.01-0.06	0.04-1.3							
		DCGT0702005L-F	0.05	0.01-0.06	0.04-1.3							
		DCGT070201R-F	0.1	0.02-0.08	0.05-1.5				●		●	
		DCGT070201L-F	0.1	0.02-0.08	0.05-1.5				●		●	
		DCGT070202R-F	0.2	0.03-0.11	0.06-1.5				●		●	
		DCGT070202L-F	0.2	0.03-0.11	0.06-1.5				●		●	
		DCGT11T3005R-F	0.05	0.02-0.08	0.05-1.5							
		DCGT11T3005L-F	0.05	0.02-0.08	0.05-1.5							
		DCGT11T301R-F	0.1	0.03-0.11	0.06-1.7				●		●	
		DCGT11T301L-F	0.1	0.03-0.11	0.06-1.7				●		●	
半精加工 / 精加工 Semi-finishing/Finishing		DCGT11T302R-F	0.2	0.04-0.15	0.08-2.0				●		●	
		DCGT11T302L-F	0.2	0.04-0.15	0.08-2.0				●		●	
		DCGT070201R-U	0.1	0.02-0.08	0.05-1.5				●		●	●
		DCGT070201L-U	0.1	0.02-0.08	0.05-1.5				●		●	●
		DCGT070202R-U	0.2	0.03-0.11	0.06-1.5				●		●	●
		DCGT070202L-U	0.2	0.03-0.11	0.06-1.5				●		●	●
		DCGT070204R-U	0.4	0.04-0.15	0.08-1.5				●		●	●
		DCGT070204L-U	0.4	0.04-0.15	0.08-1.5				●		●	●
		DCGT11T301R-U	0.1	0.03-0.11	0.06-1.7				●		●	●
		DCGT11T301L-U	0.1	0.03-0.11	0.06-1.7				●		●	●
		DCGT11T302R-U	0.2	0.04-0.15	0.08-2.0				●		●	●
		DCGT11T302L-U	0.2	0.04-0.15	0.08-2.0				●		●	●
DCGT11T304R-U	0.4	0.05-0.2	1.0-2.5				●		●	●		
DCGT11T304L-U	0.4	0.05-0.2	1.0-2.5				●		●	●		
钢 Steel					★		★	☆	★			
不锈钢 Stainless Steel								★	★			
铸铁 Cast Iron					★							
有色金属 Nonferrous Metal												★
耐热合金 Heat Resistant Alloy												
淬硬钢 Hardened Steel												

★首选 ☆可选

●标准库存 ○订单生产

车削刀片(正型)
Turning Inserts (Positive)

RC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
RC..0602MO	6	2.38	2.8
RC..0803MO	8	3.18	3.4
RC..1003MO	10	3.18	3.6
RC..1204MO.	12	4.76	4.2

刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
	RCMT0602MO	6.0	0.06-0.15	0.2-2.0		●					
	RCMT0803MO	8.0	0.08-0.21	0.3-2.5		●					
	RCMT1003MO	10.0	0.25-0.50	1.5-4.0		●					
	RCMT1204MO	12.0	0.30-0.60	2.5-5.0		●					
钢 Steel						★	★	☆		★	
不锈钢 Stainless Steel								★	★		
铸铁 Cast Iron					★						
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆		
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

车削刀片(正型) Turning Inserts (Positive)

SC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
SC..09T304..	9.525	3.97	4.4
SC..120404..	12.7	4.76	5.5

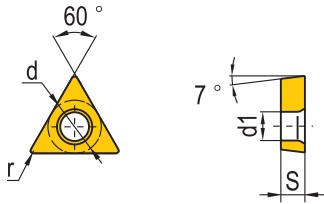
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application										
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20	
半精加工 Semi-Finishing		SCMT09T304GPK	0.4	0.08-0.25	0.3-3.0	●						
		SCMT09T308GPK	0.8	0.10-0.30	0.5-3.0	●						
		SCMT120408GPK	0.8	0.12-0.35	0.6-4.0	●						
		SCMT120412GPK	1.2	0.15-0.40	0.9-4.0	●						
半精加工 Semi-Finishing		SCMT09T304TMP	0.4	0.08-0.23	0.3-3.0		●	●	●			
		SCMT09T308TMP	0.8	0.10-0.30	0.5-3.0		●	●	●			
		SCMT120408TMP	0.8	0.09-0.27	0.3-3.6		●	●	●			
		SCMT120412TMP	1.2	0.12-0.36	0.6-3.6		●	●	●			
钢 Steel						★	★	☆		★		
不锈钢 Stainless Steel						★				★		
铸铁 Cast Iron					★							
有色金属 Nonferrous Metal												★
耐热合金 Heat Resistant Alloy											☆	
淬硬钢 Hardened Steel												

★首选 ☆可选

●标准库存 ○订单生产

车削刀片(正型) Turning Inserts (Positive)

TC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
TC..0902..	5.56	2.38	2.5
TC..1102..	6.35	2.38	2.8
TC..16T3..	9.525	3.97	4.4

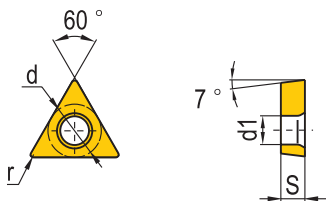
刀片外形 Insert shape		型号 Model	刀片材质及适用加工材料 Insert grades and application									
			r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
半精加工 Semi-Finishing		TCMT090204GPK	0.4	0.06-0.18	0.3-1.5	●						
		TCMT090208GPK	0.8	0.08-0.22	0.5-1.8	●						
		TCMT110204GPK	0.4	0.06-0.20	0.3-2.0	●						
		TCMT110208GPK	0.8	0.08-0.25	0.6-2.0	●						
		TCMT16T304GPK	0.4	0.08-0.30	0.3-3.0	●						
		TCMT16T308GPK	0.8	0.10-0.35	0.6-3.0	●						
		TCMT16T312GPK	1.2	0.12-0.40	0.9-3.5	●						
半精加工 Semi-Finishing		TCMT090204TMP	0.4	0.06-0.17	0.2-2.3		●		●			
		TCMT110204TMP	0.4	0.06-0.19	0.2-2.5		●	●	●			
		TCMT110208TMP	0.8	0.09-0.26	0.4-2.5		●	●	●			
		TCMT16T304TMP	0.4	0.08-0.23	0.3-3.0		●	●	●			
		TCMT16T308TMP	0.8	0.10-0.30	0.5-3.0		●	●	●			
半精加工 / 精加工 Semi-finishing/Finishing		TCMT110204FG	0.4	0.10-0.25	0.7-3.5						●	
		TCMT110208FG	0.8	0.13-0.30	1.0-3.5						●	
钢 Steel						★	★	☆		★		
不锈钢 Stainless Steel									★	★		
铸铁 Cast Iron					★							
有色金属 Nonferrous Metal											★	
耐热合金 Heat Resistant Alloy									☆			
淬硬钢 Hardened Steel												

★首选 ☆可选

●标准库存 ○订单生产

车削刀片(正型) Turning Inserts (Positive)

TC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
TC..0902..	5.56	2.38	2.5
TC..1102..	6.35	2.38	2.5
TC..1103..	6.35	2.38	2.8
TC..16T3..	9.525	3.97	4.4

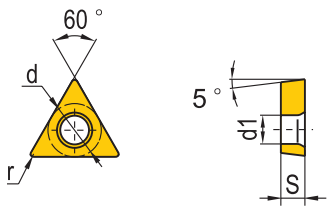
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
精加工 Finishing 	TCGT090201R-F	0.1	0.02-0.08	0.05-1.5							
	TCGT090201L-F	0.1	0.02-0.08	0.05-1.5							
	TCGT090202R-F	0.2	0.03-0.11	0.06-1.7				●		●	
	TCGT090202L-F	0.2	0.03-0.11	0.06-1.7				●		●	
	TCGT110201R-F	0.1	0.02-0.10	0.05-1.5							
	TCGT110201L-F	0.1	0.02-0.10	0.05-1.5							
	TCGT110202R-F	0.2	0.03-0.13	0.06-1.7				●		●	
	TCGT110202L-F	0.2	0.03-0.13	0.06-1.7				●		●	
	TCGT110301R-F	0.1	0.02-0.10	0.05-1.5							
	TCGT110301L-F	0.1	0.02-0.10	0.05-1.5							
	TCGT110302R-F	0.2	0.03-0.13	0.06-1.7				●		●	
	TCGT110302L-F	0.2	0.03-0.13	0.06-1.7				●		●	
钢 Steel						★	★	☆		★	
不锈钢 Stainless Steel								★	★		
铸铁 Cast Iron					★						
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆		
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

车削刀片(正型)
Turning Inserts (Positive)

TB..



型号 Model	尺寸 Size (mm)		
	d	s	d1
TB..0601..	3.97	1.59	2.3

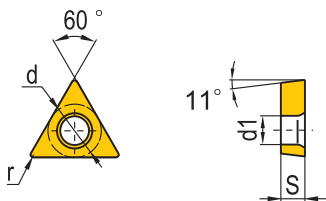
刀片外形 Insert shape		型号 Model	刀片材质及适用加工材料 Insert grades and application								
			r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20
 精加工 Finishing	TBGT060101R-F	0.1	0.03-0.15	0.06-1.0							
	TBGT060101L-F	0.1	0.03-0.15	0.06-1.0				●		●	●
	TBGT060102R-F	0.2	0.05-0.20	0.1-1.3							
	TBGT060102L-F	0.2	0.05-0.20	0.1-1.3				●		●	●
	TBGT060104R-F	0.4	0.08-0.20	0.1-1.3							
	TBGT060104L-F	0.4	0.05-0.20	0.1-1.3				●		●	●
钢 Steel						★	★	☆		★	
不锈钢 Stainless Steel								★	★		
铸铁 Cast Iron					★						
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆		
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

车削刀片(正型) Turning Inserts (Positive)

TP..



型号 Model	尺寸 Size (mm)		
	d	s	d1
TP..0802..	4.76	2.38	2.3
TP..0902..	5.56	2.38	3.0
TP..1102..	6.35	2.38	3.5
TP..1103..	6.35	3.18	3.3
TP..16T3..	9.525	3.18	4.5

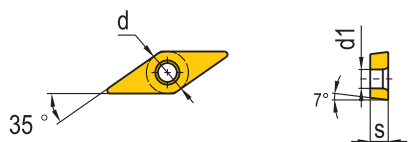
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
精加工 Finishing 	TPGH080201R-F	0.1	0.02-0.08	0.05-1.0							
	TPGH080201L-F	0.1	0.02-0.08	0.05-1.0							
	TPGH080202R-F	0.2	0.03-0.10	0.06-1.2				●		●	
	TPGH080202L-F	0.2	0.03-0.10	0.06-1.2				●		●	
	TPGH080204R-F	0.4	0.04-0.12	0.08-1.5							
	TPGH080204L-F	0.4	0.04-0.12	0.08-1.5							
	TPGH090201R-F	0.1	0.02-0.08	0.05-1.0				●		●	
	TPGH090201L-F	0.1	0.02-0.08	0.05-1.0				●		●	
	TPGH090202R-F	0.2	0.03-0.10	0.06-1.2							
	TPGH090202L-F	0.2	0.03-0.10	0.06-1.2							
	TPGH090204R-F	0.4	0.04-0.12	0.08-1.5				●		●	
	TPGH090204L-F	0.4	0.04-0.12	0.08-1.5				●		●	
	TPGH110202R-F	0.2	0.03-0.10	0.06-1.2				●		●	●
	TPGH110202L-F	0.2	0.03-0.10	0.06-1.2				●		●	●
	TPGH110204R-F	0.4	0.04-0.12	0.08-1.5				●		●	●
	TPGH110204L-F	0.4	0.04-0.12	0.08-1.5				●		●	●
	TPGH110302R-F	0.2	0.03-0.10	0.06-1.2				●		●	●
	TPGH110302L-F	0.2	0.03-0.10	0.06-1.2				●		●	●
	TPGH110304R-F	0.4	0.04-0.12	0.08-1.5				●		●	●
	TPGH110304L-F	0.4	0.04-0.12	0.08-1.5				●		●	●
	TPGH110308R-F	0.8	0.05-0.15	1.0-1.7				●		●	●
	TPGH110308L-F	0.8	0.05-0.15	1.0-1.7				●		●	●
	TPGH16T302R-F	0.2	0.03-0.10	0.06-1.2				●		●	●
	TPGH16T302L-F	0.2	0.03-0.10	0.06-1.2				●		●	●
	TPGH16T304R-F	0.4	0.04-0.12	0.08-1.7				●		●	●
	TPGH16T304L-F	0.4	0.04-0.12	0.08-1.7				●		●	●
	TPGH16T308R-F	0.8	0.05-0.20	1.0-2.0				●		●	●
	TPGH16T308L-F	0.8	0.05-0.20	1.0-2.0							
钢 Steel						★	★	☆		★	
不锈钢 Stainless Steel									★		
铸铁 Cast Iron						★					
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆		
淬硬钢 Hardened Steel											

★首选 ☆可选

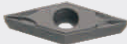
●标准库存 ○订单生产

车削刀片(正型) Turning Inserts (Positive)

VC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
VC..1103 ..	6.35	3.18	2.8
VC..1604 ..	9.525	4.76	4.4

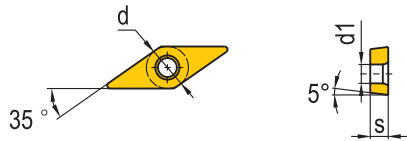
刀片外形 Insert shape		型号 Model	刀片材质及适用加工材料 Insert grades and application										
			r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20	
半精加工 Semi-Finishing		VCMT110304TMP	0.4	0.03-0.20	0.15-2.7		●	●	●				
		VCMT160404TMP	0.4	0.07-0.20	0.2-2.7		●	●	●				
		VCMT160408TMP	0.8	0.09-0.27	0.5-2.7		●	●	●				
半精加工 / 精加工 Semi-finishing/Finishing		VCGT110301R-F	0.1	0.02-0.08	0.05-1.5				●		●		
		VCGT110301L-F	0.1	0.02-0.08	0.05-1.5				●		●		
		VCGT110302R-F	0.2	0.03-0.13	0.06-1.7				●		●		
		VCGT110302L-F	0.2	0.03-0.13	0.06-1.7				●		●		
		VCGT110304R-F	0.4	0.05-0.20	0.08-2.0				●		●		
		VCGT110304L-F	0.4	0.05-0.20	0.08-2.0				●		●		
半精加工 Semi-Finishing		VCGT110302R-U	0.2	0.03-0.13	0.06-1.7				●		●	●	
		VCGT110302L-U	0.2	0.03-0.13	0.06-1.7				●		●	●	
		VCGT110304R-U	0.4	0.05-0.15	0.08-2.0				●		●	●	
		VCGT110304L-U	0.4	0.05-0.15	0.08-2.0				●		●	●	
		VCGT160404R-U	0.4	0.05-0.17	0.08-2.0				●		●	●	
		VCGT160404L-U	0.4	0.05-0.17	0.08-2.0				●		●	●	
钢 Steel					★		★	☆	★				
不锈钢 Stainless Steel								★	★				
铸铁 Cast Iron					★								
有色金属 Nonferrous Metal													★
耐热合金 Heat Resistant Alloy												☆	
淬硬钢 Hardened Steel													

★首选 ☆可选

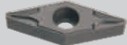
●标准库存 ○订单生产

车削刀片(正型) Turning Inserts (Positive)

VB..



型号 Model	尺寸 Size (mm)		
	d	s	d1
VB..1103..	6.35	3.18	2.8
VB..1604..	9.525	4.76	4.4

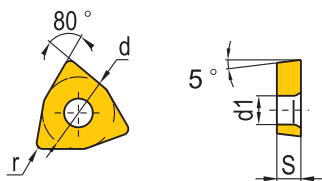
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
半精加工 Semi-Finishing 	VBMT160404GPK	0.4	0.08-0.20	0.3-2.5	●						
	VBMT160408GPK	0.8	0.10-0.25	0.5-2.5	●						
半精加工 Semi-Finishing 	VBMT110304TMP	0.4	0.03-0.20	0.15-2.7		●	●	●			
	VBMT160404TMP	0.4	0.07-0.20	0.2-2.7		●	●	●			
	VBMT160408TMP	0.8	0.09-0.27	0.5-2.7		●	●	●			
半精加工 / 精加工 Semi-finishing/Finishing 	VBGT110301R-F	0.1	0.02-0.08	0.05-1.5				●		●	
	VBGT110301L-F	0.1	0.02-0.08	0.05-1.5				●		●	
	VBGT110302R-F	0.2	0.03-0.13	0.06-1.7				●		●	
	VBGT110302L-F	0.2	0.03-0.13	0.06-1.7				●		●	
	VBGT110304R-F	0.4	0.05-0.15	0.08-2.0				●		●	
	VBGT110304L-F	0.4	0.05-0.15	0.08-2.0				●		●	
	VBGT160402R-F	0.2	0.03-0.13	0.06-1.7				●		●	
	VBGT160402L-F	0.2	0.03-0.13	0.06-1.7				●		●	
	VBGT160404R-F	0.4	0.05-0.15	0.08-2.0				●		●	
	VBGT160404L-F	0.4	0.05-0.15	0.08-2.0				●		●	
半精加工 Semi-Finishing 	VBGT110302R-U	0.2	0.03-0.13	0.06-1.7				●		●	●
	VBGT110302L-U	0.2	0.03-0.13	0.06-1.7				●		●	●
	VBGT110304R-U	0.4	0.05-0.15	0.08-2.0				●		●	●
	VBGT110304L-U	0.4	0.05-0.15	0.08-2.0				●		●	●
	VBGT110308R-U	0.8	0.08-0.20	0.08-2.3				●		●	●
	VBGT110308L-U	0.8	0.08-0.20	0.08-2.3				●		●	●
	VBGT160402R-U	0.2	0.03-0.13	0.06-1.7				●		●	●
	VBGT160402L-U	0.2	0.03-0.13	0.06-1.7				●		●	●
	VBGT160404R-U	0.4	0.05-0.15	0.08-2.0				●		●	●
	VBGT160404L-U	0.4	0.05-0.15	0.08-2.0				●		●	●
钢 Steel					★ ★ ☆ ★						
不锈钢 Stainless Steel					★ ★ ☆ ★						
铸铁 Cast Iron					★ ★ ☆ ★						
有色金属 Nonferrous Metal					★ ★ ☆ ★						
耐热合金 Heat Resistant Alloy					★ ★ ☆ ★						
淬硬钢 Hardened Steel					★ ★ ☆ ★						

★首选 ☆可选

●标准库存 ○订单生产

车削刀片(正型) Turning Inserts (Positive)

WB..



型号 Model	尺寸 Size (mm)		
	d	s	d1
WB..0601..	3.97	1.59	2.3

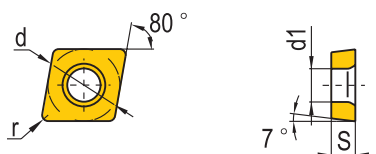
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
	WBGT060101R-F	0.1	0.01-0.05	0.1-0.3							
	WBGT060101L-F	0.1	0.01-0.05	0.1-0.3				●		●	●
	WBGT060102R-F	0.2	0.01-0.08	0.1-0.4							
	WBGT060102L-F	0.2	0.01-0.08	0.1-0.4				●		●	●
	WBGT060104R-F	0.4	0.01-0.10	0.1-0.5							
	WBGT060104L-F	0.4	0.01-0.10	0.1-0.5				●		●	●
精加工 Finishing											
钢 Steel					★ ★ ☆ ★						
不锈钢 Stainless Steel					★ ★ ★ ★						
铸铁 Cast Iron					★ ★ ★ ★						
有色金属 Nonferrous Metal					★ ★ ★ ★						
耐热合金 Heat Resistant Alloy					★ ★ ★ ★						
淬硬钢 Hardened Steel					★ ★ ★ ★						

★首选 ☆可选

●标准库存 ○订单生产

铝用刀片(正型) Aluminum Turning Inserts (Positive)

CC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
CC..0602..	6.35	2.38	2.8
CC..09T3..	9.525	3.97	4.4
CC..1204..	12.4	4.76	5.5

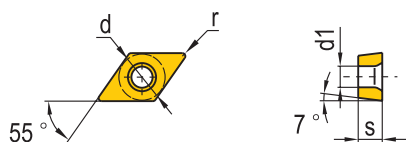
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
	CCGT060202APK	0.2	0.01-0.12	0.05-3.0							●
	CCGT060204APK	0.4	0.02-0.15	0.1-3.0							●
	CCGT060208APK	0.8	0.02-0.20	0.1-4.0							●
	CCGT09T302APK	0.2	0.02-0.20	0.05-3.0							●
	CCGT09T304APK	0.4	0.02-0.30	0.1-5.0							●
	CCGT09T308APK	0.8	0.03-0.50	0.1-5.0							●
	CCGT120402APK	0.2	0.02-0.30	0.05-4.0							●
	CCGT120404APK	0.4	0.03-0.50	0.1-5.0							●
	CCGT120408APK	0.8	0.04-0.80	0.1-5.0							●
钢 Steel					★	★	☆		★		
不锈钢 Stainless Steel							★	★			
铸铁 Cast Iron					★						
有色金属 Nonferrous Metal										★	
耐热合金 Heat Resistant Alloy								☆			
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

铝用刀片(正型) Aluminum Turning Inserts (Positive)

DC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
DC..0702 ..	6.35	2.38	2.8
DC..11T3 ..	9.525	3.97	4.4

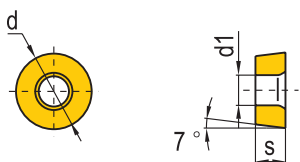
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
	DCGT070202APK	0.2	0.01-0.20	0.05-3.0							●
	DCGT070204APK	0.4	0.02-0.30	0.1-4.0							●
	DCGT070208APK	0.8	0.03-0.40	0.1-4.0							●
	DCGT11T302APK	0.2	0.02-0.30	0.05-4.0							●
	DCGT11T304APK	0.4	0.03-0.50	0.1-5.0							●
	DCGT11T308APK	0.8	0.03-0.50	0.1-5.0							●
	DCGT11T312APK	1.2	0.04-0.60	0.15-5.0							●
钢 Steel						★		★	☆		★
不锈钢 Stainless Steel								★		★	
铸铁 Cast Iron					★						
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆		
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

铝用刀片(正型) Aluminum Turning Inserts (Positive)

RC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
RC..0602MO	6	2.38	2.8
RC..0803MO	8	3.18	3.4
RC..1003MO	10	3.18	3.6
RC..10T3MO	10	3.97	4.0
RC..1204MO.	12	4.76	4.2

刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
	RCGT0602MO-APK	6.0	0.05-0.20	0.5-2.0							●
	RCGT0803MO-APK	8.0	0.05-0.25	0.5-2.5							●
	RCGT1003MO-APK	10.0	0.10-0.30	1.0-3.0							●
	RCGT10T3MO-APK	10.0	0.10-0.30	1.0-3.0							●
	RCGT1204MO-APK	12.0	0.10-0.35	1.0-3.5							●
钢 Steel						★		★	☆		★
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron						★					
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy										☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

铝用刀片(正型)
Aluminum Turning Inserts (Positive)

SC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
SC..09T304..	9.525	3.97	4.4
SC..120404..	12.7	4.76	5.5

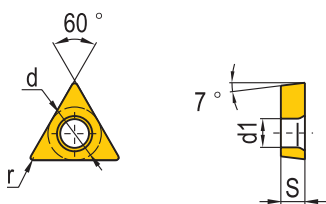
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
	SCGT09T302APK	0.2	0.02-0.30	0.1-4.0							●
	SCGT09T304APK	0.4	0.04-0.40	0.1-5.0							●
	SCGT09T308APK	0.8	0.03-0.40	0.1-5.0							●
	SCGT120404APK	0.4	0.03-0.50	0.1-5.0							●
	SCGT120408APK	0.8	0.04-0.60	0.15-5.5							●
											●
钢 Steel						★	★	☆		★	
不锈钢 Stainless Steel								★	★		
铸铁 Cast Iron					★						
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆		
淬硬钢 Hardened Steel											

★首选 ☆可选

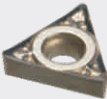
●标准库存 ○订单生产

铝用刀片(正型) Aluminum Turning Inserts (Positive)

TC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
TC..0902..	5.56	2.38	2.5
TC..1102..	6.35	2.38	2.8
TC..16T3..	9.525	3.97	4.4

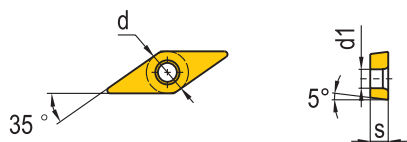
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
	TCGT090202APK	0.2	0.01-0.12	0.05-3.0							●
	TCGT090204APK	0.4	0.02-0.15	0.1-4.0							●
	TCGT110202APK	0.2	0.02-0.20	0.05-4.0							●
	TCGT110204APK	0.4	0.03-0.30	0.1-4.0							●
	TCGT110208APK	0.8	0.03-0.40	0.1-5.0							●
	TCGT16T302APK	0.2	0.02-0.30	0.05-5.0							●
	TCGT16T304APK	0.4	0.03-0.40	0.1-5.5							●
	TCGT16T308APK	0.8	0.03-0.50	0.1-5.5							●
TCGT16T312APK	1.2	0.04-0.60	0.15-5.5							●	
钢 Steel					★	★	☆		★		
不锈钢 Stainless Steel							★	★			
铸铁 Cast Iron					★						
有色金属 Nonferrous Metal										★	
耐热合金 Heat Resistant Alloy								☆			
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

铝用刀片(正型)
Aluminum Turning Inserts (Positive)

VB..



