厦门金鹭

航空航天切削工具

Cutting Tools for Aerospace

公司简介
About GESAC

厦门金鹭特种合金有限公司，成立于1989年，是一家中外合资的国家高新技术企业，隶属于中国六大稀土集团之一的厦门钨业股份有限公司。公司致力于高品质钨粉末材料、硬质合金、精密切削工具等钨系列产品的研发、生产，以及行业专业解决方案的提供，是世界知名的钨粉末、硬质合金及切削工具供应商。

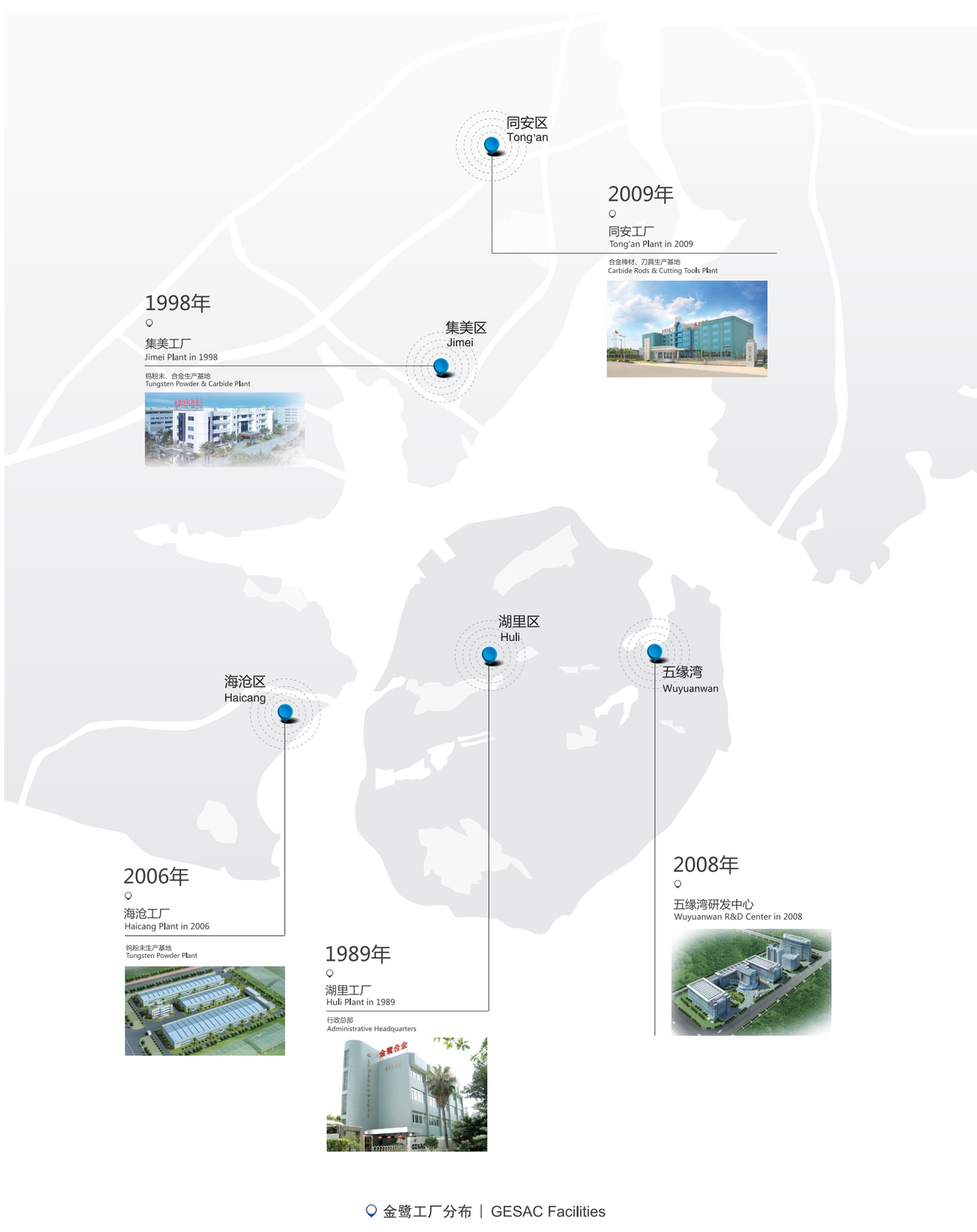
凭借完整钨产业链的产品集成技术研发，以及务实、创新的管理理念，厦门金鹭始终保持着强劲的发展势头，为全球用户提供最高性价比的钨粉末产品和服务，为现代工业领域解决高硬度、耐高温、耐磨损问题，提供了优良的产品和完善的解决方案，客户遍布全球四十多个工业发达国家和地区，享誉海内外。

公司拥有3个生产基地，3个海外销售公司和1个企业技术中心，独立承担并完成多项“国家科技支撑计划项目”，“国家科技重大专项”，“国家火炬计划项目”，“国家重点新产品”开发项目及省市重点研究课题，被评为“战略性新兴产业骨干企业”、“创新型企业”、“先进技术企业”。

Xiamen Golden Egret Special Alloy Co., Ltd. (GESAC), founded in 1989, is a Sino-foreign joint venture with national high-tech, affiliated with XTC, which is one of six major rare earth groups in China. GESAC is committed to research & development, production and professional solutions providing of high-quality tungsten powder materials, cemented carbide, precision cutting tools and other tungsten products. Up to now, GESAC has become world-famous manufacturer and supplier of tungsten powder, cemented carbide and precision cutting tools products.

With the Integrated Product Development of complete tungsten industry chain, as well as a pragmatic and innovative management concept, GESAC has always maintained a strong momentum of development, providing the cost effective tungsten powder products and services for global users, offering the excellent products and perfect solutions for solving high hardness, high temperature resistance and wear resistance topics. Our brand "Golden Egret" has become one of the leading brand in the market, enjoying famous reputation in more than 40 countries and regions.

GESAC owns three production bases, three overseas sales branches and one R&D center. We undertook and completed several development programs independently, including the “National Science and Technology Support Programs”, the “National Torch Program Projects”, and the “National Key Projects” and so on. GESAC was awarded as "Key Enterprise for Strategic Emerging Industry ", “Innovative Enterprise" and "Enterprise with Advanced Technology ".



金鹭工厂分布 | GESAC Facilities

行业简介
Aerospace

航空制造领域是先进技术高度密集的行业之一，产品的零部件外形和结构复杂、材料多种多样、加工精度要求严格。

厦门金鹭公司致力于航空高品质刀具的研发，目前已经形成铝合金加工SA系列、钛合金加工ST系列、高温合金加工SN系列、复合材料加工SD等系列刀具。竭诚服务于航空航天工业提供最具挑战性的专业加工方案。

金鹭航空刀具是通往安全高效智能制造之路的成功关键，与您共同迈向智能制造成功的未来。

Aviation manufacturing field is one of the industries with highly intensive advanced technology. The parts and components of the products are complex in shape and structure, diverse in material and strict in processing accuracy.

GESAC is committed to the research and development of aviation high-quality cutting tools. Nowadays, it has formed a series of cutting tools such as SA series for aluminum alloy processing, ST series for titanium alloy processing, SN series for high-temperature alloy processing and SD series for composite material processing. Dedicated to provide the most challenging professional processing solutions the aerospace industry for aerospace industry.

GESAC aviation tool is the key to the aerospace manufacturing, and we will achieve the success of intelligent manufacturing together in the future.

目录 Contents

GESAC

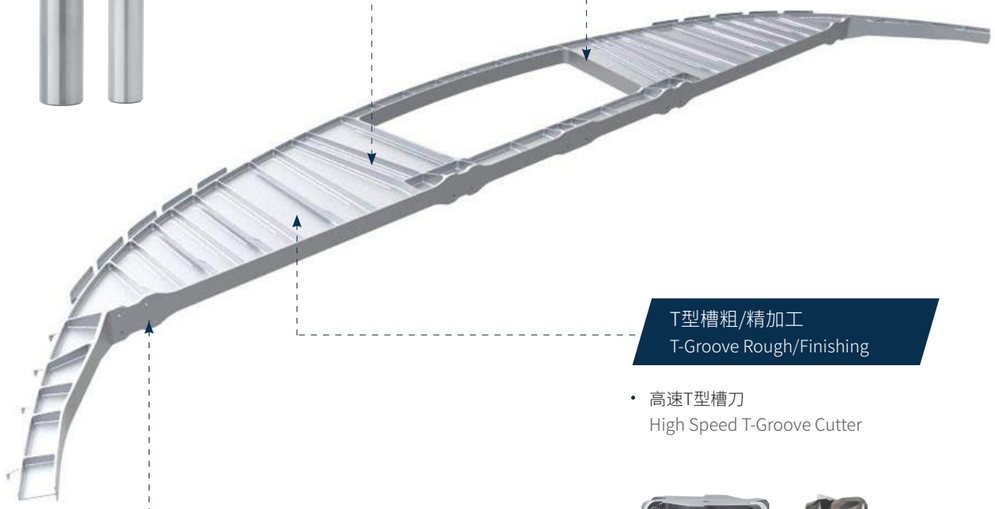
铝合金腹板
Aircraft Aluminum Alloy Web

侧壁及底面粗/精加工
Rough/Finishing Milling

- SA210高效系列立铣刀
  High Efficiency Series Endmill
- SA300高速系列立铣刀
  High Speed Series Endmill

侧壁及底面精加工
Finishing Milling

- XDHT高速系列方肩刀片
  High Speed Series



T型槽粗/精加工
T-Groove Rough/Finishing

- 高速T型槽刀
  High Speed T-Groove Cutter

孔加工
Drilling

- 铜铝加工麻花钻
  Aluminum Twist Drills

钛合金滑轨
Titanium Alloy Slideway

型腔粗加工
Cavity Rough Milling

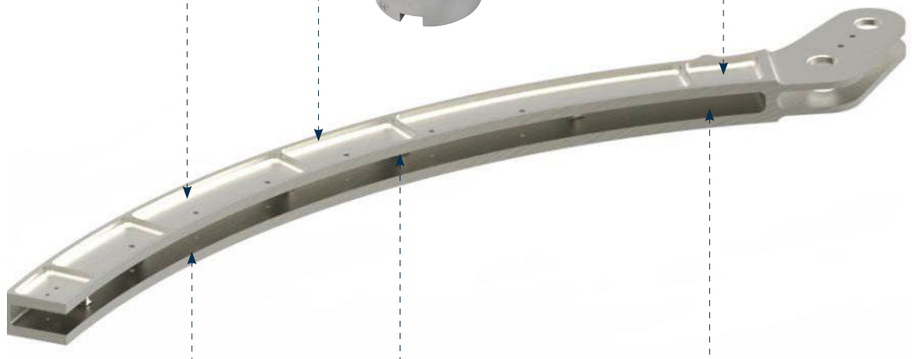
- 快进给铣刀
  High Feed Milling
  SDMT+MKM113

面铣粗加工
Face Rough Milling

- 面铣刀
  Facing Milling
  RPET+MPB100

侧壁及底面精加工
Finishing Milling

- ST210/ST300系列铣刀
  Endmill



侧壁半精加工
Semi-Finishing

- 方肩铣刀
  Shoulder Milling
  APKT+MEB190

大切深侧壁半精加工
Semi-Finishing with Large Cutting Depth

- 玉米铣刀
  Corn Milling
  APKT+MHB190

大切深侧壁精加工
Finishing with Large Cutting Depth

- ST210长刃铣刀
  Endmill with Long Cutter

A 基础信息 Basic Information

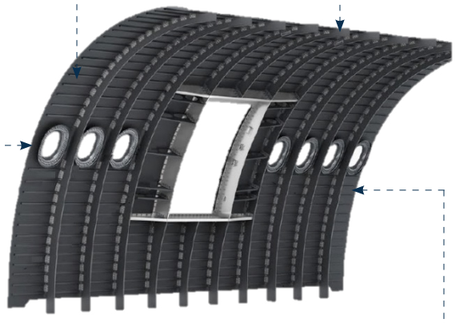
机身蒙皮
Fuselage Skin

孔加工
Drilling

- D612系列-4刃匕首钻
  Drill
- R733-C复材加工铰刀
  Reamer

铣削粗加工
Roughing

- SD200菱齿型立铣刀
  Fine-Cross-Nick



超高耐磨性PCD
PCD End mill

- SD300-GD9900 PCD立铣刀
  PCD Endmill
- GD9900 PCD锪钻
  PCD Countersink Drill

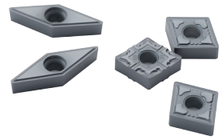
修边-精加工
Side Milling

- SD200人字型立铣刀
  Herringbone

发动机机匣
Engine Casing

车削加工
Turning

- EM半精加工系列
  Semi-Finishing
- ES精加工系列
  Finishing Series



环面铣削
Torus Milling

- SN200-R4圆角头立铣刀
  Corner Endmills

精铣凸台
Boss Finishing

- SN200-B4球头立铣刀
  Ball Endmills

切槽加工
Grooving

- G-Notch浅槽系列
  Shallow Grooving Series
- GZ深槽系列
  Deep Grooving Series

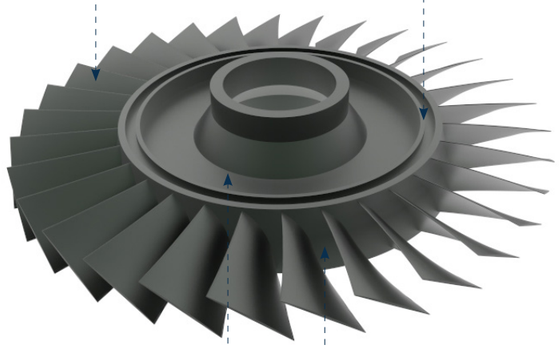
孔加工
Drilling

- D968S系列3D麻花钻
  Series 3D Twist Drills

整体叶盘
Blisks

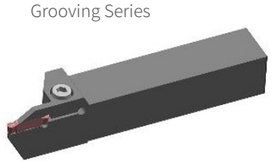
叶片精加工
Finishing

- STB200锥度球头刀
  Taper Ball Nose



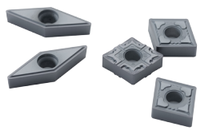
切槽加工
Grooving

- GZ系列切槽刀具
  Grooving Series



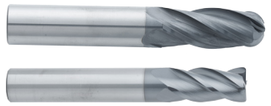
内环车削加工
Turing

- EM半精加工系列
  Semi-finishing Series
- ES精加工系列
  Finishing Series



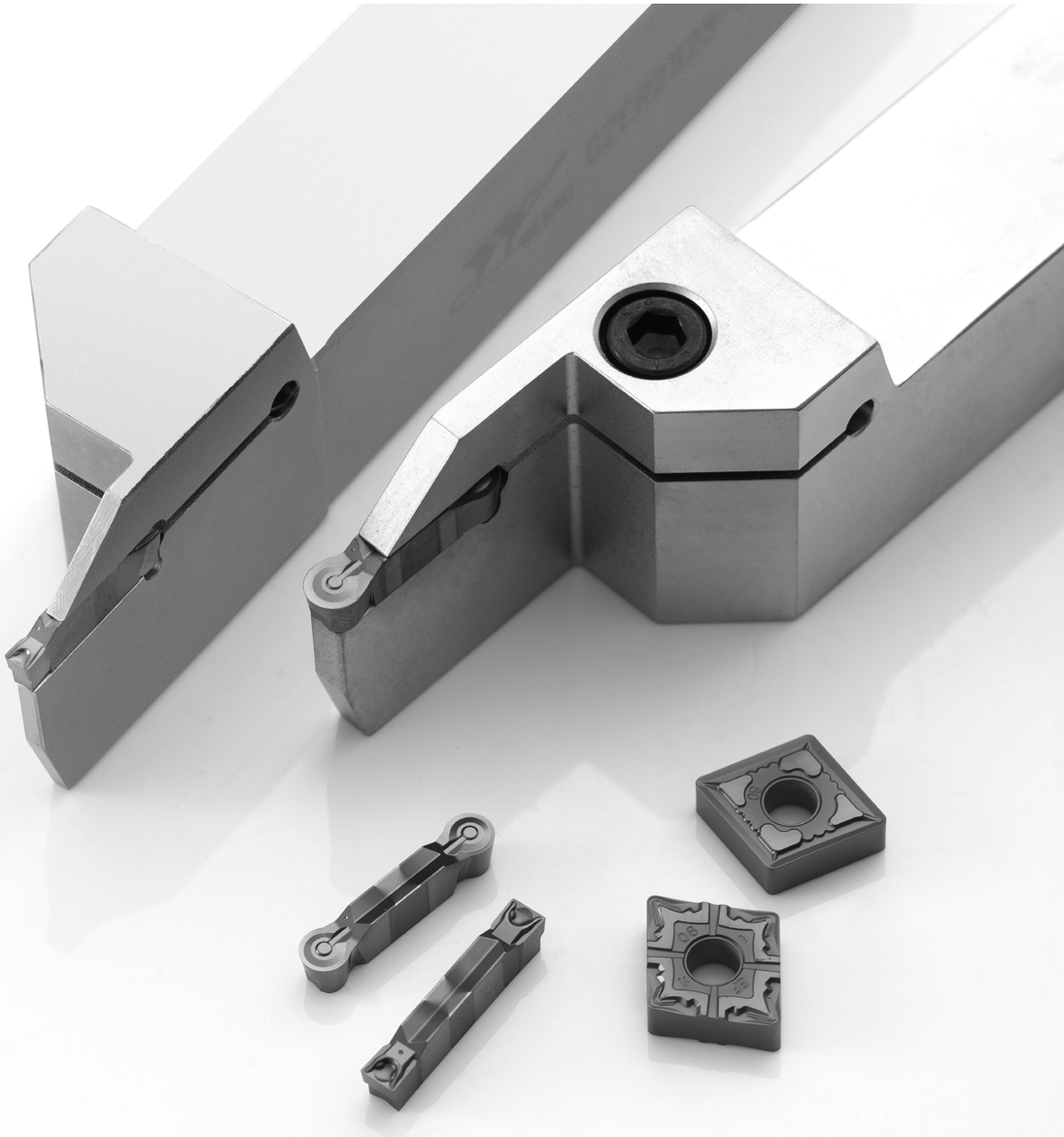
流道开粗
Roughing

- SN200系列刀具
  Series Endmills

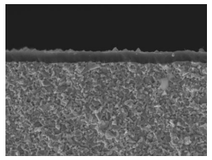
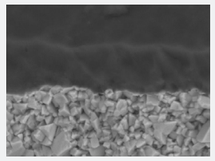
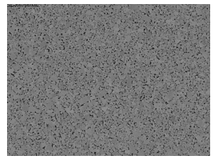


B

可转位车削刀具
Indexable Turning Cutters



车削刀片牌号简介
Grades of Turning Insert

牌号 Grade	加工类型 Turning Type	断面结构 Microstructure	特 点 Characteristics
GS3115	高温合金车削 Superalloy Turning		●采用亚微细晶粒硬质合金基体，具有优异的耐磨性和抗塑性变形能力，适用于中高速下高温合金或不锈钢的连续切削。 Micro-grain carbide substrate with excellent wear resistance and plastic deformation resistance, suitable for middle and high speed continuous cutting of stainless steel and HRSA.
GS3125	高温合金车削 Superalloy Turning		●高红硬性和抗塑性变形能力的基体，结合全新的高铝 TiAlN 涂层，赋予其优异的抗氧化性能和抗粘结磨损能力，适用于高温合金中等切削速度下的精到半精加工，同时也适用于部分钛合金的加工。 Substrate with excellent heat resistance and plastic deformation resistance, match new TiAlN coating get excellent oxidation resistance and adhesive wear resistance. Both suitable for middle speed cutting of HRSA and parts of titanium alloy.
GS9125	钛合金车削 Titanium alloy Turning		●钛合金通用加工的首选牌号，采用无涂层的细晶粒硬质合金基体，适用于钛合金的半精加工。 Recommended grade for general cutting of titanium alloy, fine grain carbide substrate without coating, and suitable for semi-finishing of titanium alloy.

高温合金普通车削刀具
HRSA Turning Inserts

EF槽型系列高温合金车削刀具
Geometry of Inserts

●适用于高温合金精加工切削。
Finishing of HRSA.
●采用独特前刀面设计，有效减小月牙湾磨损。
Special rake face can reduce the crater wear effectively.
●刀尖锋利，加工表面质量高。
Sharpen cutting edge can get high quality of the machined surface.
●曲线形切削刃使设计时排屑更顺畅，能极大的降低沟槽磨损。
Curved cutting edges make good chip control and reduce the groove wear.

EM槽型系列高温合金车削刀具
Geometry of Inserts

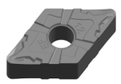
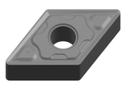
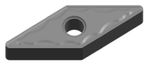
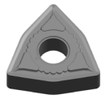
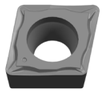
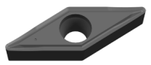
●适用于高温合金半精加工切削。
Semi-finishing of HRSA.
●采用双前角设计，可保证刀尖强度和切削锋利度。
Double rake angles design, keep the tool nose shape and strong.
●刀尖锋利，可保证刀具加工表面质量高。
Sharpen cutting edge can get high quality of the machined surface.
●独特的槽型设计，满足刀具不同切深和进给加工。
Unique groove design to meet different cutting depth and feed requirements.

ES槽型系列高温合金车削刀具
Geometry of Inserts

●刀尖锋利，切削力低，不易引起工件变形。
Sharpen cutting edge decreased the cutting force, which would cause the deformation of the workpiece.
●圆弧刃倾角设计便于切屑的排出，抑制毛刺产生，提高加工表面质量。
Arc cutting edge inclination is easy for chip flowing and burr controlling, improving the quality of the machined surface.
●刀尖前端断屑槽凸起设计可提高刀尖部的强度。
Heave at the chip breaker near the tool nose strengthen the nose.

