Obligation Keeps Excellence
责任铸就卓越

Domestic Sales Hotline
国内销售热线
0731-22673988 22673859 22673857

International Sales Hotline
国际销售热线
+86-731-22673987 22673898

株洲欧科亿数控精密刀具股份有限公司
OKE Precision Cutting Tools Co., Ltd.

总部地址：湖南省株洲市炎陵县中小企业创业园创业路（P.C.412500）
分公司地址：湖南省株洲市芦淞区创业四路8号（P.C.412008）

Head Office Add：Chuangye Rd,Chuangye Park for SMEs,Yanling County,Zhuzhou,Hunan,China.
Branch Office Add：#8,Chuangye Rd,Lusong Area,Zhuzhou,Hunan,China.

官方网站：www.oke-carbide.com 传真(Fax)：0731-22673966
邮箱(E-mail)：may@oke-carbide.com info@oke-carbide.com

炎陵欧科亿数控精密刀具有限公司
Yanling OKE Precision Cutting Tools Co.,Ltd

地址：湖南省株洲市炎陵县霞阳镇颜家村中小创业园（P.C.412500）
Add：Chuangye Park for SMEs,Yanjia Village, Xiayang Town, Yanling County, Zhuzhou,Hunan, China.

传真(Fax)：0731-22673966 邮箱(E-mail)：www.info-yanling@oke-carbide.com

WSF ISO9001

OKE 欧科亿 数控精密刀具

产品样本
Product Catalogue

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About us

关于OKE欧科亿

株洲欧科亿数控精密刀具股份有限公司(原名“株洲欧科亿硬质合金有限公司”)成立于1996年1月23日，注册资金7,500万元，是一家专业研发、生产、销售高精数控刀片(刀具)和小型精密切削刀片的民营高新技术企业。

公司地处株洲炎陵县，现已在株洲炎陵县和芦淞区建成两大生产基地，总占地面积约110亩。公司现拥有约40,000m²的现代化标准厂房，3,000多台(套)国际一流水准的加工制造装备及研发、检测设备，资产总额8亿元以上。

公司在册员工700余人，其中技术研发的人员80多人，组建了湖南省认定企业技术中心，在高精数控刀具基体材质与涂层工艺设计、刀片基体成形关键技术等方面的研究取得了数十项拥有自主知识产权的科研成果，技术水平处于国内行业领先水平。公司现已获得正式授权的有效专利共计56件，包括8件发明专利，28件实用新型专利及20件外观设计专利。

经过二十多年的发展，公司不仅拥有国际一流水准的装备，而且也掌握了行业全球最先进的工艺制造技术，主导产品“高精数控刀片(刀具)”的销量已抢占国内第一梯队，OKE已成功地跻身国产品牌前三甲;另一主导产品“小型精密切削刀片”的国内市场占有率达20%以上，成为行业细分领域的全球引领者，公司迅速崛起成为国内知名的精密数控切削刀片生产企业。

公司始终秉承“责任铸就卓越”的经营理念，切合中国高端制造产业导向，专注于高精数控刀具国产化和进口替代，打造工业4.0智能数控刀具优势企业，成为中国智能数控刀具领域的引领者和国际知名的智能数控刀具中国民族品牌。

炎陵欧科亿数控精密刀具有限公司（企业统一社会信用代码：91430225MA4PNNKW42）是株洲欧科亿数控精密刀具股份有限公司的全资子公司，成立于2018年6月29日，法人代表袁美和，注册资本壹亿元整，企业类型为有限责任公司（自然人投资或控股的法人独资），经营范围为硬质合金刀具的研发、加工、销售。

炎陵欧科亿数控精密刀具有限公司注册地址为湖南省株洲市炎陵县霞阳镇颜家村中小创业园，现有员工约150人，占地面积约37000m²，已建成约11000m²标准厂房及附属设施和一条年产1200吨硬质合金切削刀片生产线。

Established in Jan. 23,1996, OKE Precision Cutting Tools Co., Ltd.(Hereinafter referred to as "OKE"), formerly known as OKE Carbide Co., LTD., the registered capital of 75 million CNY, a professional research, development, production and sales of High precision cutting inserts(tools), carbide rods, carbide saw tips and other carbide products of high-tech private enterprises.