型号 Model	尺寸 Size (mm)		
	d	s	d1
VB..1103..	6.35	3.18	2.8
VB..1604..	9.525	4.76	4.4

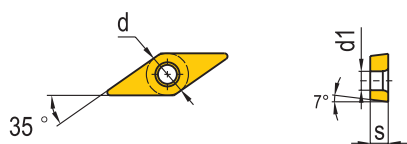
刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
	VBGT110302APK	0.2	0.02-0.15	0.05-3.0							●
	VBGT110304APK	0.4	0.02-0.15	0.1-4.0							●
	VBGT110308APK	0.8	0.03-0.18	0.1-5.0							●
	VBGT160402APK	0.2	0.03-0.30	0.05-4.0							●
	VBGT160404APK	0.4	0.03-0.40	0.1-5.0							●
	VBGT160408APK	0.8	0.03-0.50	0.1-5.0							●
	VBGT160412APK	1.2	0.05-0.60	0.1-5.5							●
钢 Steel						★		★	☆		★
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron						★					
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy										☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

铝用刀片(正型) Aluminum Turning Inserts (Positive)

VC..



型号 Model	尺寸 Size (mm)		
	d	s	d1
VC..1103..	6.35	3.18	2.8
VC..1604..	9.525	4.76	4.4

刀片外形 Insert shape	型号 Model	刀片材质及适用加工材料 Insert grades and application									
		r	进给fn mm/rev	切深ap mm	KC3110	KC1115	KC1125	KP2120	KP2130	KT20	KW20
	VCGT110302APK	0.2	0.02-0.20	0.05-3.0							●
	VCGT110304APK	0.4	0.02-0.20	0.1-4.0							●
	VCVT110308APK	0.8	0.03-0.30	0.1-5.0							●
	VCGT160402APK	0.2	0.02-0.30	0.05-5.0							●
	VCGT160404APK	0.4	0.03-0.40	0.1-5.0							●
	VCGT160408APK	0.8	0.03-0.50	0.1-5.0							●
	VCGT160412APK	1.2	0.05-0.60	0.1-5.0							●
钢 Steel					★	★	☆		★		
不锈钢 Stainless Steel							★	★			
铸铁 Cast Iron					★						
有色金属 Nonferrous Metal										★	
耐热合金 Heat Resistant Alloy								☆			
淬硬钢 Hardened Steel											

★首选 ☆可选

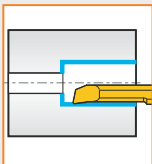
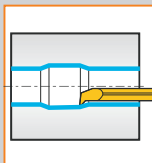
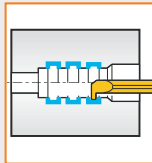
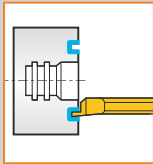
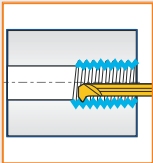
●标准库存 ○订单生产

车削刀片
Turning Insert

推荐切削条件表
Recommended Cutting Conditions

工件材料 Workpiece Materials			布氏硬度 HB	切削速度推荐值Vc(m/min) Recommended Cutting Speed																					
				KC1115			KC1125			KP2120			KP1115			KC3110			KT20			KW20			
				f(mm)			f(mm)			f(mm)			f(mm)			f(mm)			f(mm)			f(mm)			
				0.1	0.2	0.3	0.1	0.2	0.4	0.1	0.2	0.4	0.1	0.2	0.4	0.1	0.2	0.4	0.1	0.2	0.4	0.1	0.2	0.3	
P	碳素钢 Catbon Steel	约0.15%C退火 About 0.15%C, Annealed	125	500	440	390	430	380	300																
		约0.45%C退火 About 0.45%C, Annealed	190	430	380	320	360	310	250																
		约0.45%C调质 About 0.45%C, Quenched	250	300	270	240	270	230	190																
		约0.75%C退火 About 0.75%C, Annealed	270	320	300	270	320	280	220																
		约0.75%C调质 About 0.75%C, Quenched	300	260	240	220	230	200	170																
	低合金钢 Low Alloy Steel	退火 Annealed	180	370	320	280	330	280	220																
		调质 Quenched and Tempered	275	290	240	200	260	220	180																
		调质 Quenched and Tempered	300	260	220	180	230	200	150																
		调质 Quenched and Tempered	350	240	200	160	200	160	120																
	高合金钢 High Alloy Steel	退火 Annealed	200	360	300	260	320	270	220																
	工具钢 Tool Steel	淬火并回火 Quenched and Tempered	325	200	160	120	180	140	100																
M	不锈钢 Stainless Steel	铁素体/马氏体 Ferrite/Martensite	200							250	230	180	150	120	110										
		马氏体 Martensite	280							220	180	155	110	95	100										
		奥氏体 Austenite	180							180	150	120	100	90	80										
K	灰口铸铁 Gray Cast iron	球光体/铁素体 Pearlite/Ferrite	180													550	360	270							
		球光体/马氏体 Pearlite/Martensite	260													360	240	170							
	球墨铸铁 Nodular Cast iron	铁素体 Ferrite	160													370	270	210							
		球光体 Pearlite	250													270	210	170							
	可锻铸铁 Malleable Cast iron	铁素体 Ferrite	130													430	330	300							
		球光体 Pearlite	230													310	210	140							
N	铝合金 Aluminium Alloys	非时效淬硬 Non-aging Hardened	60																			2900	2200	1600	
		时效淬硬 Aging Hardened	100																			900	720	360	
	铜和铜合金 Copper Alloy	易切削合金 Free Cutting Alloys	110																			720	480	320	
		黄铜 Brass	90																			480	360	300	
		青铜和电解铜 Bronze & Electrolytic Copper	100																			340	240	160	

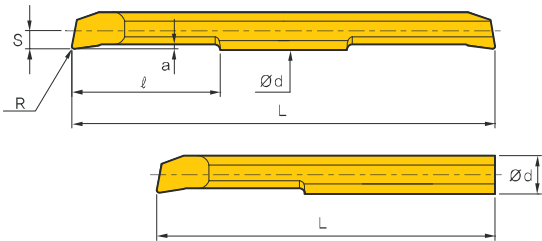
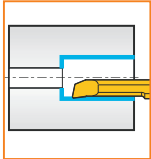
整体合金小径内孔车刀一览表 Solid carbide mini boring bar

型号 Size	刀片外形 Shape	应用范围 Applicable	特点 Features
PSBR			内孔加工 最小加工直径3.2mm
PSCR			内孔倒拉加工 最小加工直径3.2mm
PSGR			内孔切槽加工 最小加工直径3.2mm,槽宽1.0-2.5mm
PSGFR			端面槽加工 最小加工直径6.0mm 槽宽1.0-4.5mm
PSTR			内螺纹加工 最小加工直径3.3mm 螺距0.5-1.5mm

推荐切削条件表 Recommended Cutting Conditions

Material 被加工材料	VC (m/min)	孔径 boring bar Φ		
		$\Phi 1.0-\Phi 2.0$ (mm/rev)	$\Phi 2.5-\Phi 4.0$ (mm/rev)	$\Phi 4.5-\Phi 5.5$ (mm/rev)
Free-cutting steel 易削铁	60-100	0.02-0.03	0.02-0.08	0.03-0.10
Low alloyed steel 低合金钢	50-80	0.01-0.03	0.02-0.05	0.03-0.06
High alloyed steel 高合金钢	40-60	0.01-0.02	0.02-0.04	0.02-0.06
Stainless steel 不锈钢	40-90	0.01-0.03	0.02-0.05	0.03-0.08
Aluminium 铝合金	60-150	0.01-0.03	0.02-0.06	0.03-0.1
Titanium 钛合金	30-70	0.01-0.03	0.02-0.05	0.03-0.1
Copper 铜	60-150	0.01-0.03	0.02-0.05	0.03-0.08

镗孔
Boring

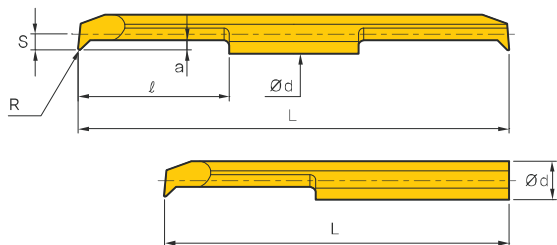
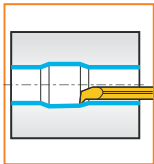


刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		R	最小直径 Min Dia mm	d	l	L	w	a	s	KTX	KW20
	PSBR0310-1	0.05	3.2	3.0	10	35		0.5	1.4	●	●
	PSBR0315-1	0.05	3.2	3.0	15	45		0.5	1.4	●	●
	PSBR0410-1	0.05	4.2	4.0	10	35		0.6	1.9	●	●
	PSBR0415-1	0.05	4.2	4.0	15	45		0.6	1.9	●	●
	PSBR0420-1	0.05	4.2	4.0	20	50		0.6	1.9	●	●
	PSBR0610-1	0.05	6.2	6.0	10	40		0.75	2.9	●	●
	PSBR0615-1	0.05	6.2	6.0	15	45		0.75	2.9	●	●
	PSBR0620-1	0.05	6.2	6.0	20	50		0.75	2.9	●	●
	PSBR0310	0.05	3.2	3.0	10	40		0.5	1.4	●	●
	PSBR0315	0.05	3.2	3.0	15	50		0.5	1.4	●	●
	PSBR0410	0.05	4.2	4.0	10	40		0.6	1.9	●	●
	PSBR0415	0.05	4.2	4.0	15	50		0.6	1.9	●	●
	PSBR0420	0.05	4.2	4.0	20	60		0.6	1.9	●	●
	PSBR0610	0.05	6.2	6.0	10	45		0.75	2.9	●	●
	PSBR0615	0.05	6.2	6.0	15	55		0.75	2.9	●	●
	PSBR0620	0.05	6.2	6.0	20	65		0.75	2.9	●	●
钢 Steel										★	
不锈钢 Stainless Steel										★	
铸铁 Cast Iron										☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy										☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

仿形 Copying

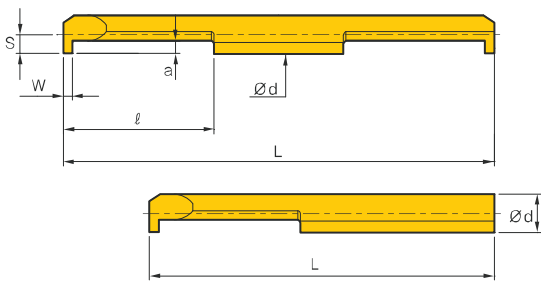
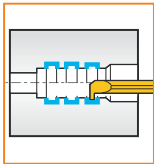


刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		R	最小直径 Min Dia mm	d	l	L	w	a	s	KTX	KW20
	PSCR0410-1	0.05	4.2	4.0	10	35		1.0	1.9	●	●
	PSCR0415-1	0.05	4.2	4.0	15	45		1.0	1.9	●	●
	PSCR0420-1	0.05	4.2	4.0	20	50		1.0	1.9	●	●
	PSCR0610-1	0.05	6.2	6.0	10	40		1.3	2.9	●	●
	PSCR0615-1	0.05	6.2	6.0	15	45		1.3	2.9	●	●
	PSCR0620-1	0.05	6.2	6.0	20	50		1.3	2.9	●	●
	PSCR0410	0.05	4.2	4.0	10	40		1.0	1.9	●	●
	PSCR0415	0.05	4.2	4.0	15	50		1.0	1.9	●	●
	PSCR0420	0.05	4.2	4.0	20	60		1.0	1.9	●	●
	PSCR0610	0.05	6.2	6.0	10	45		1.3	2.9	●	●
	PSCR0615	0.05	6.2	6.0	15	55		1.3	2.9	●	●
	PSCR0620	0.05	6.2	6.0	20	65		1.3	2.69	●	●
钢 Steel										★	
不锈钢 Stainless Steel										★	
铸铁 Cast Iron										☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy										☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

切槽
Square Grooving

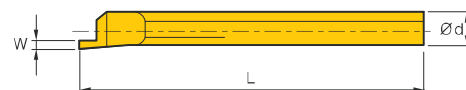
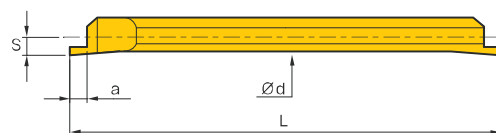
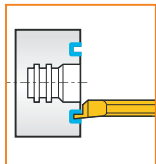


刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		R	最小直径 Min Dia mm	d	l	L	w	a	s	KTX	KW20
	PSGR0310-1.0-1		3.2	3.0	10	35	1.0	0.8	1.4	●	●
	PSGR0315-1.0-1		3.2	3.0	15	45	1.0	0.8	1.4	●	●
	PSGR0310-1.5-1		3.2	3.0	10	35	1.5	0.8	1.4	●	●
	PSGR0315-1.5-1		3.2	3.0	15	45	1.5	0.8	1.4	●	●
	PSGR0410-1.0-1		4.2	4.0	10	35	1.0	1.4	1.9	●	●
	PSGR0420-1.0-1		4.2	4.0	20	50	1.0	1.4	1.9	●	●
	PSGR0410-1.5-1		4.2	4.0	10	35	1.5	1.4	1.9	●	●
	PSGR0420-1.5-1		4.2	4.0	20	50	1.5	1.4	1.9	●	●
	PSGR0410-2.0-1		4.2	4.0	10	35	2.0	1.4	1.9	●	●
	PSGR0420-2.0-1		4.2	4.0	20	50	2.0	1.4	1.9	●	●
	PSGR0610-1.0-1		6.2	6.0	10	40	1.0	1.8	2.9	●	●
	PSGR0620-1.0-1		6.2	6.0	20	50	1.0	1.8	2.9	●	●
	PSGR0610-1.5-1		6.2	6.0	10	40	1.5	1.8	2.9	●	●
	PSGR0620-1.5-1		6.2	6.0	20	50	1.5	1.8	2.9	●	●
	PSGR0610-2.0-1		6.2	6.0	10	40	2.0	1.8	2.9	●	●
	PSGR0620-2.0-1		6.2	6.0	20	50	2.0	1.8	2.9	●	●
	PSGR0610-2.5-1		6.2	6.0	10	40	2.5	2.0	2.9	●	●
	PSGR0620-2.5-1		6.2	6.0	20	50	2.5	2.0	2.9	●	●
	PSGR0310-1.0		3.2	3.0	10	40	1.0	0.8	1.4	●	●
	PSGR0315-1.0		3.2	3.0	15	50	1.0	0.8	1.4	●	●
	PSGR0310-1.5		3.2	3.0	10	40	1.5	0.8	1.4	●	●
	PSGR0315-1.5		3.2	3.0	15	50	1.5	0.8	1.4	●	●
	PSGR0410-1.0		4.2	4.0	10	40	1.0	1.4	1.9	●	●
	PSGR0420-1.0		4.2	4.0	20	60	1.0	1.4	1.9	●	●
	PSGR0410-1.5		4.2	4.0	10	40	1.5	1.4	1.9	●	●
	PSGR0420-1.5		4.2	4.0	20	60	1.5	1.4	1.9	●	●
	PSGR0410-2.0		4.2	4.0	10	40	2.0	1.4	1.9	●	●
	PSGR0420-2.0		4.2	4.0	20	60	2.0	1.4	1.9	●	●
	PSGR0610-1.0		6.2	6.0	10	45	1.0	1.8	2.9	●	●
	PSGR0620-1.0		6.2	6.0	20	65	1.0	1.8	2.9	●	●
	PSGR0610-1.5		6.2	6.0	10	45	1.5	1.8	2.9	●	●
	PSGR0620-1.5		6.2	6.0	20	65	1.5	1.8	2.9	●	●
	PSGR0610-2.0		6.2	6.0	10	45	2.0	1.8	2.9	●	●
	PSGR0620-2.0		6.2	6.0	20	65	2.0	1.8	2.9	●	●
	PSGR0610-2.5		6.2	6.0	10	45	2.5	2.0	2.9	●	●
	PSGR0620-2.5		6.2	6.0	20	65	2.5	2.0	2.9	●	●
钢 Steel										★	
不锈钢 Stainless Steel										★	
铸铁 Cast Iron										☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy										☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

端面槽 Face Grooving

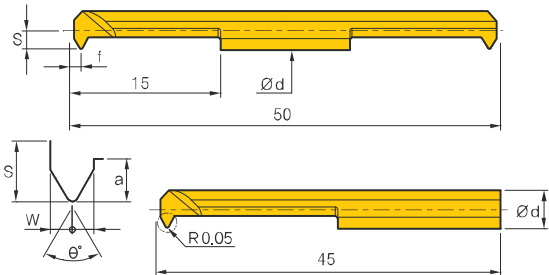
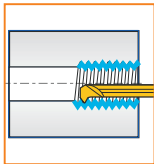


刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		R	最小直径 Min Dia mm	d	l	L	w	a	s	KTX	KW20
	PSGFR0400-1.0-1		6.0	4.0		45	1.5	1.5	1.8	●	●
	PSGFR0400-1.5-1		6.0	4.0		45	2.0	2.0	1.8	●	●
	PSGFR0600-1.0-1		8.5	6.0		45	1.0	1.5	2.9	●	●
	PSGFR0600-1.5-1		8.5	6.0		45	1.5	2.0	2.9	●	●
	PSGFR0600-2.0-1		8.5	6.0		45	2.0	2.5	2.9	●	●
	PSGFR0800-1.0-1		10.4	8.0		60	1.0	2.0	3.9	●	●
	PSGFR0800-1.5-1		10.4	8.0		60	1.5	2.5	3.9	●	●
	PSGFR0800-2.0-1		10.4	8.0		60	2.0	3.0	3.9	●	●
	PSGFR1000-2.0-1		12.4	10.0		70	2.0	2.5	4.9	●	●
	PSGFR1000-2.5-1		12.4	10.0		70	2.5	3.0	4.9	●	●
	PSGFR1000-3.0-1		12.4	10.0		70	3.0	3.5	4.9	●	●
	PSGFR1000-3.5-1		12.4	10.0		70	3.5	4.0	4.9	●	●
	PSGFR1000-4.0-1		12.4	10.0		70	4.0	4.5	4.9	●	●
	PSGFR1000-4.5-1		12.4	10.0		70	4.5	5.0	4.9	●	●
	PSGFR0400-1.0		6.0	4.0		50	1.5	1.5	1.8	●	●
	PSGFR0400-1.5		6.0	4.0		50	2.0	2.0	1.8	●	●
	PSGFR0600-1.0		8.5	6.0		50	1.0	1.5	2.9	●	●
	PSGFR0600-1.5		8.5	6.0		50	1.5	2.0	2.9	●	●
	PSGFR0600-2.0		8.5	6.0		50	2.0	2.5	2.9	●	●
	PSGFR0800-1.0		10.4	8.0		70	1.0	2.0	3.9	●	●
	PSGFR0800-1.5		10.4	8.0		70	1.5	2.5	3.9	●	●
	PSGFR0800-2.0		10.4	8.0		70	2.0	3.0	3.9	●	●
	PSGFR1000-2.0		12.4	10.0		80	2.0	2.5	4.9	●	●
	PSGFR1000-2.5		12.4	10.0		80	2.5	3.0	4.9	●	●
	PSGFR1000-3.0		12.4	10.0		80	3.0	3.5	4.9	●	●
	PSGFR1000-3.5		12.4	10.0		80	3.5	4.0	4.9	●	●
	PSGFR1000-4.0		12.4	10.0		80	4.0	4.5	4.9	●	●
	PSGFR1000-4.5		12.4	10.0		80	4.5	5.0	4.9	●	●
钢 Steel					★						
不锈钢 Stainless Steel					★						
铸铁 Cast Iron					☆						
有色金属 Nonferrous Metal					★						
耐热合金 Heat Resistant Alloy					☆						