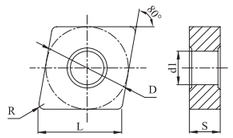
B 可转位车削刀具 Indexable Turning Cutters

刀片规格
Specifications

槽型 Groove	适用范围 Application	80°菱形 Diamond 80°	55°菱形 Diamond 55°	35°菱形 Diamond 35°	60°六边形 Hexagon 60°
EF	高温合金精加工用 Finishing of HRSA				
		CNMG-EF	DNMG-EF	VNMG-EF	
EM	高温合金半精加工用 Semi-finishing of HRSA				
		CNMG-EM	DNMG-EM	VNMG-EM	WNMG-EM
ES	高温合金精 - 半精加工用 Finishing/ Semi-finishing of HRSA				
		CCMT-ES		VBMT-ES VCGT-ES	

CNMG

菱形80°有孔
Diamond 80° with Hole

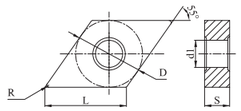


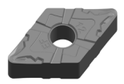
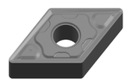
刀片外形 Shapes	刀片型号 Insert Type	尺寸 Dimension (mm)					牌号 Grade		
		L	D	S	d1	R	GS3115	GS3125	GS9125
	CNMG120408-EF	12.9	12.7	4.76	5.16	0.8	○	●	●
	CNMG120412-EF	12.9	12.7	4.76	5.16	1.2	○	●	●
	CNMG120404-EM	12.9	12.7	4.76	5.16	0.4	○	○	
	CNMG120408-EM	12.9	12.7	4.76	5.16	0.8	●	○	
	CNMG120412-EM	12.9	12.7	4.76	5.16	1.2	○	○	

●标准库存 Stock ○需预定 Available upon Order

DNMG

菱形55°有孔
Diamond 55° with Hole

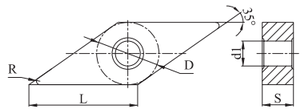


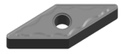
刀片外形 Shapes	刀片型号 Insert Type	尺寸 Dimension (mm)					牌号 Grade		
		L	D	S	d1	R	GS3115	GS3125	GS9125
	DNMG150408-EF	15.5	12.7	4.76	5.16	0.8	○	○	○
	DNMG150412-EF	15.5	12.7	4.76	5.16	1.2	○	○	○
	DNMG150608-EF	15.5	12.7	6.35	5.16	0.8	○	○	○
	DNMG150612-EF	15.5	12.7	6.35	5.16	1.2	○	○	○
	DNMG150408-EM	15.5	12.7	4.76	5.16	0.8	○	○	
	DNMG150412-EM	15.5	12.7	4.76	5.16	1.2	○	○	
	DNMG150608-EM	15.5	12.7	6.35	5.16	0.8	○	○	
	DNMG150612-EM	15.5	12.7	6.35	5.16	1.2	○	○	

●标准库存 Stock ○需预定 Available upon Order

VNMG

菱形35°有孔
Diamond 35° with Hole

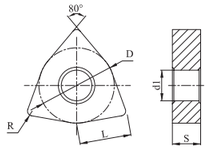


刀片外形 Shapes	刀片型号 Insert Type	尺寸 Dimension (mm)					牌号 Grade		
		L	D	S	d1	R	GS3115	GS3125	GS9125
	VNMG160408-EF	16.6	9.525	4.76	3.81	0.8	○	●	○
	VNMG160412-EF	16.6	9.525	4.76	3.81	1.2	○	●	○
	VNMG160404-EM	16.6	9.525	4.76	3.81	0.4	○	○	
	VNMG160408-EM	16.6	9.525	4.76	3.81	0.8	○	○	

●标准库存 Stock ○需预定 Available upon Order

WNMG

六边形80°有孔
Hexagon 80° with Hole

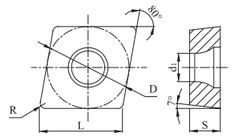


刀片外形 Shapes	刀片型号 Insert Type	尺寸 Dimension (mm)					牌号 Grade		
		L	D	S	d1	R	GS3115	GS3125	GS9125
	WNMG080408-EM	8.7	12.7	4.76	5.16	0.8	●	○	
	WNMG080412-EM	8.7	12.7	4.76	5.16	1.2	○	○	

●标准库存 Stock ○需预定 Available upon Order

CCMT

菱形80°有孔
Diamond 80° with Hole

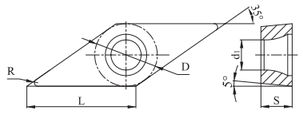


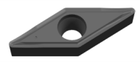
刀片外形 Shapes	刀片型号 Insert Type	尺寸 Dimension (mm)					牌号 Grade		
		L	D	S	d1	R	GS3115	GS3125	GS9125
	CCMT09T308-ES	9.7	9.525	3.97	4.4	0.8	○	○	

●标准库存 Stock ○需预定 Available upon Order

VBMT

菱形35°有孔
Diamond 35° with Hole

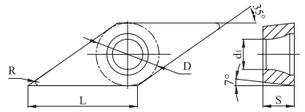


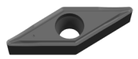
刀片外形 Shapes	刀片型号 Insert Type	尺寸 Dimension (mm)					牌号 Grade		
		L	D	S	d1	R	GS3115	GS3125	GS9125
	VBMT160404	16.6	9.525	4.76	4.6	0.4	○	○	
	VBMT160408	16.6	9.525	4.76	4.6	0.8	●	○	

●标准库存 Stock ○需预定 Available upon Order

VCGT

菱形35°有孔
Diamond 35° with Hole

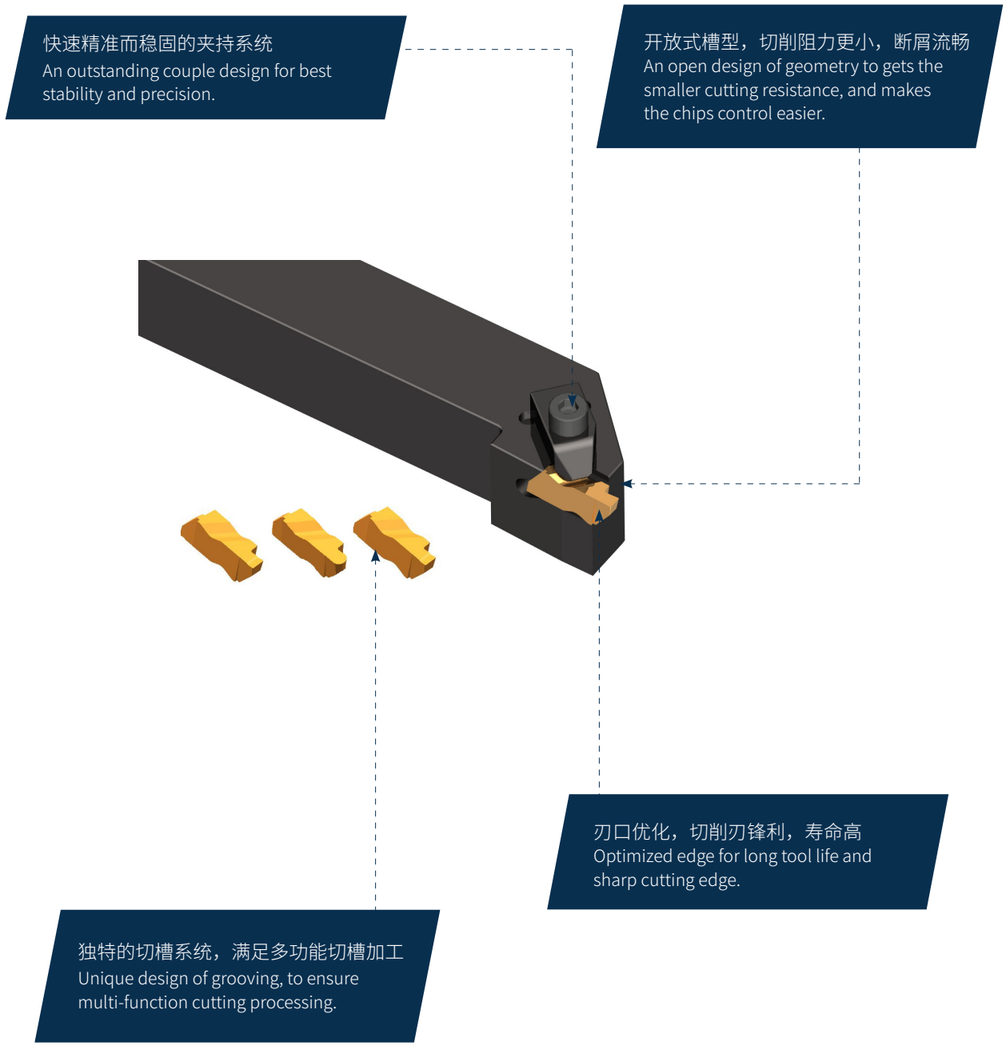


刀片外形 Shapes	刀片型号 Insert Type	尺寸 Dimension (mm)					牌号 Grade		
		L	D	S	d1	R	GS3115	GS3125	GS9125
	VCGT160404	16.6	9.525	4.76	4.6	0.4	○	○	
	VCGT160408	16.6	9.525	4.76	4.6	0.8	○	○	

●标准库存 Stock ○需预定 Available upon Order

切断与切槽刀具
Parting and Grooving Operations

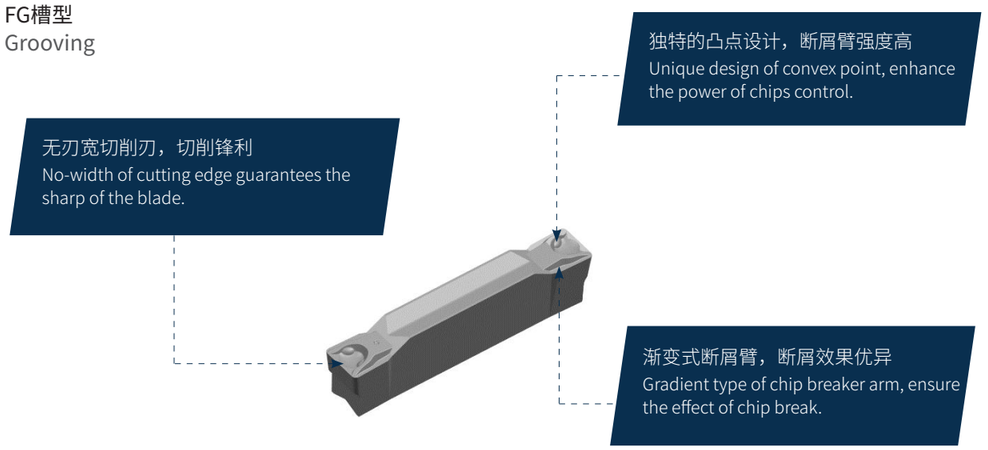
G-Notch系列高温合金切断切槽刀具
Series of Parting



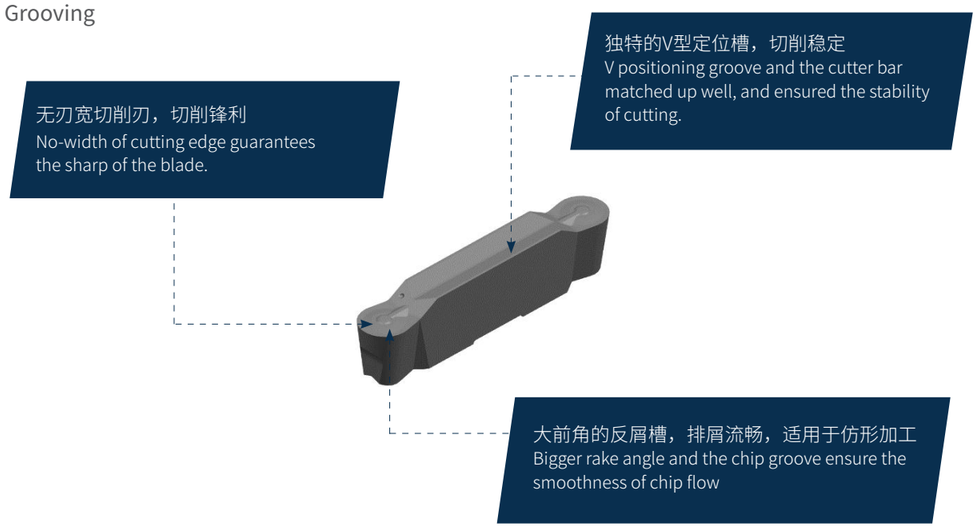
切断与切槽刀具
Parting and Grooving Operations

GZ系列高温合金切断切槽刀具
Series of Parting

FG槽型
Grooving



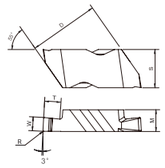
OR槽型
Grooving



B 可转位车削刀具 Indexable Turning Cutters

GNGP

切槽正前角刀片
Positive Rake Angle of Grooving

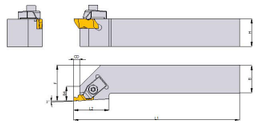


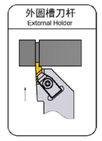
刀片外形 Shapes	刀片型号 Insert Type	尺寸 Dimensions(mm)						刀片 Inserts	牌号 Grade
		W	R	T	S	M	D		GS3115
	GNGP2M100L	1.00	0.09	1.27	5.56	3.81	8.74	2	●
	GNGP2M100R	1.00	0.09	1.27	5.56	3.81	8.74	2	●
	GNGP2M150L	1.50	0.19	2.79	5.56	3.81	8.74	2	●
	GNGP2M150R	1.50	0.19	2.79	5.56	3.81	8.74	2	●
	GNGP2M200L	2.00	0.19	2.79	5.56	3.81	8.74	2	●
	GNGP2M200R	2.00	0.19	2.79	5.56	3.81	8.74	2	●
	GNGP2M250L	2.50	0.19	2.79	5.56	3.81	8.74	2	●
	GNGP2M250R	2.50	0.19	2.79	5.56	3.81	8.74	2	●
	GNGP3M150R	1.5	0.19	2.39	8.74	4.95	16.1	3	●

●标准库存 Stock ○需预定 Available upon Order

GNSR/L

外圆刀杆
Cylindrical Cutter Bar



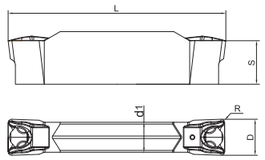


订货号 Ordering Code	尺寸 Dimension							匹配刀片 Insert	配件 Accessories			库存 Stock
	H	B	F	L1	L2	B4	CD		压板 Flat	螺钉 Screw	扳手 Spanner	
GNSR1616H2	16	16	20	100	19	9	3.5	GN.2R	720500762978	730109003291	720309000813	●
GNSR2020K2	20	20	25	125	19	9	3.5	GN.2R	720500762978	730109003291	720309000813	●
GNSR2525M2	25	25	32	150	19	9	3.5	GN.2R	720500762978	730109003291	720309000813	●
GNSR2020K3	20	20	25	125	32	13	5.3	GN.3R	720500762980	730109003295	720309000814	●
GNSR2525M3	25	25	32	150	32	13	5.3	GN.3R	720500762980	730109003295	720309000814	●
GNSL1616H2	16	16	20	100	19	9	3.5	GN.2L	720500762979	730109003291	720309000813	●
GNSL2020K2	20	20	25	125	19	9	3.5	GN.2L	720500762979	730109003291	720309000813	●
GNSL2525M2	25	25	32	150	19	9	3.5	GN.2L	720500762979	730109003291	720309000813	●
GNSL2020K3	25	20	25	125	32	13	5.3	GN.3L	720500762981	730109003295	720309000814	●
GNSL2525M3	25	25	32	150	32	13	5.3	GN.3L	720500762981	730109003295	720309000814	●

●标准库存 Stock ○需预定 Available upon Order

GZ-FG

切槽方头刀片
Square Grooving

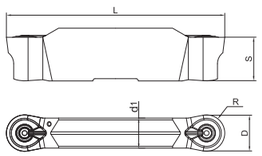


刀片外形 Shapes	刀片型号 Insert Type	尺寸 Dimension (mm)					牌号 Grade	
		L	D	S	d1	R	GS9125	GS3125
	GZD3002-FG	20.4	3	4.6	2.3	0.2	●	●
	GZD3004-FG	20.4	3	4.6	2.3	0.4	●	●
	GZD4002-FG	24	4	4.8	3.3	0.2	●	●
	GZD4004-FG	24	4	4.8	3.3	0.4	●	●
	GZD5002-FG	24	5	4.8	3.3	0.2	●	●
	GZD5004-FG	24	5	4.8	3.3	0.4	●	●
	GZD6002-FG	26	6	4.8	4.2	0.2	●	●
	GZD6004-FG	26	6	4.8	4.2	0.4	●	●

●标准库存 Stock ○需预定 Available upon Order

GZ-OR

切槽圆头刀片
Round Grooving

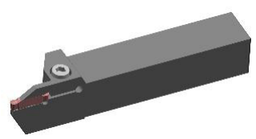


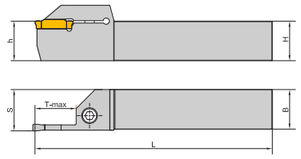
刀片外形 Shapes	刀片型号 Insert Type	尺寸 Dimension (mm)					牌号 Grade
		L	D	S	d1	R	GS3115
	GZD3015-OR	21	3	4.6	2.3	1.5	●
	GZD4020-OR	24	4	4.8	3.3	2.0	●
	GZD5025-OR	24	5	4.8	3.3	2.5	●
	GZD6030-OR	24	6	4.8	4.2	3.0	●

●标准库存 Stock ○需预定 Available upon Order

GZER/L

外圆刀杆
Cylindrical Cutter Bar





型号 Type	尺寸 Dimension (mm)					适用刀片 Insert	螺钉 Screw	扳手 Spanner
	H=(h)	B	L	S	T-max			
GZER/L2020-3T20	20	20	125	21	20	GZ 3 -	SCAM5X20	TH40L
GZER/L2525-3T20	25	25	150	26	20	GZ 3 -	SCAM6X20	TH50L
GZER/L3225-3T20	32	25	170	26	20	GZ 3 -	SCAM6X20	TH50L
GZER/L2020-4T25	20	20	125	21	25	GZ 4 - GZ 5 -	SCAM6X20	TH50L
GZER/L2525-4T25	25	25	150	26	25	GZ 4 - GZ 5 -	SCAM6X20	TH50L
GZER/L3225-4T25	32	25	170	26	25	GZ 4 - GZ 5 -	SCAM6X20	TH50L
GZER/L2525-6T32	25	25	150	26	32	GZ 6 -	SCAM6X20	TH50L
GZER/L3225-6T32	32	25	170	26	32	GZ 6 -	SCAM6X20	TH50L

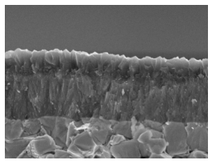
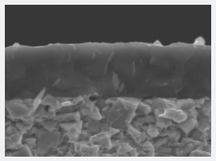
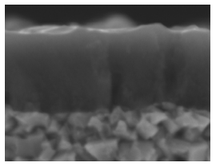
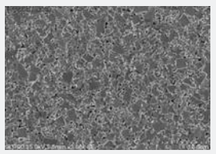
●标准库存 Stock ○需预定 Available upon Order

B 可转位车削刀具 Indexable Turning Cutters

Indexable Milling Cutters
可转位铣削刀具

C

铣削刀片牌号简介
Grades of Milling Insert

牌号 Grade	加工类型 Turning Type	断面结构 Microstructure	特 点 Characteristics
GM2140	不锈钢加工 Stainless Steel Milling		全面升级的 MT-TiCN+ Al2O3 涂层搭配高强度细晶硬质合金基体，兼备耐磨性、韧性及热稳定性，适用于不锈钢和高温合金的半精到粗加工铣削。 • The new upgrade MT-TiCN+Al2O3 coated on micro-grain carbide substrate of high strength, keeping greatly improved wear resistance, superior toughness and thermal stability. • Suitable for stainless steel and materials of difficult machinability under semi-finishing and rough condition.
GM4135	不锈钢加工 Stainless Steel Milling		最新 TiAlSiN 多层涂层搭配高强度细晶硬质合金基体，具有良好的耐磨性与韧性及热稳定性，适用于钢、不锈钢和钛合金等难加工材料的半精到粗加工铣削。 • The new TiAlSiN coatings on super micro-grain carbide，greatly improved wear resistance. • Suitable for semi-finishing to rough of steel materials.
GS4130	钛合金加工 Titanium Alloy Milling		最新 TiAlN 涂层与高韧性微细晶粒硬质合金基体结合，兼备良好的耐磨性与韧性，适用于钛合金等难加工材料的半精到粗加工铣削。 • The latest TiAlN coating on super micro-grain carbide substrate of superior toughness has high adhesion strength，excellent wear resistance and toughness. • Suitable for materials of difficult machinability such as titanium under semi-finishing and rough conditions
GN9125	铝合金加工 Aluminum Alloy Milling		无涂层细晶粒硬质合金牌号，良好的耐磨性能与韧性兼备，适合于铜、铝等有色金属的半精到粗加工。 • Uncoated cemented carbides grade for milling • Suitable for rough to semi-finishing of non-ferrous metals such as copper, aluminum, etc.

方肩铣和T型槽铣削刀具
Shoulder Milling& T Groove Milling

XDHT铝用方肩铣削刀具
Shoulder Milling for Aluminum Alloys

大前角设计，阻力小，切削轻快
Large rake angle，reduce cutting resistance

正型双后角设计，提高刃口强度
Double flank angle, enhance cutting edge strength

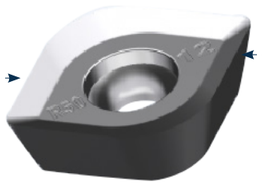
长切削刃设计，满足大切深加工工况
Long cutting edge design，satisfy the deep processing conditions

螺旋刃设计，在方肩铣削时达到真正的90°台阶
Helical cutting edge，achieve real 90°step at square shoulder milling

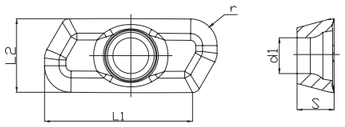
SDET铝用T型槽铣刀具
Groove Aluminum Alloy Milling

大前角、大刀尖圆弧设计，降低震颤，提高加工表面质量及加工稳定性
Large rake angle and large tip radius design，reduce vibration and achieve high quality surface and hign cutting stability

精准的周边磨削技术，保证零件加工精度
Accurate peripheral grinding technology，assure processing accuracy



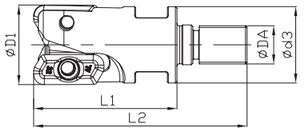
XDHT
铝用方肩铣刀片
Shoulder Milling Insert for Aluminum Alloy



订货号 Ordering Code		尺寸 Dimension (mm)				牌号 Grade
		L1	L2	S	r	GN9125
	XDHT190402FR-AL	19	9.50	4.76	0.2	●
	XDHT190404FR-AL	19	9.50	4.76	0.4	○
	XDHT190408FR-AL	19	9.50	4.76	0.8	●
	XDHT190412FR-AL	19	9.50	4.76	1.2	○
	XDHT190416FR-AL	19	9.50	4.76	1.6	○
	XDHT190420FR-AL	19	9.50	4.76	2.0	●
	XDHT190425FR-AL	19	9.50	4.76	2.5	○
	XDHT190432FR-AL	19	9.50	4.76	3.2	●
	XDHT190440FR-AL	19	9.50	4.76	4.0	●
	XDHT190450FR-AL	19	9.50	4.76	5.0	●

●标准库存 Stock ○需预定 Available upon Order

MEH190
螺纹式系列
Screw Thread Series

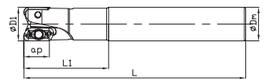


订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)					最大切深 Depth	匹配刀片 Inserts	配件 Accessories		库存 Stock
			ΦD1	ΦDA	Φd3	L1	L2	ap		螺钉 Screw	扳手 Spanner	
MEH190025R02M12XD19	25	2	25	M12	24	45	67	18	XDHT19 (R ⩽ 4)	PSI60M 040072	720300960290	●
MEA190032R03M16XD19	32	3	32	M16	29	52	75	18	XDHT19 (R ⩽ 4)	PSI60M 040078	720300960290	●
MEA190040R03M16XD19	40	3	40	M16	32	52	75	18	XDHT19 (R ⩽ 4)	PSI60M 040085	720300960290	●

●标准库存 Stock ○需预定 Available upon Order

MEH190

直柄式系列
Straight Shank Series

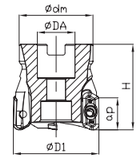


订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)				最大切深 Depth	匹配刀片 Inserts	配件 Accessories		库存 Stock
			ΦD1	Φdm	L	L1	ap		螺钉 Screw	扳手 Spanner	
MEH190025R02P25XD19	25	2	25	25	121	65	18	XDHT19 (R ⩽ 4)	PSI60M 040072	720300960290	○
MEH190025R02P25XD19A50	25	2	25	25	121	50	18	XDHT19 (R ⩽ 4)	PSI60M 040072	720300960290	○
MEH190025R02P25XD19A63	25	2	25	25	165	63	18	XDHT19 (R ⩽ 4)	PSI60M 040072	720300960290	○
MEH190032R02P32XD19	32	2	32	32	125	65	18	XDHT19 (R ⩽ 4)	PSI60M 040072	720300960290	○
MEH190032R02P32XD19A80	32	2	32	32	165	80	18	XDHT19 (R ⩽ 4)	PSI60M 040072	720300960290	○
MEH190032R03P32XD19	32	3	32	32	125	65	18	XDHT19 (R ⩽ 4)	PSI60M 040072	720300960290	○
MEH190032R03P32XD19A80	32	3	32	32	165	80	18	XDHT19 (R ⩽ 4)	PSI60M 040072	720300960290	○