OKE located in Yanling County, built two big production bases in Yanling county and Lusong area in Zhuzhou city where Cover an area of more than 73,300m², Include 40,000m² modern standard workshop, over 3,000 (sets) international first-class level of processing and manufacturing facilities and research & development testing equipments. The total assets are over 800 million yuan.

Now, OKE has over 700 employees, include over 80 technology research and development personnel. OKE set up the enterprise technology center recognized by Hunan province, had achieved over 10 research achievements in High precision inserts tools substrate material, coating technique, forming and other aspects. OKE already have 56 patents, include 8 invent patents, 28 practical patents, and 20 appearance patents.

Over twenty years development, OKE not only has the world first class facility, but also mastered the world leading manufacturing techniques. The leading products sales of high precision CNC inserts and tools have seized the first echelon. Now OKE is the top 3 carbide insert Chinese brand in china. Meanwhile, another leading products sales of small precision cutting blades are more than 20% in the domestic market share and become the global leader in the field of segmentation. OKE rapidly rise to a well know carbide insert company.

OKE insists its business conception: “Obligation Keeps Excellence”, and following Chinese high-end manufacturing industry guide, focuses on high precision CNC tools localization and import substitution, builds industrial 4.0 intelligent CNC cutting tool superior enterprise. Now OKE has become a leader in the field of intelligent CNC tools and a famous national brand of intelligent CNC tools in China.

Yanling OKE Precision Cutting Tools Co.,Ltd. (Enterprise Unified Social Credit Code: 91430225MA4PNNKW42) is a wholly-owned subsidiary of OKE Precision Cutting Tools Co., Ltd., which was established on June 29, 2018, and legal representative Yuan Meihe. The registered capital is 100 million yuan. The type of enterprise is limited liability company , and the business scope is the research and development, processing and sales of tungsten carbide tools.

Yanling OKE Precision Cutting Tools Co., Ltd. is registered at Yanling village, Zhuzhou, China. It has about 150 employees and covers an area of about 37,000 square meters. It has built about 11,000 m² standard factory buildings with many ancillary facilities , and a production line with an annual output of 1,200 tons of carbide saw tips and other carbide products.

专·注·专·业·专·家

WSF世标认证证书

Development
发展历程

1996-01

株洲精诚实业
有限公司成立：
占地8.5亩；

Established Zhuzhou Jingcheng Industrial Co., Ltd. covered area of 5660 square meters;

2000-09

公司
建立合金二厂，
占地12.6亩；

Established our 2nd factory, covered area of 8400 square meters;

2003-06

公司通过
ISO9001：2000
质量管理体系认证；

Passed ISO9001:2000 quality management system certification;

2010-01

公司建立合金三厂，
共占地41亩；

更名株洲欧科亿
硬质合金有限公司

公司通过
ISO9001:2008
质量管理体系认证；

Established our 3rd factory, covered area of 27000 square meters;

Zhuzhou Jingcheng industrial Co.,LTD. was named to OKE Carbide Co.,Ltd;

Passed ISO9001:2008 quality management system certification;

2011-01

公司扩展
合金三厂场地，
建立数控刀片生产线；

Expanded our 3rd factory building area; Established an indexable inserts production line;

2012-07

公司
与湖南工业大学建成
产、学、研基地；

Set up production ,study and research base with Hunan University of Technology;

2017-08

2017年8月，
公司更名为：
株洲欧科亿数控精密刀具
股份有限公司

The company name is officially renamed OKE Precision Cutting Tools Co., Ltd.