★首选 ☆可选

●标准库存 ○订单生产

内螺纹
Threading



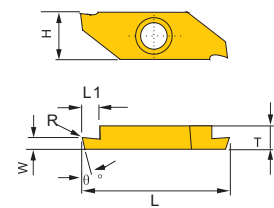
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades										
		R	最小直径 Min Dia mm	d	l	L	w	螺距 P/t	θ°	KTX	KW20	
	PSTR0315-F60-1	0.05	3.3	3.0			1.2	0.5-1.0	60	●	●	
	PSTR0415-F60-1	0.05	4.3	4.0			1.2	0.5-1.0	60	●	●	
	PSTR0615-A60-1	0.05	6.2	6.0			2.0	0.5-1.5	60	●	●	
	PSTR0315-F55-1	0.05	3.3	3.0			1.2	48-24	55	●	●	
	PSTR0415-F55-1	0.05	4.3	4.0			1.2	48-24	55	●	●	
	PSTR0615-A55-1	0.05	6.2	6.0			2.0	28-16	55	●	●	
												
	PSTR0315-F60	0.05	3.3	3.0			1.2	0.5-1.0	60	●	●	
	PSTR0415-F60	0.05	4.3	4.0			1.2	0.5-1.0	60	●	●	
	PSTR0615-A60	0.05	6.2	6.0			2.0	0.5-1.5	60	●	●	
	PSTR0315-F55	0.05	3.3	3.0			1.2	48-24	55	●	●	
	PSTR0415-F55	0.05	4.3	4.0			1.2	48-24	55	●	●	
	PSTR0615-A55	0.05	6.2	6.0			2.0	28-16	55	●	●	
钢 Steel											★	
不锈钢 Stainless Steel											★	
铸铁 Cast Iron											☆	
有色金属 Nonferrous Metal												★
耐热合金 Heat Resistant Alloy											☆	

★首选 ☆可选

●标准库存 ○订单生产

小零件加工
Small part cutting

KTPR.. FA
切断加工
Parting off inserts



刀片外形 Insert shape 	型号	尺寸与材质										
		Model		Size and Grades								
	w	L1	R	T	H	L	θ°	KTX	KVX	KW20		
	KTPR100FA	1.0	5.0	0.08	3.5	9.4	25	16	●	●	●	
	KTPR150FA	1.5	7.0	0.08	3.5	9.4	25	16	●	●	●	
	KTPR200FA	2.0	8.5	0.08	3.5	9.4	25	16	●	●	●	
	KTPR250FA	2.5	8.5	0.08	3.5	9.4	25	16	●	●	●	
钢 Steel										★	★	
不锈钢 Stainless Steel											★	
铸铁 Cast Iron										☆	☆	
有色金属 Nonferrous Metal												★
耐热合金 Heat Resistant Alloy											☆	
淬硬钢 Hardened Steel												

★首选 ☆可选

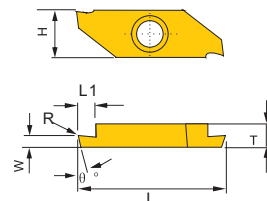
●标准库存 ○订单生产

小零件加工 Small part cutting

KTPR.. FN

切槽加工

Grooving inserts



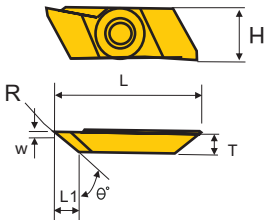
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		w	L1	R	T	H	L	θ°	KTX	KVX	KW20
	KTPR050FN	0.5	2.0	0.05	3.5	9.4	25	0	●	●	●
	KTPR070FN	0.7	2.8	0.05	3.5	9.4	25	0	●	●	●
	KTPR100FN	1.0	4.0	0.05	3.5	9.4	25	0	●	●	●
	KTPR125FN	1.25	5.0	0.05	3.5	9.4	25	0	●	●	●
	KTPR150FN	1.5	5.5	0.05	3.5	9.4	25	0	●	●	●
	KTPR200FN	2.0	5.5	0.05	3.5	9.4	25	0	●	●	●
	KTPR250FN	2.5	5.5	0.05	3.5	9.4	25	0	●	●	●
钢 Steel									★	★	
不锈钢 Stainless Steel										★	
铸铁 Cast Iron									☆	☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy										☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

小零件加工
Small part cutting

KTPR.. FB
后扫加工
Back turning inserts



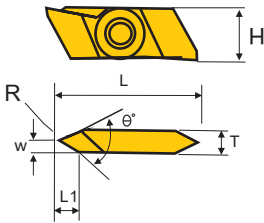
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		w	L1	R	T	H	L	θ°	KTX	KVX	KW20
	KTPR05FB	0.5	4.0	0.05	3.5	9.4	25	60	●	●	●
	KTPR10FB	1.0	4.0	0.1	3.5	9.4	25	60	●	●	●
钢 Steel										★	★
不锈钢 Stainless Steel											★
铸铁 Cast Iron										☆	☆
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy											☆
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

小零件加工
Small part cutting

KTPR.. FT
螺纹加工
Threading inserts



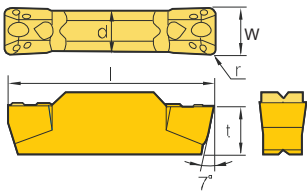
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades										
		螺距 Pitch	W	R	T	H	L	θ°	KTX	KVX	KW20	
	KTPR6000FT	0.2-0.6	2.0	0.00	3.5	9.4	25	60	●	●	●	
	KTPR6005FT	0.5-1.25	2.0	0.05	3.5	9.4	25	60	●	●	●	
	KTPR5500FT	64-48	2.0	0.00	3.5	9.4	25	55	●	●	●	
	KTPR5505FT	48-24	2.0	0.05	3.5	9.4	25	55	●	●	●	
钢 Steel										★	★	
不锈钢 Stainless Steel											★	
铸铁 Cast Iron										☆	☆	
有色金属 Nonferrous Metal										★		
耐热合金 Heat Resistant Alloy										☆		
淬硬钢 Hardened Steel												

★首选 ☆可选

●标准库存 ○订单生产

切断切槽刀片
Grooving inserts

M.MN..



刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades							KTX	KVX	KW20
		W	r	l	d	t					
	MGMN150-G	1.5	0.15	16.0	1.2	3.5			●	●	
	MGMN200-G	2.0	0.2	16.0	1.6	3.5			●	●	
	MGMN250-G	2.5	0.2	18.5	2.0	3.85			●	●	
	MGMN300-M	3.0	0.4	21.0	2.35	4.8			●	●	
	MGMM400-M	4.0	0.4	21.0	3.3	4.8			●	●	
	MGMN500-M	5.0	0.8	26.0	4.1	5.8			●	●	
	MGMN600-M	6.0	0.8	26.0	5.0	5.8			●	●	
	MRMN200-M	2.0	1.0	16.0	1.5	3.5			●	●	
	MRMN300-M	3.0	1.5	21.0	2.35	4.8			●	●	
	MRMN400-M	4.0	2.0	21.0	3.3	4.8			●	●	
钢 Steel									★	★	
不锈钢 Stainless Steel										★	
铸铁 Cast Iron									☆	☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy										☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

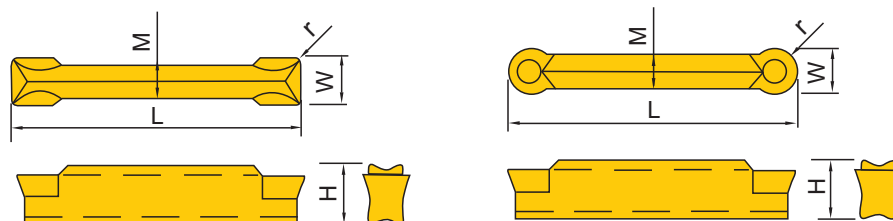
●标准库存 ○订单生产

推荐切削条件表
Recommended Cutting Conditions

工件材料 Workpiece Materials		加工形式	切削速度推荐值Vc(m/min) Recommended Cutting Speed			切削速度推荐值f(mm/rev) Recommended Cutting Speed					
			KTX	KVX	KW20	1.5/2.0	2.5	3.0	4.0	5.0	6.0
						f(mm/rev)	f(mm/rev)	f(mm/rev)	f(mm/rev)	f(mm/rev)	f(mm/rev)
P	钢 Steel	外圆加工	50-100-130	50-100-130		0.06-0.12	0.07-0.15	0.08-0.20	0.10-0.25	0.12-0.25	0.15-0.25
		内孔端面加工	40-70-100	40-70-100		0.05-0.10	0.06-0.10	0.07-0.12	0.08-0.14	0.10-0.16	0.10-0.18
M	不锈钢 Stainless Steel	外圆加工		60-110-150		0.06-0.12	0.07-0.15	0.08-0.20	0.10-0.25	0.12-0.25	0.15-0.25
		内孔端面加工		50-80-120		0.05-0.10	0.06-0.10	0.07-0.12	0.08-0.14	0.10-0.16	0.10-0.18
K	铸铁 Cast Iron	外圆加工	50-100-130	50-100-130		0.06-0.12	0.07-0.15	0.08-0.20	0.10-0.25	0.12-0.25	0.15-0.25
		内孔端面加工	40-70-100	40-70-100		0.05-0.10	0.06-0.10	0.07-0.12	0.08-0.14	0.10-0.16	0.10-0.18

切断切槽刀片 Grooving inserts

WD..



刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades					KTX	KVX	KW20
		W	L	R	H	A			
	WD22N2.00S-0.2T	2.0	22	0.2	4.0			●	
	WD22N3.00S-0.3T	3.0	22	0.3	4.0			●	
	WD25N4.00S-0.4T	4.0	25	0.4	4.0			●	
	WD25N5.00S-0.4T	5.0	25	0.4	4.0			●	
	WD22R-2.00S-06F	2.0	22		4.0	6		●	
	WD22R-3.00S-06F	3.0	22		4.0	6		●	
	WD22N3.00S-1.5R	3.0	22	1.5	4.0			●	
	WD25N4.00S-2.0R	4.0	25	2.0	4.0			●	
								●	
钢 Steel									★
不锈钢 Stainless Steel									★
铸铁 Cast Iron									☆
有色金属 Nonferrous Metal									★
耐热合金 Heat Resistant Alloy									☆
淬硬钢 Hardened Steel									

★首选 ☆可选

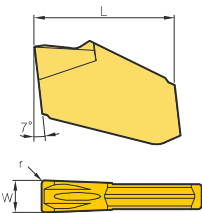
●标准库存 ○订单生产

推荐切削条件表 Recommended Cutting Conditions

工件材料 Workpiece Materials		加工形式	切削速度推荐值Vc(m/min) Recommended Cutting Speed			切削速度推荐值f(mm/rev) Recommended Cutting Speed					
			KTX	KVX	KW20	2.0	3.0	4.0	5.0		
						f(mm/rev)	f(mm/rev)	f(mm/rev)	f(mm/rev)		
P	钢 Steel	外圆加工	50-100-170	50-100-170		0.06-0.12	0.08-0.20	0.10-0.25	0.12-0.25		
		内孔端面加工	40-70-100	40-70-100		0.05-0.10	0.07-0.12	0.08-0.14	0.10-0.16		
M	不锈钢 Stainless Steel	外圆加工		100-130-170		0.06-0.12	0.08-0.20	0.10-0.25	0.12-0.25		
		内孔端面加工		50-80-120		0.05-0.10	0.07-0.12	0.08-0.14	0.10-0.16		
K	铸铁 Cast Iron	外圆加工	50-100-170	50-100-170		0.06-0.12	0.08-0.20	0.10-0.25	0.12-0.25		
		内孔端面加工	40-70-100	40-70-100		0.05-0.10	0.07-0.12	0.08-0.14	0.10-0.16		

切断切槽刀片
Grooving inserts

SP..



刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades					KTX	KVX	KW20
		W	I	R					
	SP200	2.0	9.3	0.2			●	●	
	SP300	3.0	11.3	0.2			●	●	
	SP400	4.0	11.3	0.25			●	●	
	SP500	5.0	11.4	0.3			●	●	
钢 Steel							★	★	
不锈钢 Stainless Steel								★	
铸铁 Cast Iron							☆	☆	
有色金属 Nonferrous Metal									★
耐热合金 Heat Resistant Alloy								☆	
淬硬钢 Hardened Steel									

★首选 ☆可选

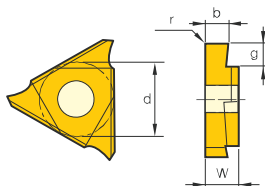
●标准库存 ○订单生产

推荐切削条件表
Recommended Cutting Conditions

工件材料 Workpiece Materials		加工形式	切削速度推荐值Vc(m/min) Recommended Cutting Speed			切削速度推荐值f(mm/rev) Recommended Cutting Speed				
			KTX	KVX	KW20	2.0	3.0	4.0	5.0	
						f(mm/rev)	f(mm/rev)	f(mm/rev)	f(mm/rev)	
P	钢 Steel	外圆加工	60-100-150			0.07-0.12	0.08-0.15	0.09-0.20	0.10-0.25	
M	不锈钢 Stainless Steel	外圆加工								
K	铸铁 Cast iron	外圆加工	60-100-150			0.07-0.12	0.08-0.15	0.09-0.20	0.10-0.25	

切断切槽刀片 Grooving inserts

TGF32..



型号 Model	尺寸 Size (mm)		
	d	s	d1
TGF32..	9.525	3.18	4.6

刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades					KTX	KVX	KW20
		W	B	R					
	TGF32R033	0.33	0.8	0.05				●	●
	TGF32R050	0.50	1.2	0.05				●	●
	TGF32R075	0.75	2.0	0.1				●	●
	TGF32R095	0.95	2.0	0.1				●	●
	TGF32R100	1.00	2.0	0.1				●	●
	TGF32R120	1.20	2.0	0.1				●	●
	TGF32R125	1.25	2.0	0.1				●	●
	TGF32R150	1.50	2.0	0.1				●	●
	TGF32R175	1.75	2.0	0.1				●	●
	TGF32R200	2.00	2.5	0.1				●	●
	TGF32R250	2.50	2.5	0.1				●	●
	TGF32L033	0.33	0.8	0.05					
	TGF32L050	0.50	1.2	0.05					
	TGF32L075	0.75	2.0	0.1					
	TGF32L095	0.95	2.0	0.1					
	TGF32L100	1.00	2.0	0.1					
	TGF32L120	1.20	2.0	0.1					
	TGF32L125	1.25	2.0	0.1					
	TGF32L150	1.50	2.0	0.1					
	TGF32L175	1.75	2.0	0.1					
	TGF32L200	2.00	2.5	0.1					
	TGF32L250	2.50	2.5	0.1					
							★	★	
								★	
钢 Steel								☆	☆
不锈钢 Stainless Steel									
铸铁 Cast Iron									
有色金属 Nonferrous Metal									★
耐热合金 Heat Resistant Alloy								☆	
淬硬钢 Hardened Steel									

★首选 ☆可选

●标准库存 ○订单生产

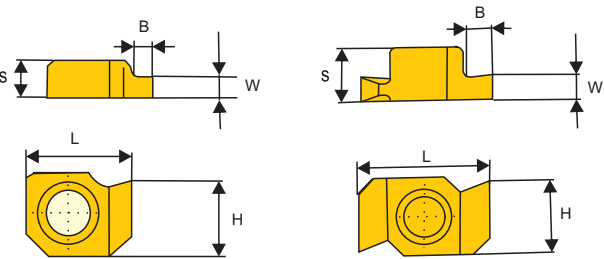
推荐切削条件表 Recommended Cutting Conditions

工件材料 Workpiece Materials		加工形式	切削速度推荐值Vc(m/min) Recommended Cutting Speed			切削速度推荐值f(mm/rev) Recommended Cutting Speed					
			KTX	KVX	KW20	0.33-0.50	0.75-0.95	1.00-1.45	1.50-2.50		
						f(mm/rev)	f(mm/rev)	f(mm/rev)	f(mm/rev)		
P	钢 Steel	切槽加工		80-180		0.01-0.05	0.02-0.07	0.03-0.08	0.03-0.08		
		横向加工		80-180				0.03-0.06	0.03-0.06		
M	不锈钢 Stainless Steel	切槽加工		60-130		0.01-0.04	0.2-0.06	0.03-0.07	0.03-0.07		
		横向加工		60-130				0.02-0.05	0.02-0.05		
K	铸铁 Cast iron	切槽加工			60-100	0.01-0.05	0.02-0.07	0.03-0.08	0.03-0.08		
		横向加工			60-100			0.03-0.06	0.03-0.06		
N	有色金属 Nonferrous metal	切槽加工			150-400	0.01-0.04	0.02-0.06	0.03-0.08	0.03-0.08		
		横向加工			150-400			0.03-0.06	0.03-0.06		

切断切槽刀片

Grooving inserts

MLG..



型号 Model	尺寸 Size (mm)
	S
MLG10	2.38
MLG14	4.76
MLG20	6.35

刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades					KTX	KVX	KW20
		W	B	R	L	H			
	MLG1012L	1.2	1	0.1	7	5.0		●	●
	MLG1015L	1.5	1	0.1	7	5.0		●	●
	MLG1020L	2.0	1	0.1	7	5.0		●	●
	MLG1415L	1.5	2	0.1	11.8	6.5		●	●
	MLG1420L	2.0	2	0.1	11.8	6.5		●	●
	MLG1430L	3.0	2	0.1	11.8	6.5		●	●
	MLG2020L	2.0	3	0.1	16.8	9.03		●	●
	MLG2030L	3.0	3	0.1	16.8	9.03		●	●
	MLG2040L	4..0	3	0.1	16.8	9.03		●	●
钢 Steel							★	★	
不锈钢 Stainless Steel								★	
铸铁 Cast Iron							☆	☆	
有色金属 Nonferrous Metal									★
耐热合金 Heat Resistant Alloy								☆	
淬硬钢 Hardened Steel									

★首选 ☆可选

●标准库存 ○订单生产

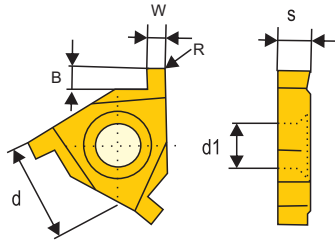
推荐切削条件表

Recommended Cutting Conditions

工件材料 Workpiece Materials		加工形式	切削速度推荐值Vc(m/min) Recommended Cutting Speed			切削速度推荐值f(mm/rev) Recommended Cutting Speed				
			KTX	KVX	KW20	1.2-1.5	2.0	3.0	4.0	
						f(mm/rev)	f(mm/rev)	f(mm/rev)	f(mm/rev)	
P	钢 Steel			60-120		0.02-0.08	0.02-0.08	0.02-0.08	0.02-0.08	
M	不锈钢 Stainless Steel			50-100		0.02-0.04	0.02-0.04	0.02-0.04	0.02-0.04	

切断切槽刀片 Grooving inserts

CUT..



型号 Model	尺寸 Size (mm)		
	d	s	d1
11NR..	6.35	3.1	3.0
16NR..	9.525	3.5	4.0

刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades					KTX	KVX	KW20
		W	B	R					
	11NR050CUT	0.50	0.8	0.05				●	●
	11NR075CUT	0.75	1.2	0.05				●	●
	11NR100CUT	1.0	1.5	0.1				●	●
	11NR120CUT	1.2	1.8	0.1				●	●
	11NR150CUT	1.5	1.8	0.1				●	●
	16NR050CUT	0.5	1.0	0.05				●	●
	16NR075CUT	0.75	1.5	0.05				●	●
	16NR100CUT	1.0	2.0	0.1				●	●
	16NR150CUT	1.5	2.2	0.1				●	●
	16NR200CUT	2.0	2.3	0.1				●	●
	16NR250CUT	2.5	2.3	0.1				●	●
	16ER050CUT	0.5	1.0	0.05					
	16ER075CUT	0.75	1.5	0.05					
	16ER100CUT	1.0	2.0	0.1					
	16ER150CUT	1.5	2.2	0.1					
	16ER200CUT	2.0	2.3	0.1					
	16ER250CUT	2.5	2.3	0.1					
钢 Steel							★	★	
不锈钢 Stainless Steel								★	
铸铁 Cast Iron							☆	☆	
有色金属 Nonferrous Metal									★
耐热合金 Heat Resistant Alloy								☆	
淬硬钢 Hardened Steel									

★首选 ☆可选

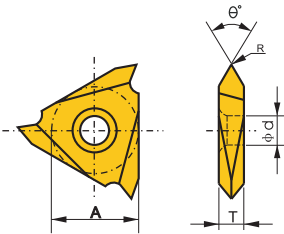
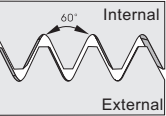
●标准库存 ○订单生产

推荐切削条件表 Recommended Cutting Conditions

工件材料 Workpiece Materials		加工形式	切削速度推荐值Vc(m/min) Recommended Cutting Speed			切削速度推荐值f(mm/rev) Recommended Cutting Speed					
			KTX	KVX	KW20	0.33-0.50	0.75-0.95	1.00-1.45	1.50-2.50		
						f(mm/rev)	f(mm/rev)	f(mm/rev)	f(mm/rev)		
P	钢 Steel			80-180		0.01-0.05	0.02-0.07	0.03-0.08	0.03-0.08		
M	不锈钢 Stainless Steel			60-130		0.01-0.04	0.2-0.06	0.03-0.07	0.03-0.07		
K	铸铁 Cast iron				60-100	0.01-0.05	0.02-0.07	0.03-0.08	0.03-0.08		
N	有色金属 Nonferrous metal				150-400	0.01-0.04	0.02-0.06	0.03-0.08	0.03-0.08		

螺纹刀片
Thread inserts

TT..60..



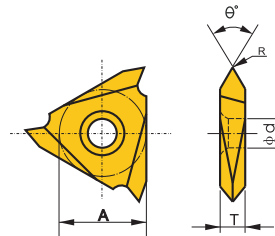
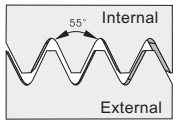
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	T	A	θ°	KTX	KKX	KVX	KW20
	TT32R6000	0.5~2.5		0.0	3.18	9.525	60			●	●
	TT32R6001	1.0~2.5		0.1	3.18	9.525	60			●	●
	TT32R6002	1.5~2.5		0.2	3.18	9.525	60				
	TT32R6003	2.5~3.5		0.3	3.18	9.525	60				
	TT43R6001	1.0~3.5		0.1	4.76	12.70	60			●	●
	TT43R6002	1.5~3.5		0.2	4.76	12.70	60				
	TT43R6003	2.5~3.5		0.3	4.76	12.70	60				
	TT43R6004	3.0~3.5		0.4	4.76	12.70	60				
	TT32L6000	0.5~2.5		0.0	3.18	9.525	60				
	TT32L6001	1.0~2.5		0.1	3.18	9.525	60				
	TT32L6002	1.5~2.5		0.2	3.18	9.525	60				
	TT32L6003	2.5~3.5		0.3	3.18	9.525	60				
	TT43L6001	1.0~3.5		0.1	4.76	12.70	60				
	TT43L6002	1.5~3.5		0.2	4.76	12.70	60				
	TT43L6003	2.5~3.5		0.3	4.76	12.70	60				
	TT43L6004	3.0~3.5		0.4	4.76	12.70	60				
钢 Steel										★	★
不锈钢 Stainless Steel											★
铸铁 Cast Iron										☆	☆
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy										☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

螺纹刀片 Thread inserts

TT..55..