●标准库存 Stock ○需预定 Available upon Order

MEH190

心轴式系列
Spindle Series

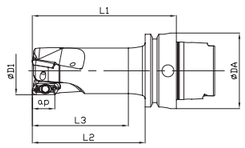


订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)				最大切深 Depth	匹配刀片 Inserts	配件 Accessories		库存 Stock
			ΦD1	Φdm	DA	H	ap		螺钉 Screw	扳手 Spanner	
MEH190040R03A16XD19	40	3	40	38	16	50	18	XDHT19 (R ⩽ 4)	PSI60M 040085	720300960290	●
MEH190050R04A22XD19	50	4	50	43	22	50	18	XDHT19 (R ⩽ 4)	PSI60M 040085	720300960290	●
MEH190063R04A22XD19	63	4	63	48	22	50	18	XDHT19 (R ⩽ 4)	PSI60M 040085	720300960290	●
MEH190063R05A22XD19	63	5	63	48	22	50	18	XDHT19 (R ⩽ 4)	PSI60M 040085	720300960290	○
MEH190080R04A27XD19	80	4	80	58	27	50	18	XDHT19 (R ⩽ 4)	PSI60M 040085	720300960290	○
MEH190080R05A27XD19	80	5	80	58	27	50	18	XDHT19 (R ⩽ 4)	PSI60M 040085	720300960290	○
MEH190100R04A32XD19	100	4	100	78	32	50	18	XDHT19 (R ⩽ 4)	PSI60M 040085	720300960290	○
MEH190100R05A32XD19	100	5	100	78	32	50	18	XDHT19 (R ⩽ 4)	PSI60M 040085	720300960290	○
MEH190125R05A40XD19	125	5	125	88	40	63	18	XDHT19 (R ⩽ 4)	PSI60M 040085	720300960290	○
MEH190125R06A40XD19	125	6	125	88	40	63	18	XDHT19 (R ⩽ 4)	PSI60M 040085	720300960290	○

●标准库存 Stock ○需预定 Available upon Order

MEH190

HSK接口式系列
HSK Series

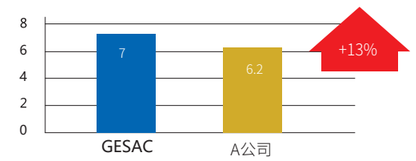


订货号 Ordering Code	接口 Match	刃数 Blades	尺寸 Dimension (mm)					最大切深 Depth	匹配刀片 Inserts	配件 Accessories		库存 Stock
			ΦD1	ΦDA	L1	L2	L3	ap		螺钉 Screw	扳手 Spanner	
MEH190025R02H63AXD19A50	HSK63A	2	25	63	90	64	50	18	XDHT19 (R ≤ 4)	PSI60M 040072	720300960290	○
MEH190025R02H63AXD19A63	HSK63A	2	25	63	100	74	63	18	XDHT19 (R ≤ 4)	PSI60M 040072	720300960290	○
MEH190032R02H63AXD19A63	HSK63A	2	32	63	100	74	63	18	XDHT19 (R ≤ 4)	PSI60M 040072	720300960290	○
MEH190032R02H63AXD19A80	HSK63A	2	32	63	120	94	80	18	XDHT19 (R ≤ 4)	PSI60M 040072	720300960290	○
MEH190032R03H63AXD19A63	HSK63A	3	32	63	100	74	63	18	XDHT19 (R ≤ 4)	PSI60M 040072	720300960290	○
MEH190032R03H63AXD19A80	HSK63A	3	32	63	120	94	80	18	XDHT19 (R ≤ 4)	PSI60M 040072	720300960290	○
MEH190040R03H63AXD19A63	HSK63A	3	40	63	100	74	63	18	XDHT19 (R ≤ 4)	PSI60M 040072	720300960290	○
MEH190040R03H63AXD19A80	HSK63A	3	40	63	120	94	80	18	XDHT19 (R ≤ 4)	PSI60M 040072	720300960290	○
MEH190050R03H63AXD19A100	HSK63A	3	50	63	140	114	100	18	XDHT19 (R ≤ 4)	PSI60M 040072	720300960290	○

●标准库存 Stock ○需预定 Available upon Order

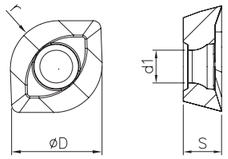
XDHT 系列加工肋板
Machining of Ribbed Plate

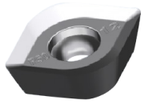
刀具型号 Type	XDHT190432FR-AL-GN9125 MXH190-040R03H63A-XD19
刀杆规格 Size	D40*R3.2*120*3Z
加工材料 Workpiece	7050
切削速度 Cutting Speed	13300rpm (1670m/min)
进给速度 Feedrate	10500mm/min(0.26mm/z)
切削方式 Cutting Method	型腔加工 Cavity Milling
切深量 Cutting Depth	ap=24 mm，ae=1mm
冷却方式 Cooling Method	乳化液、内冷 Emulsion、Inner Cooling



SDET

铝用T型槽铣刀片
T Groove Milling Insert for Aluminum Alloy

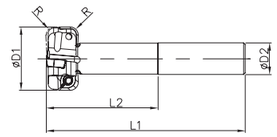


刀片外形 Shapes	刀片型号 Insert Type	尺寸 Dimension (mm)			牌号 Grade
		D	S	r	GN9125
	SDET09T350	9.525	3.97	5.0	○
	SDET120430	13.3	4.96	3.0	○
	SDET120450	13.3	4.96	5.0	○
	SDET120460	13.3	4.96	6.0	○
	SDET150560	16.475	5.76	6.0	○

●标准库存 Stock ○需预定 Available upon Order

MSA/MST

直柄式系列
Straight Shank Series



订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)					最大切深 Depth	匹配刀片 Inserts	配件 Accessories		库存 Stock
			ΦD1	ΦD2	L1	L2	R	ap		螺钉 Screw	扳手 Spanner	
MSA190040R04P25SD09	40	4	40	25	125	70	5	15	SDET09	PSI60M030072	720300960237	○
MSA190070R06P25SD09	70	6	70	25	125	70	5	15	SDET09	PSI60M030072	720300960237	○
MSA190075R06P25SD09	75	6	75	25	120	65	5	20	SDET09	PSI60M030072	720300960232	○
MST520040R04P25SD12	40	4	40	20	125	70	5	20	SDET12	PSI60M040085	720300960232	○
MST320040R04P20SD12	40	4	40	20	125	70	3	20	SDET12	PSI60M040085	720300960232	○
MST320045R04P25SD12	45	4	45	25	100	50	3	20	SDET12	PSI60M040085	720300960232	○
MST320065R06P25SD12	65	6	65	25	110	50	3	20	SDET12	PSI60M040085	720300960232	○
MST620065R06P20SD12	65	6	65	20	130	70	6	20	SDET12	PSI60M040085	720300960232	○
MST620065R06P25SD12	65	6	65	25	130	70	6	20	SDET12	PSI60M040085	720300960232	○
MST118050R04P25SD12	50	4	50	25	125	70	5	18	SDET12	PSI60M040085	720300960232	○
MST125065R04P25SD15	65	4	65	25	125	70	6	25	SDET15	PSI60M050130	720300960520	○

●标准库存 Stock ○需预定 Available upon Order

圆刀片系列仿形铣削刀具
Round Insert Milling Tools

大正前角设计，切削效率高
Positive rake angle design make cutting easier.

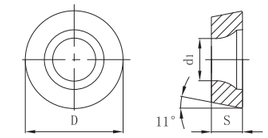
特殊定位结构设计，加工稳定性强
Special positioning structure and high processing stability.

切削刃强度高
High cutting edge strength.

全新基体材质，耐磨性高，通用性好
New carbide substrate，high wear resistance and good universality.

RP系列
RP Series

圆刀片
Round Inserts

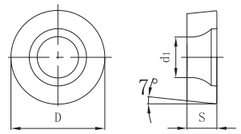


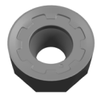
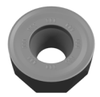
刀片外形 Shapes	刀片型号 Insert Type	尺寸 Dimension (mm)			牌号 Grade		
		D	S	d1	GM2140	GM4135	GS4130
	RPET08T2M0-GM	8	2.78	2.94	○	○	○
	RPMT1003M0T-GM	10	3.97	4.4	○	○	○
	RPMT10T3M0-GM	10	3.97	4.4	○	○	○
	RPMT1204M0-GM	12	4.76	4.4	○	○	○
	RPET1204M0-MM	12	4.76	4.4	○	●	○
	RPMX10T3M0-KM	10	3.97	3.9	○	●	○
	RPMT1204M0T-KM	12	4.76	4.4	○	●	○
	RPET1606M0-SM	16	6.35	5.5	○	●	○

●标准库存 Stock ○需预定 Available upon Order

RC系列
RC Series

圆刀片
Round Inserts



刀片外形 Shapes	刀片型号 Insert Type	尺寸 Dimension (mm)			牌号 Grade		
		D	S	d1	GM2140	GM4135	GS4130
	RCET10T3M0-EM	10	3.97	4.4	○	○	○
	RCET1606M0-EM	16	6.35	5.5	○	○	○
	RCMT1606M0T-KM	16	6.35	5.5	○	●	○

●标准库存 Stock ○需预定 Available upon Order

MPB100

心轴式系列
Spindle Series

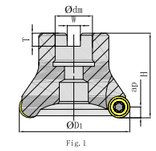


Fig. 1

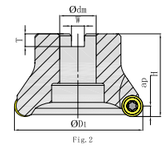


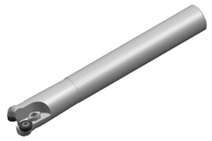
Fig. 2

订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)					最大切深 Depth	匹配刀片 Inserts	图示 Shape	库存 Stock
			ΦD1	Φdm	H	W	T				
MPB100040R05A16RP08	40	5	40	16	40	8.4	6.3	4	RP**08T2	Fig1	○
MPB100040R04A16RP10	40	4	40	16	40	8.4	6.3	5	RP**1003	Fig1	○
MPB100050R04A22RP10	50	4	50	22	50	10.4	6.3	5	RP**1003	Fig1	○
MPB100050R04A22RP12	50	4	50	22	50	10.4	6.3	6	RP**1204	Fig1	○
MPB100063R05A22RP12	63	5	63	22	50	10.4	6.3	6	RP**1204	Fig1	○
MPB100063R04A22RP16	63	4	63	22	40	10.4	6.3	8	RP**1606	Fig1	○
MPB100080R06B27RP16	80	6	80	27	50	12.4	7	8	RP**1606	Fig2	○
MPB100100R07B32RP16	100	7	100	32	50	14.4	8	8	RP**1606	Fig2	○
MPB100125R08B40RP16	125	8	125	40	63	16.4	9	8	RP**1606	Fig2	○

●标准库存 Stock ○需预定 Available upon Order

MPB100

圆柱直柄式系列
Cylindrical Straight Shank Series



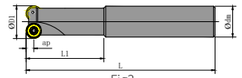


Fig3

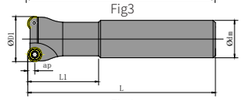


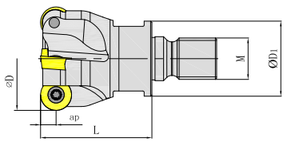
Fig4

订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)				最大切深 Depth	匹配刀片 Inserts	图示 Shape	库存 Stock
			ΦD1	Φdm	L	L1				
MPB100016R02P16RP08S	16	2	16	16	120	40	4	RP**08T2	Fig3	○
MPB100016R02P16RP08	16	2	16	16	160	60	4	RP**08T2	Fig3	○
MPB100020R02P20RP08	20	2	20	20	160	60	4	RP**08T2	Fig3	○
MPB100025R03P25RP08	25	3	25	25	160	60	4	RP**08T2	Fig3	○
MPB100020R02P20RP10	20	2	20	20	160	50	5	RP**1003	Fig3	○
MPB100025R02P20RP10	25	2	25	20	160	50	5	RP**1003	Fig4	○
MPB100025R02P20RP10L	25	2	25	20	200	50	5	RP**1003	Fig4	○
MPB100025R02P25RP12	25	2	25	25	160	50	6	RP**1204	Fig3	○
MPB100032R02P25RP12	32	2	32	25	160	50	6	RP**1204	Fig4	○
MPB100032R02P25RP12L	32	2	32	25	200	50	6	RP**1204	Fig4	○
MPB100040R02P32RP16	40	2	40	32	200	80	8	RP**1606	Fig4	○

●标准库存 Stock ○需预定 Available upon Order

MPB100

螺纹式系列
Screw Thread Series

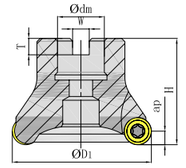


订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)				最大切深 Depth	匹配刀片 Inserts	库存 Stock
			ΦD	ΦD1	L	M			
MPB100025R02M12RP12	25	2	25	21	35	12	6	RP**1204	○
MPB100032R02M16RP12	32	2	32	29	43	16	6	RP**1204	○
MPB100032R03M16RP12	32	3	32	29	43	16	6	RP**1204	○
MPB100040R03M16RP12	40	3	40	29	43	16	6	RP**1204	○
MPB100040R04M16RP12	40	4	40	29	43	16	6	RP**1204	○
MPB100042R04M16RP12	42	4	40	29	43	16	6	RP**1204	○

●标准库存 Stock ○需预定 Available upon Order

MPT100

心轴式系列
Spindle Series

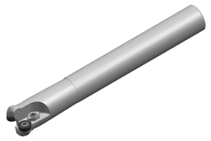


订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)					最大切深 Depth	匹配刀片 Inserts	库存 Stock
			ΦD1	Φdm	H	W	T			
MPT100040R04A16RP10	40	5	40	16	40	8.4	6.3	5	RPMX10T3	○
MPT100050R04A22RP10	50	4	50	22	50	10.4	6.3	5	RPMX10T3	○
MPT100050R06A22RP10	50	6	50	22	50	10.4	6.3	5	RPMX10T3	○
MPT100063R06A27RP10	50	6	63	27	50	12.4	7	5	RPMX10T3	○

●标准库存 Stock ○需预定 Available upon Order

MPT100

圆柱直柄式系列
Cylindrical Straight Shank Series



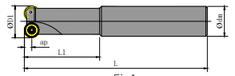


Fig1

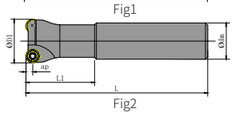


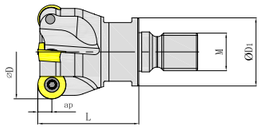
Fig2

订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)				最大切深 Depth	匹配刀片 Inserts	图示 Shape	库存 Stock
			ΦD1	Φdm	L	L1				
MPT100020R02P20RP10	20	2	20	20	160	50	5	RPMX10T3	Fig1	○
MPT100020R02P20RP10L	20	2	20	20	200	50	5	RPMX10T3	Fig1	○
MPT100025R02P20RP10	25	2	25	20	160	50	5	RPMX10T3	Fig2	○
MPT100025R02P25RP10	25	2	25	25	160	50	5	RPMX10T3	Fig1	○
MPT100025R02P25RP10L	25	2	25	25	200	50	5	RPMX10T3	Fig1	○
MPT100025R03P25RP10	25	3	25	25	160	50	5	RPMX10T3	Fig1	○
MPT100032R03P32RP10	32	3	32	32	160	50	5	RPMX10T3	Fig1	○
MPT100032R04P32RP10	32	4	32	32	160	50	5	RPMX10T3	Fig1	○

●标准库存 Stock ○需预定 Available upon Order

MPT100

螺纹式系列
Screw Thread Series

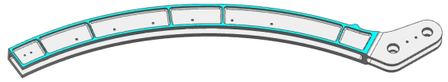


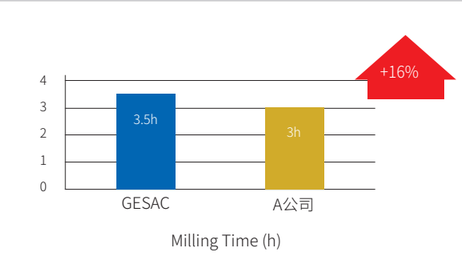
订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)				最大切深 Depth	匹配刀片 Inserts	库存 Stock
			ΦD	ΦD1	L	M			
MPT100020R02M10RP10	20	2	20	18	30	10	5	RPMX10T3	○
MPT100025R02M12RP10	25	2	25	21	35	12	5	RPMX10T3	○
MPT100025R03M12RP10	25	3	25	21	35	12	5	RPMX10T3	○
MPT100032R03M16RP10	32	3	32	29	43	16	5	RPMX10T3	○
MPT100032R04M16RP10	32	4	32	29	43	16	5	RPMX10T3	○

●标准库存 Stock ○需预定 Available upon Order

钛合金滑轨满槽铣削加工
Titanium Track Milling

刀片型号 Insert Type	RPMT1204M0T-KM-GM4135
加工材料 Material	TC18
切削速度 Cutting Speed	32m/min
进给速度 Feed Speed	200mm/min
切削方式 Method	满槽铣削 Full groove milling
切削量 Cutting Parameter	ap=1.5mm，ae=32mm
冷却方式 Cooling	外冷（水乳冷却） Water emulsion cooling



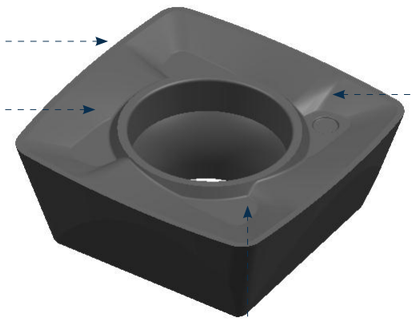


快进给铣削刀具
High Feed Milling Tools

4刃快进给系列钛合金铣削刀具
4-Edge High Feed Milling Tools for Titanium

4条切削刃，实现经济型高效铣削
4 cutting edges, realize economical and efficient milling.

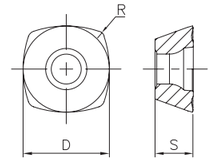
曲线刃设计，刀刃锋利且强度高
The unique design ensures the sharpness and strength of the cutting edge.



渐变式前角设计，降低切削温度、摩擦阻力
Tapered front angle design make cutting easier.

独特排屑槽设计，减少积屑阻力，延长寿命
The unique chip removal slot decreases the accumulation, and makes the process safe and stable.

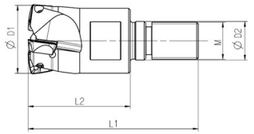
SDMT
快进给刀片
Hight Feed Insert Series



刀片外形 Shapes	刀片型号 Insert Type	尺寸 Dimension (mm)			牌号 Grade		
		D	S	R	GS4130	GM2140	GM4135
	SDMT09T307-SM	9	3.50	0.7	●	●	●
	SDMT120512-SM	12.7	5.56	1.2	○	○	●
	SDMT09T320-SL	9.525	3.97	2	●	●	○

●标准库存 Stock ○需预定 Available upon Order

MKM113
螺纹式系列
Screw Thread Series

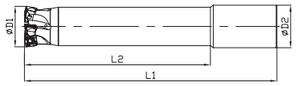


订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)					匹配刀片 Inserts	配件 Accessories		库存 Stock
			ΦD1	ΦD2	L1	L2	M		螺钉 Screw	扳手 Spanner	
MKM113025R03M12SD09	25	3	25	12.5	33	55	12	SDMT09-SM	PSI60M030072-04210ISXD	PTI09PSXD	●
MKM113032R04M16SD09	32	4	32	17	40	63	16	SDMT09-SM	PSI60M030072-04210ISXD	PTI09PSXD	●
MKM113035R05M16SD09	35	5	35	17	40	63	16	SDMT09-SM	PSI60M030072-04210ISXD	PTI09PSXD	●

●标准库存 Stock ○需预定 Available upon Order

MKM113

直柄式系列
Straight Shank Series

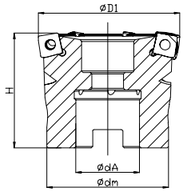


订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)					匹配刀片 Inserts	配件 Accessories		库存 Stock
			ΦD1	ΦD2	L1	L2	M		螺钉 Screw	扳手 Spanner	
MKM113025R03P25SD09	25	3	25	25	110	60	—	SDMT09-SM	PSI60M030072-04210ISXD	PTI09PSXD	○
MKM113032R04P32SD09	32	4	32	32	132	80	—	SDMT09-SM	PSI60M030072-04210ISXD	PTI09PSXD	●
MKM113035R05P32SD09	35	5	35	32	190	140	—	SDMT09-SM	PSI60M030072-04210ISXD	PTI09PSXD	○

●标准库存 Stock ○需预定 Available upon Order

MKM213

心轴式系列
Spindle Series

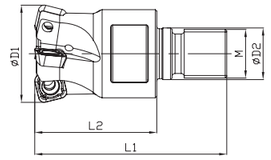


订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)					匹配刀片 Inserts	配件 Accessories		库存 Stock
			ΦD1	Φdm	ΦdA	H	M		螺钉 Screw	扳手 Spanner	
MKM213040R05A16SD09	40	5	40	35	16	40	—	SDMT09-SM	PSI60M030072-04210ISXD	PTI09PSXD	○
MKM213050R06A22SD09	50	6	50	42	22	40	—	SDMT09-SM	PSI60M030072-04210ISXD	PTI09PSXD	●
MKM213063R08A22SD09	63	8	63	52	22	40	—	SDMT09-SM	PSI60M030072-04210ISXD	PTI09PSXD	○
MKM213052R05A22SD12	52	5	52	42	22	40	—	SDMT12-SM	PSI60M040085-05514ISXD	PTI15PSXD	●

●标准库存 Stock ○需预定 Available upon Order

MKL113

螺纹式系列
Screw Thread Series

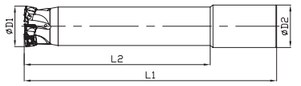


订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)					匹配刀片 Inserts	配件 Accessories		库存 Stock
			ΦD1	ΦD2	L1	L2	M		螺钉 Screw	扳手 Spanner	
MKL113025R02M12SD09	25	2	25	12.5	58	36	12	SDMT09-SL	PSI60M035076-04808ISXD	PTI10PSXD	○
MKL113032R04M16SD09	32	4	32	17	63	40	16	SDMT09-SL	PSI60M035076-04808ISXD	PTI10PSXD	○
MKL113035R04M16SD09	35	4	35	17	63	40	16	SDMT09-SL	PSI60M035076-04808ISXD	PTI10PSXD	○

●标准库存 Stock ○需预定 Available upon Order

MKL113

直柄式系列
Straight Shank Series

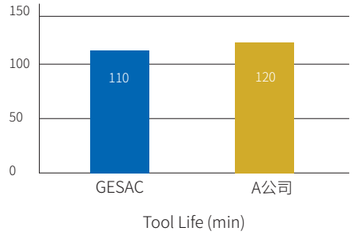


订货号 Ordering Code	直径 Diameter	刃数 Blades	尺寸 Dimension (mm)					匹配刀片 Inserts	配件 Accessories		库存 Stock
			ΦD1	ΦD2	L1	L2	M		螺钉 Screw	扳手 Spanner	
MKL113025R02P25SD09	25	2	25	25	110	60	—	SDMT09-SL	PSI60M035076-04808ISXD	PTI10PSXD	○
MKL113032R04P32SD09	32	4	32	32	192	140	—	SDMT09-SL	PSI60M035076-04808ISXD	PTI10PSXD	●
MKL113035R04P32SD09	35	5	35	32	192	140	—	SDMT09-SL	PSI60M035076-04808ISXD	PTI10PSXD	○