2018-06

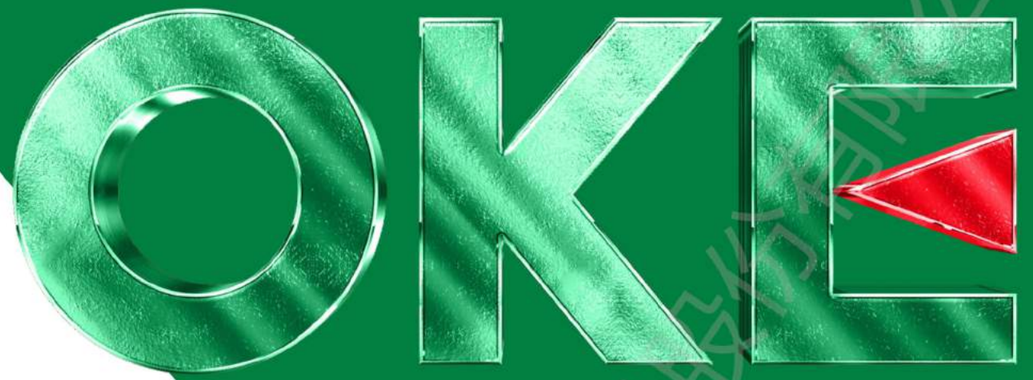
成立全资子公司：
炎陵欧科亿数控精密刀具
有限公司

Establish wholly owed subsidiary company:Yanling OKE Precision Cutting Tools Co., Ltd.

Culture
企业文化

公司以“军队、学校、家庭”作为企业文化，对员工遵循“军队”“学校”“家庭”式管理模式。军队般的纪律与执行力，学校般的学习氛围，家庭般的温暖，让每一位员工拥有宽松和谐的发展空间，快乐、健康的工作和生活；坚持“以人为本”，不断提升企业文化建设水平。以特种部队步调一致、雷厉风行的纪律严格要求，将整个公司建成为一个高效率的组织。对员工进行各种技能及专业知识培训，实现员工跟随公司不断成长。公司为员工提供多项福利，鼓励员工之间互相团结，让每一位员工充满归属感，再配合激励机制，力将OKE打造成为员工们自由施展的舞台。让每个员工都有施展自己才能的机会和平台。员工良好的执行力使企业管理制度得到高效执行，个人价值在企业整体发展中得到实现。

We take "army, school, family" as the enterprise culture, following "army" "school", "family" management model. Under the military discipline and execution, the school study atmosphere, and the family warmth, the employees have developing opportunities in such a harmonious environment, working and living happily and healthily.Adhere to people oriented policy and promote enterprise culture construction level constantly. In conformity with Special Forces, highly effective discipline and strict requirements, we build an efficient organization of the entire company. Employees participate in all kinds of skills and professional knowledge training, along with the rise of company. Providing several benefits for employees, encouraging them work in unity and help one another, to make everyone full of the sense of belonging. Cooperating with incentive mechanism, aim to make OKE into a free stage, in which employee can show their talents. Staff good execution makes our enterprise management system implemented efficiently, personal value achieved in the development of whole enterprise.



Obligation Keeps Excellence
责任铸就卓越

我们以维护客户利益为已任，我们以提供优质、高效率的产品为追求，我们以快速、准确的服务为理念，以满足客户需求为导向，锐意进取，高度的责任感，为用户提供最优的产品及服务。跻身强势企业，打造国际品牌，是我公司恒久不变的追求。

we maintain the interests for our customers as our mission; we provide high quality and efficient products as our pursuit, quick and accurate service as our idea to meet customer demand as the guidance in order to bring the best products and services to our customs through determined progression, full enthusiasm and high sense of responsibility. Squeezing our way into the ranks of strong enterprises and building a famous world brand are the eternal pursuit of our company.

R&D Centre
研发中心

一、与高校建立战略合作关系

公司始终重视产学研结合，积极搭建外部合作创新平台，与湖南工业大学等相关领域高等院校及科研院所建立了长期良好的合作关系，共同进行新技术攻关、新材料研究、新产品开发以及技术人才的培养，形成了完整的“开发-试制-产品-商品”产学研合作系统。

1.Establish strategic cooperation with Hunan University of Technology

Combine production, study and research, create an innovation platform with external cooperation, build long term cooperation with Hunan University of Technology and research institutes in related fields to research new technology, new material, new products and train technical personnel, which formed an integrated “development-trial manufacture-product-commodity”system.