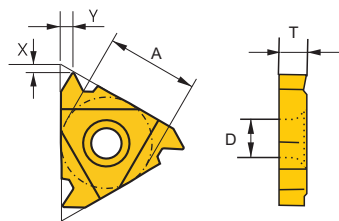
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	T	A	θ°	KTX	KKX	KVX	KW20
	TT32R5501		28-10	0.1	3.18	9.525	55			●	●
	TT32R5502		14-11	0.2	3.18	9.525	55				
	TT43R5501		28-11	0.1	4.76	12.70	55			●	●
	TT43R5502		14-11	0.2	4.76	12.70	55				
	TT43R5503		10-7	0.3	4.76	12.70	55				
	TT43R5504		8-7	0.4	4.76	12.70	55				
	TT32L5501		28-10	0.1	3.18	9.525	55				
	TT32L5502		14-11	0.2	3.18	9.525	55				
	TT43L5501		28-11	0.1	4.76	12.70	55				
	TT43L5502		14-11	0.2	4.76	12.70	55				
	TT43L5503		10-7	0.3	4.76	12.70	55				
	TT43L5504		8-7	0.4	4.76	12.70	55				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

螺纹刀片
Thread inserts

60° 泛外螺纹



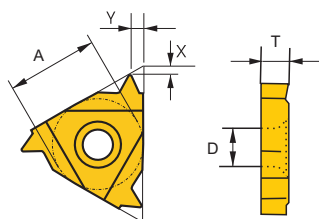
型号 Model	尺寸 Size (mm)		
	A	T	D
16ER/L..	9.525	3.68	4.0
22ER/L..	12.70	4.9	4.85

刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	16ERMA60	0.5-1.5		0.06	0.8	0.9	60			●	
	16ERM G60	1.75-3		0.22	1.2	1.7	60			●	
	16ERMAG60	0.5-3		0.06	1.2	1.7	60			●	
	16ER A60	0.5-1.5		0.06	0.8	0.9	60	●	●	●	●
	16ER G60	1.75-3		0.22	1.2	1.7	60	●	●	●	●
	16ER AG60	0.5-3		0.06	1.2	1.7	60	●	●	●	●
	16ELMA60	0.5-1.5		0.06	0.8	0.9	60				
	16ELM G60	1.75-3		0.22	1.2	1.7	60				
	16ELMAG60	0.5-3		0.06	1.2	1.7	60				
	16EL A60	0.5-1.5		0.06	0.8	0.9	60				
	16EL G60	1.75-3		0.22	1.2	1.7	60				
	16EL AG60	0.5-3		0.06	1.2	1.7	60				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选 ●标准库存 ○订单生产

螺纹刀片 Thread inserts

60° 泛内螺纹



型号 Model	尺寸 Size (mm)		
	A	T	D
06NR..	3.97	1.91	2.3
08NR..	4.76	2.38	2.3
11NR..	6.35	3.18	3.0
16NR..	9.525	3.68	4.0
22NR..	12.70	4.9	4.85

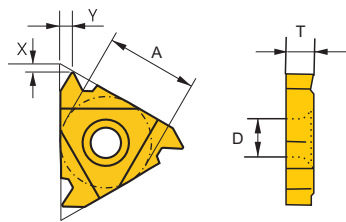
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	06NR A60	0.75-1.25		0.05	0.6	0.6	60			●	●
	08NR A60	1.0-1.75		0.07	0.6	0.7	60			●	●
	11NR A60	0.5-1.5		0.02	0.8	0.9	60	●	●	●	●
	16NR A60	0.5-1.5		0.02	0.8	0.9	60	●	●	●	●
	16NR G60	1.75-3		0.11	1.2	1.7	60	●	●	●	●
	16NR AG60	0.5-3		0.02	1.2	1.7	60	●	●	●	●
	22NR N60	3.5-5		0.22	1.7	2.5	60	●		●	●
	06NL A60	0.75-1.25		0.05	0.6	0.6	60				
	08NL A60	1.0-1.75		0.07	0.6	0.7	60				
	11NL A60	0.5-1.5		0.02	0.8	0.9	60				
	16NL A60	0.5-1.5		0.02	0.8	0.9	60				
	16NL G60	1.75-3		0.11	1.2	1.7	60				
	16NL AG60	0.5-3		0.02	1.2	1.7	60				
	22NL N60	3.5-5		0.22	1.7	2.5	60				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

螺纹刀片 Thread inserts

55° 泛外螺纹



型号 Model	尺寸 Size (mm)		
	A	T	D
16ER/L..	9.525	3.68	4.0
22ER/L..	12.70	4.9	4.85

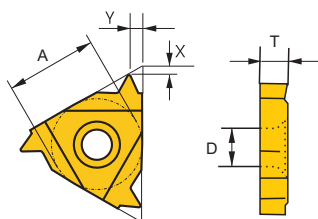
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	16ERMA55		40-16	0.06	0.8	0.9	55			●	
	16ERM G55		14-8	0.22	1.2	1.7	55			●	
	16ERMAG55		40-8	0.06	1.2	1.7	55			●	
	16ER A55		40-6	0.06	0.8	0.9	55	●	●	●	●
	16ER G55		14-8	0.22	1.2	1.7	55	●	●	●	●
	16ER AG55		40-8	0.06	1.2	1.7	55	●	●	●	●
	22ER N55		7-5	0.47	1.7	2.5	55	●		●	●
	16ELMA55		40-16	0.06	0.8	0.9	55				
	16ELM G55		14-8	0.22	1.2	1.7	55				
	16ELMAG55		40-8	0.06	1.2	1.7	55				
	16EL A55		40-6	0.06	0.8	0.9	55				
	16EL G55		14-8	0.22	1.2	1.7	55				
	16EL AG55		40-8	0.06	1.2	1.7	55				
	22EL N55		7-5	0.47	1.7	2.5	55				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

螺纹刀片 Thread inserts

55° 泛内螺纹



型号 Model	尺寸 Size (mm)		
	A	T	D
06NR..	3.97	1.91	2.3
08NR..	4.76	2.38	2.3
11NR..	6.35	3.18	3.0
16NR..	9.525	3.68	4.0
22NR..	12.70	4.9	4.85

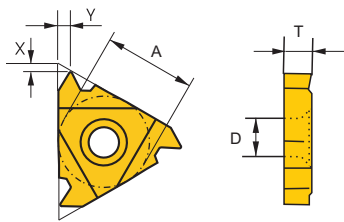
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	06NR A55		24	0.10	0.6	0.6	55			●	●
	08NR A55		24,20	0.10	0.6	0.7	55			●	●
	11NR A55		40-16	0.06	0.8	0.9	55	●	●	●	●
	16NR A55		40-16	0.06	0.8	0.9	55	●	●	●	●
	16NR G55		14-8	0.22	1.2	1.7	55	●	●	●	●
	16NR AG55		40-8	0.06	1.2	1.7	55	●	●	●	●
	22NR N55		7-5	0.47	1.7	2.5	55	●		●	●
	06NL A55		24	0.10	0.6	0.6	55				
	08NL A55		24,20	0.10	0.6	0.7	55				
	11NL A55		40-16	0.06	0.8	0.9	55				
	16NL A55		40-16	0.06	0.8	0.9	55				
	16NL G55		14-8	0.22	1.2	1.7	55				
	16NL AG55		40-8	0.06	1.2	1.7	55				
	22NL N55		7-5	0.47	1.7	2.5	55				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

螺纹刀片
Thread inserts

60°公制外螺纹



型号 Model	尺寸 Size (mm)		
	A	T	D
16ER/L...	9.525	3.68	4.0
22ER/L...	12.70	4.9	4.85

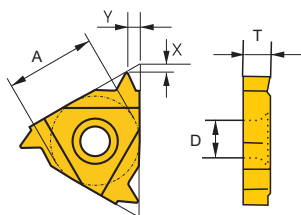
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	16ERM 1.00 ISO	1.0		0.12	0.7	0.7	60			●	
	16ERM 1.25 ISO	1.25		0.15	0.8	0.9	60			●	
	16ERM 1.50 ISO	1.5		0.19	0.8	1.0	60			●	
	16ERM 1.75 ISO	1.75		0.22	0.9	1.2	60			●	
	16ERM 2.00 ISO	2.0		0.25	1.0	1.3	60			●	
	16ERM 2.50 ISO	2.5		0.33	1.1	1.5	60			●	
	16ERM 3.00 ISO	3.0		0.41	1.2	1.6	60			●	
	16ER 0.50 ISO	0.5		0.06	0.6	0.6	60	●	●	●	●
	16ER 0.75 ISO	0.75		0.09	0.6	0.6	60	●	●	●	●
	16ER 1.00 ISO	1.0		0.12	0.7	0.7	60	●	●	●	●
	16ER 1.25 ISO	1.25		0.15	0.8	0.9	60	●	●	●	●
	16ER 1.50 ISO	1.5		0.19	0.8	1.0	60	●	●	●	●
	16ER 1.75 ISO	1.75		0.22	0.9	1.2	60	●	●	●	●
	16ER 2.00 ISO	2.0		0.25	1.0	1.3	60	●	●	●	●
	16ER 2.50 ISO	2.5		0.32	1.1	1.5	60	●	●	●	●
	16ER 3.00 ISO	3.0		0.41	1.2	1.6	60	●	●	●	●
	22ER 3.00 ISO	3.0		0.41	1.2	1.6	60	●		●	●
	22ER 3.50 ISO	3.5		0.48	1.6	2.3	60	●		●	●
	22ER 4.00 ISO	4.0		0.55	1.6	2.3	60	●		●	●
	22ER 4.50 ISO	4.0		0.62	1.7	2.4	60	●		●	●
	22ER 5.00 ISO	5.0		0.70	1.7	2.5	60	●		●	●
	16ELM 1.00 ISO	1.0		0.12	0.7	0.7	60				
	16ELM 1.25 ISO	1.25		0.15	0.8	0.9	60				
	16ELM 1.50 ISO	1.5		0.19	0.8	1.0	60				
	16ELM 1.75 ISO	1.75		0.22	0.9	1.2	60				
	16ELM 2.00 ISO	2.0		0.25	1.0	1.3	60				
	16ELM 2.50 ISO	2.5		0.33	1.1	1.5	60				
	16ELM 3.00 ISO	3.0		0.41	1.2	1.6	60				
	16EL 0.50 ISO	0.5		0.06	0.6	0.6	60				
	16EL 0.75 ISO	0.75		0.09	0.6	0.6	60				
	16EL 1.00 ISO	1.0		0.12	0.7	0.7	60				
	16EL 1.25 ISO	1.25		0.15	0.8	0.9	60				
	16EL 1.50 ISO	1.5		0.19	0.8	1.0	60				
	16EL 1.75 ISO	1.75		0.22	0.9	1.2	60				
	16EL 2.00 ISO	2.0		0.25	1.0	1.3	60				
	16EL 2.50 ISO	2.5		0.32	1.1	1.5	60				
	16EL 3.00 ISO	3.0		0.41	1.2	1.6	60				
	22EL 3.00 ISO	3.0		0.41	1.2	1.6	60				
	22EL 3.50 ISO	3.5		0.48	1.6	2.3	60				
	22EL 4.00 ISO	4.0		0.55	1.6	2.3	60				
	22EL 4.50 ISO	4.0		0.62	1.7	2.4	60				
	22EL 5.00 ISO	5.0		0.70	1.7	2.5	60				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

螺纹刀片 Thread inserts

60°公制内螺纹



型号 Model	尺寸 Size (mm)		
	A	T	D
11NR..	6.35	3.18	3.0
16NR..	9.525	3.68	4.0
22NR..	12.70	4.9	4.85

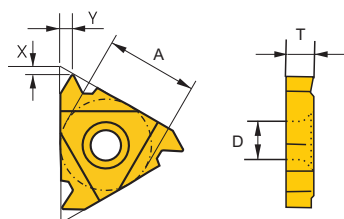
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades										
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20	
	11NRM 1.00 ISO	1.0		0.07	0.6	0.7	60			●		
	11NRM 1.25 ISO	1.25		0.08	0.8	0.9	60			●		
	11NRM 1.50 ISO	1.5		0.11	0.8	1.0	60			●		
	11NRM 1.75 ISO	1.75		0.12	0.9	1.1	60			●		
	16NRM 1.00 ISO	1.0		0.07	0.6	0.7	60			●		
	16NRM 1.25 ISO	1.25		0.08	0.8	0.9	60			●		
	16NRM 1.50 ISO	1.5		0.11	0.8	1.0	60			●		
	16NRM 1.75 ISO	1.75		0.12	0.9	1.2	60			●		
	16NRM 2.00 ISO	2.0		0.14	1.0	1.3	60			●		
	16NRM 2.50 ISO	2.5		0.17	1.1	1.5	60			●		
	16NRM 3.00 ISO	3.0		0.19	1.1	1.5	60			●		
	11NR 0.50 ISO	0.5		0.03	0.6	0.6	60	●	●	●	●	
	11NR 0.75 ISO	0.75		0.05	0.6	0.6	60	●	●	●	●	
	11NR 1.00 ISO	1.0		0.07	0.6	0.7	60	●	●	●	●	
	11NR 1.25 ISO	1.25		0.08	0.8	0.9	60	●	●	●	●	
	11NR 1.50 ISO	1.5		0.11	0.8	1.0	60	●	●	●	●	
	11NR 1.75 ISO	1.75		0.12	0.9	1.1	60	●	●	●	●	
	11NR 2.00 ISO	2.0		0.14	0.8	0.9	60	●	●	●	●	
	16NR 1.00 ISO	1.0		0.07	0.6	0.7	60	●	●	●	●	
	16NR 1.25 ISO	1.25		0.08	0.8	0.9	60	●	●	●	●	
	16NR 1.50 ISO	1.5		0.11	0.8	1.0	60	●	●	●	●	
	16NR 1.75 ISO	1.75		0.12	0.9	1.2	60	●	●	●	●	
	16NR 2.00 ISO	2.0		0.14	1.0	1.3	60	●	●	●	●	
	16NR 2.50 ISO	2.5		0.16	1.1	1.5	60	●	●	●	●	
	16NR 3.00 ISO	3.0		0.19	1.1	1.5	60	●	●	●	●	
	22NR 3.00 ISO	3.0		0.19	1.1	1.5	60	●		●	●	
	22NR 3.50 ISO	3.5		0.23	1.6	2.3	60	●		●	●	
	22NR 4.00 ISO	4.0		0.26	1.6	2.3	60	●		●	●	
	22NR 4.50 ISO	4.5		0.30	1.6	2.3	60	●		●	●	
	22NR 5.00 ISO	5.0		0.34	1.6	2.3	60	●		●	●	
	11NRM 1.00 ISO	1.0		0.07	0.6	0.7	60					
	11NRM 1.25 ISO	1.25		0.08	0.8	0.9	60					
	11NRM 1.50 ISO	1.5		0.11	0.8	1.0	60					
	11NRM 1.75 ISO	1.75		0.12	0.9	1.1	60					
	16NRM 1.00 ISO	1.0		0.07	0.6	0.7	60					
	16NRM 1.25 ISO	1.25		0.08	0.8	0.9	60					
	16NRM 1.50 ISO	1.5		0.11	0.8	1.0	60					
	16NRM 1.75 ISO	1.75		0.12	0.9	1.2	60					
	16NRM 2.00 ISO	2.0		0.14	1.0	1.3	60					
	16NRM 2.50 ISO	2.5		0.17	1.1	1.5	60					
	16NRM 3.00 ISO	3.0		0.19	1.1	1.5	60					
	11NR 0.50 ISO	0.5		0.03	0.6	0.6	60					
	11NR 0.75 ISO	0.75		0.05	0.6	0.6	60					
	11NR 1.00 ISO	1.0		0.07	0.6	0.7	60					
	11NR 1.25 ISO	1.25		0.08	0.8	0.9	60					
	11NR 1.50 ISO	1.5		0.11	0.8	1.0	60					
	11NR 1.75 ISO	1.75		0.12	0.9	1.1	60					
	11NR 2.00 ISO	2.0		0.14	0.8	0.9	60					
	16NR 1.00 ISO	1.0		0.07	0.6	0.7	60					
	16NR 1.25 ISO	1.25		0.08	0.8	0.9	60					
	16NR 1.50 ISO	1.5		0.11	0.8	1.0	60					
	16NR 1.75 ISO	1.75		0.12	0.9	1.2	60					
	16NR 2.00 ISO	2.0		0.14	1.0	1.3	60					
	16NR 2.50 ISO	2.5		0.16	1.1	1.5	60					
	16NR 3.00 ISO	3.0		0.19	1.1	1.5	60					
	22NR 3.00 ISO	3.0		0.19	1.1	1.5	60					
	22NR 3.50 ISO	3.5		0.23	1.6	2.3	60					
	22NR 4.00 ISO	4.0		0.26	1.6	2.3	60					
	22NR 4.50 ISO	4.5		0.30	1.6	2.3	60					
	22NR 5.00 ISO	5.0		0.34	1.6	2.3	60					
钢 Steel									★		★	
不锈钢 Stainless Steel										★	★	
铸铁 Cast Iron									☆		☆	
有色金属 Nonferrous Metal												★
耐热合金 Heat Resistant Alloy										☆	☆	
淬硬钢 Hardened Steel												

★首选 ☆可选

●标准库存 ○订单生产

螺纹刀片 Thread inserts

60°英制外螺纹 (UN)



型号 Model	尺寸 Size (mm)		
	A	T	D
16ER/L..	9.525	3.68	4.0
22ER/L..	12.70	4.9	4.85

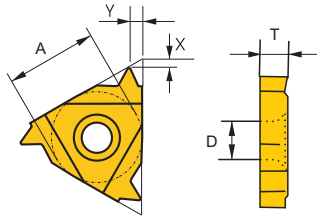
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	16ERM 24 UN		24	0.12	0.8	0.9	60			●	
	16ERM 20 UN		20	0.15	0.8	1.0	60			●	
	16ERM 18 UN		18	0.18	0.9	1.1	60			●	
	16ERM 16 UN		16	0.20	1.0	1.2	60			●	
	16ERM 14 UN		14	0.23	1.0	1.3	60			●	
	16ERM 13 UN		13	0.25	1.1	1.4	60			●	
	16ERM 12 UN		12	0.27	1.1	1.5	60			●	
	16ERM 10 UN		10	0.34	1.1	1.5	60			●	
	16ERM 08 UN		8	0.43	1.2	1.6	60			●	
	16ER 24 UN		24	0.13	0.7	0.8	60	●	●	●	●
	16ER 20 UN		20	0.16	0.8	0.9	60	●	●	●	●
	16ER 18 UN		18	0.18	0.8	1.0	60	●	●	●	●
	16ER 16 UN		16	0.20	0.9	1.1	60	●	●	●	●
	16ER 14 UN		14	0.23	1.0	1.2	60	●	●	●	●
	16ER 12UN		12	0.27	1.1	1.4	60	●	●	●	●
	22ER 08 UN		8	0.43	1.2	1.6	60	●		●	
	16ELM 24 UN		24	0.12	0.7	0.9	60				
	16ELM 20 UN		20	0.15	0.8	1.0	60				
	16ELM 18 UN		18	0.18	0.9	1.1	60				
	16ELM 16 UN		16	0.20	1.0	1.2	60				
	16ELM 14 UN		14	0.23	1.0	1.3	60				
	16ELM 13 UN		13	0.25	1.1	1.4	60				
	16ELM 12 UN		12	0.27	1.1	1.5	60				
	16ELM 10 UN		10	0.34	1.1	1.5	60				
	16ELM 08 UN		8	0.43	1.2	1.6	60				
	16EL 24 UN		24	0.13	0.7	0.8	60				
	16EL 20 UN		20	0.16	0.8	0.9	60				
	16EL 18 UN		18	0.18	0.8	1.0	60				
	16EL 16 UN		16	0.20	0.9	1.1	60				
	16EL 14 UN		14	0.23	1.0	1.2	60				
	16EL 12UN		12	0.27	1.1	1.4	60				
	22EL 08 UN		8	0.43	1.2	1.6	60				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

螺纹刀片 Thread inserts

60°英制内螺纹 (UN)



型号 Model	尺寸 Size (mm)		
	A	T	D
16NR/L...	9.525	3.68	4.0
22NR/L...	12.70	4.9	4.85

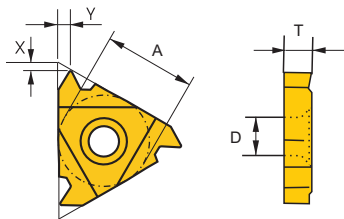
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	16NRM 24 UN		24	0.06	0.7	0.8	60			●	
	16NRM 20 UN		20	0.08	0.8	0.9	60			●	
	16NRM 18 UN		18	0.09	0.8	1.0	60			●	
	16NRM 16 UN		16	0.10	0.9	1.1	60			●	
	16NRM 14 UN		14	0.12	0.9	1.2	60			●	
	16NRM 13 UN		13	0.13	1.0	1.3	60			●	
	16NRM 12 UN		12	0.14	1.1	1.4	60			●	
	16NRM 10 UN		10	0.17	1.1	1.5	60			●	
	16NRM 08 UN		8	0.21	1.1	1.5	60			●	
	16NR 24 UN		24	0.05	0.7	0.8	60	●	●	●	●
	16NR 20 UN		20	0.07	0.8	0.9	60	●	●	●	●
	16NR 18 UN		18	0.09	0.8	1.0	60	●	●	●	●
	16NR 16 UN		16	0.10	0.9	1.1	60	●	●	●	●
	16NR 14 UN		14	0.12	0.9	1.2	60	●	●	●	●
	16NR 12UN		12	0.14	1.1	1.4	60	●	●	●	●
	22NR 08 UN		8	0.20	1.1	1.5	60	●		●	
	16NLM 24 UN		24	0.06	0.7	0.8	60				
	16NLM 20 UN		20	0.08	0.8	0.9	60				
	16NLM 18 UN		18	0.09	0.8	1.0	60				
	16NLM 16 UN		16	0.10	0.9	1.1	60				
	16NLM 14 UN		14	0.12	0.9	1.2	60				
	16NLM 13 UN		13	0.13	1.0	1.3	60				
	16NLM 12 UN		12	0.14	1.1	1.4	60				
	16NLM 10 UN		10	0.17	1.1	1.5	60				
	16NLM 08 UN		8	0.21	1.1	1.5	60				
	16NL 24 UN		24	0.05	0.7	0.8	60				
	16NL 20 UN		20	0.07	0.8	0.9	60				
	16NL 18 UN		18	0.09	0.8	1.0	60				
	16NL 16 UN		16	0.10	0.9	1.1	60				
	16NL 14 UN		14	0.12	0.9	1.2	60				
	16NL 12UN		12	0.14	1.1	1.4	60				
	22NL 08 UN		8	0.20	1.1	1.5	60				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