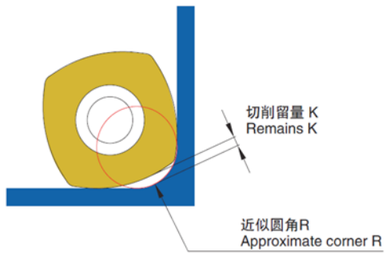
●标准库存 Stock ○需预定 Available upon Order

钛合金滑轨满槽铣削加工
Titanium track milling

刀片型号 Insert Type	SDMT09T307-SM-GS4130
加工材料 Material	TC18
切削速度 Cutting Speed	V=35m/min
进给速度 Feed Speed	F=1800mm/min
切削方式 Method	腔铣削 Cavity
切削量 Cutting Parameter	ap=0.5mm, ae=30mm
冷却方式 Cooling	外冷(水乳冷却) Emulsion
刀具寿命 Tool Life	110min



CNC编程-刀尖半径参数
CNC Programming Tip radius parameter



刀片规格 Insert	近似编程圆角 Approximate Round Corner R(mm)	切削残留量 Remains K(mm)
SDMT09T307-SM	1.7	0.8
SDMT09T320-SL	2.8	1.0

标记说明
Guidelines to Icons

标示		说明
柄部形状 Shank	SHANK h5	ISO 标准柄部 ISO Standard Shank
	SHANK h6	ISO 标准柄部 ISO Standard Shank
涂层 Coating	AlCrN	AlCrN涂层 AlCrN Coating
	AlCrSiN	AlCrSiN涂层 AlCrSiN Coating
	TiAlN	TiAlN涂层 TiAlN Coating
	AlTiN nano	AlTiN纳米涂层 Nano Coating AlTiN
	AlCrN/ TiSiN	AlCrN/TiSiN多层 AlCrN/TiSiN Coating
	AlTiN/ TiSiN	AlTiN/TiSiN纳米多层 Nano Coating AlTiN/ TiSiN
	TiAlCrSiN	TiAlCrSiN
	N-DIA	粗晶金刚石涂层 Normal Diamond Coating
	U-DIA	超细晶金刚石涂层 Ultra-Fine Grain Diamond Coating
切削方式 Cutting Condition		侧铣 For Side Milling
		For Slotting 槽铣
		仿形切削 For Profile Milling
螺旋角 Helix	-20° Helix	左20°螺旋角 -20° Helix
	15° Helix	15°螺旋角 15° Helix
	20° Helix	20°螺旋角 20° Helix

标示		说明
螺旋角 Helix	28° Helix	28°螺旋角 28° Helix
	30° Helix	30°螺旋角 30° Helix
	35° Helix	35°螺旋角 35° Helix
	40° Helix	40°螺旋角 40° Helix
	45° Helix	45°螺旋角 45° Helix
	28°/30° Helix	双螺旋角 Variable Helix
	15°/40° Helix	双螺旋角 Variable Helix
	35°/38° Helix	双螺旋角 Variable Helix
	36°/39° Helix	双螺旋角 Variable Helix
	47°/45°/43° Helix	不等螺旋角 Variable Helix
刃数 No.of Flutes	1	1 刃立铣刀 1 Flute Endmills
	2	2 刃立铣刀 2 Flute Endmills
	3	3 刃立铣刀 3 Flute Endmills
	4	4 刃立铣刀 4 Flute Endmills
	5	5 刃立铣刀 5 Flute Endmills
	6	6 刃立铣刀 6 Flute Endmills
	12	12 刃立铣刀 12 Flute Endmills

标示		说明
底刃形状 Endteeth Type	Square	平头 Square
	Corner-R	圆角头 Corner Radius
	Ballnose	球头 Ballnose
	Chamfer	刀尖倒角 Square with Chamfer
工件材料 Workpiece Material	P	钢 Steels
	M	不锈钢 Stainless Steels
	K	铸铁 Cast Iron
	N	非铁材料 Non-ferrous Materials
	S	高温合金、钛合金 Heat-resistant Super Alloys, Titanium Alloys
	H	高硬度材料 High Hardened Materials

刀具系列目录（按系列）

Drills Index -Tool Series

适用加工材料 Workpiece Material	刃数 No.of Flutes	底刃形状 Endteeth Type	涂层 Coating	刀具名称及外形 Description	系列型号 Type	尺寸范围 Diameter Range	尺寸表页码 Dimension Page	切削参数页 Cutting Parameters Page		工件材料 Workpiece Material												
										P		M	K	N			S		H			
										1234	56	123	123	123	4	5	123	4	12	34	5	
										碳钢 合金钢 Carbon Steel,Alloy	合金钢 Alloy Steel	不锈钢 Stainless Steel	铸铁 Cast Iron	铝合金 Aluminium Alloys	铜合金 Copper Alloys	石墨、复合材料 Graphite, Composite Materials	高温合金 Heat Resistant Super Alloys	钛合金 Titanium Alloys	高硬钢 Hardened Steel	高硬钢 Hardened Steel	高硬钢 Hardened Steel 淬硬钢 Hardened Steels	
										＜35HRC	＜48HRC		＜35HRC						45-55HRC	55-65HRC	＞65HRC	
铝合金 Aluminium Alloy	SA210 航空铝合金高效加工立铣刀 High Efficiency Endmill for Aluminium Alloy																					
	3	Corner-R		3 刃长颈圆角头 3 Flutes Corner Radius with Reduced Neck	SA210-BW	D12~D25	54	56						◎	◎							
	3	Corner-R		3 刃长颈圆角头 3 Flutes Corner Radius with Reduced Neck	SA210-HF	D8~D20	55	56						◎	◎							
	SA300 航空铝合金高速加工立铣刀 High Speed Endmills for Aluminium Alloy																					
	2	Corner-R		2 刃长颈圆角头 2 Flutes Corner Radius with Reduced Neck	SA300-RN2	D6~D25	58	60						◎	◎							
	3	Corner-R		3 刃长颈圆角头 3 Flutes Corner Radius with Reduced Neck	SA300-RN3	D6~D32	59	61						◎	◎							
钛合金 Titanium Alloy	ST210 钛合金高性能加工立铣刀 High Performerce Endmills for Titanium Alloys																					
	4	Square	AlCrN	4 刃平头 4 Flutes Square	ST210-S4	D2~D20	63	71		○	○	◎					○	◎				
	4	Corner-R	AlCrN	4 刃圆角头 4 Flutes Corner Radius	ST210-R4	D2~D20	65	71		○	○	◎					○	◎				
	4	Corner-R	AlCrN	4 刃长颈圆角头 4 Flutes Corner Radius with Reduced Neck	ST210-RN4	D12~D25	68	71		○	○	◎					○	◎				
	5	Corner-R	AlCrN	5 刃长刃圆角头 5 Flutes Corner Radius with Long Cutter	ST210-RL5	D16~D25	70	72		○	○	◎					○	◎				
	4	Ballnose	AlCrN	4 刃球头 4 Flutes Ball Nose	ST210-B4	D2~D16	69	72		○	○	◎					○	◎				
	ST300 钛合金高效加工立铣刀 High Efficiency Endmill for Titanium Alloys																					
	4	Corner-R	AlCrN	4 刃长颈圆角头 4 Flutes Corner Radius with Reduced Neck	ST300-RN4	D12~D20	74	76		○	○	◎					○	◎				
	5	Corner-R	AlCrN	5 刃长颈圆角头 5 Flutes Corner Radius with Reduced Neck	ST300-RN5	D16~D25	75	77		○	○	◎					○	◎				

◎ 非常适合 Most Suitable ○ 适合 Suitable

刀具系列目录（按系列）
Drills Index -Tool Series

适用加工材料 Workpiece Material	刃数 No.of Flutes	底刃形状 Endteeth Type	涂层 Coating	刀具名称及外形 Description	系列型号 Type	尺寸范围 Diameter Range	尺寸表页码 Dimension Page	切削参数页 Cutting Parameters Page		工件材料 Workpiece Material											
										P		M	K	N			S		H		
										1234	56	123	123	123	4	5	123	4	12	34	5
										碳钢 合金钢 Carbon Steel,Alloy	合金钢 Alloy Steel	不锈钢 Stainless Steel	铸铁 Cast Iron	铝合金 Aluminium Alloys	铜合金 Copper Alloys	石墨、复合材料 Graphite, Composite Materials	高温合金 Heat Resistant Super Alloys	钛合金 Titanium Alloys	高硬钢 Hardened Steel	高硬钢 Hardened Steel	高硬钢 Hardened Steel 淬硬钢 Hardened Steels
										＜35HRC	＜48HRC		＜35HRC						45-55HRC	55-65HRC	＞65HRC
高强度钢 High strength steels	SS600 高强度钢加工立铣刀 Endmill for High strength steels																				
	4	Square	AlTiN	4 刃平头 4 Flutes Square	SS600-S4	D4 ～ D20	79	82		◎	◎	◎	◎				○	◎			
	4	Corner-R	AlTiN	4 刃圆角头 4 Flutes Corner Radius	SS600-R4	D4 ～ D20	80	82		◎	◎	◎	◎				○	◎			
	4	Ballnose	AlTiN	4 刃球头 4 Flutes Ball Nose	SS600-B4	R3 ～ R10	81	83		◎	◎	◎	◎				○	◎			
高温合金 Heat Resistant Super Alloys	SN200 高性能高温合金加工系列 High Performerce Endmill for HRSA																				
	4	Corner-R	AlTiN	4 刃圆角头 4 Flutes Corner Radius	SN200-R4	D6~D18	85	87		○	○	◎					◎	◎			
	4	Ballnose	AlTiN	4 刃球头 4 Flutes Ball Nose	SN200-B4	D6~D16	86	88		○	○	◎					◎	◎			
难加工材料 Difficult-to-machine Material	STB200 锥度球头刀加工系列 Taper ball nose series																				
	4	Ballnose	AlTiN	4 刃锥度球头立铣刀 4 Flutes Taper Ball Nose	STB200-F4	R1.5~R5	90	92		○	○	◎					◎	◎			
复合材料 Composite Material	SD200 高性能复合材料加工系列 High Performance Endmill for Composite																				
		Square	U-DIA	右旋菱齿 Right-hand Helix,Fine-cross-nick	SD200-KDA	D2~D12	94	99								◎						
		Square	U-DIA	直槽菱齿 Without helix, Fine-cross-nick	SD200-KDB	D4~D12	95	99								◎						
		Square	U-DIA	左旋菱齿 Left-hand Helix,Fine-cross-nick	SD200-KDC	D4~D12	96	99								◎						
	2	Square	U-DIA	2 刃 人字形立铣刀 2 Flutes Herringbone	SD200-JD2	D4~D12	97	100								◎						
	4	Square	U-DIA	4 刃 人字形立铣刀 4 Flutes Herringbone	SD200-JD4	D4~D12	98	100								◎						
	SD300 高性能复合材料加工系列 High Performance PCD Endmill for Composite																				
	2	Square		2 刃 铣刀 2 Flutes Endmill	SD300-GD9900	D2~D20	102	103						◎	◎	◎		○				

◎ 非常适合 Most Suitable ○ 适合 Suitable

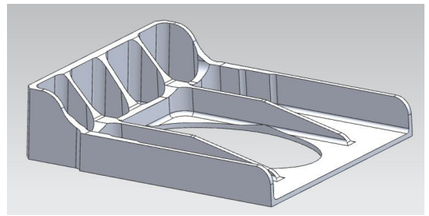
SA210系列铝合金高效加工立铣刀
High Efficiency Endmills for Aluminum Alloys

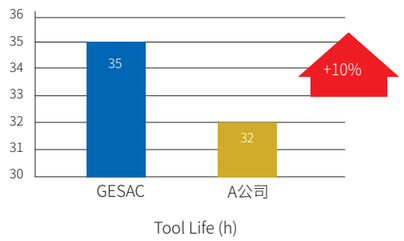
SA210-BW高速型
High Speed Type

- 适合铝合金材料加工的波浪齿型设计。
Wavy tooth design, suitable for aluminum alloy machining.
- 采用圆周刃减震设计，可实现优异减震效果。
Peripheral edge vibration absorber design,excellent shock absorber effect
- 动平衡等级N=20000RPM，G=2.5。
Dynamic balance grade N=20000RPM, G=2.5.
- 适用转速N=12000~20000rpm。
Applicable speed N=12000~20000rpm.

SA210-BW-20030 框类零件型腔加工
Cavity Machining of Frame

刀具型号 Type	SA210-BW-20030
刀具规格 Size	D20*R3*20*70*125
加工材料 Workpiece Material	7075
转速 Speed	14000rpm (879m/min)
进给速度 Feed Rate	7500mm/min(0.18mm/z)
切削方式 Cutting Method	侧铣 Side milling
切深量 Cutting Depth	ap=10mm，ae=6mm
冷却方式 Cooling Method	乳化液、外冷 Emulsion, External Cooling





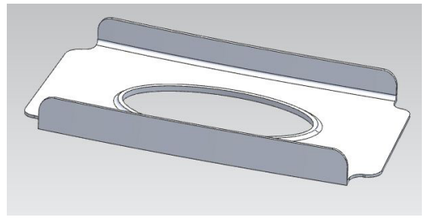
SA210系列铝合金高效加工立铣刀
High Efficiency Endmills for Aluminum Alloys

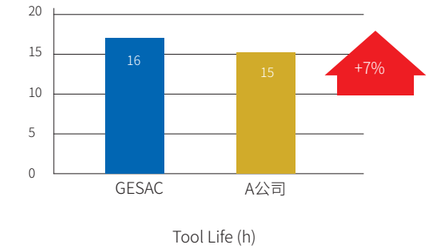
SA210-HF低速型
Low Speed Type

- 应用前刀面、后刀面抛光技术，降低切削阻力。
Front and back cutting surfaces are polished to reduce the cutting resistance.
- 特殊的容屑槽设计有增大排屑能力，满足高金属去除率。
Special chip pocket design, increasing chip removal capacity and meetting high metal removal rate.
- 特殊的抑振设计，可实现平稳切削。
Special vibration resistance design to achieve smooth cutting.
- 适用转速N=4000~6000rpm。
Applicable speed N=4000~6000rpm.

SA210-HF-20015 雷达面板加工
Machining of Radar Panel

刀具型号 Type	SA210-HF-20015
刀具规格 Size	D20*R1.5*30*38*104
加工材料 Workpiece Material	7075
转速 Speed	4000rpm (251.2m/min)
进给速度 Feed Rate	4000mm/min(0.33mm/z)
切削方式 Cutting Method	型腔加工 Cavity Milling
切深量 Cutting Depth	ap=15.4mm，ae=20mm
冷却方式 Cooling Method	水基乳化液，外冷 Water based emulsion, external cooling

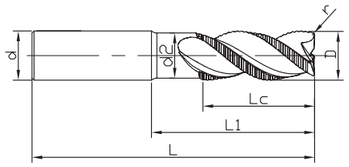




SA210-BW

3刃长颈圆角头

3 Flutes Corner Radius with Reduced Neck



订货号 Ordering Code	D	r	Lc	L1	d2	L	d	库存 Stock
SA210-BW-12010	12	1	16	50	11.5	100	12	○
SA210-BW-16030	16	3	20	63	15.5	115	16	○
SA210-BW-20030	20	3	20	70	19	125	20	○
SA210-BW-25030	25	3	25	75	24	135	25	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
12≤D<16	0 -0.03
16≤D≤25	0 -0.04

单位unit（mm）

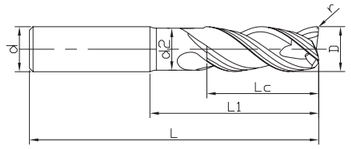
工件材料 Workpiece Material					
M	S		N		
不锈钢 Stainless Steel	钛合金 Titanium Alloys	高温合金 HRSA	铝合金 Aluminium Alloys	铜合金 Copper Alloys	石墨 Graphite
			◎	◎	

◎最适合 Most Suitable ○适合 Suitable

SA210-HF

3刃长颈圆角头

3 Flutes Corner Radius with Reduced Neck



订货号 Ordering Code	D	r	Lc	L1	d2	L	d	库存 Stock
SA210-HF-08005	8	0.5	12	19	7.5	63	8	●
SA210-HF-10008	10	0.8	15	22	9.5	72	10	●
SA210-HF-12010	12	1	18	26	11.5	83	12	●
SA210-HF-16012	16	1.2	24	32	15.5	92	16	●
SA210-HF-20015	20	1.5	30	38	19	104	20	●

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D<16	0 -0.03
16≤D≤20	0 -0.04

单位unit（mm）

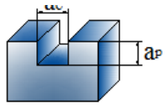
工件材料 Workpiece Material					
M	S		N		
不锈钢 Stainless Steel	钛合金 Titanium Alloys	高温合金 HRSA	铝合金 Aluminium Alloys	铜合金 Copper Alloys	石墨 Graphite
			◎	◎	

◎最适合 Most Suitable ○适合 Suitable

推荐切削参数
Recommended Cutting Parameters

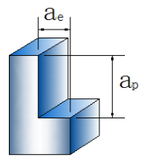
SA210-BW

铝合金Aluminum Alloys——槽铣 Slotting



工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	12	16	20	25
N	铝合金	ap≤75%D	800	转速 Speed (min-1)	20000	15000	12000	10000
				进给速度 Feed Rate (mm/min)	6000	5400	4680	3900

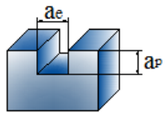
铝合金Aluminum Alloys——侧铣 Side Milling



工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	12	16	20	25
N	铝合金	ap≤1D	950	转速 Speed (min-1)	20000	18000	16000	12000
		ae≤1D		进给速度 Feed Rate (mm/min)	7800	8100	7200	5760

SA210-HF

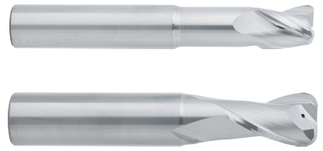
铝合金Aluminum Alloys——槽铣 Slotting



工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	8	10	12	16	20
N	铝合金	ap≤75%D	250	转速 Speed (min-1)	6000	6400	6000	5000	4000
				进给速度 Feed Rate (mm/min)	2150	2880	3200	3700	4000

SA300系列航空铝合金高速加工立铣刀

High Speed Endmills for Aluminum Alloys

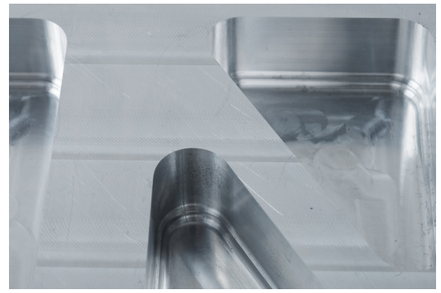


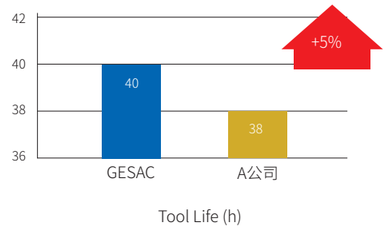
- 适用于航空铝合金材料的高速切削加工。
Suitable for high speed machining of aerospace aluminium alloy.
- 特殊设计和精良制造相结合，刀具动平衡性能N=25000RPM，G2.5。
Special symmetry design and precision with balance N=25000RPM ， G2.5 good for high speed cutting.
- 使用超细晶硬质合金基体，具有超强耐磨性好和高韧性。
Ultra-fine cemented carbide, enhance both wear resistance and toughness.
- 独特的锋利切削刃设计，切削效率高，提高加工效率和工件表面质量。
Unique sharp cutting edges design, increasing cutting efficiency and surface quality.

SA300-RN2 系列加工连接角盒

Machining of Connection Box

刀具型号 Type	SA300-RN2-20030
刀具规格 Size	D20*R3*35*60*110
加工材料 Workpiece Material	7075
转速 Speed	23600rpm (1480m/min)
进给速度 Feed Rate	9000mm/min(0.19mm/z)
切削方式 Cutting Method	型腔精加工 Cavity Finishing
切深量 Cutting Depth	ap=24 mm，ae=1mm
冷却方式 Cooling Method	乳化液、内冷 Emulsion、Inner Cooling





SA300-RN2

2刃长颈圆角头

2 Flutes Corner Radius with Reduced Neck

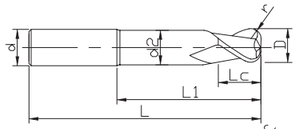


Fig1

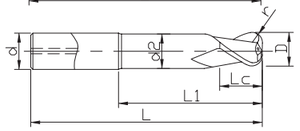


Fig2

订货号 Ordering Code	D	r	Lc	L1	d2	L	d	图号 Figure No	库存 Stock
SA300-RN2-06010	6	1	15	30	5.5	65	6	1	○
SA300-RN2-08010	8	1	16	27	7.5	63	8	1	○
SA300-RN2-10030	10	3	15	32	9.5	72	10	1	○
SA300-RN2-12030	12	3	18	55	11.5	100	12	1	○
SA300-RN2-16030	16	3	25	60	15.5	110	16	1	○
SA300-RN2-20030	20	3	35	60	19.4	110	20	1	○
SA300-RN2-20030-IC	20	3	38	75	19.4	125	20	2	○
SA300-RN2-25030	25	3	45	70	24.4	130	25	1	○
SA300-RN2-25030-IC	25	3	38	55	24.4	105	25	2	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D<16	0 -0.03
16≤D≤25	0 -0.04

单位unit（mm）

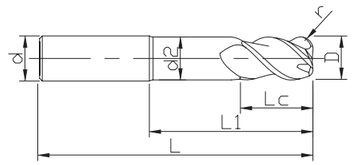
工件材料 Workpiece Material					
M	S		N		
不锈钢 Stainless Steel	钛合金 Titanium Alloys	高温合金 HRSA	铝合金 Aluminium Alloys	铜合金 Copper Alloys	石墨 Graphite
			◎	◎	

◎最适合 Most Suitable ○适合 Suitable

SA300-RN3

3刃长颈圆角头

3 Flutes Corner Radius with Reduced Neck



订货号 Ordering Code	D	r	Lc	L1	d2	L	d	库存 Stock
SA300-RN3-06010	6	1	15	30	5.5	65	6	○
SA300-RN3-08010	8	1	16	27	7.5	63	8	○
SA300-RN3-10030	10	3	15	32	9.5	72	10	○
SA300-RN3-12030	12	3	18	55	11.5	100	12	○
SA300-RN3-16030	16	3	25	60	15.5	110	16	○
SA300-RN3-20030	20	3	35	60	19.4	110	20	○
SA300-RN3-25030	25	3	45	70	24.4	130	25	○
SA300-RN3-32030	32	3	40	120	31	183	32	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D<16	0 -0.03
16≤D≤32	0 -0.04

单位unit（mm）

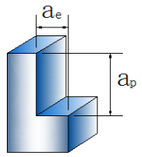
工件材料 Workpiece Material					
M	S		N		
不锈钢 Stainless Steel	钛合金 Titanium Alloys	高温合金 HRSA	铝合金 Aluminium Alloys	铜合金 Copper Alloys	石墨 Graphite
			◎	◎	

◎最适合 Most Suitable ○适合 Suitable

推荐切削参数
Recommended Cutting Parameters

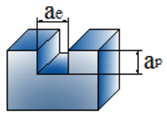
SA300-RN2

航空铝合金Aluminium Alloy——侧铣 Side Milling



工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	6	8	10	12	16	20	25
N	铝合金7075，7050等 Aluminum Alloy 7075,7050, etc	ap≤0.15D	835 (370～1300)	转速 Speed (min^{-1})	20000	20000	20000	20000	20000	20000	16000
		ae≤0.5D		进给速度 Feed Rate (mm/min)	3200	4000	5200	6000	6600	6800	7560

航空铝合金Aluminium Alloy——槽铣Slotting

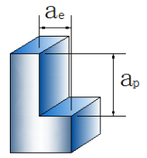


工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	6	8	10	12	16	20	25
N	铝合金7075，7050等 Aluminum alloy 7075,7050, etc	ap≤0.2D	385 (300~471)	转速 Speed (min^{-1})	16000	15000	12000	10000	8000	7000	6000
		ae=1D		进给速度 Feed Rate (mm/min)	3200	3600	3360	3200	3040	2940	3000

推荐切削参数
Recommended Cutting Parameters

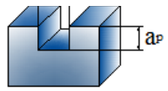
SA300-RN3

航空铝合金Aluminium Alloy——侧铣 Side Milling



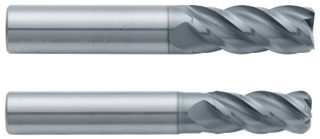
工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	6	8	10	12	16	20	25	32
N	铝合金7075，7050等 Aluminum Alloy 7075,7050, etc	ap≤0.25D	785 (370~1200)	转速 Speed (min^{-1})	20000	20000	20000	20000	20000	20000	16000	12000
		ae≤0.5D		进给速度 Feed Rate (mm/min)	4800	6000	7200	8400	9000	9000	10000	10800

航空铝合金Aluminium Alloy——槽铣Slotting



工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	6	8	10	12	16	20	25	32
N	铝合金7075，7050等 Aluminum Alloy 7075,7050, etc	ap≤0.2D	400 (300~500)	转速 Speed (min^{-1})	16000	15000	12000	10000	8000	7000	6000	4000
		ae=1D		进给速度 Feed Rate (mm/min)	4800	5400	5040	4800	4560	4410	4500	3000

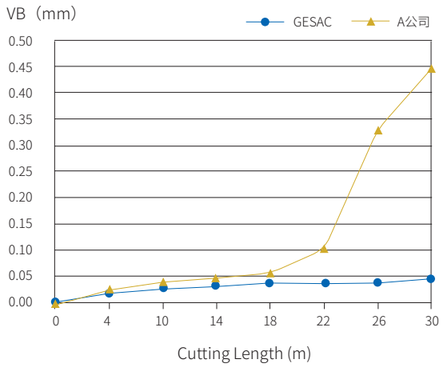
ST210钛合金高性能加工立铣刀
High Performance Endmills for Titanium Alloys



- 适用于钛合金以及不锈钢材料高性能切削加工。
Suitable for high performance machining of titanium alloy and stainless steel.
- 采用不等分度、不等螺旋设计，有效抑制振动的产生，提高加工表面质量。
Variable helix and differential flute pith design，reduces vibration and improves surface quality.
- 偏心圆弧后角设计，刃口强度高，可稳定切削加工。
Eccentric relief design，improves tool stability.