螺纹刀片
Thread inserts

55°惠氏外螺纹 (W) 管用平行螺纹G(PF)



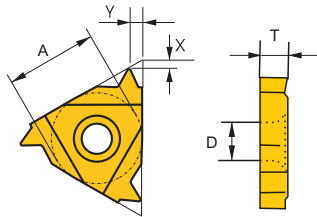
型号 Model	尺寸 Size (mm)		
	A	T	D
16ER/L..	9.525	3.68	4.0
22ER/L..	12.70	4.9	4.85

刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	16ERM 19W		19	0.16	0.8	1.0	55			●	
	16ERM 16W		16	0.19	0.9	1.1	55			●	
	16ERM 14W		14	0.23	1.0	1.2	55			●	
	16ERM 11W		11	0.30	1.1	1.5	55			●	
	16ER 19W		19	0.16	0.8	1.0	55	●	●	●	●
	16ER14W		14	0.23	1.0	1.2	55	●	●	●	●
	16ER 11W		11	0.30	1.1	1.5	55	●	●	●	●
	16ELM 19W		19	0.16	0.8	1.0	55				
	16ELM 16W		16	0.19	0.9	1.1	55				
	16ELM 14W		14	0.23	1.0	1.2	55				
	16ELM 11W		11	0.30	1.1	1.5	55				
	16EL 19W		19	0.16	0.8	1.0	55				
	16EL14W		14	0.23	1.0	1.2	55				
	16EL 11W		11	0.30	1.1	1.5	55				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选 ●标准库存 ○订单生产

螺纹刀片 Thread inserts

55°惠氏内螺纹 (W) 管用平行螺纹G(PF)



型号 Model	尺寸 Size (mm)		
	A	T	D
16NR/L...	9.525	3.68	4.0
22NR/L...	12.70	4.9	4.85

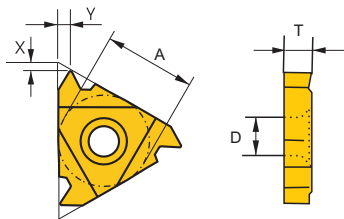
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	16NRM 19W		19	0.16	0.8	1.0	55			●	
	16NRM 16W		16	0.19	0.9	1.2	55			●	
	16NRM 14W		14	0.23	1.0	1.4	55			●	
	16NRM 11W		11	0.30	1.1	1.5	55			●	
	16NR 14W		14	0.23	1.0	1.2	55	●	●	●	●
	16NR 11W		11	0.30	1.1	1.5	55	●	●	●	●
	16NLM 19W		19	0.16	0.8	1.0	55				
	16NLM 16W		16	0.19	0.9	1.2	55				
	16NLM 14W		14	0.23	1.0	1.4	55				
	16NLM 11W		11	0.30	1.1	1.5	55				
	16NL 14W		14	0.23	1.0	1.2	55				
	16NL 11W		11	0.30	1.1	1.5	55				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

螺纹刀片
Thread inserts

55°锥度管螺纹 外螺纹 (BSPT)



型号 Model	尺寸 Size (mm)		
	A	T	D
16ER/L..	9.525	3.68	4.0
22ER/L..	12.70	4.9	4.85

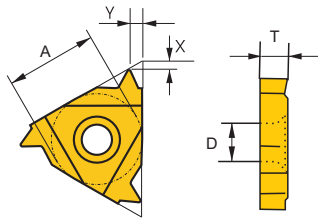
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	16ERM 28BSPT		28	0.10	0.6	0.6	55			●	
	16ERM 19BSPT		19	0.16	0.8	0.9	55			●	
	16ERM 14BSPT		14	0.22	1.0	1.2	55			●	
	16ERM 11BSPT		11	0.29	1.1	1.5	55			●	
	16ER 28BSPT		28	0.10	0.6	0.6	55	●	●	●	●
	16ER 19BSPT		19	0.16	0.8	0.9	55	●	●	●	●
	16ER 14BSPT		14	0.22	1.0	1.2	55	●	●	●	●
	16ER 11BSPT		11	0.29	1.1	1.5	55	●	●	●	●
	16ELM 28BSPT		28	0.10	0.6	0.6	55				
	16ELM 19BSPT		19	0.16	0.8	0.9	55				
	16ELM 14BSPT		14	0.22	1.0	1.2	55				
	16ELM 11BSPT		11	0.29	1.1	1.5	55				
	16EL 28BSPT		28	0.10	0.6	0.6	55				
	16EL 19BSPT		19	0.16	0.8	0.9	55				
	16EL 14BSPT		14	0.22	1.0	1.2	55				
	16EL 11BSPT		11	0.29	1.1	1.5	55				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

螺纹刀片 Thread inserts

55°锥度管螺纹 内螺纹 (BSPT)



型号 Model	尺寸 Size (mm)		
	A	T	D
11NR..	6.35	3.18	3.0
16NR..	9.525	3.68	4.0

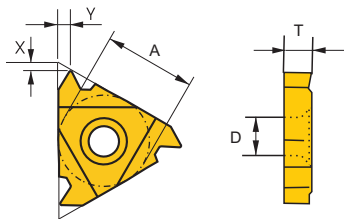
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	11NRM 28BSPT		28	0.10	0.6	0.6	55			●	
	11NRM 19BSPT		19	0.16	0.8	0.9	55			●	
	11NRM 14BSPT		14	0.22	0.9	1.0	55			●	
	16NRM 14BSPT		14	0.22	1.0	1.2	55			●	
	16NRM 11BSPT		11	0.29	1.1	1.5	55			●	
	11NR 28BSPT		28	0.10	0.6	0.6	55	●	●	●	●
	11NR 19BSPT		19	0.16	0.8	0.9	55	●	●	●	●
	11NR 14BSPT		14	0.22	0.9	1.0	55	●	●	●	●
	16NR 14BSPT		14	0.22	1.0	1.2	55	●	●	●	●
	16NR 11BSPT		11	0.29	1.1	1.5	55	●	●	●	●
	11NLM 28BSPT		28	0.10	0.6	0.6	55				
	11NLM 19BSPT		19	0.16	0.8	0.9	55				
	11NLM 14BSPT		14	0.22	0.9	1.0	55				
	16NLM 14BSPT		14	0.22	1.0	1.2	55				
	16NLM 11BSPT		11	0.29	1.1	1.5	55				
	11NL 28BSPT		28	0.10	0.6	0.6	55				
	11NL 19BSPT		19	0.16	0.8	0.9	55				
	11NL 14BSPT		14	0.22	0.9	1.0	55				
	16NL 14BSPT		14	0.22	1.0	1.2	55				
	16NL 11BSPT		11	0.29	1.1	1.5	55				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

螺纹刀片
Thread inserts

60°美式锥度管螺纹 外螺纹 (NPT)



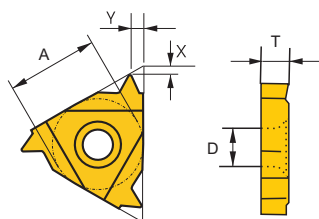
型号 Model	尺寸 Size (mm)		
	A	T	D
16ER/L..	9.525	3.68	4.0
22ER/L..	12.70	4.9	4.85

刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	16ER 18NPT		18	0.04	0.8	1.0	60	●	●	●	●
	16ER 14NPT		14	0.05	0.9	1.2	60	●	●	●	●
	16ER 11.5NPT		11.5	0.06	1.1	1.5	60	●	●	●	●
	16EL 18NPT		18	0.04	0.8	1.0	60				
	16EL 14NPT		14	0.05	0.9	1.2	60				
	16EL 11.5NPT		11.5	0.06	1.1	1.5	60				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选 ●标准库存 ○订单生产

螺纹刀片 Thread inserts

60°美式锥度管螺纹 内螺纹 (NPT)



型号 Model	尺寸 Size (mm)		
	A	T	D
16NR/L...	9.525	3.68	4.0
22NR/L...	12.70	4.9	4.85

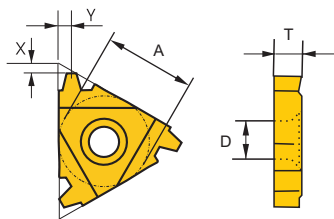
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	16NR 18NPT		18	0.04	0.8	1.0	60	●	●	●	●
	16NR 14NPT		14	0.05	0.9	1.2	60	●	●	●	●
	16NR 11.5NPT		11.5	0.06	1.1	1.5	60	●	●	●	●
	16NL 18NPT		18	0.04	0.8	1.0	60				
	16NL 14NPT		14	0.05	0.9	1.2	60				
	16NL 11.5NPT		11.5	0.06	1.1	1.5	60				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

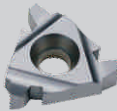
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螺纹刀片
Thread inserts

30°梯形螺纹 外螺纹 (TR)



型号 Model	尺寸 Size (mm)		
	A	T	D
16ER/L..	9.525	3.68	4.0
22ER/L..	12.70	4.9	4.85

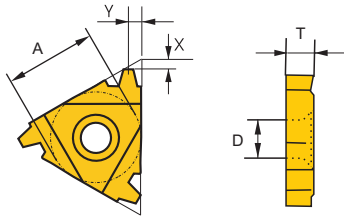
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	16ER 2.0TR	2.0		0.20	1.1	1.3	30	●	●	●	●
	16ER 3.0TR	3.0		0.20	1.3	1.5	30	●	●	●	●
	22ER 4.0TR	4.0		0.20	1.7	1.9	30	●		●	●
	22ER 5.0TR	5.0		0.20	2.1	2.5	30	●		●	●
	16EL 2.0TR	2.0		0.20	1.1	1.3	30				
	16EL 3.0TR	3.0		0.20	1.3	1.5	30				
	22EL 4.0TR	4.0		0.20	1.7	1.9	30				
	22EL 5.0TR	5.0		0.20	2.1	2.5	30				
钢 Steel								★		★	
不锈钢 Stainless Steel									★	★	
铸铁 Cast Iron								☆		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel											

★首选 ☆可选

●标准库存 ○订单生产

螺纹刀片 Thread inserts

30°梯形螺纹 内螺纹 (TR)



型号 Model	尺寸 Size (mm)		
	A	T	D
16NR/L...	9.525	3.68	4.0
22NR/L...	12.70	4.9	4.85

刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		螺距 Pitch	TPI	R	X	Y	θ°	KTX	KKX	KVX	KW20
	16NR 2.0TR	2.0		0.20	1.1	1.3	30	●	●	●	●
	16NR 3.0TR	3.0		0.20	1.3	1.5	30	●	●	●	●
	22NR 4.0TR	4.0		0.20	1.7	1.9	30	●		●	●
	22NR 5.0TR	5.0		0.20	2.1	2.5	30	●		●	●
	16NL 2.0TR	2.0		0.20	1.1	1.3	30				
	16NL 3.0TR	3.0		0.20	1.3	1.5	30				
	22NL 4.0TR	4.0		0.20	1.7	1.9	30				
	22NL 5.0TR	5.0		0.20	2.1	2.5	30				
钢 Steel		★									
不锈钢 Stainless Steel		★									
铸铁 Cast Iron		☆									
有色金属 Nonferrous Metal											
耐热合金 Heat Resistant Alloy		☆									
淬硬钢 Hardened Steel		☆									

★首选 ☆可选

●标准库存 ○订单生产

推荐切削条件表
Recommended Cutting Conditions

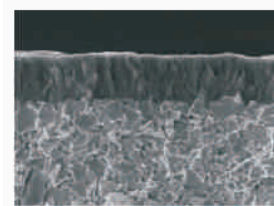
工件材料 Workpiece Materials			布氏硬度 HB	切削速度推荐值Vc(m/min) Recommended Cutting Speed								
				KTX		KKX		KVX		KW20		
				ER	NR	ER	NR	ER	NR	ER	NR	
P	碳素钢 Carbon Steel	低碳钢 C=0.1-0.25%	125	100-190	90-180			130-190	110-180			
		中碳钢 C=0.25-0.55%	150	100-170	90-160			130-170	110-160			
		高碳钢 C=0.55-0.85%	170	80-160	70-150			110-160	100-150			
	合金钢 Alloy Steel	易车铁	180	80-160	70-150			120-170	110-150			
		淬火钢 HRC=28-40		70-130	60-120			100-150	80-120			
		淬火钢 HRC=41-48		60-100	50-80			80-130	60-90			
		淬火钢 HRC=49-55		40-60	40-60			50-70	40-70			
	铸造钢 Casting Steel	低碳钢 Low Carbon Steel	200	70-140	70-130			100-180	100-160			
		中碳钢 Medium Carbon Steel	250	60-130	60-120			90-170	90-150			
	锻造钢 Forging Steel	低碳钢 Low Carbon Steel	230	60-130	60-120			100-150	100-130			
		中碳钢 Medium Carbon Steel	280	60-120	60-110			100-130	100-120			
M	不锈钢-棒料/锻料 Stainless Steel	奥氏体 Austenite	200			80-120	60-100	100-150	80-130			
		预淬火	330			60-80	50-80	70-100	70-100			
	不锈钢-棒料/锻料 Stainless Steel	易车锈钢	200			80-120	60-100	100-150	80-130			
		预淬火	330			50-70	50-70	80-100	60-80			
	铁素体/马氏体 Ferrite/Martensite	淬硬	330			60-90	50-80	60-90	50-80			
		不锈钢-棒料/锻料 Stainless Steel	C≥0.05%	230			40-60	40-60	50-70	45-70		
	铁素体/奥氏体 Ferrite/Austenite	C<0.05%	260			70-80	50-70	70-80	55-80			
	不锈钢-铸造 Stainless Steel Casting	奥氏体 Austenite	200			80-120	60-100	100-150	100-130			
		淬硬	330			45-70	50-70	70-90	60-80			
	不锈钢-铸造 Stainless Steel Casting	马氏体 Martensite	200			80-120	60-100	100-150	100-130			
		淬硬	330			45-60	45-70	45-70	45-70			
	不锈钢-铸造 Stainless Steel Casting	C≥0.05%	230			40-60	40-65	45-70	45-70			
		铁素体/奥氏体 Ferrite/Austenite	C<0.05%	260			45-70	45-70	50-80	50-80		
	K	灰口铸铁 Gray Cast iron	铁素体 Ferrite	130	100-190	100-180			100-190	100-180		
			球光体 Pearlite	230	80-150	80-150			80-150	80-150		
球墨铸铁 Nodular Cast iron		铁素体 Ferrite	180	100-160	90-160			100-160	90-160			
		球光体 Pearlite	260	100-150	90-150			100-150	90-150			
可锻铸铁 Malleable Cast iron		铁素体 Ferrite	160	110-170	110-170			110-170	110-170			
		球光体 Pearlite	260	100-120	100-120			100-120	100-120			
N	铝合金 Aluminium Alloys	非时效淬硬 Non-aging Hardened	60							180-280	180-300	
		时效淬硬 Aging Hardened	100							100-220	100-220	
		高硅合金 13-22% Si	130							80-180	80-180	
	铜和铜合金 Copper Alloy	黄铜 Brass	100							100-220	100-220	
		青铜 Bronze	100							100-220	100-220	

铣削刀片材质简介 Milling Insert Grades

KP1230

高耐磨性晶粒基体与纳米结构的TiAlN涂层完美结合，具有良好的耐磨性和抗崩刃性。

Nano-structure TiAlN coating on micro-grain carbide, superior wear resistance and fracture resistance



KP1110

高韧性高强度的硬质合金基体结合耐磨的TiAlN涂层，具有良好的韧性和耐磨性，适合中高硬度钢件和铸铁的加工

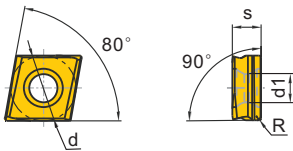
The highly hard and thin grained substrate combines with wearing resistance AlTiN coating, it is optimized for impact resistance, suited for mid-high hardness steel and cast iron in milling



铣削刀片

Milling inserts

CTHQ..



刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		R	d	s	d1	KP1110	KP1230	KP2220	KP3220	KT20	KW20
	CTHQ090508KF	0.8	9.525	5.56	4.4		●		●		
钢 Steel						★	★			★	
不锈钢 Stainless Steel							★	★		★	
铸铁 Cast Iron							★		★	☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy								☆		☆	
淬硬钢 Hardened Steel						★					

★首选 ☆可选

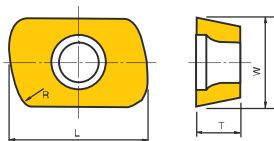
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推荐切削条件表

Recommended Cutting Conditions

工件材料 Workpiece Materials		布氏硬度 HB	材质牌号 Grade	切削速度推荐值 Recommended Cutting Speed		
				Vc(m/min)	f(mm/z)	ap(mm)
P	钢 Steel	<180	KP1230	80-180	0.1-0.25	2.0-4.0
		180-280	KP1230	80-180	0.1-0.25	2.0-4.0
		280-350	KP1230	80-180	0.1-0.25	2.0-4.0
M	不锈钢 Stainless Steel	<270	KP1230	80-180	0.1-0.25	2.0-4.0
K	铸铁 Cast Iron	180-250	KP3220	80-180	0.1-0.25	2.0-4.0
N	铝合金 Aluminium Alloys					
H	高硬钢 Hardness	HRC50-60				

铣削刀片 Milling inserts EP..



刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades					KP1110	KP1230	KP2220	KT20	KW20
		R	L	T	W						
	EPMT0603-8R	8	10	3.18	6.35			●			
	EPMW0603-8R	8	10	3.18	6.35			●			
钢 Steel							★	★		★	
不锈钢 Stainless Steel								★	★	★	
铸铁 Cast Iron								★		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel							★				

★首选 ☆可选

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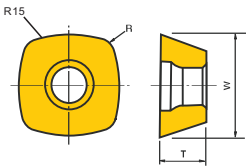
推荐切削条件表 Recommended Cutting Conditions

工件材料 Workpiece Materials		布氏硬度 HB	材质牌号 Grade	切削速度推荐值 Recommended Cutting Speed		
				Vc(m/min)	f(mm/z)	ap(mm)
P	钢 Steel	<180	KP1230	220-280	0.5-1.0	0.5-1.5
		180-280	KP1230	220-280	0.5-1.0	0.5-1.5
		280-350	KP1230	150-200	0.5-1.0	0.5-1.5
M	不锈钢 Stainless Steel	<270	KP1230	100-150	0.3-0.5	0.5-1.5
K	铸铁 Cast iron	180-250				
N	铝合金 Aluminium Alloys					
H	高硬度 Hardness	HRC50-60				

铣削刀片

Milling inserts

SDMT..



刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades					KP1110	KP1230	KP2220	KT20	KW20
		R	W	T							
	SDMT120512-GM	1.2	12.7	5.56				●			
钢 Steel							★	★		★	
不锈钢 Stainless Steel								★	★	★	
铸铁 Cast Iron								★		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel							★				

★首选
 ☆可选

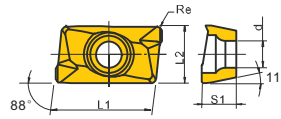
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推荐切削条件表

Recommended Cutting Conditions

工件材料 Workpiece Materials		布氏硬度 HB	材质牌号 Grade	切削速度推荐值 Recommended Cutting Speed		
				Vc(m/min)	f(mm/z)	ap(mm)
P	钢 Steel	<180	KP1230	150-200	0.8-1.5	0.4-2.0
		180-280	KP1230	120-180	0.8-1.5	0.4-2.0
		280-350	KP1230	90-140	0.8-1.5	0.4-2.0
M	不锈钢 Stainless Steel	<270	KP1230	90-140	0.6-1.0	0.4-2.0
K	铸铁 Cast Iron	180-250	KP1230	150-200	0.8-1.5	0.4-2.0
N	铝合金 Aluminium Alloys					
H	高硬钢 Hardness	HRC50-60				

铣削刀片 Milling inserts APKT..



刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades									
		Re	L1	L2	S1	d	KP1110	KP1230	KP2220	KT20	KW20
	APKT11T304-PM	0.4	12.24	6.5	3.6	2.8		●			
	APKT160408-PM	0.8	17.878	9.33	5.76	4.4		●			
	APKT1604PDFR MA	0.8	17.878	9.33	5.76	4.4					●
钢 Steel		★									
不锈钢 Stainless Steel		★									
铸铁 Cast Iron		★									
有色金属 Nonferrous Metal		★									
耐热合金 Heat Resistant Alloy		★									
淬硬钢 Hardened Steel		★									

★首选 ☆可选

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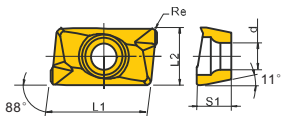
推荐切削条件表 Recommended Cutting Conditions

工件材料 Workpiece Materials		布氏硬度 HB	材质牌号 Grade	切削速度推荐值 Recommended Cutting Speed		
				Vc(m/min)	f(mm/z)	ap(mm)
P	钢 Steel	<180	KP1230	200-360	0.1-0.3	
		180-280	KP1230	180-360	0.1-0.3	
		280-350	KP1230	160-340	0.1-0.3	
M	不锈钢 Stainless Steel	<270	KP1230	110-270	0.1-0.3	
K	铸铁 Cast Iron	180-250	KP1230	120-300	0.1-0.3	
N	铝合金 Aluminium Alloys		KW20	300	0.08-0.4	
H	高硬钢 Hardness	HRC50-60				

铣削刀片

Milling inserts

APMT..



刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades										
		Re	L1	L2	S1	d	KP1110	KP1230	KP2220	KT20	KW20	
	APMT1135PDER	0.8	11.25	6.2	3.5	2.8	●	●				
	APMT1604PDER	0.8	17.25	9.25	4.76	4.4	●	●				
钢 Steel								★	★		★	
不锈钢 Stainless Steel									★	★	★	
铸铁 Cast Iron									★		☆	
有色金属 Nonferrous Metal												★
耐热合金 Heat Resistant Alloy												☆
淬硬钢 Hardened Steel								★				

★首选 ☆可选

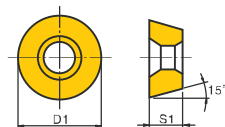
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推荐切削条件表

Recommended Cutting Conditions

工件材料 Workpiece Materials		布氏硬度 HB	材质牌号 Grade	切削速度推荐值 Recommended Cutting Speed		
				Vc(m/min)	f(mm/z)	ap(mm)
P	钢 Steel	<180	KP1230	140-250	0.04-0.15	
		180-280	KP1230	130-250	0.04-0.15	
		280-350	KP1230	110-240	0.04-0.15	
M	不锈钢 Stainless Steel	<270	KP1230	80-190	0.04-0.15	
K	铸铁 Cast Iron	180-250	KP1230	80-210	0.04-0.15	
N	铝合金 Aluminium Alloys					
H	高硬钢 Hardness	HRC50-60	KP1110	70-120		

铣削刀片 Milling inserts RD..



刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades				
		D1	S1	KP1110	KP1230	KP2220 KT20 KW20
	RDKW0702MO	07	2.38	●		
	RDKW0803MO	08	3.18	●		
	RDMW10T3MO	10	3.97	●	●	
	RDMW1204MO	12	4.76	●	●	
钢 Steel		★				
不锈钢 Stainless Steel		★				
铸铁 Cast iron		★				
有色金属 Nonferrous Metal						
耐热合金 Heat Resistant Alloy		☆				
淬硬钢 Hardened Steel		★				

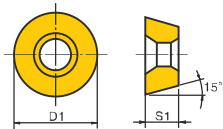
★首选 ☆可选

●标准库存 ○订单生产

推荐切削条件表 Recommended Cutting Conditions

工件材料 Workpiece Materials		布氏硬度 HB	材质牌号 Grade	切削速度推荐值 Recommended Cutting Speed		
				Vc(m/min)	f(mm/z)	ap(mm)
P	钢 Steel	<180	KP1230	200-360	0.1-0.45	
		180-280	KP1230	180-350	0.1-0.45	
		280-350	KP1230	170-340	0.1-0.45	
M	不锈钢 Stainless Steel	<270	KP1230	110-270	0.1-0.45	
K	铸铁 Cast iron	180-250	KP1230	120-300	0.1-0.45	
N	铝合金 Aluminium Alloys					
H	高硬钢 Hardness	HRC50-60	KP1110	70-120		

铣削刀片
Milling inserts
RP..



刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades				
		D1	S1	KP1110	KP1230	KP2220 KT20 KW20
	RPMW1003MOE	10	3.18		●	
	RPMW10T3MOE	10	3.97		●	
	RPMW1204MOE	12	4.76		●	
钢 Steel				★	★	★
不锈钢 Stainless Steel					★	★
铸铁 Cast Iron					★	☆
有色金属 Nonferrous Metal						★
耐热合金 Heat Resistant Alloy					☆	☆
淬硬钢 Hardened Steel				★		

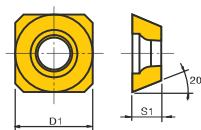
★首选 ☆可选

●标准库存 ○订单生产

推荐切削条件表
Recommended Cutting Conditions

工件材料 Workpiece Materials		布氏硬度 HB	材质牌号 Grade	切削速度推荐值 Recommended Cutting Speed		
				Vc(m/min)	f(mm/z)	ap(mm)
P	钢 Steel	<180	KP1230	200-360	0.1-0.45	
		180-280	KP1230	180-350	0.1-0.45	
		280-350	KP1230	170-340	0.1-0.45	
M	不锈钢 Stainless Steel	<270	KP1230	110-270	0.1-0.45	
K	铸铁 Cast Iron	180-250	KP1230	120-300	0.1-0.45	
N	铝合金 Aluminium Alloys					
H	高硬钢 Hardness	HRC50-60				

铣削刀片 Milling inserts SE..



刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades				
		D1	S1	KP1110	KP1230	KP2220 KT20 KW20
	SEKT1204AFEN-11	12.7	4.76		●	
	SEHW1204AFSN	12.7	4.76		●	
	SEHT1204AFFN	12.7	4.76			●
钢 Steel				★	★	★
不锈钢 Stainless Steel					★	★
铸铁 Cast Iron					★	☆
有色金属 Nonferrous Metal						★
耐热合金 Heat Resistant Alloy					☆	☆
淬硬钢 Hardened Steel				★		

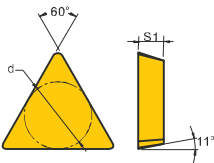
★首选 ☆可选

●标准库存 ○订单生产

推荐切削条件表 Recommended Cutting Conditions

工件材料 Workpiece Materials		布氏硬度 HB	材质牌号 Grade	切削速度推荐值 Recommended Cutting Speed		
				Vc(m/min)	f(mm/z)	ap(mm)
P	钢 Steel	<180	KP1230	200-360	0.1-0.3	
		180-280	KP1230	180-350	0.1-0.3	
		280-350	KP1230	170-340	0.1-0.3	
M	不锈钢 Stainless Steel	<270	KP1230	110-270	0.1-0.3	
K	铸铁 Cast Iron	180-250	KP1230	120-300	0.1-0.3	
N	铝合金 Aluminium Alloys		KW20	300	0.1-0.4	
H	高硬钢 Hardness	HRC50-60				

铣削刀片
Milling inserts
TP..



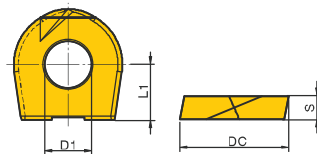
刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades				
		d	S1	KP1110	KP1230	KP2220 KT20 KW20
	TPUN160308	9.525	3.18		●	
	TPKN1603PDTR	9.525	3.18		●	
	TPKR1603PDTR	9.525	3.18		●	
	TPKN2204PDTR	12.7	4.76		●	
	TPKR22204PDTR	12.7	4.76		●	
钢 Steel		★				
不锈钢 Stainless Steel		★				
铸铁 Cast Iron		★				
有色金属 Nonferrous Metal						
耐热合金 Heat Resistant Alloy		☆				
淬硬钢 Hardened Steel		★				

★首选 ☆可选 ●标准库存 ○订单生产

推荐切削条件表
Recommended Cutting Conditions

工件材料 Workpiece Materials		布氏硬度 HB	材质牌号 Grade	切削速度推荐值 Recommended Cutting Speed		
				Vc(m/min)	f(mm/z)	ap(mm)
P	钢 Steel	<180	KP1230	200-360	0.1-0.3	
		180-280	KP1230	180-350	0.1-0.3	
		280-350	KP1230	170-340	0.1-0.3	
M	不锈钢 Stainless Steel	<270	KP1230	100-250	0.1-0.3	
K	铸铁 Cast Iron	180-250	KP1230	120-300	0.1-0.3	
N	铝合金 Aluminium Alloys					
H	高硬钢 Hardness	HRC50-60				

铣削刀片 Milling inserts RHB..



刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades					KP1110	KP1230	KP2220	KT20	KW20
		DC	D1	L1	S						
	RHB080	8	3	4	2.0	●					
	RHB100	10	4	5	2.5	●					
	RHB120	12	5	6	2.5	●					
	RHB160	16	5	6	3.0	●					
	RHB200	20	5	6	3.0	●					
	RHB250	25	6	9	4.0	●					
钢 Steel							★	★		★	
不锈钢 Stainless Steel								★	★	★	
铸铁 Cast iron								★		☆	
有色金属 Nonferrous Metal											★
耐热合金 Heat Resistant Alloy									☆	☆	
淬硬钢 Hardened Steel							★				

★首选 ☆可选

●标准库存 ○订单生产

推荐切削条件表 Recommended Cutting Conditions

工件材料 Workpiece Materials		布氏硬度 HB	材质牌号 Grade	切削速度推荐值 Recommended Cutting Speed		
				Vc(m/min)	f(mm/z)	ap(mm)
P	钢 Steel	<180	KP1110	100-200	0.15-0.3	0.8-1.25
		180-280	KP1110	180-350	0.15-0.3	0.8-1.25
		280-350	KP1110	180-350	0.15-0.3	0.8-1.25
M	不锈钢 Stainless Steel	<270	KP1110	70-150	0.1-0.25	0.6-1.0
K	铸铁 Cast iron	180-250	KP1110	160-300	0.2-0.3	1.0-1.8
N	铝合金 Aluminium Alloys					
H	高硬钢 Hardness	HRC50-60	KP1110	70-120	0.15-0.3	0.4-0.6

钻削刀片材质简介 Drilling Insert Grades

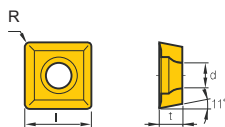
KP2230

高耐磨性晶粒基体与纳米结构的PVD涂层完美结合，具有良好的耐磨性和抗崩刃性。

Nano-structure PVD coating on micro-grain carbide, superior wear resistance and fracture resistance



钻削刀片 Drilling inserts SPMT..



刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades				KP1320	KP2330	KW20
		R	l	t	d			
	SPMT050204KM	0.4	5.3	2.4	2.3		●	
	SPMT060204KM	0.4	6.2	2.55	2.5		●	
	SPMT07T308KM	0.8	7.2	3.99	2.8		●	
	SPMT090408KM	0.8	9.79	4.35	4.0		●	
	SPMT110408KM	0.8	11.5	4.76	4.44		●	
	SPMT140512KM	1.2	17.23	6.45	6.87		●	
钢 Steel						★	★	
不锈钢 Stainless Steel							★	
铸铁 Cast Iron						☆	☆	
有色金属 Nonferrous Metal								★
耐热合金 Heat Resistant Alloy							☆	
淬硬钢 Hardened Steel								

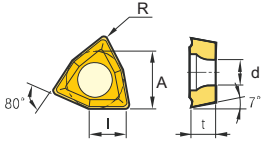
★首选 ☆可选

●标准库存 ○订单生产

推荐切削条件表 Recommended Cutting Conditions

工件材料 Workpiece Materials		布氏硬度 HB	切削速度推荐值 Recommended Cutting Speed				
			Vc(m/min)	D16.0-D25.4 f(mm/rev)	D26.0-D30.0 f(mm/rev)	D31.0-D41.3 f(mm/rev)	D42.0-D80.0 f(mm/rev)
P	钢 Steel	<180	100-250	0.04-0.12	0.09-0.19	0.11-0.20	0.14-0.25
		180-280	90-250	0.08-0.12	0.09-0.16	0.11-0.20	0.14-0.22
		280-350	100-200	0.08-0.12	0.09-0.18	0.11-0.22	0.14-0.25
M	不锈钢 Stainless Steel	<270	150-220	0.08-0.12	0.08-0.15	0.08-0.15	0.09-0.16
K	铸铁 Cast Iron	180-250	80-180	0.09-0.15	0.11-0.19	0.12-0.20	0.18-0.30
N	铝合金 Aluminium Alloys						
H	高硬钢 Hardness	250-400	90-200	0.08-0.12	0.08-0.15	0.11-0.17	0.11-0.20

钻削刀片
 Drilling inserts
 WCMX..



刀片外形 Insert shape	型号 Model	尺寸与材质 Size and Grades						KP1320	KP2330	KW20
		R	I	t	A	d				
	WCMX030208KM	0.8	3.8	2.38	5.56	2.5		●		
	WCMX040208KM	0.8	4.3	2.38	6.35	2.8		●		
	WCMX050308KM	0.8	5.4	3.18	7.94	3.4		●		
	WCMX06T308KM	0.8	6.5	3.97	9.525	4.4		●		
	WCMX080412KM	1.2	8.7	4.76	12.7	5.5		●		
钢 Steel								★	★	
不锈钢 Stainless Steel									★	
铸铁 Cast Iron								☆	☆	
有色金属 Nonferrous Metal										★
耐热合金 Heat Resistant Alloy									☆	
淬硬钢 Hardened Steel										

★首选
 ☆可选

●标准库存
 ○订单生产

推荐切削条件表
 Recommended Cutting Conditions

工件材料 Workpiece Materials		布氏硬度 HB	切削速度推荐值 Recommended Cutting Speed				
			Vc(m/min)	D16.0-D25.4 f(mm/rev)	D26.0-D30.0 f(mm/rev)	D31.0-D41.3 f(mm/rev)	D42.0-D80.0 f(mm/rev)
P	钢 Steel	<180	100-250	0.04-0.12	0.09-0.19	0.11-0.20	0.14-0.25
		180-280	90-250	0.08-0.12	0.09-0.16	0.11-0.20	0.14-0.22
		280-350	100-200	0.08-0.12	0.09-0.18	0.11-0.22	0.14-0.25
M	不锈钢 Stainless Steel	<270	150-220	0.08-0.12	0.08-0.15	0.08-0.15	0.09-0.16
K	铸铁 Cast Iron	180-250	80-180	0.09-0.15	0.11-0.19	0.12-0.20	0.18-0.30
N	铝合金 Aluminium Alloys						
H	高硬钢 Hardness	250-400	90-200	0.08-0.12	0.08-0.15	0.11-0.17	0.11-0.20

SI 单位换算表

SI Unit Conversion Table

■ 粗线表格灰色部分即SI单位
Bold lined units marked with gray background are SI Units

力 Force

N	Kgf	dyn
1	1.01972×10^{-1}	1×10^5
9.80665	1	9.80665×10^5
1×10^{-5}	1.01972×10^{-6}	1

应力 Stress

1pa=1N/m², 1Mpa=1N/mm²

Pa or N/m ²	MPa or N/mm ²	kgf/mm ²	kgf/cm ²	kgf/m ²
1	1×10^{-6}	1.01972×10^{-7}	1.01972×10^{-5}	1.01972×10^{-1}
1×10^6	1	1.01972×10^{-1}	1.01972×10	1.01972×10^5
9.80665×10^6	9.80665	1	1×10^2	1×10^6
9.80665×10^4	9.80665×10^{-2}	1×10^{-2}	1	1×10^4
9.80665	9.80665×10^{-6}	1×10^{-6}	1×10^{-4}	1

压力 Pressure

1pa=1N/m²

Pa	Kpa	Mpa	Bar	kgf/cm ²
1	1×10^{-3}	1×10^{-6}	1×10^{-5}	1.01972×10^{-5}
1×10^3	1	1×10^{-3}	1×10^{-2}	1.01972×10^{-2}
1×10^6	1×10^3	1	1×10	1.01972×10
1×10^5	1×10^2	1×10^{-1}	1	1.01972
9.80665×10^4	9.80665×10	9.80665×10^{-2}	9.80665×10^{-1}	1

■ 摘录自 JIS 钢铁手册
Extracted from JIS Handbook "steel"

硬度换算表

Hardness Conversion Table

韦氏硬度 Vickers Hardness (HV)	布氏硬度 Brinell Hardness (HB)		洛氏硬度 Rockwell Hardness			肖氏硬度 Shore Hardness (HS)	抗拉强度 (近似值) Tensile Strength Mpa*
	标准球 Standard Ball	碳化钨球 Tungsten Carbide Ball	A量规 荷重60KGgf金钢石 圆锥压子 A Scale Load: 60kgf Diamond point (HRA)	B量规 荷重100Kgf,直径1.6mm (1/16 in),球HRB B Scale Load: 100kgf 1.6mm Dia.Ball (HRB)	C量规 荷重150kgf 金刚石圆锥压子HRC C Scale Load:150kgf Diamond Point (HRC)		
940	-	-	85.6	-	68.0	97	-
920	-	-	85.3	-	67.5	96	-
900	-	-	85.0	-	67.0	95	-
880	-	767	84.7	-	66.4	93	-
860	-	757	84.4	-	65.9	92	-
840	-	745	84.1	-	65.3	91	-
820	-	733	83.8	-	64.7	90	-
800	-	722	83.4	-	64.0	88	-
780	-	710	83.0	-	63.3	87	-
760	-	698	82.6	-	62.5	86	-
740	-	684	82.2	-	61.8	84	-
720	-	670	81.8	-	61.0	83	-
700	-	656	81.3	-	60.1	81	-
690	-	647	81.1	-	59.7	-	-
680	-	638	80.8	-	59.2	80	-
670	-	630	80.6	-	58.8	-	-
660	-	620	80.3	-	58.3	79	-
650	-	611	80.0	-	57.8	-	-
640	-	601	79.8	-	57.3	77	-
630	-	591	79.5	-	56.8	-	-
620	-	582	79.2	-	56.3	75	-
610	-	573	78.9	-	55.7	-	-
600	-	564	78.6	-	55.2	74	-
590	-	554	78.4	-	54.7	-	2055
580	-	545	78.0	-	54.1	72	2020
570	-	535	77.8	-	53.6	-	1985
560	-	525	77.4	-	53.0	71	1950
550	-	517	77.0	-	52.3	-	1905
540	-	507	76.7	-	51.7	69	1860
530	-	497	76.4	-	51.1	-	1825
520	-	488	76.1	-	50.5	67	1795
510	-	479	75.7	-	49.8	-	1750
500	-	471	75.3	-	49.1	66	1705
490	-	460	74.9	-	48.4	-	1660
480	-	452	74.5	-	47.7	64	1620
470	-	442	74.1	-	46.9	-	1570
460	-	433	73.6	-	46.1	62	1530
450	-	425	73.3	-	45.3	-	1495
440	-	415	72.8	-	44.5	59	1460
430	-	405	72.3	-	43.6	-	1410
420	-	397	71.8	-	42.7	57	1370
410	-	288	71.4	-	41.8	-	1330
400	-	379	70.8	-	40.8	55	1290
390	-	369	70.3	-	39.8	-	1240
380	-	360	69.8	(110.0)	38.8	52	1205
370	-	350	69.2	-	37.7	-	1170
360	-	341	68.7	(109.0)	36.6	50	1130
350	-	331	68.1	-	35.5	-	1095
340	-	322	67.6	(108.0)	34.4	47	1070
330	-	313	67.0	-	33.3	-	1035

硬度换算表

Hardness Conversion Table

韦氏硬度 Vickers Hardness (HV)	布氏硬度 Brinell Hardness (HB)		洛氏硬度 Rockwell Hardness			肖氏硬度 Shore Hardness (HS)	抗拉强度 (近似值) Tensile Strength Mpa*
	标准球 Standard Ball	碳化钨球 Tungsten Carbide Ball	A量规 荷重60KGf金钢石 圆锥压子 A Scale Load: 60kgf Diamond point (HRA)	B量规 荷重100Kgf,直径1.6mm (1/16 in),球HRB B Scale Load: 100kgf 1.6mm Dia.Ball (HRB)	C量规 荷重150kgf 金刚石圆锥压子HRC C Scale Load:150kgf Diamond Point (HRC)		
320	303	303	66.4	(107.0)	32.2	45	1005
310	294	294	65.8	-	31	-	980
300	284	284	65.2	-105.5	29.8	42	950
295	280	280	64.8	-	29.2	-	935
290	275	275	64.5	-104.5	28.5	41	915
285	270	270	64.2	-	27.8	-	905
280	265	265	63.8	103.5	27.1	40	890
275	261	261	63.5	-	26.4	-	875
270	256	256	63.1	102	25.6	38	855
265	252	252	62.7	-	24.8	-	840
260	247	247	62.4	(101.0)	24.0	37	825
255	243	243	62.0	-	23.1	-	805
250	238	238	61.6	99.5	22.2	36	795
245	233	233	61.2	-	21.3	-	780
240	228	228	60.7	98.1	20.3	34	765
230	219	219	-	96.7	(18.0)	33	730
220	209	209	-	95.0	(15.7)	32	695
210	200	200	-	93.4	(13.4)	30	670
200	190	190	-	91.5	(11.0)	29	635
190	181	181	-	89.5	(8.5)	28	605
180	171	171	-	87.1	(6.0)	26	580
170	162	162	-	85.0	(3.0)	25	545
160	152	152	-	81.7	(0.0)	24	515
150	143	143	-	78.7	-	22	490
140	133	133	-	75.0	-	21	455
130	124	124	-	71.2	-	20	425
120	114	114	-	66.7	-	-	390
110	105	105	-	62.3	-	-	-
100	95	95	-	56.2	-	-	-
95	90	90	-	52.0	-	-	-
90	86	86	-	48.0	-	-	-
85	81	81	-	41.0	-	-	-

■ 此表摘录自 JIS 钢铁手册 (SAE J417)

注 (1) 1MPa=1N/mm²

(2) 表中 () 内值不是实际使用值,仅做参考使用

Extracted from JIS Handbook "Iron & Steel"(SAE J 417)

Note(1)1MPa=1N/mm²

(2)Value in () is not in practical use, but reference only

表面粗糙度

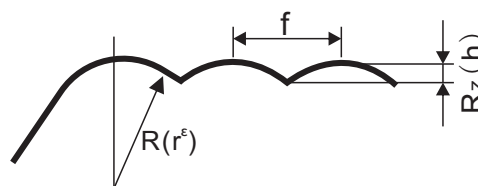
Surface Roughness

理论（几何）表面粗糙度

Theoretical(Geometrical) surface Roughness

$$R_z[h] = \frac{f^2}{8XR[r\epsilon]} \times 1,000$$

- $R_z(h)$:理论表面粗糙度 Theoretical Surface Roughness(um)
- f :每旋转一周的进给量Feed Rate(mm/rev)
- $R(r)$:刀尖圆弧半径Corner Radius of Insert (mm)

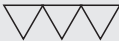


表面粗糙度的计算方法

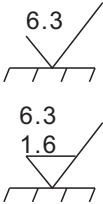
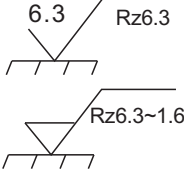
How to Obtain Surface Roughness Values

种类 Type	记号 Symbol	计算方法 How to obtain	说明图 Explanation
最大粗糙度 Max. Height Roughness	R_z	从粗曲线上沿平均线方向选取基准长度 (ℓ)，在这部分中的最高峰高度与最低谷深度的和以微米表示的值，这个就是 R_z 值。 $R_z = R_p + R_v$ R_z is a mean value in micron meter obtained from the distance of the highest peaks and the lowest valleys within the range of sampled reference lengths (ℓ) in the direction of the center line of the roughness curve. $R_z = R_p + R_v$	
十点平均粗糙度 Ten Points Mean Roughness	R_{zJIS}	从粗曲线上沿平均线方向选取基准长度 (ℓ)，在此长度中，分别计算5个最高峰的平均值 (Y_p) 和5个最低谷的平均值 (Y_v)。然后相加，以微米表示，就得到 R_{zJIS} 值。 $R_{zJIS} = \frac{(Y_{p1} + Y_{p2} + Y_{p3} + Y_{p4} + Y_{p5}) + (Y_{v1} + Y_{v2} + Y_{v3} + Y_{v4} + Y_{v5})}{5}$ R_z is a mean value in micron meter obtained from the distance of 5 highest peaks (Y_p) and the 5 lowest valleys (Y_v) measured from the center line of the roughness curve within the range of sampled reference length (ℓ) $R_{zJIS} = \frac{(Y_{p1} + Y_{p2} + Y_{p3} + Y_{p4} + Y_{p5}) + (Y_{v1} + Y_{v2} + Y_{v3} + Y_{v4} + Y_{v5})}{5}$	$Y_{p1}, Y_{p2}, Y_{p3}, Y_{p4}, Y_{p5}$: 基准长度 ($\ell$) 内的5个最高峰到中心线距离的和 Distance from the mean line to highest 5 peaks in the range of sampled reference length (ℓ) $Y_{v1}, Y_{v2}, Y_{v3}, Y_{v4}, Y_{v5}$: 在基准长度 ($\ell$) 内的5个最低谷到中心线距离的和 Distance from the mean line to the lowest 5 valleys in the range of sampled reference length (ℓ)
算术平均粗糙度 Arithmetical Mean Roughness	R_a	从粗曲线上沿平均线方向选取基准长度 (ℓ)，把中心线方向看出X轴方向，与其垂直的为Y轴方向。若粗曲线可以有方程 $y=f(x)$ 表示，则以微米表示 R_a 值可以由以下方程式求出。 $R_a = \frac{1}{\ell} \int_0^\ell f(x) dx$ R_a is obtained from the following formula in micron meter, the roughness curve is expressed by $y=f(x)$, the X-axis is in the direction of the center line and the Y-axis is the vertical magnification of the roughness curve in the range of sampled reference lengths (ℓ). $R_a = \frac{1}{\ell} \int_0^\ell f(x) dx$	

与三角记号的关系 Relationship with Triangle Symbol

算术平均粗糙度 Arithmetical Mean Roughness $R_a(\mu m)$	最大粗糙度 Max.Height Roughness $R_z(\mu m)$	十点平均粗糙度 Ten Points Mean Roughness $R_zJIS(\mu m)$	三角记号 Triangle Note
0.025 0.05 0.1 0.2	0.1 0.2 0.3 0.4 0.8	0.1 0.2 0.4 0.8	
0.4 0.8 1.6	1.6 3.2 6.3	1.6 3.2 6.3	
3.2 6.3	12.5 25	12.5 25	
12.5 25	50 100	50 100	

JIS标准记号的表示例 Indication in JIS Standard

Ra的记号表示例 Example of Ra Indication	Rz的记号表示例 Example of Rz Indication
①仅表示上限的场合 (上限为6.3umRa时) ①When indication the upper limit only (when upper limit is 6.3umRa) ②表示上限和下限的场合 (上限为6.3umRa、下限为1.6umRa时) ②When indication both lower and upper limit (when upper limit is 6.3umRa, lower limit is 1.6umRa) 	①仅表示上限的场合，在参数记号后面列出表面粗糙度 ①When indication upper limit only indicate surface roughness following the parameter symbol. ②表示上限和下限的场合，在参数记号后面，按照“上限~下限”的形式表示表面粗糙度。 ②When indication both lower and upper limit indication surface roughness as (upper limit ~lower limit) following the parameter symbol. 