ST210-S4槽铣粗加工
Slotting of TC4

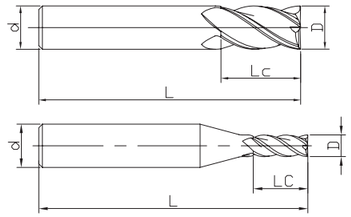
刀具型号 Type	ST210-S4-12030
刀具规格 Size	D12*30*75*d12
加工材料 Workpiece Material	TC4
转速 Speed	1592RPM（60m/min）
进给速度 Feed Rate	318mm/min（0.05mm/z）
切削方式 Cutting Method	槽铣 Slotting
切深量 Cutting Depth	ap=4mm，ae=12mm
冷却方式 Cooling Method	乳化液、外冷 Emulsion，External Cooling



GESAC　　A公司

After cutting 30m

ST210-S4
4刃平头
4 Flutes Square



订货号 Ordering Code	D	Lc	L	d	图号 Figure NO	库存 Stock
ST210-S4-02006	2	6	50	4	1	●
ST210-S4-02506	2.5	6	50	4	1	●
ST210-S4-03009	3	9	50	4	1	●
ST210-S4-03509	3.5	9	50	4	1	●
ST210-S4-04011	4	11	50	4	2	●
ST210-S4-04511	4.5	11	50	4	1	○
ST210-S4-05013	5	13	50	6	1	●

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D<6	0 -0.02
6≤D≤16	0 -0.03
D>16	0 -0.04

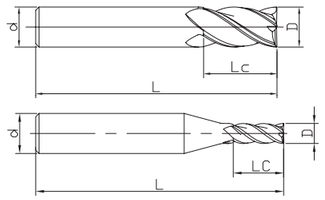
单位unit（mm）

工件材料 Workpiece Material					
P		M	S		
1234	5	123	4		
碳钢、合金钢 Carbon Steels，Alloy Steels <35HRC	合金钢 Alloy Steels < 48HRC	不锈钢 Stainless Steel	TA α	TC α+β	TB β
○	○	○	◎	◎	◎

◎最适合 Most Suitable　○适合 Suitable

ST210-S4

4刃平头
4 Flutes Square



订货号 Ordering Code	D	Lc	L	d	图号 Figure NO	库存 Stock
ST210-S4-06016	6	16	50	6	2	●
ST210-S4-08020	8	20	60	8	2	●
ST210-S4-10025	10	25	72	10	2	●
ST210-S4-12030	12	30	75	12	2	●
ST210-S4-14032	14	32	80	14	2	○
ST210-S4-16036	16	36	100	16	2	●
ST210-S4-20045	20	45	100	20	2	●

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D<6	0 -0.02
6≤D≤16	0 -0.03
D>16	0 -0.04

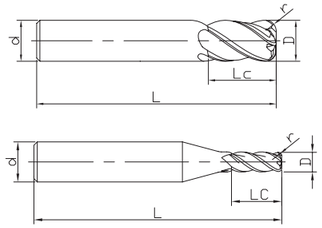
单位unit（mm）

工件材料 Workpiece Material					
P		M	S		
1234	5	123	4		
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	TA α	TC α+β	TB β
○	○	○	◎	◎	◎

◎最适合 Most Suitable ○适合 Suitable

ST210-R4

4刃圆角头
4 Flutes Corner Radius



订货号 Ordering Code	D	r	Lc	L	d	图号 Figure NO	库存 Stock
ST210-R4-02002	2	0.2	6	50	4	1	○
ST210-R4-03003	3	0.3	9	50	4	1	○
ST210-R4-03005	3	0.5	9	50	4	1	○
ST210-R4-04005	4	0.5	11	50	4	2	●
ST210-R4-04010	4	1	11	50	4	2	●
ST210-R4-05005	5	0.5	13	50	6	1	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D≤16	0 -0.03
D>16	0 -0.04

单位unit（mm）

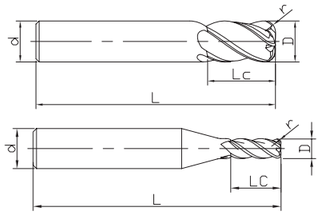
工件材料 Workpiece Material					
P		M	S		
1234	5	123	4		
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	TA α	TC α+β	TB β
○	○	○	◎	◎	◎

◎最适合 Most Suitable ○适合 Suitable

ST210-R4

4刃圆角头

4 Flutes Corner Radius



订货号 Ordering Code	D	Lc	L	d	图号 Figure NO	库存 Stock
ST210-R4-06005	6	0.5	16	50	2	●
ST210-R4-06010	6	1	16	50	2	●
ST210-R4-08005	8	0.5	20	60	2	●
ST210-R4-08010	8	1	20	60	2	●
ST210-R4-10005	10	0.5	25	72	2	●
ST210-R4-10010	10	1	25	72	2	●

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D≤16	0 -0.03
D>16	0 -0.04

单位unit（mm）

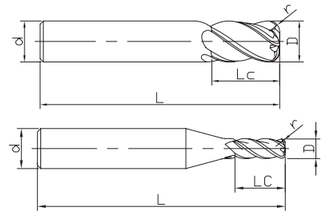
工件材料 Workpiece Material					
P		M	S		
1234	5	123	4		
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	TA α	TC α+β	TB β
○	○	○	◎	◎	◎

◎最适合 Most Suitable ○适合 Suitable

ST210-R4

4刃圆角头

4 Flutes Corner Radius



订货号 Ordering Code	D	r	Lc	L	d	图号 Figure NO	库存 Stock
ST210-R4-10020	10	2	25	72	10	2	○
ST210-R4-12010	12	1	30	75	12	2	●
ST210-R4-12020	12	2	30	75	12	2	○
ST210-R4-12030	12	3	30	75	12	2	●
ST210-R4-16010	16	1	36	100	16	2	●
ST210-R4-16020	16	2	36	100	16	2	○
ST210-R4-16030	16	3	36	100	16	2	●
ST210-R4-20010	20	1	45	100	20	2	●
ST210-R4-20020	20	2	45	100	20	2	○
ST210-R4-20030	20	3	45	100	20	2	●

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D≤16	0 -0.03
D>16	0 -0.04

单位unit（mm）

工件材料 Workpiece Material					
P		M	S		
1234	5	123	4		
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	TA α	TC α+β	TB β
○	○	○	◎	◎	◎

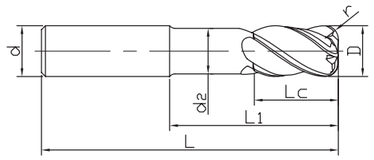
◎最适合 Most Suitable ○适合 Suitable

C 铣削 Milling

ST210-RN4

4刃长颈圆角头

4 Flutes Corner Radius with Reduced Neck



订货号 Ordering Code	D	r	Lc	L1	d2	L	d	库存 Stock
ST210-RN4-12010	12	1	24	45	11	90	12	○
ST210-RN4-12030	12	3	24	45	11	90	12	○
ST210-RN4-16010	16	1	30	60	15	110	16	○
ST210-RN4-16030	16	3	30	60	15	110	16	○
ST210-RN4-20010	20	1	40	65	19	115	20	○
ST210-RN4-20030	20	3	40	65	19	115	20	○
ST210-RN4-25030	25	3	50	75	24	135	25	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D≤16	0 -0.03
D>16	0 -0.04

单位unit（mm）

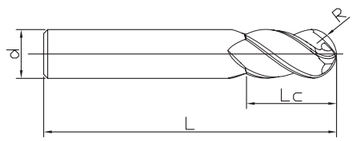
工件材料 Workpiece Material					
P		M	S		
1 2 3 4	5	1 2 3	4		
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	TA α	TC α+β	TB β
○	○	○	◎	◎	◎

◎最适合 Most Suitable ○适合 Suitable

ST210-B4

4刃球头

4 Flutes Ball Nose



订货号 Ordering Code	D	R	Lc	L	d	库存 Stock
ST210-B4-02004	2	1	4	50	6	○
ST210-B4-03006	3	1.5	6	50	6	○
ST210-B4-04008	4	2	8	50	6	●
ST210-B4-05010	5	2.5	10	50	6	○
ST210-B4-06012	6	3	12	50	6	●
ST210-B4-08014	8	4	14	60	8	●
ST210-B4-10018	10	5	18	75	10	●
ST210-B4-12022	12	6	22	75	12	○
ST210-B4-16030	16	8	30	100	16	○
ST210-B4-20038	20	10	38	100	20	○

●库存 Stock ○需预定 Available upon Order

R	公差Tol
R≥1	±0.02

单位unit（mm）

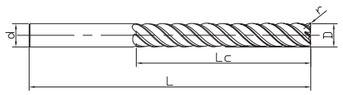
工件材料 Workpiece Material					
P		M	S		
1 2 3 4	5	1 2 3	4		
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	TA α	TC α+β	TB β
○	○	○	◎	◎	◎

◎最适合 Most Suitable ○适合 Suitable

ST210-RL5

5刃长刃圆角头

5 Flutes Corner Radius with Long Cutter



订货号 Ordering Code	D	r	Lc	L	d	库存 Stock
ST210-RL5-16005	16	0.5	48	100	16	○
ST210-RL5-16005A	16	0.5	80	130	16	○
ST210-RL5-200005	20	0.5	60	110	20	○
ST210-RL5-20005A	20	0.5	100	150	20	○
ST210-RL5-25005	25	0.5	75	155	25	○
ST210-RL5-25005A	25	0.5	125	205	25	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D≤16	0 -0.03
D>16	0 -0.04

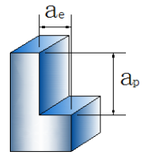
单位unit（mm）

工件材料 Workpiece Material					
P		M	S		
1 2 3 4	5	1 2 3	4		
碳钢、合金钢 Carbon Steels，Alloy Steels <35HRC	合金钢 Alloy Steels <48HRC	不锈钢 Stainless Steel	TA α	TC α+β	TB β
○	○	○	◎	◎	◎

◎最适合 Most Suitable ○适合 Suitable

推荐切削参数

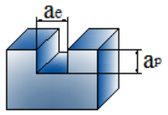
Recommended Cutting Parameters



ST210—S4、R4、RN4

钛合金 Titanium Alloys —— 侧铣 Side Milling

工件材料 Workpiece Material	切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter(mm)	2	3	4	5	6	8	10	12	16	20
钛合金 Titanium Alloy	ap≤1.5D	60 (40~100)	转速 Speed (min^{-1})	9555	6370	4780	3820	3185	2390	1910	1590	1195	955
	ae≤0.25D		进给速度 Feed Rate (mm/min)	380	305	285	305	320	335	345	350	310	305
不锈钢 Stainless Steel	ap≤1.5D	80 (60~110)	转速 Speed (min^{-1})	12740	8490	6370	5095	4245	3185	2545	2020	1590	1275
	ae≤0.25D		进给速度 Feed Rate (mm/min)	760	575	510	510	510	510	510	485	445	430



ST210—S4、R4、RN4

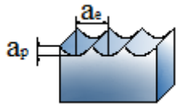
钛合金 Titanium Alloys —— 槽铣 Slotting

工件材料 Workpiece Material	切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter(mm)	2	3	4	5	6	8	10	12	16	20
钛合金 Titanium Alloy	ap≤1D	40 (30~60)	转速 Speed (min^{-1})	6370	4245	3185	2545	2120	1590	1270	1060	795	635
	ae=1D		进给速度 Feed Rate (mm/min)	255	200	190	170	170	190	200	210	190	190
不锈钢 Stainless Steel	ap≤1D	60 (50~70)	转速 Speed (min^{-1})	9555	6370	4775	3820	3185	2390	1910	1590	1195	955
	ae=1D		进给速度 Feed Rate (mm/min)	380	305	285	305	320	335	345	350	310	305

推荐切削参数
Recommended Cutting Parameters

ST210-B4

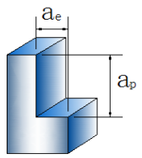
钛合金 Titanium Alloys —— 仿形铣 Profiling



工件材料 Workpiece Material	切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	6	8	10	12	16
钛合金 Titanium Alloy	ap≤0.2D	70 (60~80)	转速 Speed (min^{-1})	3715	2785	2230	1860	1390
	ae≤0.3D		进给速度 Feed Rate (mm/min)	670	610	535	480	445

ST210—RL5

钛合金 Titanium Alloys —— 侧铣 Side Milling



工件材料 Workpiece Material	切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	16	20	25
钛合金 Titanium Alloy	ap≤5D	40 (20~60)	转速 Speed (min^{-1})	795	635	510
	ae≤0.05D		进给速度 Feed Rate (mm/min)	275	255	255

ST300 钛合金高效加工立铣刀

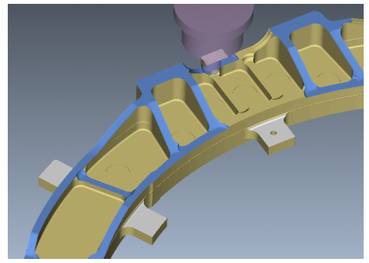
High Efficiency Endmills for Titanium Alloys

- 适用于航空钛合金材料的高效切削加工。
Suitable for high efficiency machining of aerospace titanium alloys.
- 采用超细晶基体、专用R涂层及先进刃口处理技术，具有超长刀具寿命。
Ultra-fine cemented carbide substrate, special R coating and advanced edge processing technology, superior wear resistance, longer tool life.
不等距排屑空间、圆弧清边设计，可使刀具减震效果优异，表面精度高。
Unequal flute spacing and eccentric relief design，super vibration reduction performance.
独特U型槽与内冷孔设计，具有超凡排屑性能，冷却效果优异，金属去除率提升。
Special internal cooling holes and U type flute design, excellent cooling effect and chip evacuation, high material removal rate.
可满足大切宽大切深的高效加工要求，并可实现粗精一体化加工。
Apply for high efficiency machining at large depth and large width, realizing rough and finishing milling with one tool.

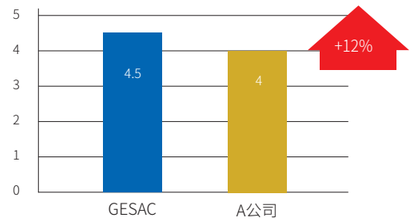
ST300系列钛框精加工

Endmills Machining of Titanium Frame

刀具型号 Type	ST300-RN5-20030
刀具规格 Size	D20*R3*40*65*115*d20
加工材料 Workpiece Material	TC4
转速 Speed	1911rpm (120m/min)
进给速度 Feed Rate	764mm/min (0.08mm/z)
切削方式 Cutting Method	型腔铣 Cavity milling
切深量 Cutting Depth	ap=30mm，ae=1mm
冷却方式 Cooling Method	乳化液、外冷 Emulsion，External Cooling



钛框

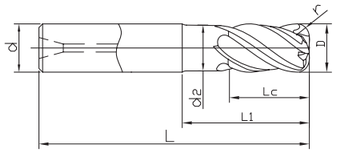


Milling Time (h)

ST300-RN4

4刃长颈圆角头

4 Flutes Corner Radius with Reduced Neck



订货号 Ordering Code	D	r	Lc	L1	d2	L	d	库存 Stock
ST300-RN4-12010	12	1	24	38	11.4	90	12	○
ST300-RN4-12030	12	3	24	38	11.4	90	12	○
ST300-RN4-16010	16	1	32	47	15.4	100	16	○
ST300-RN4-16030	16	3	32	47	15.4	100	16	○
ST300-RN4-20010	20	1	40	57	19.4	115	20	○
ST300-RN4-20030	20	3	40	57	19.4	115	20	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D≤16	0 -0.03
D>16	0 -0.04

单位unit（mm）

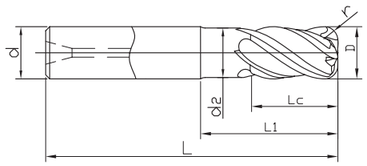
工件材料 Workpiece Material					
P		M	S		
1 2 3 4	5	1 2 3	4		
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	TA α	TC α+β	TB β
○	○	○	◎	◎	◎

◎最适合 Most Suitable ○适合 Suitable

ST300-RN5

5刃长颈圆角头

5 Flutes Corner Radius with Reduced Neck



订货号 Ordering Code	D	r	Lc	L1	d2	L	d	库存 Stock
ST300-RN5-16010	16	1	32	47	15.4	100	16	○
ST300-RN5-16030	16	3	32	47	15.4	100	16	○
ST300-RN5-20010	20	1	40	67	19.4	117	20	○
ST300-RN5-20030	20	3	40	67	19.4	117	20	○
ST300-RN5-25030	25	3	50	82	24.4	138	25	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D≤16	0 -0.03
D>16	0 -0.04

单位unit（mm）

工件材料 Workpiece Material					
P		M	S		
1 2 3 4	5	1 2 3	4		
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	TA α	TC α+β	TB β
○	○	○	◎	◎	◎

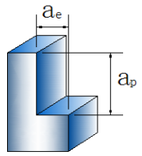
◎最适合 Most Suitable ○适合 Suitable

C 铣削 Milling

推荐切削参数
Recommended Cutting Parameters

ST300-RN4

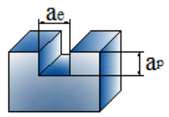
钛合金 Titanium Alloys —— 侧铣 Side Milling



工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	12	16	20
S	TA	ap≤1.5D	100 (80~120)	转速 Speed (min^{-1})	2650	1990	1590
		ae≤0.2D		进给速度 Feed Rate (mm/min)	740	635	605
	TC	ap≤1.5D	100 (80~120)	转速 Speed (min^{-1})	2650	1990	1590
		ae≤0.2D		进给速度 Feed Rate (mm/min)	690	635	570
	TB	ap≤1.5D	80 (60~100)	转速 Speed (min^{-1})	2120	1590	1270
		ae≤0.2D		进给速度 Feed Rate (mm/min)	550	510	460

ST300-RN4

钛合金 Titanium Alloys —— 槽铣 Slotting

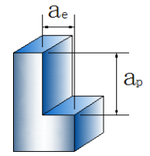


工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	12	16	20
S	TA	ap≤1D	80 (60~100)	转速 Speed (min^{-1})	2120	1590	1275
		ae=1D		进给速度 Feed Rate (mm/min)	595	510	485
	TC	ap≤1D	80 (60~100)	转速 Speed (min^{-1})	2120	1590	1275
		ae=1D		进给速度 Feed Rate (mm/min)	550	510	460
	TB	ap≤1D	50 (40~60)	转速 Speed (min^{-1})	1460	1095	875
		ae=1D		进给速度 Feed Rate (mm/min)	380	350	315

推荐切削参数
Recommended Cutting Parameters

ST300-RN5

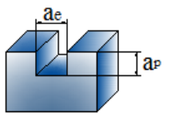
钛合金 Titanium Alloys —— 侧铣 Side Milling



工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	16	20	25
S	TA	ap≤1.5D	100 (80~120)	转速 Speed (min^{-1})	1990	1590	1270
		ae≤0.2D		进给速度 Feed Rate (mm/min)	795	755	605
	TC	ap≤1.5D	100 (80~120)	转速 Speed (min^{-1})	1990	1590	1270
		ae≤0.2D		进给速度 Feed Rate (mm/min)	795	715	570
	TB	ap≤1.5D	80 (60~100)	转速 Speed (min^{-1})	1590	1270	1020
		ae≤0.2D		进给速度 Feed Rate (mm/min)	635	570	460

ST300-RN5

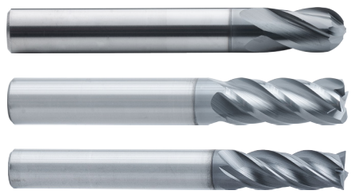
钛合金 Titanium Alloys —— 槽铣 Slotting



工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	16	20	25
S	TA	ap≤1D	80 (60~100)	转速 Speed (min^{-1})	1590	1275	1020
		ae=1D		进给速度 Feed Rate (mm/min)	635	605	485
	TC	ap≤1D	80 (60~100)	转速 Speed (min^{-1})	1590	1275	1020
		ae=1D		进给速度 Feed Rate (mm/min)	635	570	460
	TB	ap≤1D	50 (40~60)	转速 Speed (min^{-1})	1095	875	700
		ae=1D		进给速度 Feed Rate (mm/min)	435	395	315