请注意 R_a 和 R_z 的表示方式各不相同
Note: The indications of R_a and R_z are different.

使用表面粗糙度标记的注意事项 Surface Roughness Symbol Caution

以上资料是根据 JIS B 0601-2001编制的。
为了与ISO标准一致，从JIS B 0601-2001版开始，变更为右表的记号。
The above information is based on JIS B 0601-2001.
However, some symbols were revised as shown in the right table in accordance with ISO standard from JIS B 0601-2001 version.

种类 Type	记号Symbol (JIS B 0601-1994)	记号Symbol (JIS B 0601-2001)
最大粗糙度 Max.Height Roughness	R_y 	R_z
十点平均粗糙度 Ten Points Mean Roughness	R_z 	$(R_z)_{jis}$
算术平均粗糙度 Arithmetical Mean Roughness	R_a 	R_a

车削加工的计算公式

Basic Formulas of Turning

所需功率 Power Requirement

$$P_C = \frac{K_s X V_c X a_p X f}{6120 X \eta}$$

$$P_{HP} = \frac{K_s X V_c X a_p X f}{4500 X \eta}$$

- P_C : 所需功率 Power Requirement(KW)
- P_{HP} : 所需功率 Power Requirement(Horse Power)(HP)
- V_c : 切削速度 Cutting Speed(m/min)
- f : 每转进给量 Feed Rate(mm/rev)
- a_p : 切深 Depth of Cut(mm)
- K_s : 比切削阻力 Specific Cutting Resistance(kgf/mm²)
- η : 机械效率 Mechanical Efficiency(0.7~0.8)

$$f = \frac{l}{n}$$

l (mm/min): 每分钟切削长度
Length of cut per minute

K_s 的概略值 approximate value of K_s

铝 Aluminum: 800MPa
普通钢 General Steel: 2,500~3,000MPa
铸铁 Cast Iron: 1500MPa

软钢 (低碳钢) Low Carbon Steel	190	高合金钢 High Alloy Steel	245
中碳钢 Medium Carbon Steel	210	铸铁 Cast Iron	93
高碳钢 High Carbon Steel	240	可锻铸铁 Malleable Cast Iron	120
低碳合金钢 Low Alloy Steel	190	青铜/黄铜 Bronze, Brass	70

切削速度 Cutting Speed

$$V_c = \frac{\pi X D_m X n}{1000}$$

- V_c : 切削速度 Cutting Speed(m/min)
- n : 转速 Spindle Revolution(min⁻¹)
- D_m : 工件外径 Workpiece Diameter(mm)

表面粗糙度 Surface Roughness

$$R_z = h = \frac{f^2}{8 X R(\gamma \epsilon)} \times 1000$$

- $R_z = h$: 理论表面粗糙度 Theoretical Surface Roughness(um)
- f : 每转进给量 Feed Rate(mm/rev)
- $R(\gamma \epsilon)$: 刀尖半径 Corner Radius of Insert(mm)

实际表面粗糙度 Actual Surface Roughness	钢的场合: 理论粗糙度 (R_z) X1.5~3 steel: Theoretical Surface Roughness(R_z) X1.5~3 铸铁的场合: 理论粗糙度 (R_z) X3~5 Cast Iron: Theoretical Surface Roughness(R_z) X3~5
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铣削加工的计算公式

Basic Formylas of Milling

所需功率

Power Requirement

$$P_c = \frac{K_s X Q}{6120 X \eta}$$

$$= \frac{K_s X a_e X V_f X a_p}{6120000 X \eta}$$

$$= \frac{K_s X a_e X f_z X Z X n X a_p}{6120000 X \eta}$$

$$P_{HP} = \frac{6120}{4500} P_c$$

- P_c : 所需功率 Power Requirement(KW)
- P_{HP} : 所需功率 Power Requirement(Horse Power)(HP)
- a_e : 切削宽度 Width of Cut(mm)
- V_f : 工作台进给速度 Table Feed(mm/min)
- f_z : 每刃进给量 Feed per Tooth(mm/t)
- Z : 刀盘刃数 Number of Inserts(pcs)
- n : 主轴旋转数 Spindle Revolution(min^{-1})
- a_p : 切深 Depth of Cut(mm)
- K_s : 比切削阻力 Specific Cutting Resistance(kgf/mm^2)
- η : 机械效率 Mechanical Efficiency(0.7~0.8)
- Q : 切削排出量 Chip Removal Volume(cm^3/min)
- K_s 的概略值 approximate value of K_s

铝 Aluminum: 800MPa
普通钢 General Steel: 2,500~3,000MPa
铸铁 Cast Iron: 1500MPa

软钢 (低碳钢) Low Carbon Steel	190	高碳合金钢 High Alloy Steel	245
中碳钢 Medium Carbon Steel	210	铸铁 Cast Iron	93
高碳钢 High Carbon Steel	240	可锻铸铁 Malleable Cast Iron	120
低碳合金钢 Low Alloy Steel	190	青铜/黄铜 Bronze, Brass	70

切削排出量计算法

Chip Removal Volume

$$Q = \frac{a_c X V_f X a_p}{1000}$$

$$= \frac{a_e X f_z X Z X n X a_p}{1000}$$

- Q : 切削排出量 Chip Removal Volume(cm^3/min)
- a_e : 切削宽度 Width of Cut(mm)
- V_f : 工作台进给速度 Table Feed(mm/min)
- f_z : 每刃进给量 Feed per Tooth(mm/t)
- Z : 刀盘刃数 Number of Inserts(pcs)
- n : 主轴旋转数 Spindle Revolution(min^{-1})
- a_p : 切深 Depth of Cut(mm)

工作台进给量和每刃进给量

Table Feed & Per Tooth

$$f_z = \frac{V_f}{Z X n}$$

- f_z : 每刃进给量 Feed per Tooth(mm/t)
- V_f : 工作台进给速度 Table Feed(mm/min)
- Z : 刀盘刃数 Number of Inserts(pcs)
- n : 主轴旋转数 Spindle Revolution(min^{-1})

切削速度

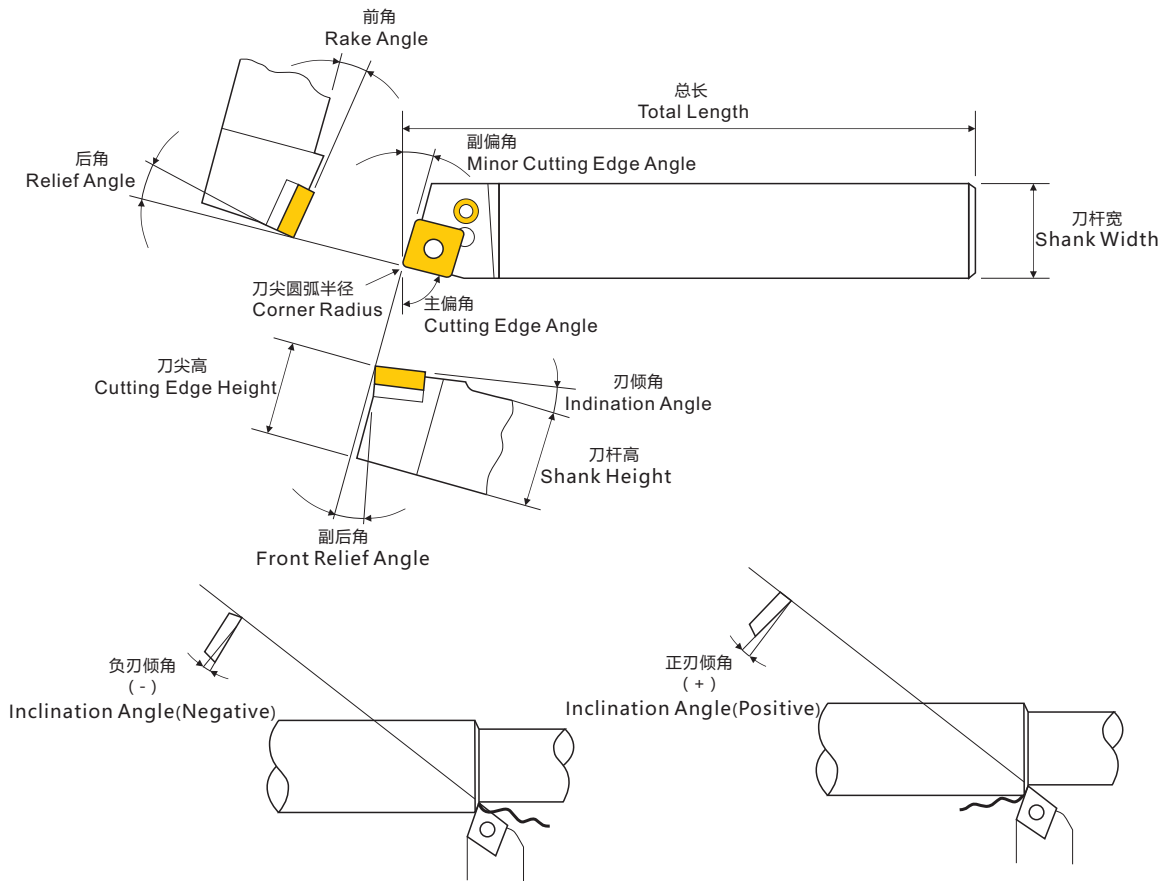
Cutting Speed

$$V_c = \frac{\pi X D_s X n}{1000}$$

- V_c : 切削速度 Cutting Speed(m/min)
- n : 主轴旋转数 Spindle Revolution(min^{-1})
- D_s : 铣刀公称直径 Cutter Diameter(mm)

车刀各部分的名称角度

Terms and Angles of Turning Toolholder



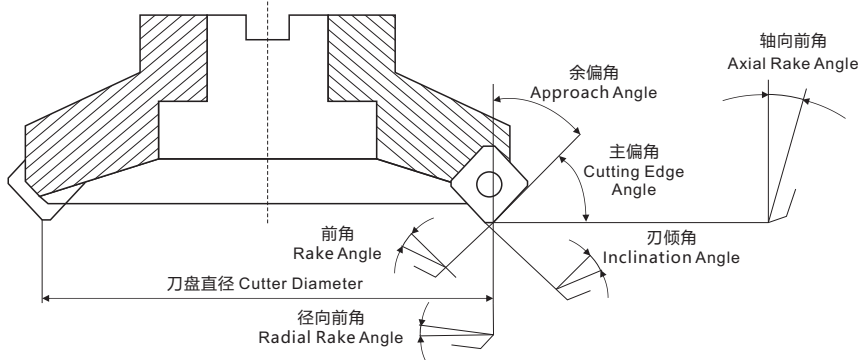
刀尖各角度的功能 Function of Tool Angle

刀尖角度 Tool Angle	作用 Function	效果 Effect
前角 Rake Angle	对切削阻力，切削热，切削排出，工具寿命产生影响。 ● Affects cutting force, cutting heat, chip evacuation and tool life.	正角时，可得到更锋利的切削效果，切削阻力减少，但刀尖强度降低。 加工料加工性好或细工件时，推荐使用正角。 若在黑皮或继续加工需要较强的刀尖强度时，推荐使用较小的前角或负角。 ● When it is positive (+) angle, sharper cutting performance is obtained, less cutting resistance but less edge strength. ● Positive (+) angle is recommended for easy to machine workpieces or thin workpieces. ● Smaller rake angle or negative (-) angle is recommended when a stronger edge is required like scale cutting or interrupted cutting.

刀尖角度 Tool Angle	作用 Function	效果 Effect
刃倾度 Inclination Angle	重切削时，切削开始点的刀尖上要承受很大的冲击力，为防止刀尖受此力而发生脆性损伤，故需有刃倾角。 • The corner will bear a strong impact when heavy cutting • It needs a suitable cutting edge inclination angle to prevent fracture	刃倾角为负时，切屑流向工件，为正时反向排出；刃倾角为正时，切削刃强度增大，但切削背分力也增加，易产生振动。推荐车削时为3°~5°，铣削时10°~15°。 • When it is negative---chip flows to the workpiece and vice versa. • When it is positive---cutting edge strength improves, but the back cutting force also increases and it is inclined to produce vibration. • Recommended values: Turning 3°~5°,Milling 10°~15°.
主后角 Relief Angle	避免切刃以外的部分与加工面接触。 • Prevents the tool's contact to the workpiece surface,except the cutting edge	若后角小，刀尖强度变大，但后面磨损在短时间内变大，刀具寿命也会变短。 • When it is small,the cutting edge strength improves,but the wear at relief face increases,and tool life may decreases.
主偏角 Cutting Edge Angle	影响切屑控制能力与切削力方向。 • Affects chip control and the direction of cutting force	主偏角大时。切屑变厚且切屑控制能力提高 • When it is large,chip thickness becomes thick and chip control improves.
副偏角 Minor Cutting Edge Angle	减少已加工表面与刀具摩擦。 • Prevents friction between cutting edge and work surface	副偏角小，切削刃强度增加，但刀尖发热；副偏角小，背分力增加，切削时易产生振动；粗加工时副偏角宜小些，而精加工时则宜大些。一般为5°~15°。 • When it is small,the cutting edge strength will improve,but the tip is heated. • When it is small,back cutting force increases and it is inclined to produce cutting vibration. • It should be smaller for rough finishing,while it can be larger for rough finishing. - Recommended values:5°~15°.
刀尖圆弧半径 Corner Radius	对刀尖的强度及加工表面粗糙度影响很大。 • Affects tool nose strength and roughness of the finished surface	一般适宜值选进给量的2~3倍。 • Recommended values:2~3 times of feed rate.

铣刀各部分的名称角度

Terms and Angles of Milling Cutter



刀尖各角度的功能

Function of Tool Angle

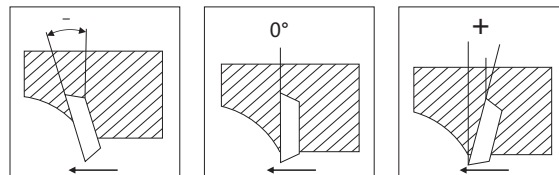
刀尖角度 Tool Angle	作用 Function	效果 Effect
轴向前角 Axial Rake Angle	控制切屑排出方向和切削力 Controls chip flow direction and cutting force	正角时，切削性能好，且不易发生切屑粘连。 When it is positive---Good cutting performance and less chip welding
径向前角 Radial Rake Angle	控制切屑排出方向和切削力 Controls chip flow direction and cutting force	负角时，切屑排出性能好 When it is negative---Good chip evacuation
前角 Rake Angle	决定实际切削刃锋利程度 Determines the real sharp degree of tool edge	正角时，切削性能好且不易发生切屑粘连，但切刃强度下降 负角时，切削性能差，易发生切屑粘连，但是切刃强度高。 - When it is positive---Good cutting performance and less chip welding, but lower edge strength - When it is negative---Higher edge strength but easier to weld
余偏角 Approach Angle	决定切屑厚度和切屑排出方向 Controls chip thickness and chip flow direction	角度大时。切屑厚度变小，切屑负荷变小，但背分力大。 When it is large---Thinner chip thickness and lower cutting load
刃倾角 Inclination Angle	决定切屑排出方向 Controls chip flowdirection	正角时。切屑排出好切屑阻力小，但切刃强度较小。 When it is positive---Good chip evacuation, less cutting resistance and lower edge stability of the corner part

不同前角的组合特征

Characteristic Of Different Rake Angle Combination

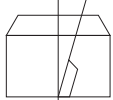
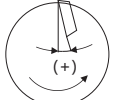
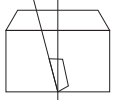
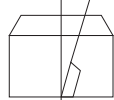
前角的正负

Positive/Negative Rake Angle



不同前角的组合特征

Characteristics Of Different Rake Angle Combination

基本刀型的组合 Combination of Rake Angles		(+)轴向前角 Positive Axial Rake angle (+)  (+)径向前角 Positive Radia Rake angle (+)  双重正角刀型 Double Positive	(-)轴向前角 Negative Axial Rake angle (-)  (-)径向前角 Negative Radial Rake Angle (-)  双重负角刀型 Double Negative	(+)轴向前角 Positive Axial Rake angle (+)  (-)径向前角 Negative Radial Rake Angle (-)  正负角刀型 Positive + Negative
轴向前角 Axial Rake Angle		正 Positive (+)	负 Negative (-)	正 Positive (+)
径向前角 Radial Rake Angle		正 Positive (+)	负 Negative (-)	负 Negative (-)
刀片样式 Tool Style		正角型刀片 Positive Angle (单面使用) (Single Side Used)	负角型刀片 Negative Angle (双面使用) (Double Side Used)	正角型刀片 Positive Angle (单面使用) (Single Side Used)
工件材料 Workpiece Material	钢 Steel	●	—	●
	铸铁 Cast Iron	—	●	●
	轻合金 Light Alloy	●	—	—
	难加工材料 Difficult-to-machine Material	●	—	●

国内外品牌刀具牌号对照表

Grade Table

CVD涂层刀片厂家牌号对照表

Grade table of CVD coating

加工类别 Machining Type	工件材料 Workpiece Material	分类代号 Code	各厂家牌号对照列表 Grade table of competitors and KOVES														
			科维丝 KOVES	山特维克 SANDVIK	伊斯卡 ISACR	肯纳金属 KENNAMETAL	特固克 TAEGUTEC	瓦尔特 WALTER	三菱 MITSUBISHI	住友 SUMITOMO	泰珂洛 TUNGALOY	京瓷 KYOCERA	黛杰 DIJET	日立 HITACHI	科罗伊 KORLOY	山高 SCEO	株洲钻石 ZCC-CT
车削 Turning	P	P01		GC4005	IC9150	KC9105		WAP01	UE6050	AC700G	T9005	CA5505	JC110V	HC5000		TP1000 TK1000	
		P10	KC1115	GC4015	IC9150 IC9015	KC9110 TN7005 TN7010	TT1300	WAP10	UE6050 UE6110 UE6010 UC6020 UC6010	AC700G AC2000	T9005 T9015	CA5505 CA5515	JC110V JC215V	HG8010 GM8015 GM10	NC310 NC3015	TP1000 TK1000 TP2000 TK2000	YBC152 YBC151
		P20	KC1115 KC1125	GC4015 GC4225 GC4025 GC2015	IC9250 IC9025 IC9054	KC9125 KC9225 TN7015	TT1500	WAP20	UE6110 UE6010 UE6020 UC6010	AC2000 AC3000	T9015 T9025	CA5515 CA5525 CA5025 CR9025	JC110V JC215V	HG8025 GM8020	NC3020	TP2000 TK2000 TP200	YBC251 YBC252
		P30	KC1125	GC4225 GC4025 GC4035 GC2025 GC2135	IC9350 IC656	KC8050 TN7025	TT3500 TT5100	WAP30	UE6035 UH6400 US735	AC3000 AC630M	T9025 T9035	CA5535	JC215V JC325	GM25	NC330	TP3000 TP300	YBC252 YBC351
		P40		GC4035 GC235	IC635	KC9140 KC9040 KC9240 KX9245 TN7035 TPC35	TT450		UE6035 UH6400 US735	AC630M	T9035	CA5535	JC325V JC450V	GM8035 GX30		TP3000 TP400	YBC351
	M	M10		GC2015	IC9250	TN7010		WAM10	US7020	AC610M	T9015	CA6515 CA6015	JC110V	GM10		TP200	
		M20		GC2025	IC9250 IC9025 IC9054	KC9225 TN7015	TT2500	WAM20	US7020	AC610M AC630M	T6020 T9025	CA6525 CA6015	JC110V JC215V	GM8020	NC9020	TP200	YBM151
		M30		GC2135 GC235	IC9350 IC9025	KC8050 TN8025	TT3500	WAM30	US735	AC630M	T6030		JC215V JC325V	HG8025 GM25	NC330	TP300 TP400 TP40	YBM151 YBC251
		M40			IC656 IC635	KC9240 KC9245 TPC35	TT5100		US735				JC325V JC450V	GX30		TP400 TP40	
	K	K01		GC3205 GC3210	IC9150				UC5015	AC300G	T5010	CA4010	JC105V	GM3005		TK1000	YBD052
		K10	KC3110	GC3205 GC3210 GC3015	IC9150 IC9015 IC4010 IC418 IC428	KC9315 KC9110 TN5015	TT1300	WAK10	UC5115	AC700G	T5010	CA4010 AC4115	JC110V	HG8010 GM8015	N305K	TK1000 TK2000	YBD102 YBD151
		K20		GC3215	IC9015	KC9320 TN5020	TT1500	WAK20	UC5115	AC700G	T5020	CA4120	JC110V JC215V	HG8025 GM8020	N315K	TK2000 TP200	YBD152 YBD252
铣削 Milling	P	P01															
		P10			IC9080 IC4100	TN2510 TN25M				ACP100			JC730U				
		P20		GC4020	IC520M	TN7525		WAP25	FH7020 F7030	ACP100			JC730U			T200M T250M	YBM251
		P30		GC4030	IC4050	KC930M	TT7300	WAP35	F7030	AC230	T3030				NCM335	T250M T350M T25M	YBM351
		P40		GC4240 GC4040		KC935M TN7535				AC230				GF30 GX2030 GX30		T350M	
	M	M01															
		M10				TN25M											
		M20			IC520M	TN7525			F7030				JC730U			T350M T25M	YBM251
		M30		GC2040	IC4050	KC930M TN7535		WTP35	F7030		T3030				NCM335	T250M T25M	YBM351
		M40												GF30 GX30			
	K	K01			IC9080								JC600				
		K10			IC4100	TN5505 TN5515		WAK15	F5010	ACK200 AC211	T1015		JC600		NCM310		YBD152
		K20		GC3220 GC3020 K20D K21W	C520M DT7150	KC915M TN5520		WAK25	F5020	ACK200	T1015		JC610		NCM320	T150M T200M	YBD252
		K30		GC3040	IC4050	KC930M KC935M							JC610			T200M	