SS600高强度钢加工立铣刀
SS600 Endmills for High Strength Steels

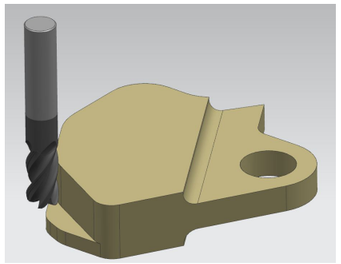
NEW

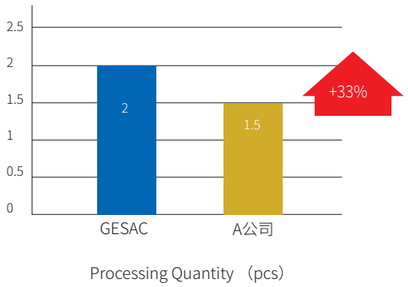


- 适用于加工高强度钢、沉淀硬化不锈钢、钛合金等
Suitablefor processing high strength steel, precipitated hardened stainless steel, titanium alloy, etc.
- 槽铣性能优异，刃口强度高，抗崩刃
Excellent Slot Milling performance, high edge strength
- 不等螺旋不等分度设计，切削过程稳定
Unequal helical non-isometric design, stable cutting process
- 抛物线型容屑槽设计，拥有优异的排屑能力
Parabolic chip groove with excellent chip removal capabilityprocess

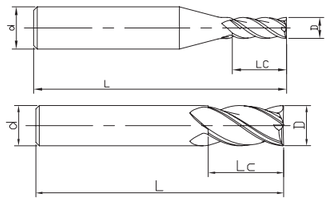
SS600-R4系列铰链板加工
SS600-R4 Endmills for Machining Hinge Plate

刀具型号 Type	SS600-R4-16015
刀具规格 Size	D16*R1.5*32*92*d16
加工材料 Workpiece Material	15-5PH
转速 Speed	1300RPM (65m/min)
进给速度 Feed Rate	130mm/min (0.025mm/z)
切削方式 Cutting Method	槽铣 Slotting
切深量 Cutting Depth	ap=7mm，ae=16mm
冷却方式 Cooling Method	乳化液、外冷 Emulsion,External Cooling





SS600-S4
4 刃平头
4 Flutes Square



SHANK h6 | 4 | AlTiN | 35-38° Helix | Square

订货号 Ordering Code	D	Lc	L	d	库存 Stock
SS600-S4-04011	4	11	50	4	●
SS600-S4-64011	4	11	50	6	●
SS600-S4-06016	6	16	50	6	●
SS600-S4-08020	8	20	60	8	●
SS600-S4-10025	10	25	75	10	●
SS600-S4-12026	12	26	83	12	●
SS600-S4-16032	16	32	92	16	●
SS600-S4-20038	20	38	100	20	●

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D≤12	0 -0.03
D>12	0 -0.04

单位unit（mm）

工件材料 Workpiece Material					
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	铸铁 Cast iron	高温合金 HRSA	钛合金 Titanium Alloys
◎	◎	◎	○	○	◎

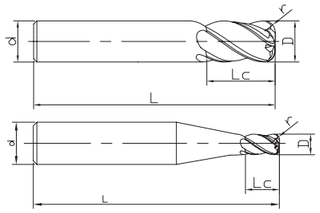
◎最适合 Most Suitable ○适合 Suitable

C 铣削 Milling

SS600-R4

4刃圆角头

4 Flutes Corner Radius



订货号 Ordering Code	D	R	Lc	L	d	库存 Stock
SS600-R4-04005	4	0.5	11	50	4	●
SS600-R4-64005	4	0.5	11	50	6	●
SS600-R4-06005	6	0.5	16	50	6	●
SS600-R4-06010	6	1	16	50	6	●
SS600-R4-08005	8	0.5	20	60	8	●
SS600-R4-08010	8	1	20	60	8	●
SS600-R4-10005	10	0.5	25	75	10	●
SS600-R4-10010	10	1	25	75	10	●
SS600-R4-12005	12	0.5	26	83	12	●
SS600-R4-12010	12	1	26	83	12	●
SS600-R4-16010	16	1	32	92	16	●
SS600-R4-16020	16	2	32	92	16	●
SS600-R4-20010	20	1	38	100	20	●
SS600-R4-20020	20	2	38	100	20	●

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D≤12	0 -0.03
D>12	0 -0.04

单位unit（mm）

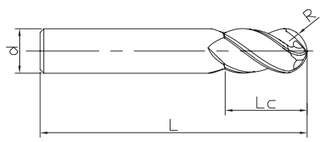
工件材料 Workpiece Material					
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	铸铁 Cast iron	高温合金 HRSA	钛合金 Titanium Alloys
◎	◎	◎	◎	○	◎

◎最适合 Most Suitable ○适合 Suitable

SS600-B4

4刃球头

4 Flutes Ball Nose



订货号 Ordering Code	D	R	Lc	L	d	库存 Stock
SS600-B4-06012	6	3	12	50	6	○
SS600-B4-08014	8	4	14	60	8	○
SS600-B4-10018	10	5	18	75	10	○
SS600-B4-12022	12	6	22	75	12	○
SS600-B4-16030	16	8	30	100	16	○
SS600-B4-20030	20	10	38	100	20	○

●库存 Stock ○需预定 Available upon Order

R	公差Tol
R≥3	± 0.020

单位unit（mm）

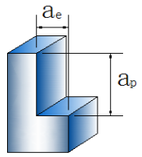
工件材料 Workpiece Material					
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	铸铁 Cast iron	高温合金 HRSA	钛合金 Titanium Alloys
◎	◎	◎	◎	○	◎

◎最适合 Most Suitable ○适合 Suitable

推荐切削参数
Recommended Cutting Parameters

SS600-S4/R4

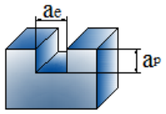
高强度钢For High Strength Steels——侧铣Side milling



工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	4	6	8	10	12	16	20
M	不锈钢 Stainless steel	ap≤1.5D	80 (60~110)	转速 Speed (min-1)	6730	4245	3185	2545	2020	1590	1275
		ae≤0.25D		进给速度 Feed Rate (mm/min)	510	510	510	510	485	445	430
S	钛合金 Titanium Alloys	ap≤1.5D	60 (40~100)	转速 Speed (min-1)	4780	3185	2390	1910	1590	1195	955
		ae≤0.25D		进给速度 Feed Rate (mm/min)	285	320	335	354	350	310	305

SS600-S4/R4

高强度钢 For High Strength Steels——槽铣 Slotting

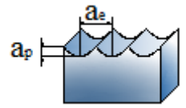


工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	4	6	8	10	12	16	20
M	不锈钢 Stainless steel	ap≤1.5D	60 (50~70)	转速 Speed (min-1)	4775	3185	2390	1910	1590	1195	955
		ae≤1D		进给速度 Feed Rate (mm/min)	285	320	335	345	350	310	305
S	钛合金 Titanium Alloys	ap≤1.5D	40 (30~60)	转速 Speed (min-1)	3185	2120	1590	1270	1060	792	635
		ae≤1D		进给速度 Feed Rate (mm/min)	190	190	190	200	210	190	190

推荐切削参数
Recommended Cutting Parameters

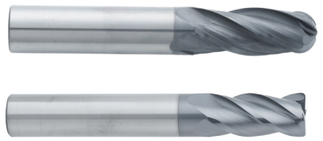
SS600-B4

高强度钢For High Strength Steels ——仿型铣Profiling



工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	6	8	10	12	16	20
M	不锈钢 Stainless steel	ap≤0.2D	100 (80~120)	转速 Speed (min-1)	5300	3980	3180	2650	1990	1590
		ae≤0.2D		进给速度 Feed Rate (mm/min)	1100	1100	1080	1050	1030	1020
S	钛合金 Titanium Alloys	ap≤0.2D	70 (60~80)	转速 Speed (min-1)	3715	2785	2230	1860	1390	1110
		ae≤0.2D		进给速度 Feed Rate (mm/min)	670	610	535	480	445	352

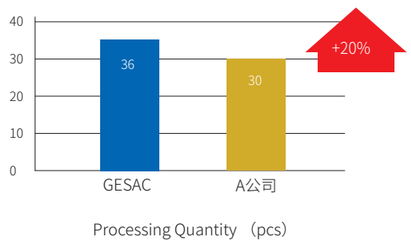
SN200高温合金高性能加工立铣刀
High Performance Endmills for Heat Resistant Super Alloy



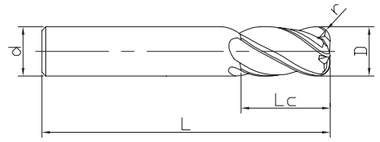
- 适用于高温合金材料的粗加工、精加工。
Suitable for roughing and finishing of HRSA.
- 独特的刃型设计，保证刀具具有高刚性，抗震性能优异。
Special edge design，guarantees high rigidity and reduces vibration.
- 特殊的圆周后角处理，增加刃口强度，保证切削表面质量。
Special disposing of endmill cutting edge，improves edge strength and guarantees surface quality.

SN200-R4 系列发动机机匣花边加工
Endmills for Scallops of Engine Casing Machining

刀具型号 Type	SN200-R4-12010
刀具规格 Size	Φ12R1*26*83*d12
加工材料 Workpiece Material	RENE’41(48HRC)
转速 Speed	800RPM (30m/min)
进给速度 Feed Rate	100mm/min (0.03mm/z)
切削方式 Cutting Method	侧铣 Side milling
切深量 Cutting Depth	ap=10 mm，ae=2-12mm
冷却方式 Cooling Method	乳化液、外冷 Emulsion、External Cooling



SN200-R4
4刃圆角头
4 Flutes Corner Radius



订货号 Ordering Code	D	R	Lc	L	d	库存 Stock
SN200-R4-06005	6	0.5	15	50	6	○
SN200-R4-08010	8	1	19	63	8	○
SN200-R4-10010	10	1	22	72	10	○
SN200-R4-12010	12	1	26	83	12	○
SN200-R4-16010	16	1	32	92	16	○
SN200-R4-18010	18	1	32	92	18	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D≤12	0 -0.03
D>12	0 -0.04

单位unit（mm）

工件材料 Workpiece Material				
P		M	S	
1 2 3 4	5	1 2 3	1 2 3	4
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	高温合金 HRSA	钛合金 Titanium Alloys
○	◎	○	◎	○

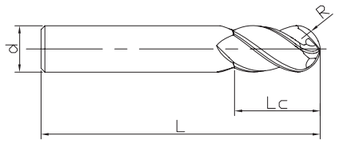
◎最适合 Most Suitable ○适合 Suitable

C 铣削 Milling

SN200-B4

4刃球头

4 Flutes Ballnose



订货号 Ordering Code	D	R	Lc	L	d	库存 Stock
SN200-B4-06012	6	3	12	50	6	○
SN200-B4-08014	8	4	14	60	8	○
SN200-B4-10018	10	5	18	70	10	○
SN200-B4-12022	12	6	22	75	12	○
SN200-B4-16026	16	8	26	90	16	○

●库存 Stock ○需预定 Available upon Order

R	公差Tol
R≥3	±0.020

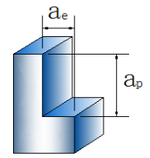
单位unit（mm）

工件材料 Workpiece Material				
P		M	S	
1 2 3 4	5	1 2 3	1 2 3	4
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	高温合金 HRSA	钛合金 Titanium Alloys
○	◎	○	◎	◎

◎最适合 Most Suitable ○适合 Suitable

推荐切削参数

Recommended Cutting Parameters



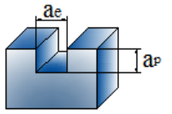
SN200-R4

高温合金 For HRSA——侧铣 Side Milling

工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	6	8	10	12	16	18
S	铁基高温合金 Fe-based HRSA	ap≤1D	25 (15~35)	转速 Speed (min^{-1})	1325	995	795	660	495	440
		ae≤0.1D		进给速度 Feed Rate (mm/min)	160	160	190	185	160	175
	钴基高温合金 Co-based HRSA	ap≤1D	20 (15~30)	转速 Speed (min^{-1})	1060	795	635	530	400	350
		ae≤0.1D		进给速度 Feed Rate (mm/min)	125	125	150	145	125	140
	镍基高温合金 Nickel –based HRSA	ap≤1D	25 (15~30)	转速 Speed (min^{-1})	1325	995	795	660	495	440
		ae≤0.1D		进给速度 Feed Rate (mm/min)	160	160	190	185	160	175

SN200-R4

高温合金 For HRSA——槽铣 Slotting

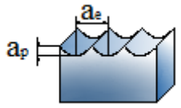


工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	6	8	10	12	16	18
S	铁基高温合金 Fe-based HRSA	ap≤0.5D	20 (10~30)	转速 Speed (min^{-1})	1060	795	635	530	400	350
		ae≤1D		进给速度 Feed Rate (mm/min)	105	95	90	95	80	75
	钴基高温合金 Co-based HRSA	ap≤0.5D	15 (10~25)	转速 Speed (min^{-1})	795	600	475	400	300	260
		ae≤1D		进给速度 Feed Rate (mm/min)	65	60	60	60	60	55
	镍基高温合金 Nickel –based HRSA	ap≤0.5D	20 (10~30)	转速 Speed (min^{-1})	1060	795	635	530	400	350
		ae≤1D		进给速度 Feed Rate (mm/min)	105	95	90	95	80	75

推荐切削参数
Recommended Cutting Parameters

SN200-B4

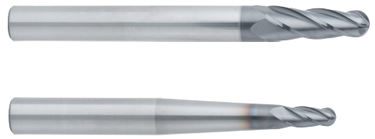
高温合金For HRSA——仿型铣 Profiling



工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	6	8	10	12	16
S	铁基高温合金 Fe-based HRSA	ap≤0.04D	40 (30~50)	转速 Speed (min^{-1})	2120	1590	1270	1060	795
		ae≤0.04D		进给速度 Feed Rate (mm/min)	255	285	305	340	320
	钴基高温合金 Co-based HRSA	ap≤0.04D	35 (25~45)	转速 Speed (min^{-1})	1855	1390	1115	930	695
		ae≤0.04D		进给速度 Feed Rate (mm/min)	220	220	265	260	280
	镍基高温合金 Nickel –based HRSA	ap≤0.03D	40 (30~50)	转速 Speed (min^{-1})	2120	1590	1270	1060	795
		ae≤0.03D		进给速度 Feed Rate (mm/min)	255	285	305	320	320

STB200锥度球头立铣刀

Taper Ball Nose

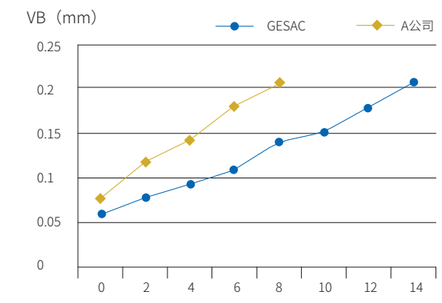


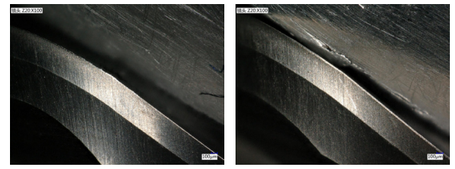
- 适用于叶盘叶片的半精加工、精加工。
Suitable for semi-finishing and finishing of blisks and blades.
- 锥度避空设计及抑震设计，适合大悬伸加工。
Taper avoidance design and vibration suppression design, suitable for large overhang processing.
- 采用超细颗粒基体及高性能专用纳米涂层技术，具有高耐磨性，保证刀具加工稳定。
Ultra-fine cemented carbide and special coating, high wear resistance, longer tool life.
- 高轮廓精度，圆角半径精度±0.01mm，锥度精度±3'。
High precision profile，Radius tolerance±0.01mm, Taper tolerance±3'.

STB200-F4仿形精加工

Profiling Machining

刀具型号 Type	STB200-F4-06002008
刀具规格 Size	R3*2°*10*80*d8
加工材料 Workpiece Material	GH4169
转速 Speed	1600RPM（30m/min）
进给速度 Feed Rate	128mm/min（0.02mm/z）
切削方式 Cutting Method	仿形铣 Profiling
切深量 Cutting Depth	ap=0.48mm，ae=0.8mm
冷却方式 Cooling Method	乳化液、外冷 Emulsion，External Cooling





GESAC A公司

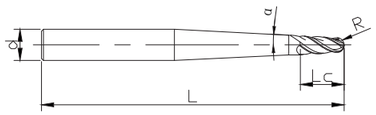
After Cutting 8m

C 铣削 Milling

STB200-F4

4刃锥度球头立铣刀

4 Flutes Taper Ball Nose



订货号 Ordering Code	α	R	Lc	L	d	库存 Stock
STB200-F4-04002006	2	2	10	80	6	○
STB200-F4-06002008	2	3	10	80	8	○
STB200-F4-08002010	2	4	15	100	10	○
STB200-F4-10002012	2	5	20	120	12	○

●库存 Stock ○需预定 Available upon Order

	公差Tol
R	±0.01
α	±3'

单位unit（mm）

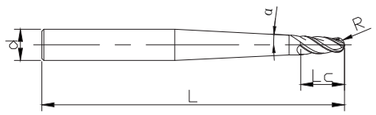
工件材料 Workpiece Material				
P		M	S	
1234	5	123	123	4
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	高温合金 HRSA	钛合金 Titanium Alloys
○	○	◎	◎	◎

◎最适合 Most Suitable ○适合 Suitable

STB200-F4

4刃锥度球头立铣刀

4 Flutes Taper Ball Nose



订货号 Ordering Code	α	R	Lc	L	d	库存 Stock
STB200-F4-03003006	3	1.5	10	80	6	○
STB200-F4-04003006	3	2	10	80	6	○
STB200-F4-05003008	3	2.5	10	80	8	○
STB200-F4-06003010	3	3	10	100	10	○
STB200-F4-08003012	3	4	15	120	12	○
STB200-F4-10003016	3	5	20	120	16	○

●库存 Stock ○需预定 Available upon Order

	公差Tol
R	±0.01
α	±3'

单位unit（mm）

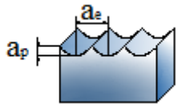
工件材料 Workpiece Material				
P		M	S	
1234	5	123	123	4
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	高温合金 HRSA	钛合金 Titanium Alloys
○	○	◎	◎	◎

◎最适合 Most Suitable ○适合 Suitable

推荐切削参数
Recommended Cutting Parameters

STB200-F4

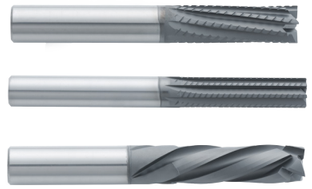
锥度球头Taper Ball Nose——仿型铣 Profiling



工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	3	4	5	6	8	10
M	不锈钢 Stainless Steel	ap≤0.2D	100 (80~120)	转速 Speed (min^{-1})	10600	7960	6370	5300	3980	3180
		ae≤0.2D		进给速度 Feed Rate (mm/min)	1160	1020	1020	1100	1100	1080
S	高温合金 HRSA	ap≤0.03D	35 (25~45)	转速 Speed (min^{-1})	3715	2785	2225	1855	1390	1115
		ae≤0.03D		进给速度 Feed Rate (mm/min)	295	245	230	220	220	265
	钛合金 Titanium Alloys	ap≤0.2D	70 (60~80)	转速 Speed (min^{-1})	7430	5570	4450	3715	2785	2230
		ae≤0.3D		进给速度 Feed Rate (mm/min)	740	670	715	670	610	535

SD200高性能复合材料加工立铣刀

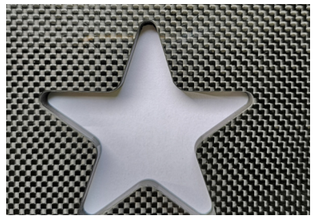
High Performance Endmill for Composite



- 独特的刀型设计，有效抑制复材工件上下表面出现毛刺、翻边等现象。
The fine-cross flute design, without burr and delamination on the top and bottom of the workpiece.
- 刀具表面采用金刚石涂层技术，极大提升刀具耐磨损性能。
Longer tool life with diamond coating.
- 采用与金刚石涂层具有良好附着力的 硬质合金基体——具有高耐磨性，使刀具具备更长的寿命。
Using special substrate，higher wear resistance，and longer tool life.

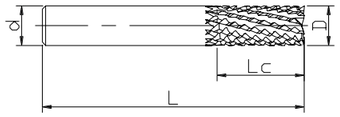
SD200-KDA 系列加工CFRP

Endmills for CFRP

刀具型号 Type	SD200-KDA-06014	上表面无毛刺 Without burr delamination on the top
刀具规格 Size	D6*14*95*d12	
加工材料 Workpiece Material	碳纤维(T800) CFRP(T800)	
转速 Speed	5000RPM（95m/min）	
进给速度 Feed Rate	400mm/min（0.08mm/r）	下表面无毛刺 Without burr delamination on the bottom
切削方式 Cutting Method	槽铣 Slotting	
切深量 Cutting Depth	ap=4mm(板厚 3mm)，ae=6mm	
冷却方式 Cooling Method	气冷 Air cooling	

SD200-KDA

菱齿型金刚石涂层
Fine-cross-nick Diamond Coating



订货号 Ordering Code	D	Lc	L	d	库存 Stock
SD200-KDA-02008	2	8	45	4	○
SD200-KDA-04010	4	11	50	4	●
SD200-KDA-06014	6	14	95	12	●
SD200-KDA-06015	6	15	60	6	●
SD200-KDA-08020	8	20	60	8	●
SD200-KDA-10025	10	25	75	10	●
SD200-KDA-12030	12	30	85	12	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D<10	0 -0.04
10≤D≤12	0 -0.05

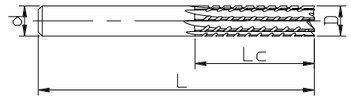
单位unit（mm）

工件材料 Workpiece Material					
P		M	N		
1 2 3 4	5	1 2 3			
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	铝合金 Aluminum Alloys	铜合金 Copper Alloys	复合材料 CFRP/GFRP
					◎

◎最适合 Most Suitable ○适合 Suitable

SD200-KDB

菱齿型金刚石涂层
Fine-cross-nick Diamond Coating



订货号 Ordering Code	D	Lc	L	d	库存 Stock
SD200-KDB-04016	4	16	60	6	○
SD200-KDB-06020	6	20	60	6	○
SD200-KDB-06025	6	25	65	6	○
SD200-KDB-08022	8	22	65	8	○
SD200-KDB-08032	8	32	75	8	○
SD200-KDB-10032	10	32	75	10	○
SD200-KDB-12032	12	32	85	12	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D<10	0 -0.04
10≤D≤12	0 -0.05

单位unit（mm）

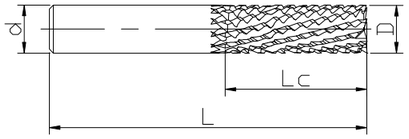
工件材料 Workpiece Material					
P		M	N		
1 2 3 4	5	1 2 3			
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	铝合金 Aluminum Alloys	铜合金 Copper Alloys	复合材料 CFRP/GFRP
					◎

◎最适合 Most Suitable ○适合 Suitable

SD200-KDC

左旋菱齿型金刚石涂层

Left Hand Helix Fine-cross-nick Diamond Coating



订货号 Ordering Code	D	Lc	L	d	库存 Stock
SD200-KDC-04016	4	16	60	6	○
SD200-KDC-06020	6	20	60	6	○
SD200-KDC-06025	6	25	65	6	○
SD200-KDC-08022	8	22	65	8	○
SD200-KDC-08032	8	32	75	8	○
SD200-KDC-10032	10	32	75	10	○
SD200-KDC-12032	12	32	85	12	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D<10	0 -0.04
10≤D≤12	0 -0.05

单位unit（mm）

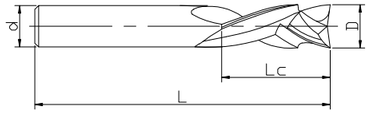
工件材料 Workpiece Material					
P		M	N		
1 2 3 4	5	1 2 3			
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	铝合金 Aluminum Alloys	铜合金 Copper Alloys	复合材料 CFRP/GFRP
					◎

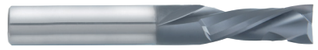
◎最适合 Most Suitable ○适合 Suitable

SD200-JD2

2刃人字形金刚石涂层

Herringbone Two Flute Cutter





订货号 Ordering Code	D	Lc	L	d	库存 Stock
SD200-JD2-04010	4	10	50	4	○
SD200-JD2-06015	6	15	50	6	○
SD200-JD2-08020	8	20	60	8	○
SD200-JD2-10025	10	25	75	10	○
SD200-JD2-12030	12	30	75	12	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D<10	0 -0.04
10≤D≤12	0 -0.05

单位unit（mm）

工件材料 Workpiece Material					
P		M	N		
1 2 3 4	5	1 2 3			
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	铝合金 Aluminum Alloys	铜合金 Copper Alloys	复合材料 CFRP/GFRP
					◎

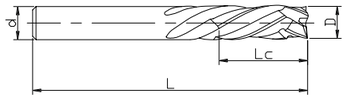
◎最适合 Most Suitable ○适合 Suitable

C 铣削 Milling

SD200-JD4

4刃人字形金刚石涂层

Herringbone Four Flute Cutter



订货号 Ordering Code	D	Lc	L	d	库存 Stock
SD200-JD4-04010	4	10	50	4	○
SD200-JD4-06015	6	15	50	6	○
SD200-JD4-08020	8	20	60	8	○
SD200-JD4-10025	10	25	75	10	○
SD200-JD4-12030	12	30	75	12	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D<10	0 -0.04
10≤D≤12	0 -0.05

单位unit（mm）

工件材料 Workpiece Material					
P		M	N		
1234	5	123			
碳钢、合金钢 Carbon Steels，Alloy Steels ＜35HRC	合金钢 Alloy Steels ＜48HRC	不锈钢 Stainless Steel	铝合金 Aluminum Alloys	铜合金 Copper Alloys	复合材料 CFRP/GFRP
					◎

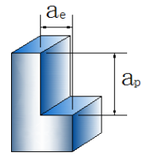
◎最适合 Most Suitable ○适合 Suitable

推荐切削参数

Recommended Cutting Parameters

SD200-KDA、KDB、KDC

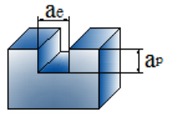
碳纤维复合材料 For CFRP——侧铣 Side Milling



工件材料 Workpiece Material	切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	4	6	8	10	12
碳纤维 CFRP	ap≤2D	140 (80~200)	转速 Speed (min^{-1})	11140	7430	5570	4460	3715
	ae≤0.2D		进给速度 Feed Rate (mm/min)	665	445	445	445	370
玻璃纤维 GFRP	ap≤2D	150 (100~200)	转速 Speed (min^{-1})	11940	7960	5970	4775	3980
	ae≤0.2D		进给速度 Feed Rate (mm/min)	710	475	475	475	400

SD200-KDA、KDB、KDC

碳纤维复合材料 For CFRP——槽铣 Slotting

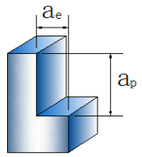


工件材料 Workpiece Material	切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	4	6	8	10	12
碳纤维 CFRP	ap≤1D	120 (80~160)	转速 Speed (min^{-1})	11140	7430	5570	4460	3715
	ae=1D		进给速度 Feed Rate (mm/min)	385	255	285	305	320
玻璃纤维 GFRP	ap≤1D	150 (100~200)	转速 Speed (min^{-1})	11940	7960	5970	4775	3980
	ae=1D		进给速度 Feed Rate (mm/min)	480	320	360	380	400

推荐切削参数
Recommended Cutting Parameters

SD200-JD2

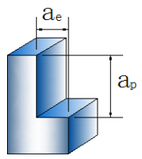
碳纤维复合材料 For CFRP——侧铣 Side Milling



工件材料 Workpiece Material	切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	4	6	8	10	12
碳纤维 CFRP	ap≤2D	140 (80~200)	转速 Speed (min^{-1})	11140	7430	5570	4460	3715
	ae≤0.2D		进给速度 Feed Rate (mm/min)	220	150	140	135	110
玻璃纤维 GFRP	ap≤2D	150 (100~200)	转速 Speed (min^{-1})	11940	7960	5970	4775	3980
	ae≤0.2D		进给速度 Feed Rate (mm/min)	240	160	150	145	120

SD200-JD4

碳纤维复合材料 For CFRP——侧铣 Side Milling



工件材料 Workpiece Material	切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	4	6	8	10	12
碳纤维 CFRP	ap≤2D	140 (80~160)	转速 Speed (min^{-1})	11140	7430	5570	4460	3715
	ae≤0.2D		进给速度 Feed Rate (mm/min)	445	300	250	225	185
玻璃纤维 GFRP	ap≤2D	150 (100~200)	转速 Speed (min^{-1})	11940	7960	5970	4775	3980
	ae≤0.2D		进给速度 Feed Rate (mm/min)	475	320	265	240	200

复合材料高性能加工PCD立铣刀

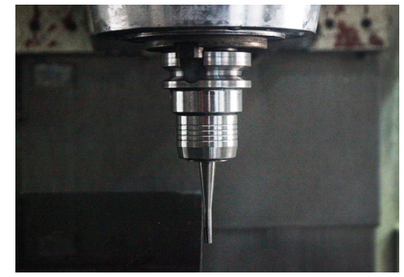
High Performance PCD Endmills for Composite

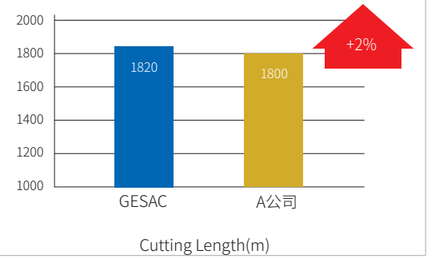
- 适用于碳纤维、玻璃纤维等复合材料的粗加工、半精加工、精加工。
Suitable for the rough milling, semi-finishing and finish of carbon fiber, glass fiber and other.
- 选用耐磨性超好的混合粒度复合片，形成独特的刃口处理设计。
Super wear-resistant composite materials and unique edge treatment.
保证切削表面质量提升，延长刀具寿命。
Enhance surface quality and tool life.

SD300 系列玻璃纤维复合材料板材加工

Endmills for Trimming of Glass Fiber Composite Sheet

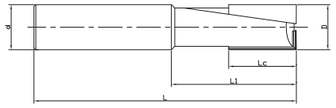
刀具型号 Type	SD300-GD9900
刀具规格 Size	D12*12*100*d12
加工材料 Workpiece Material	玻璃纤维增强树脂基复合材料 Glass fiber reinforced resin material
转速 Speed	11000RPM (414m/min)
进给速度 Feed Rate	2000mm/min (0.09mm/z)
切削方式 Cutting Method	侧铣 Side milling
切深量 Cutting Depth	ap=2 mm，ae=3-4mm
冷却方式 Cooling Method	气雾冷 Air-mist cooling
加工效果 Machining Effect	刀具寿命 1820m. Our tools can manchine more than 1820m.





SD300-GD9900

2刃平头
2 Flutes Square



SHANK h6 | 2 | L | L

订货号 Ordering Code	D	Lc	L1	L	d	Z	库存 Stock
SD300S10202006070	2	6	7	50	4	1	○
SD300S10402006080	4	6	8	50	4	1	○
SD300SB0602006080	6	6	8	50	6	2	○
SD300SB0802010150	8	10	15	70	8	2	○
SD300SB1002010150	10	10	15	70	10	2	○
SD300SG1202015250	12	15	25	80	12	3	○
SD300SG1502015250	15	15	25	80	14	3	○
SD300SN2002020350	20	20	35	100	20	4	○

●库存 Stock ○需预定 Available upon Order

D	公差Tol
D≤20	±0.02

单位unit（mm）

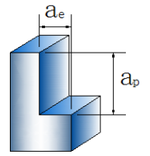
工件材料 Workpiece Material			
N			S
123	4	5	4
铝合金 Aluminium Alloys	铜合金 Copper Alloys	石墨、复合材料 Graphite, Composite Materials	钛合金 Titanium Alloys
◎	○	◎	○

◎最适合 Most Suitable ○适合 Suitable

推荐切削参数
Recommended Cutting Parameters

SD300-GD9900

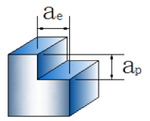
有色金属 For Nonferrous Metal——侧铣 Side Milling



工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	6	8	10	12	16	20
N	增强树脂基复合材料 Reinforced Resin Matrix Composites	ap≤2D	400 (250~450)	转速 Speed (min^{-1})	13270	11775	11145	10615	8000	6000
		ae≤0.2D		进给速度 Feed Rate (mm/min)	2650	2350	2230	2120	2400	2400
	铝合金 Aluminum Alloys	ap≤2D	150 (100~250)	转速 Speed (min^{-1})	12000	10000	8000	8000	5000	3000
		ae≤0.1D		进给速度 Feed Rate (mm/min)	2400	2000	1600	1600	1500	1200

SD300-GD9900

复合材料 For CFRP——面铣 Face Milling



工件材料 Workpiece Material		切深量 Cutting Depth (mm)	切削速度 Cutting Speed (m/min)	刃径 Tool Diameter (mm)	6	8	10	12	16	20
N	增强树脂基复合材料 Reinforced Resin Matrix Composites	ap≤0.1D	400 (250~450)	转速 Speed (min^{-1})	13270	11775	11145	10615	8000	6000
		ae≤0.6D		进给速度 Feed Rate (mm/min)	2650	2350	2230	2120	2400	2400
	铝合金 Aluminum Alloys	ap≤0.1D	150 (100~250)	转速 Speed (min^{-1})	12000	10000	8000	8000	5000	3000
		ae≤0.6D		进给速度 Feed Rate (mm/min)	2400	2000	1600	1600	1500	1200

Holemaking
孔加工

D

D612复材加工匕首钻
Triple-angle Drill for Composite Material

- 适用于各类碳纤维/玻璃纤维增强塑料手动钻削加工。
Suitable for all kinds of carbon fiber / glass fiber reinforced plastic manual drilling.
- 独特的钻尖设计，可保证钻削平稳顺畅。
The unique tip design ensures smooth and smooth drilling.
- 切削刃口锋利，极大提升刀具切削质量及效率。
Cutting edge sharp can be processed out of excellent export / import quality.

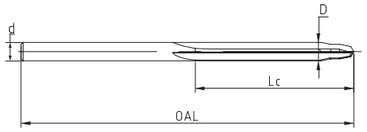
D612-Y3N-0635航空复材件钻孔加工
Hole Making for CFRP

刀具型号 Type	D612-Y3N-0635	匕首钻加工 50 个孔后正常且无毛刺 Triple-angle drill goog drilling result after 50 holes,no burr	普通钻头加工 5 个孔出现毛刺、剥离 Common twist dirll appear burr and strip
刀具规格 Size	D6.35*40*100*d6.35		
加工材料 Workpiece Material	CFRP		
转速 Speed	N=3000 rpm Vc=60m/min		
进给速度 Feed Rate	Vf=240mm/min Fn=0.08mm/rev		
切削方式 Cutting Method	钻削通孔 Through hole		
切深量 Cutting Depth	H=7.5mm		
寿命判定 Life Decision	出口剥离、毛刺、孔径偏大等 Burr,strip rather big hole diameter		
使用设备 Machine	Atlas（Nmax=3200RPM）		
切削效果 Cutting Effect	切削声音正常，孔径合格，无毛刺 Cutting sound normal,qualified hole diameter,no burr		

D612-Y3N

4刃/6刃匕首钻

4 Flute/6 Flute Triple-angle Drill



SHANK U-DIA 3D

订货号 Ordering Code	D（mm）	D(in)	Lc	OAL	d	线号 Linenumber
D612-Y3N-0249	2.49	0.0980	15	60	2.49	——
D612-Y3N-0270	2.70	0.1063	15	60	2.70	——
D612-Y3N-0300	3.00	0.1181	18	60	3.00	——
D612-Y3N-0320	3.20	0.1260	20	75	3.20	——
D612-Y3N-0326	3.26	0.1283	20	75	3.26	30#
D612-Y3N-0400	4.00	0.1575	30	75	4.00	——
D612-Y3N-0409	4.09	0.1610	30	75	4.09	20#
D612-Y3N-0450	4.50	0.1772	30	75	4.50	16#
D612-Y3N-0480	4.80	0.1890	30	75	4.80	12#
D612-Y3N-04826	4.826	0.1900	30	75	4.83	——
D612-Y3N-0491	4.91	0.1933	30	75	4.91	10#

单位unit（mm）

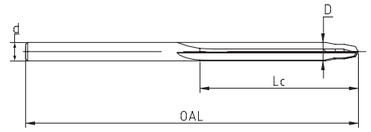
工件材料 Workpiece Material							
P			M	N			
1234	5	6	123	12	3	4	5
碳钢、合金钢 Carbon Steels, Alloy Steels (<35HRC)	合金钢、工具钢 Alloy Steels, Tool Steels (35-48HRC)	PH与铁素体/马氏体钢 PH and Ferrite/ Martensitic Stainless (<35HRC)	不锈钢 Stainless Steell	锻造铝合金，铸造铝合金 Wrought Aluminium Alloys, Cast Aluminium Alloys (Si≤12%)	铸造铝合金 Cast Aluminium Alloys (Si>12%)	铜合金 Copper Alloys (<200HB)	复合材料 Composite Material
							◎

◎最适合 Most Suitable ○ 适合 Suitable

D612-Y3N

4刃/6刃匕首钻

4 Flute/6 Flute Triple-angle Drill



SHANK U-DIA 3D

订货号 Ordering Code	D（mm）	D(in)	Lc	OAL	d	线号 Linenumber
D612-Y3N-0500	5.00	0.1969	35	100	5.00	——
D612-Y3N-0505	5.05	0.1988	35	100	5.05	8#
D612-Y3N-0522	5.22	0.2055	35	100	5.22	5#
D612-Y3N-0600	6.00	0.2362	40	100	6.00	——
D612-Y3N-0635	6.35	0.2500	40	100	6.35	——
D612-Y3N-0794	7.94	0.3126	40	100	7.94	——
D612-Y3N-0953	9.525	0.3750	40	100	9.53	——
D612-Y3N-1270	12.70	0.5000	40	100	12.70	——

单位unit（mm）

工件材料 Workpiece Material							
P			M	N			
1234	5	6	123	12	3	4	5
碳钢、合金钢 Carbon Steels, Alloy Steels (<35HRC)	合金钢、工具钢 Alloy Steels, Tool Steels (35-48HRC)	PH与铁素体/马氏体钢 PH and Ferrite/ Martensitic Stainless (<35HRC)	不锈钢 Stainless Steell	锻造铝合金，铸造铝合金 Wrought Aluminium Alloys, Cast Aluminium Alloys (Si≤12%)	铸造铝合金 Cast Aluminium Alloys (Si>12%)	铜合金 Copper Alloys (<200HB)	复合材料 Composite Material
							◎

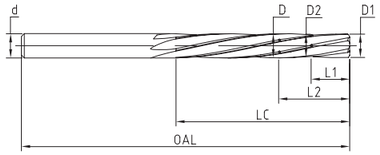
◎最适合 Most Suitable ○ 适合 Suitable

D 孔加工 Holemaking

R733-C 复材加工铰刀
Reamer for Composite Material

- 适用于各类碳纤维/玻璃纤维增强塑料高精度手动铰削加工。
Suitable for all kinds of carbon fiber / glass fiber reinforced plastic high precision manual hinge processing.
- 适用于对孔几何精度和加工粗糙度要求很高的铰削加工。
Suitable for hole geometric accuracy and processing roughness demanding reaming.
- 双阶梯设计可有效增加刀具应用范围。
Double ladder design can effectively increase the scope of application.

R733-C
4刃/6刃铰刀
4 Flute/6 Flute Reame



订货号 Ordering Code	D(mm)	D（in）	D1	L1	D2	L2	Lc	OAL	d	线号 Linenumber
R733-C-0326	3.26	0.128	3.10	6.5	-	-	35	75	3.26	30#
R733-C-0357	3.57	0.141	3.26	6.5	3.45	13.0	35	75	3.57	28#
R733-C-0400	4.00	0.157	3.45	6.5	3.86	13.0	35	75	4.00	-
R733-C-0417	4.17	0.164	3.86	6.5	4.00	13.0	40	100	4.17	-
R733-C-0450	4.50	0.177	4.17	6.5	4.39	13.0	40	100	4.50	-
R733-C-0485	4.85	0.191	4.50	6.5	4.70	13.0	40	100	4.85	11#
R733-C-0500	5.00	0.197	4.70	6.5	4.85	13.0	40	100	5.00	-
R733-C-0536	5.36	0.211	4.85	6.5	5.20	13.0	40	100	5.36	6#

单位unit（mm）

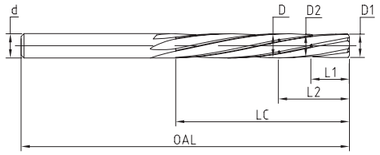
工件材料 Workpiece Material								
P			M	N				
1234	5	6	123	12	3	4	5
碳钢、合金钢 Carbon Steels，Alloy Steels（<35HRC）	合金钢、工具钢 Alloy Steels，Tool Steels (35-48HRC)	PH与铁素体/马氏体钢 PH and Ferrite/ Martensitic Stainless（<35HRC）	不锈钢 Stainless Steell	锻造铝合金，铸造铝合金 Wrought Aluminium Alloys, Cast Aluminium Alloys（Si≤12%）	铸造铝合金 Cast Aluminium Alloys（Si>12%）	铜合金 Copper Alloys（<200HB）	复合材料 Composite Material
							◎

◎最适合 Most Suitable ○ 适合 Suitable

D 孔加工 Holemaking

R733-C

4刃/6刃铰刀
4 Flute/6 Flute Reame



SHANK HELICA 6

订货号 Ordering Code	D(mm)	D（in）	D1	L1	D2	L2	Lc	OAL	d	线号 Linenumber
R733-C-0556	5.56	0.219	5.18	6.5	5.40	13.0	40	100	5.56	7/32
R733-C-0595	5.95	0.234	5.56	6.5	5.79	13.0	40	100	5.95	15/64
R733-C-0600	6.00	0.236	5.56	6.5	5.85	13.0	40	100	6.00	-
R733-C-0635	6.35	0.250	5.95	7.5	6.20	15.0	40	100	6.35	1/4
R733-C-0794	7.94	0.313	7.54	7.5	7.67	15.0	45	120	7.94	5/16
R733-C-0953	9.53	0.375	9.00	7.5	9.30	15.0	50	120	9.53	3/8
R733-C-1270	12.70	0.500	12.00	7.5	12.40	15.0	60	150	12.70	1/2

单位unit（mm）

工件材料 Workpiece Material							
P			M	N			
1234	5	6	123	12	3	4	5
碳钢、合金钢 Carbon Steels, Alloy Steels (<35HRC)	合金钢、工具钢 Alloy Steels, Tool Steels (35-48HRC)	PH与铁素体/马氏体钢 PH and Ferrite/ Martensitic Stainless (<35HRC)	不锈钢 Stainless Steell	锻造铝合金，铸造铝合金 Wrought Aluminium Alloys, Cast Aluminium Alloys (Si≤12%)	铸造铝合金 Cast Aluminium Alloys (Si>12%)	铜合金 Copper Alloys (<200HB)	复合材料 Composite Material
							◎

◎最适合 Most Suitable ○ 适合 Suitable

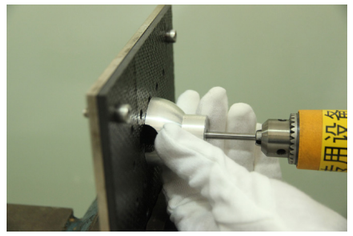
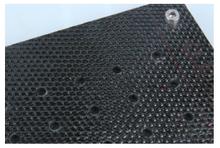
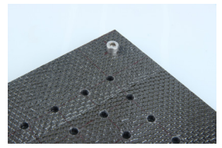
D973复材+金属叠层板加工麻花钻

Twist Drills for Composite and Metal

- 适用于碳纤维/玻璃纤维增强塑料和金属叠层板材料的手动制孔。
Suitable for carbon fiber / glass fiber reinforced plastic and metal laminated board material manual hole.
- 适用于航空铝、钛合金、不锈钢类金属材料。
Suitable for aviation aluminum, titanium alloy, stainless steel metal materials.
- 采用双刃带和自定心设计，增加切削加工稳定性。
Double edge and self centering design increases process stability.
- 推荐配合钻套使用。
Recommended with the use of drilling sleeve.

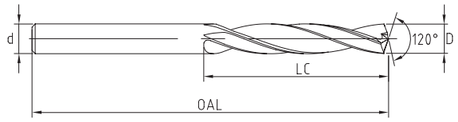
航空复材+金属叠层类零件钻扩铰加工

CFRP+Metal Stacks Hole Making

刀具型号 Type	D913-Y5N-0326 D573-Y3N-0450 R733-CM-0485		
加工材料 Workpiece Material	CFRP+Ti		
转速 Speed	Vc=20m/min		
进给速度 Feed Rate	Fn=0.05mm/rev		
切削方式 Cutting Method	钻削通孔 Through hole	加工 50 个孔后正常，无毛刺 goog drilling result after 50 holes, no burr	加工 70 个孔后出现毛刺 appear burr after 70 holes
切深量 Cutting Depth	H=6.5mm+5mm(CFRP+Ti)		
冷却方式 Cooling Method	空冷non		
寿命判定 Life Decision	出口剥离、毛刺、孔径偏大等 Burr,strip rather big hole diameter		
使用设备 Machine	Atlas（Nmax=3200RPM）		

D973-Y5N

麻花钻
Twist Drills



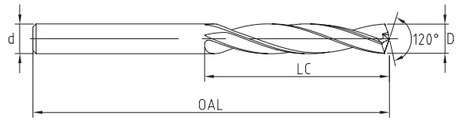
订货号 Ordering Code	D	D(in)	Lc	OAL	d	线号 Linenumber
D973-Y5N-0250	2.50	0.0984	25	75	2.50	——
D973-Y5N-0270	2.70	0.1063	25	75	2.70	——
D973-Y5N-0300	3.00	0.1181	25	75	3.00	——
D973-Y5N-0310	3.10	0.1220	25	75	3.10	——
D973-Y5N-0326	3.26	0.1285	35	75	3.26	30#
D973-Y5N-0400	4.00	0.1575	35	100	4.00	——
D973-Y5N-0409	4.09	0.1610	40	100	4.09	20#
D973-Y5N-0417	4.17	0.1640	40	100	4.17	——

单位unit（mm）

工件材料 Workpiece Material								
P			M	N				S
1234	5	6	123	12	3	4	5	1234
碳钢、合金钢Carbon Steels，Alloy Steels（<35HRC）	合金钢、工具钢 Alloy Steels，Tool Steels (35-48HRC)	PH与铁素体/马氏体钢 PH and Ferrite/ Martensitic Stainless（<35HRC）	不锈钢 Stainless Steell	锻造铝合金，铸造铝合金 Wrought Aluminium Alloys, Cast Aluminium Alloys（Si≤12%）	铸造铝合金 Cast Aluminium Alloys（Si>12%）	铜合金 Copper Alloys（<200HB）	复合材料 Composite Material	钛合金/高温合金 Titanium alloy, Heat-resistant Super Alloys
○	○		◎	◎	◎		◎	◎

◎最适合 Most Suitable ○ 适合 Suitable

D973-Y5N
麻花钻
Twist Drills



订货号 Ordering Code	D	D(in)	Lc	OAL	d	线号 Linenumber
D973-Y5N-0470	4.70	0.1850	40	100	4.70	13#
D973-Y5N-0483	4.83	0.1900	40	100	4.83	——
D973-Y5N-0500	5.00	0.1969	40	100	5.00	——
D973-Y5N-0556	5.56	0.2190	40	100	5.56	——
D973-Y5N-0595	5.95	0.2344	40	100	5.95	15/64
D973-Y5N-0600	6.00	0.2362	40	100	6.00	——
D973-Y5N-0635	6.35	0.2500	40	100	6.35	1/4
D973-Y5N-0750	7.50	0.2953	45	120	7.50	——
D973-Y5N-0794	7.94	0.3125	45	120	7.94	5/16

单位unit（mm）

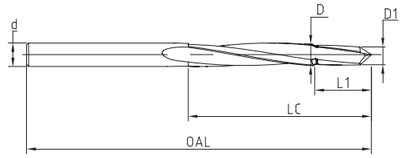
工件材料 Workpiece Material								
P			M	N				S
1234	5	6	123	12	3	4	5	1234
碳钢、合金钢Carbon Steels，Alloy Steels（<35HRC）	合金钢、工具钢 Alloy Steels，Tool Steels (35-48HRC)	PH与铁素体/马氏体钢 PH and Ferrite/ Martensitic Stainless（<35HRC）	不锈钢 Stainless Steell	锻造铝合金，铸造铝合金 Wrought Aluminium Alloys, Cast Aluminium Alloys（Si≤12%）	铸造铝合金 Cast Aluminium Alloys（Si>12%）	铜合金 Copper Alloys（<200HB）	复合材料 Composite Material	钛合金/高温合金 Titanium alloy, Heat-resistant Super Alloys
○	○		◎	◎	◎		◎	◎

◎最适合 Most Suitable ○ 适合 Suitable

D573复材+金属叠层材料加工扩孔钻
Core Drills for Composite and Metal

- 适用于CFRP/GFRP和金属叠层板材料的手动扩孔。
Suitable for manual reaming of CFRP / GFRP and metal laminates.
- 适用于航空铝、钛合金、不锈钢类金属材料。
Suitable for aviation aluminum, titanium alloy, stainless steel metal materials.
- 三刃结构和钻尖设计，增加切削加工稳定性。
Three-blade structure and drill tip design to increase processing stability.
- 采用推荐配合钻套使用。
Recommended with the use of drilling sleeve.