PVD涂层刀片厂家牌号对照表

Grade table of PVD coating

加工类别 Machining Type	工件材料 Workpiece Material	分类代号 Code	各厂家牌号对照列表 Grade table of competitors and KOVES														
			科维丝 KOVES	山特维克 SANDVIK	伊斯卡 ISACR	肯纳金属 KENNAMETAL	特固克 TAEGUTEK	瓦尔特 WALTER	三菱 MITSUBISHI	住友 SUMITOMO	泰珂洛 TUNGALOY	京瓷 KYOCERA	黛杰 DIJET	日立 HITACHI	科罗伊 KORLOY	山高 SCEO	株洲钻石 ZCC.CT
车削 Turning	P	P01										PR915	JC5003				
		P10			IC507	KC5010 KC5510			VP10MF		AH710	PR915 PR930	JC5003			CP200	YBG102
		P20	KP2120 KTX	GC1020 GC1025	IC908 IC928 IC1008 IC1028	KC5025			VP15TF VP20MF		AH710 AH330	PR630 PR915 PR930 PR660	JC5015		PC230	CP250	YBG202
		P30	KP2130 KVX	GC1025 GC4125	IC928 IC1008 IC1028	K7010 K7020 K7235			VP15TF VP20MF		GH330 GH730 AH120 AH330 AH740	PR630 PR660	JC5015			CP500	YBG202
		P40		GC1020 GC2145	IC928 IC1008 IC1028	K7030			VP15TF VP20MF		AH120	PR660			PC240	CP500	YBG302
	M	M01								EH510Z EH10Z		PR915					
		M10		GC1005 GC1025	IC507 IC907	KC5010 KC5510			VP10MF	EH510Z EH10Z		PR915 PR930	JC5003			CP200	YBG102
		M20	KP2120 KKX	GC1020 GC1025 GC4125	IC354 IC3028	KC5025 KC730 KC5525			VP15TF VP20MF	EH520Z EH20Z	GH330 GH730	PR630 PR915 PR930	JC5015		PC9030	CP200 CP500	YBG202
		M30	KP2130 KVX	GC1020 GC2035	IC908 IC928 IC1008 IC1028	KC5025 KC5525			VP15TF VP20MF		AH120	PR630 PR660	JC5015		PC9030	CP500	YBG302
		M40		GC2145	IC228 IC328							PR660					
	K	K01								EA10Z	AH110		JC5003				
		K10				KC5010 KC5510				EA10Z	GH110 AH110		JC5003 JC5015		PC205K	CP200	YBG102
		K20		GC1020	IC928 IC1008 IC908 IC22	KC7015			VP15TF	EH20Z	AH120		JC5015		PC205K	CP200 CP250	YBG202
		K30		GC4125	IC928 IC1008 IC908 IC22	KC7225			VP15TF							CP500	
	S	S01		GC1005						VP05RT		AH110	PR915	JC5003			
		S10		GC1005 GC1025		KC5410 KC5010			VP05RT VP10RT	EH510Z EH10Z	AH120	PR915	JC5015			CP200 CP250	YBG102
		S20		GC4125		KC5025 KC5525			VP10RT VP15TF	EH20Z EH520Z		PR915				CP250 CP500	
		S30		GC2145					VP15TF								
铣削 Milling	P	P01							APC100			JC5003	PTH08M PAC08M TB6005 JX1005				
		P10	KP1110		IC903 IC950	KC715M		WXH15 WXM15		ACZ310 ACP100		PR730 PR830	JC5003 JC5030	CY9020 PCA12M TB6005 JX1020 PC20M			
		P20	KP1210	GC1025	IC950 IC900 IC908 IC910	KC522M KC525M			VP15TF	ACZ310 ACZ330 ACZ200		PR630 PR730 PR830 PR660	JC5015 JC5030 JC5040	TB6020 CY150 JX1015	PC230	F25M	YBG202
		P30		GC1030	IC900 IC928 IC300 IC328	KC725M	TT7030 TT7070 TT9030	WXM35	VP15TF VP30RT	ACZ300 ACZ350 ACZ200	GH330 AH330 AH120 AH740	PR630 PR660 PR730 PR830	JC5015 JC5040	TB6020 CY250 CY25 HC844 JX1045 PTH30E	PC3530 PC130	F25M F30M	YBG302
		P40			IC900 IC928 IC300 IC328	KC735M	TT8020 TT8030	WXP45	VP30RT	ACZ350 ACP300	AH120	PA660	JC5040	PTH30E TB6060 PTH40H		F40M T60M	
	M	M01												PCS08M			
		M10		GC1025		KC715M		WXM15				PR630 PR730 PR830	JC5003	CY9020 JX1020			
		M20	KP2220	GC2030	IC900 IC903 IC908 IC928	KC522M KC525M	TT8020 TT9030		VP15TF VP20RT	ACZ310 EH20Z	GH330	PR630 PR730 PR830 PR660	JC5015 JC5030 JC5040	TB6020 CY150 JX1015		F25M	YBG202
		M30		GC2030	IC928 IC328	KC725M KC735M	TT8030	WXM35	VP15TF VP20RT VP30RT	ACZ330 EH20Z ACZ350	AH120	PR630 PR660 PR730 PR830	JC5015 JC5030 JC5040	TB6045 CY250 HC844	PC9530	F30M F40M	YBG302
		M40			IC928 IC328				VP30RT	ACZ350 ACP300	AH140	PR660	JC5015	TB6060 PTH40H JX1060			

国内外品牌刀具牌号对照表

Grade Table

硬质合金刀片厂家牌号对照表

Grade table of un coated carbide

加工类别 Machining Type	工件材料 Workpiece Material	分类代号 Code	各厂家牌号对照列表 Grade table of competitors and KOVES														
			科维丝 KOVES	山特维克 SANDVIK	伊斯卡 ISACR	肯纳金属 KENNAMETAL	特固克 TAEGUTEK	瓦尔特 WALTER	三菱 MITSUBISHI	住友 SUMITOMO	泰珂洛 TUNGALOY	京瓷 KYOCERA	戴杰 DIJET	日立 HITACHI	科罗伊 KORLOY	山崎 SCEO	株洲钻石 ZCC.CT
车削 Turning	P	P01													ST05		
		P10		SIP	IC70	P10	P10			ST10P	TX10S		SRT	WS10	ST10		YC10
		P20		SMA	IC70 IC50M	K125M TTM	P20		UTi20t	ST20E	TX20 TX25		SRT DX30	EX35	ST20		
		P30		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		H10A		K313	M10			EH510 U10E	TU10		UMN	WA10B	U10	890	YC10
		M20		H13A	IC08	K68 KMF K125M TTM	M20		UTi20t	EH520 U2	TU20 UX30		DX25 UMS	EX35	U20	HX 883	
		M30		H19F 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		H1P H10 HM	IC20	K313 K110M THM THM-U	K10		HTi10	EH10 EH510	G1F TH10	KW10	KG10 KT9	WH10	H01	890	YD101
		K20		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			IC10 IC28	THR			UTi20t	G10E	G3		KG30		G3	883	
	N	N01		H10 H13A		K605				H1 H2	KS05F		KG03				
		N10				K313 K110M THM THM-U	K10		HTi10	EH10 EH510	TH10 H10T		KG10 KT9		H01	890 H15	YD101
		N20	KW20			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				
铣削 Milling	P	P10		S1P									SRT				YC10
		P20			IC50M IC28	K125	P10		UTi20t	A30N	TX25		SRT DX30	EX35	ST20		
		P30			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				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		H1P	IC20	K110M K313	K10	WK10	HTi10	G10E	TH10	KW10	KG10	WH10	H05 H10		YD101
		K20			IC20 IC10	KFM	K20		UTi20t	G10E			KT9 CR1 KG20	WH20	G10	HX	YD201
		K30			IC20 IC28				UTi20t				KG30				

车削加工问题及对策
Trouble Shooting (Turning)

故障内容 Trouble			对策与检查要点 Measures		主要原因 Trouble Item		刀具材质				切削条件				刀具几何形状				机床装夹		
							Insert Grade				Cutting Conditions				Tool Geometry				Setting/ Machine		
							硬度更高的材质 change to harder grade	韧性更大的材质 change to tougher grade	耐冲击性更好的材质 More thermal shock resistant grade	耐粘结性更好的材质 Change to more welding resistant grade	切削速度 Cutting speed Vc	进给量 Feed rate fz	切深 Depth of cut ap	改变走刀路线 Tool path review	切削液 Coolant	校正刀片断屑槽槽形 Chipbreaker review	前角 Rake angle	刀尖圆弧半径 Corner-R	余偏角 Approach angle	切削刃强度/钝化 Edge strength honing	提高刀片精度等级 Change to higher tolerance
				提高/增加 Higher(Larger) ↑ 降低/减少 Lower(Smaller) ↓				喷雾式 Usage of mist		干式 Dry		增大 Increase ↑ 减少 Decrease ↓									
尺寸的不稳定 Unstable dimension	工件尺寸不稳定 Unstable workpiece dimension	刀片精度不适当 Unsuitable insert tolerance														●					
		刀具或工件的逃隙 Tool or workpiece evacuation										●	● ↑	● ↓	● ↓			●	●	●	
	切削中频繁偏心 Frequent offset during cutting	后刀面磨损增大 Flank wear increase	●												● ↑						
		切削条件不适当 Unsuitable cutting conditions					● ↓	● ↑													
		刃口切削瘤 Built-up edge				●	● ↑														
表面粗糙度 Surface roughness	表面粗糙度差 Poor surface roughness	刀具磨损使切削性能不佳 Poor cutting by tool wear	●			●	● ↓			●		●	● ↑	● ↑	● ↓	●					
		崩损 Chipping		●				● ↓	● ↓			●		● ↑	● ↑	● ↑			●	●	●
		粘刀, 刃口积屑瘤 Welding, built-up edge				●	● ↑			●		●	● ↑		● ↓	●					
		切削条件不适当 Unsuitable cutting conditions					● ↑	● ↓	● ↓	●											
		刀具材质/几何形状不适当 Unsuitable tool geometry/geometry									●		● ↑	● ↓	● ↓	●					
		振动, 振刀 Vibration, chattering		●			● ↓	● ↓ ₁	● ↓			●	● ↑	● ↓	● ↓	● ↓	●	●	●	●	●
发热 Heat	切削发热使加工精度恶化或 刀具寿命降低 Deterioration of accuracy or tool life by cutting heat	切削条件不适当 Unsuitable cutting conditions				● ↓	● ↓	● ↓	●												
		刀具材质/几何形状不适当 Unsuitable tool geometry/geometry	●								●	● ↑		● ↓							
毛刺、欠损、毛边 Burr, Chipping, Scuffing	钢, 铝—毛刺 Steel, Aluminium - Burr	切削条件不适当 Unsuitable cutting conditions				● ↓	● ↑		●	●											
		刀具材质/几何形状不适当 Unsuitable tool geometry/geometry	●								●	● ↑	● ↓	● ↓	● ↓						
	铸铁-欠损 Cast iron workpiece chip off	切削条件不适当 Unsuitable cutting conditions					● ↓	● ↓	●												
		刀具材质/几何形状不适当 Unsuitable tool geometry/geometry	●								●	● ↑	● ↑	● ↑	● ↓		●	●	●	●	
	软钢-毛边 Mild steel scuffing	切削条件不适当 Unsuitable cutting conditions					● ↑	● ↓ ₂		●											
		刀具材质/几何形状不适当 Unsuitable tool geometry/geometry	●		●						●	● ↑		● ↓							
切刀的损伤 Edge damage	后刀面和前刀面磨损增大 Wear increase at relief face rake face	后刀面的磨损 Flank wear	●			● ↓				●		●	● ↑	● ↑	● ↓						
		前刀面的磨损 Rake face wear	●				● ↓	● ↓	● ↓		●		● ↑	● ↑							
	境界磨损 Notching	境界磨损 Notching			●	● ↓			●												
	崩损 Chipping	振动, 振刀 Vibration, chattering		●			● ↓	● ↓			●			● ↑	● ↑		●	●	●	●	
	崩裂 Crack	刀具材质/切削条件不适当 Unsuitable tool grade/cutting conditions		●	●		● ↓	● ↓			●		● ↑	● ↑	● ↑		●	●	●	●	
	热龟裂 Thermal Crack	刀具材质/切削条件不适当 Unsuitable tool grade/cutting conditions			●		● ↓	● ↓	● ↓			●	● ↑		● ↓						
	切刃刀尖角部的变形 Edge nose deformation	继续加工时刀尖部变形 Edge nose deformation during interrupted cutting	●				● ↓	● ↓	● ↓			●	● ↓	● ↑	● ↑	● ↑					
	刃口积屑瘤 Built-up edge	刀具材质/切削条件不适当 Unsuitable tool grade/cutting conditions				●	● ↑	● ↑		●		●	● ↑		● ↓	●					
切屑处理 Chip control	长切屑缠绕 Long, tangling chips	切削条件不适当 Unsuitable cutting conditions					● ↓	● ↑	● ↑	●		●									
		刀具切刃形状不适当 Unsuitable tool geometry										●		● ↓	● ↓						
	短切屑四处飞溅 Chips scattering	切削条件不适当 Unsuitable cutting conditions						● ↓	● ↓			●									
		刀具切刃形状不适当 Unsuitable tool geometry										●		● ↑	● ↑						
(1)为防止振刀, 可采用较大的进给量。To prevent chattering, the higher f may be suitable (2)为避免毛边, 可采用较大的进给量。To prevent scuffing, the higher f may be suitable																					

(1)为防止振刀, 可采用较大的进给量。To prevent chattering, the higher f may be suitable

(2)为避免毛边, 可采用较大的进给量。To prevent scuffing, the higher f may be suitable

铣削加工问题及对策

Trouble Shooting (Milling)

故障内容 Trouble			对策与检查要点 Measures			主要原因 Trouble Item			刀具材质 Insert Grade				切削条件 Cutting Conditions				刀具几何形状 Tool Geometry								机床装夹 Setting/ Machine						
									硬度更高的材质 change to harder grade	韧性更大的材质 change to tougher grade	耐冲击性更好的材质 More thermal shock resistant grade	耐粘结性更好的材质 Change to more welding resistant grade	切削速度 V_c Cutting speed	进给量 f_z Feed rate	切深 a_p Depth of cut	刀盘直径与切削宽度 review review	改变走刀路线 Tool path review	切削液 Coolant		附断屑槽刀片 Insert with chip breaker	刀片后角 Relief angle	刀尖角 Corner angle	切削刃强度钝化 Edge strength honing	刀片刃数 Insert number	刀片安装凹槽 Insert pocket	修光刃形状退刀槽 () 的检查 Wiper edge (relief angle) review	刀刃振动精度的检查 Insert run out check	刀具刚性的检查 Cutter rigidity	工件/刀具的安装 Workpiece/tool installation	刀柄悬伸长度 Over hang length	动力、机械松动情况 Power,rigidity
																		提高/增加 Higher(Larger) ↑	降低/减少 Lower(Smaller) ↓												
切削损伤 Edge damage	后刀面 磨损增大 Flank wear increase	切削条件不适当 Unsuitable cutting conditions					●↓							●																	
		刀具切削刃形状不适当 Unsuitable tool geometry	●													●↑		●↓			●										
	前刀面 磨损增大 Rake face wear increase	切削条件不适当 Unsuitable cutting conditions					●↓	●↓	●↓				●																		
		刀具切削刃形状不适当 Unsuitable tool geometry	●														●↑	●↑	●↓												
	切削刃崩损 Chipping cracking	切削条件不适当 Unsuitable cutting conditions					●↓	●↓		●			●																		
		刀具切削刃形状不适当 Unsuitable tool geometry		●												●↓	●	●↑			●	●	●	●	●	●					
	热冲击破损 Edge breakage by thermal shock	切削条件不适当 Unsuitable cutting conditions					●↓	●↓	●↓					●																	
		刀具切削刃形状不适当 Unsuitable tool geometry			●											●↑		●↓													
加工精度 Machining accuracy	刃口积屑瘤 Built-up edge	切削条件不适当 Unsuitable cutting conditions					●↑	●↑					●																		
		刀具切削刃形状不适当 Unsuitable tool geometry				●										●↑		●↓													
	精加工 表面不佳 Poor surface finish	切削条件不适当 Unsuitable cutting conditions					●↑	●↓	●↓				●																		
		刀具切削刃形状不适当 Unsuitable tool geometry	●			●												●↓	●↓		●	●		●	●						
	毛刺 Burr	切削条件不适当 Unsuitable cutting conditions					●↓	●↓	●↓	●			●																		
		刀具切削刃形状不适当 Unsuitable tool geometry														●↑	●↓	●↓		●											
	欠损 Workpiece chip off	切削条件不适当 Unsuitable cutting conditions																													
		刀具切削刃形状不适当 Unsuitable tool geometry														●↑	●↑	●↓	●↑		●										
其他 Others	平面度/ 平行度差 Poor planeness parallelness	工具或刀具的逃隙 Tool or workpiece evacuation					●↓	●↓					●	1	●	●↑	●↓	●↓	●↓		●	●	●	●	●	●					
	振动/振刀大 Heavy chattering vibration	安装过程/切削条件不适当 Unsuitable cutting conditions installation					●↓	●↓	●↓	●			●		●	●↑	●↓	●↓	●↓			●	●	●	●						
		切削条件不适当 Unsuitable cutting conditions					●↑	2	3				4		●		●↓	●↓	●↓												
	切削缠绕堵塞 Damaging chips	刀具切削刃形状不适当 Unsuitable tool geometry												6	●	●	●↑		●↓	●											

(1) 由于切削热, 使工件表面变形
If the surface is warped by cutting heat

(2) 为了防止振刀, 可采用较大进给量
To prevent chattering, the higher f_z may be suitable

(3) 为防止振刀, 可采用较大的切深
To prevent chattering, the larger a_p may be suitable

(4) 螺旋加工时推荐使用逆铣加工方法
Down-cut method is recommended for helical end milling

(5) 大进给量也可以
Higher f_z may be suitable

(6) 推荐使用压缩空气
Compressed air is recommended

非标刀具

Non-standard cutter

根据要求制作各种尺寸的非标刀具，提供完美的加工方案，解决以往加工效率差，精度低，表面光洁度差，耗时长等各种问题！

According to the requirements of various sizes of non-standard tool, We can provide perfect machining way to solve the poor efficiency, low accuracy, poor surface finishing, long time consuming problems!



日期
DATE
填表人
Applicant客户单位
Customer Company
联系人
Name
电话 TEL刀具名称
Request tool
图号
Part No.
规格 Specification

机床 Machine	机床名称: Machine Name				
	★机床类型: ☐ 数控车 ☐ 立式加工中心 ☐ 卧式加工中心 ☐ 专机 ☐ 其他 Machine type: CNC Lathe Vertical machining center Horizontal machining center Special machine Other machine				
	★夹柄型号: ☐ 热膨胀夹头 ☐ 液压夹头 ☐ 弹簧夹头 ☐ 侧固式 ☐ 专用丝锥夹头 ☐ 钻夹头 ☐ 其他 Holder type: Shrink fit chuck Hydraulic chuck Collet chuck Side lock chuck Special taps chuck Drill chuck Others				
	★机床主轴类型: ☐ BT30 ☐ BT40 ☐ BT50 ☐ HSK ☐ 其他 Machine Spindle Type Others				
	★冷却类型: ☐ 内冷 ☐ 外冷 ☐ 干式切削 机床冷却压力: Cooling type: internal cooling external cooling dry cutting Machine Cooling pressure				
加工工艺 Processing technic	★工件材料: Workpiece Material			★提供零件简图 Workpiece Picture	
	★硬度: Hardness				
	★加工表面状态 ☐ 毛坯表面 ☐ 已加工过表面 Machined surface Base Surface Machined Surface				
	★是否干涉 ☐ 无 ☐ 干涉 干涉长____mm Interference NO Interference Length				
	★干涉 ☐ 无 ☐ 干涉 干涉长____mm Interference NO Interference Length				
Turning Boring Milling Forming ☐ 钻孔 ☐ 扩孔 ☐ 铰孔 ☐ 复合加工 Drilling Enlargement hole Reaming Compound machining ☐ 攻丝 ☐ 铣槽 ☐ 三维加工 ☐ 其他 Tapping Grooving 3D machining Others					
★工况 ☐ 通孔 ☐ 盲孔 ☐ 平面 ☐ 外圆 ☐ 成型表面 Working condition Through hole Blind hole Flat External Forming surface					
★产品加工状况 预孔 ☐ 无 No Product processing status Hole Yes Hole Cutting allowance 中间是否有断差孔、斜孔 ☐ 无 ☐ 有 ☐ 断续 Is there a gap hole or a slant hole in the middle No Yes Intermittent 孔/外圆 (直径) Inner/Outer Diameter ★孔要求 Hole requirement 孔深度 Hole Depth 质量 (公差、表面粗糙度、直线度) 见右图 Quality (tolerance, surface roughness, straightness) See right					
应用 Application	★客户对刀具耐用度要求: Customer requirements for tool durability:				
	目前客户使用状况 Current customer usage	新产品 New Products	☐ 是 参数是否由我司提供 Yes Condition provide by our Company ☐ 不是 请填写替换刀具内容 NO Please write replace tool details as below		
		替换刀具 Replace tool	刀具品牌: Tool Brand	★寿命 Tool Life	★进给fn (mm/rev) Feederate
			切削速度Vc (m/min) Cutting Speed	★转速n(r/min) Rotation Speed	
			★失效形式 Invalid Mode		
申请人 Applicant:	销售主管 Sales Executive:		技术主管 Technical director:		
备注: 打★为必填项目 Remark: ★ Necessary filling item					

超硬刀具

Diamond tool

我们注重细节的控制，无论是简单的刀片还是到复杂的钻铰刀，在每一道工序做质量的检验与控制，强调质量是生产出来的而不是检验出来的，确保满足并超越您的预想！



we pay attention to detail control, whether it is a simple blade or complex drilling and reamer, we care every processing testing and controlling, we always keep in mind the quality is not only by checking but also by controlling when production. we promise you we will satisfy you and exceed your expectation.

以上产品只展示部分，如有需要敬请联系我司销售人员订购。
Above tools is only part of Koves, If any necessary, pls contact our sales department for order.

KOVES®
科维丝工具

东莞市科维丝精密工具有限公司

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