D573-Y5N
扩孔钻
Core Drills



SHANK HELICA 3

订货号 Ordering Code	D(mm)	D(in)	D1	L1	Lc	OAL	d	线号 Linenumber
D573-Y3N-0400	4.00	0.157	3.26	8.0	40.0	80	4.00	——
D573-Y3N-0409	4.09	0.161	3.37	8.0	40.0	80	4.09	20#
D573-Y3N-0417	4.17	0.164	3.37	8.0	40.0	80	4.17	——
D573-Y3N-0437	4.37	0.172	4.10	8.0	40.0	80	4.37	17#
D573-Y3N-0450	4.50	0.177	4.10	8.0	40.0	100	4.50	——
D573-Y3N-0470	4.70	0.185	4.17	8.0	40.0	100	4.70	13#
D573-Y3N-0485	4.85	0.191	4.37	8.0	40.0	100	4.85	11#
D573-Y3N-0500	5.00	0.197	4.37	10.0	50.0	100	5.00	——

单位unit（mm）

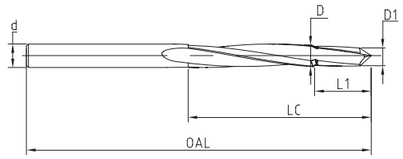
工件材料 Workpiece Material								
P			M	N				S
1234	5	6	123	12	3	4	5	1234
碳钢、合金钢Carbon Steels，Alloy Steels（<35HRC）	合金钢、工具钢 Alloy Steels，Tool Steels (35-48HRC)	PH与铁素体/马氏体钢 PH and Ferrite/ Martensitic Stainless (<35HRC)	不锈钢 Stainless Steell	锻造铝合金，铸造铝合金 Wrought Aluminium Alloys, Cast Aluminium Alloys (Si≤12%)	铸造铝合金 Cast Aluminium Alloys (Si>12%)	铜合金 Copper Alloys (<200HB)	复合材料 Composite Material	钛合金/高温合金 Titanium alloy, Heat-resistant Super Alloys
○	○		◎	◎	◎		◎	◎

◎最适合 Most Suitable ○ 适合 Suitable

D 孔加工 Holemaking

D573-Y5N

扩孔钻
Core Drills



订货号 Ordering Code	D(mm)	D(in)	D1	L1	Lc	OAL	d	线号 Linenumber
D573-Y3N-0518	5.18	0.204	4.85	10.0	50.0	100	5.18	6#
D573-Y3N-0556	5.56	0.219	4.70	10.0	50.0	100	5.56	——
D573-Y3N-0595	5.95	0.234	5.56	10.0	50.0	100	5.95	——
D573-Y3N-0625	6.25	0.246	5.95	10.0	50.0	100	6.25	——
D573-Y3N-0754	7.54	0.297	6.35	10.0	50.0	100	7.54	——
D573-Y3N-0767	7.67	0.302	6.35	10.0	50.0	120	7.67	——
D573-Y3N-0930	9.30	0.366	8.40	10.0	50.0	120	9.30	——

单位unit（mm）

工件材料 Workpiece Material								
P			M	N				S
1234	5	6	123	12	3	4	5	1234
碳钢、合金钢Carbon Steels，Alloy Steels（<35HRC）	合金钢、工具钢 Alloy Steels，Tool Steels (35-48HRC)	PH与铁素体/马氏体钢 PH and Ferrite/ Martensitic Stainless (<35HRC)	不锈钢 Stainless Steell	锻造铝合金，铸造铝合金 Wrought Aluminium Alloys, Cast Aluminium Alloys (Si≤12%)	铸造铝合金 Cast Aluminium Alloys (Si>12%)	铜合金 Copper Alloys (<200HB)	复合材料 Composite Material	钛合金/高温合金 Titanium alloy, Heat-resistant Super Alloys
○	○		◎	◎	◎		◎	◎

◎最适合 Most Suitable ○适合 Suitable

R733-CM 复材+金属材料加工铰刀

Reamer for Composite and Metal

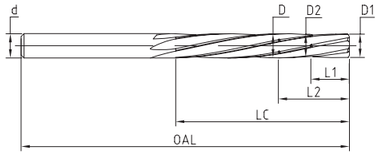
- 适用于CFRP/GFRP和金属叠层板材料的高精度手动铰削加工。
Suitable for high precision manual reaming of CFRP / GFRP and metal laminates.
- 适用于对孔几何精度和加工粗糙度要求很高的铰削加工。
Suitable for hole geometric accuracy and processing roughness demanding reaming.
- 采用双阶梯设计，可有效增加刀具应用范围。
Double ladder design can effectively increase the scope of application.

D 孔加工 Holemaking

R733-CM

4刃/6刃铰刀

4 Flute/6 Flute Reame



订货号 Ordering Code	D(mm)	D（in）	D1	L1	D2	L2	Lc	OAL	d	线号 Linenumber
R733-CM-0326	3.26	0.128	3.10	6.5	-	-	35	75	3.26	30#
R733-CM-0357	3.57	0.141	3.26	6.5	3.45	13.0	35	75	3.57	28#
R733-CM-0400	4.00	0.157	3.45	6.5	3.86	13.0	35	75	4.00	-
R733-CM-0417	4.17	0.164	3.86	6.5	4.00	13.0	40	100	4.17	-
R733-CM-0450	4.50	0.177	4.17	6.5	4.39	13.0	40	100	4.50	-
R733-CM-0485	4.85	0.191	4.50	6.5	4.70	13.0	40	100	4.85	11#
R733-CM-0500	5.00	0.197	4.70	6.5	4.85	13.0	40	100	5.00	-

单位unit（mm）

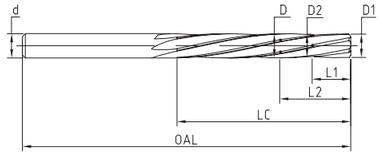
工件材料 Workpiece Material								
P			M	N				S
1234	5	6	123	12	3	4	5	1234
碳钢、合金钢Carbon Steels，Alloy Steels（<35HRC）	合金钢、工具钢 Alloy Steels，Tool Steels (35-48HRC)	PH与铁素体/马氏体钢 PH and Ferrite/ Martensitic Stainless（<35HRC）	不锈钢 Stainless Steell	锻造铝合金，铸造铝合金 Wrought Aluminium Alloys, Cast Aluminium Alloys（Si≤12%）	铸造铝合金 Cast Aluminium Alloys（Si>12%）	铜合金 Copper Alloys（<200HB）	复合材料 Composite Material	钛合金/高温合金 Titanium alloy, Heat-resistant Super Alloys
○	○		◎	◎	◎		◎	◎

◎最适合 Most Suitable ○ 适合 Suitable

R733-CM

4刃/6刃铰刀

4 Flute/6 Flute Reame



订货号 Ordering Code	D(mm)	D（in）	D1	L1	D2	L2	Lc	OAL	d	线号 Linenumber
R733-CM-0536	5.36	0.211	4.85	6.5	5.20	13.0	40	100	5.36	6#
R733-CM-0556	5.56	0.219	5.18	6.5	5.40	13.0	40	100	5.56	7/32
R733-CM-0595	5.95	0.234	5.56	6.5	5.79	13.0	40	100	5.95	15/64
R733-CM-0600	6.00	0.236	5.56	6.5	5.85	13.0	40	100	6.00	-
R733-CM-0635	6.35	0.250	5.95	7.5	6.20	15.0	40	100	6.35	1/4
R733-CM-0794	7.94	0.313	7.54	7.5	7.67	15.0	45	120	7.94	5/16
R733-CM-0953	9.53	0.375	9.00	7.5	9.30	15.0	50	120	9.53	3/8
R733-CM-1270	12.70	0.500	12.00	7.5	12.40	15.0	60	150	12.70	1/2

单位unit（mm）

工件材料 Workpiece Material								
P			M	N				S
1234	5	6	123	12	3	4	5	1234
碳钢、合金钢Carbon Steels，Alloy Steels（<35HRC）	合金钢、工具钢 Alloy Steels，Tool Steels (35-48HRC)	PH与铁素体/马氏体钢 PH and Ferrite/ Martensitic Stainless（<35HRC）	不锈钢 Stainless Steell	锻造铝合金，铸造铝合金 Wrought Aluminium Alloys, Cast Aluminium Alloys（Si≤12%）	铸造铝合金 Cast Aluminium Alloys（Si>12%）	铜合金 Copper Alloys（<200HB）	复合材料 Composite Material	钛合金/高温合金 Titanium alloy, Heat-resistant Super Alloys
○	○		◎	◎	◎		◎	◎

◎最适合 Most Suitable ○ 适合 Suitable

推荐切削参数
Recommended Cutting Parameters

D612复材加工匕首钻
Triple-angle Drill for Composite Material

应用 Application	工件材料 Workpiece Material		切削速度 Cutting Speed (m/min)		进给量 feed (fn)	
			m/min	ft/min	mm/rev	inch/rev
钻削 Drilling	N	CFRP、GFRP	60	197	0.08	0.0031

CFRP：碳纤维强化塑料 Carbon fiber reinforced plastic
GFRP：玻璃纤维强化塑料 Glass fiber reinforced plastic
1.请使用刚性较好的风动工具，配合钻套使用，保证加工稳定性；
Please use the pneumatic tools with better rigidity, drill set, ensure processing stability
2.使用小规格刀具加工时，适当减小刀具进给量20%-30%。
When using the small size cutting tool, reduce the tool feed 20%-30%

R733-C复材加工铰刀
Reamer for Composite Material

应用 Application	工件材料 Workpiece Material		切削速度 Cutting Speed (m/min)		进给量 feed (fn)	
			m/min	ft/min	mm/rev	inch/rev
铰削 Reaming	N	CFRP、GFRP	60	197	0.08	0.0031

CFRP：碳纤维强化塑料 Carbon Fiber Reinforced Plastic
GFRP：玻璃纤维强化塑料 Glass Fiber Reinforced Plastic
1.请使用刚性较好的风动工具，配合钻套使用，保证加工稳定性；
Please use the pneumatic tools with better rigidity, drill set, ensure processing stability
2.使用小规格刀具加工时，适当减小刀具进给量20%-30%。
When using the small size cutting tool, reduce the tool feed 20%-30%

推荐切削参数
Recommended Cutting Parameters

D973复材+金属叠层材料加工麻花钻
Twist Drills for Composite and Metal

应用 Application	工件材料 Workpiece Material		切削速度 Cutting Speed (m/min)		进给量 feed (fn)	
			m/min	ft/min	mm/rev	inch/rev
钻削 Drilling	N	CFRP+铝合金 Aluminium Alloys	60	197	0.08	0.0031
	N S	CFRP+钛合金Titanium alloy	20	66	0.05	0.0020
	N	铝合金 Aluminium Alloys	60	197	0.08	0.0031
	S	钛合金 Titanium alloy	15	49	0.05	0.0020
	M	不锈钢 Stainless Steel	15	49	0.05	0.0020

CFRP：碳纤维强化塑料 Carbon Fiber Reinforced Plastic
GFRP：玻璃纤维强化塑料 Glass Fiber Reinforced Plastic
1.请使用刚性较好的风动工具，配合钻套使用，保证加工稳定性；
Please use the pneumatic tools with better rigidity, drill set, ensure processing stability
2.使用小规格刀具加工时，适当减小刀具进给量20%-30%。
When using the small size cutting tool, reduce the tool feed 20%-30%

D 孔加工 Holemaking

推荐切削参数
Recommended Cutting Parameters

D573复材+金属叠层材料扩孔钻
Core Drills for Composite and Metal

应用 Application	工件材料 Workpiece Material		切削速度 Cutting Speed (m/min)		进给量 feed (fn)	
			m/min	ft/min	mm/rev	inch/rev
钻削 Drilling	N	CFRP	60	197	0.08	0.0031
	N	CFRP+铝合金 Aluminium Alloys	60	197	0.08	0.0031
	N S	CFRP+钛合金Titanium alloy	20	66	0.05	0.0020
	N	铝合金 Aluminium Alloys	60	197	0.08	0.0031
	S	钛合金 Titanium alloy	15	49	0.05	0.0020
	M	不锈钢 Stainless Steel	15	49	0.05	0.0020

CFRP：碳纤维强化塑料 Carbon Fiber Reinforced Plastic
GFRP：玻璃纤维强化塑料 Glass Fiber Reinforced Plastic
1.请使用刚性较好的风动工具，配合钻套使用，保证加工稳定性；
Please use the pneumatic tools with better rigidity, drill set, ensure processing stability
2.使用小规格刀具加工时，适当减小刀具进给量20%-30%。
When using the small size cutting tool, reduce the tool feed 20%-30%

推荐切削参数
Recommended Cutting Parameters

R733-CM系列复材+金属材料加工铰刀
Reamer for Composite and Metall

应用 Application	工件材料 Workpiece Material		切削速度 Cutting Speed (m/min)		进给量 feed (fn)	
			m/min	ft/min	mm/rev	inch/rev
钻削 Drilling	N	CFRP	60	197	0.08	0.0031
	N	CFRP+铝合金 Aluminium Alloys	60	197	0.08	0.0031
	N S	CFRP+钛合金Titanium alloy	20	66	0.05	0.0020
	N	铝合金 Aluminium Alloys	60	197	0.08	0.0031
	S	钛合金 Titanium alloy	15	49	0.05	0.0020
	M	不锈钢 Stainless Steel	15	49	0.05	0.0020

CFRP：碳纤维强化塑料 Carbon Fiber Reinforced Plastic
GFRP：玻璃纤维强化塑料 Glass Fiber Reinforced Plastic
1.请使用刚性较好的风动工具，配合钻套使用，保证加工稳定性；
Please use the pneumatic tools with better rigidity, drill set, ensure processing stability
2.使用小规格刀具加工时，适当减小刀具进给量20%-30%。
When using the small size cutting tool, reduce the tool feed 20%-30%

D 孔加工 Holemaking

Appendix
附录

E

工件材料表
Workpiece Material Table

材料组 ISO Material Group	MC GESAC	工件材料 Workpiece Material	含量 Content	抗拉强度 Tensile Strength N/mm²	布氏硬度 Brinell Hardness HB	洛氏硬度 Rockwell Hardness HRC
P 钢 Steels	P1	低碳钢，长切屑 Low-carbon Steels，Long Chipping	C<0.25%	<530	<125	
	P2	低碳钢，短切屑，易切钢 Low-carbon Steels，Short Chipping，Free-cutting Steels	C<0.25%	<530	<125	
	P3	高碳钢及中碳钢 High-carbon Steels, Midium-carbon Steels	C>0.25%	>530	<220	<25
	P4	合金钢，工具钢 Alloy Steels，Tool Steels.	C>0.25%	600-850	<330	<35
	P5	合金钢，工具钢 Alloy Steels，Tool Steels.	C>0.25%	850-1400	340-450	35-48
	P6	铁素体不锈钢，马氏体不锈钢，PH不锈钢 Ferritic Stainless Steels，Martensitic Stainless Steels，PH Stainless Steels	C=(0-0.4)%	600-900	<330	<35
	P7	高强度铁素体不锈钢，马氏体不锈钢, PH 不锈钢， High-strength Ferritic Stainless Steels，Martensitic Stainless Steels，PH Stainless Steels.	C=(0.1-0.6)%	900-1350	330-450	35-48
M 不锈钢 Stainless Steels	M1	奥氏体不锈钢， Austenitic Stainless Steels	C=(0.05-0.15)%	<600	130-200	
	M2	高强度的奥氏体和铸造不锈钢 High-Strength Austenitic Stainless Steels and Cast Stainless Steels	C=(0.05-0.15)%	600-800	150-230	<25
	M3	双相不锈钢 Duplex Stainless Steels	C=(0.05-0.20)%	<800	135-275	<30
K 铸铁 Cast Iron	K1	灰铸铁 Grey Cast Iron		125-500	120-290	＜32
	K2	中等加工难度的合金铸铁，球墨铸铁 Moderately Difficult Alloy Cast iron，Nodular Cast Iron.		<600	130-260	＜28
	K3	难加工的高合金铸铁，球墨铸铁 Difficult High-alloy Cast Iron，Nodular Cast Iron		>600	180-350	＜43

工件材料表
Workpiece Material Table

材料组 ISO Material Group	MC GESAC	工件材料 Workpiece Material	含量 Content	抗拉强度 Tensile Strength N/mm²	布氏硬度 Brinell Hardness HB	洛氏硬度 Rockwell Hardness HRC
N 有色材料 Non-ferrous Materials	N1	锻造铝合金 Wrought Aluminium Alloys		<520	60-90	
	N2	铸造铝合金 Cast Aluminium Alloys	Si<12%	<350	70-100	
	N3	铸造铝合金 Cast Aluminium Alloys	Si>12%	200-320	60-120	
	N4	铜，铜合金 Copper，Copper Alloys		200-650	60-200	
	N5	石墨，复合材料 Graphite，CFK，CFRP Graphite，Composite Materials		600-1500		
	N6	铝基复合材料(MMCs) GFK，CFK Aluminium-based Composite Materials		<700	<210	
S 耐热合金、钛合金 Heat-resistant Super Alloys、 Titanium Alloys,	S1	铁基高温合金 Iron-based Heat-resistant Alloys		500-1200	160-260	25-48
	S2	钴基高温合金 Cobalt-based Heat-resistant Alloys		1000-1450	250-450	25-48
	S3	镍基高温合金 Nickel-based Heat-resistant Alloys		600-1700	160-450	<48
	S4	钛及钛合金 Titanium and Titanium Alloys		900-1600	300-400	33-48
H 高硬度硬材料 HardenedMaterials	H1	淬硬钢 Hardened Steels				45-55
	H2	淬硬钢 Hardened Steels				55-60
	H3	淬硬钢 Hardened Steels				60-65
	H4	淬硬钢 Hardened Steels				>65

线号字母分数对应公制尺寸表
Metric Scale List

序号 N0.	线号表示 Wire	小数表示 Decimal	公制尺寸 Metric	分数表示 Fractional	小数表示 Decimal	公制尺寸 Metric	字母表示 Letter	小数表示 Decimal	公制尺寸 Metric
	1-40#	in	mm	in	in	mm	A-Z	in	mm
1	1#	0.2280	5.79	1/64	0.0156	0.40	A	0.2340	5.94
2	2#	0.2210	5.61	1/32	0.0313	0.79	B	0.2380	6.05
3	3#	0.2130	5.41	3/64	0.0469	1.19	C	0.2420	6.15
4	4#	0.2090	5.31	1/16	0.0625	1.59	D	0.2460	6.25
5	5#	0.2055	5.22	5/64	0.0781	1.98	E	0.2500	6.35
6	6#	0.2040	5.18	3/32	0.0938	2.38	F	0.2570	6.53
7	7#	0.2010	5.11	7/64	0.1094	2.78	G	0.2610	6.63
8	8#	0.1990	5.05	1/8	0.1250	3.18	H	0.2660	6.76
9	9#	0.1960	4.98	9/64	0.1406	3.57	I	0.2720	6.91
10	10#	0.1935	4.91	5/32	0.1563	3.97	J	0.2770	7.04
11	11#	0.1910	4.85	11/64	0.1719	4.37	K	0.2810	7.14
12	12#	0.1890	4.80	3/16	0.1875	4.76	L	0.2910	7.39
13	13#	0.1850	4.70	13/64	0.2031	5.16	M	0.2950	7.49
14	14#	0.1820	4.62	7/32	0.2188	5.56	N	0.3020	7.67
15	15#	0.1800	4.57	15/64	0.2344	5.95	O	0.3160	8.03
16	16#	0.1770	4.50	1/4	0.2500	6.35	P	0.3230	8.20
17	17#	0.1730	4.39	17/64	0.2656	6.75	Q	0.3320	8.43
18	18#	0.1695	4.31	9/32	0.2813	7.14	R	0.3390	8.61
19	19#	0.1660	4.22	19/64	0.2969	7.54	S	0.3480	8.84
20	20#	0.1610	4.09	5/16	0.3125	7.94	T	0.3580	9.09
21	21#	0.1590	4.04	21/64	0.3281	8.33	U	0.3680	9.35
22	22#	0.1570	3.99	11/32	0.3438	8.73	V	0.3770	9.58
23	23#	0.1540	3.91	23/64	0.3594	9.13	W	0.3860	9.80
24	24#	0.1520	3.86	3/8	0.3750	9.53	X	0.3970	10.08
25	25#	0.1495	3.80	25/64	0.3906	9.92	Y	0.4040	10.26
26	26#	0.1470	3.73	13/32	0.4063	10.32	Z	0.4130	10.49
27	27#	0.1440	3.66	27/64	0.4219	10.72			
28	28#	0.1405	3.57	7/16	0.4375	11.11			
29	29#	0.1360	3.45	29/64	0.4531	11.51			
30	30#	0.1285	3.26	15/32	0.4688	11.91			
31	31#	0.1200	3.05	31/64	0.4844	12.30			
32	32#	0.1160	2.95	1/2	0.5000	12.70			
33	33#	0.1130	2.87						
34	34#	0.1110	2.82						
35	35#	0.1100	2.79						
36	36#	0.1065	2.71						
37	37#	0.1040	2.64						
38	38#	0.1015	2.58						
39	39#	0.0995	2.53						
40	40#	0.0980	2.49						

MEMO

MEMO

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