二、研发团队

一、公司拥有一支由国内行业专家、高级工程师、研究生组成的强大研发团队，装备国际一流的研发设备，具备业内一流的研发能力，研发团队秉承“贴近市场做开发”的宗旨，不断更新升级改善产品性能，研发出符合市场和客户需求的新产品。

2. Professional R&D team

OKE owned by a strong R&D team of domestic industry experts, senior engineer, graduate student, equipped with the international first rate research and development equipment, and domestic first rate R&D ability, and the team adhering to the principle of close to the market development, constantly update to improve product performance, develop in line with market and customer demand of our new products.

研发团队由从事多年结构设计、技术应用、基体涂层研发的国内行业专家、高级工程师以及专业和年龄结构合理的科研队伍组成。他们多元的知识结构和先进的开发理念以及国际化的视野，使欧科亿数控刀具与世界同步。

多年以来，研发团队以创新为本，不断开发新槽型和新牌号，以满足国内外市场和客户的需求，为客户提供从技术服务到新产品开发，从解决方案到刀具配套的全方位技术支持。

The R&D team is composed of professional domestic industry experts, senior engineers and scientific research teams who have been engaged in structural design, technical application and matrix coating research and development for many years.

Over the years, the research and development team is innovation-oriented, constantly develop new chip breaker and new brand to meet the needs of domestic and foreign markets and customers, to provide customers with technical services and new product development, solutions and tool support all-round technical support.

Analyzing and Inspecting Centre

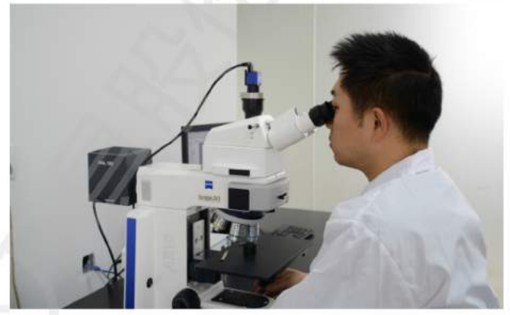
分析检测中心

硬质合金、涂层常规物理性能、组织结构，化学元素定量的检测设备、方法一应俱全，能多维度对硬质合金性能、组织结构进行精确表征，为研发提供有效的数据支撑（相关设备：com仪、HC计，密度天平、金相显微镜及其相应的金相定量分析软件、洛维氏硬度计（硬度和断裂韧性）、冲击韧性机、抗弯强度机等）。

Carbide and coating conventional physical properties, structure, chemical element quantitative inspection equipment and methods are all available. To provide effective data support(Com instrument, HC meter, density balance, metallographic microscope and its corresponding quantitative metallographic analysis software, HRA/HV hardness tester (hardness and fracture toughness), impact toughness machine, bending strength machine).

配备国际先进的zeiss高分辨FESEM场发射扫描电镜和gatan制样设备，能对材料进行微/纳米尺寸的高分辨观察（SEM照片，STEM照片）和高精度表征（电子背散衍射EBSD、能谱EDS），并与zeiss建立联合实验室，这为研发人员畅游材料的神奇微观世界提供有效保障（电镜本身）的同时始终保持设备的先进性（联合实验室的成立，zeiss长期负责设备的升级维护）。

Equipped with international advanced Zeiss field emission scanning electron microscopy (SEM) and high resolution FESEM gatan sample preparation equipment, for micro/nano size high resolution observation of the materials (SEM photos, STEM photos) and high precision characterization of EBSD (electron back scattering diffraction, spectroscopy (EDS), and establish joint laboratory with Zeiss, good for research and develop freely in the miraculous microscopic world at the same time, always maintain the equipment advanced, (the establishment of joint laboratory, Zeiss long-term responsible for equipment upgrade and maintenance).



引入国际一流的纳米压痕仪、划痕仪、摩擦磨损仪等涂层力学性能检测设备，摆脱之前涂层力学性能无法准确量化困扰。

Import world-class nanometer indentation instrument, scratch instrument, friction and wear instrument and other coating mechanical properties testing equipment, get rid of the problem that coating mechanical properties can not be accurately quantified.

▼ 配套完善的分析检测中心
Comprehensive and advanced analyzing and inspecting centre

Die and Mould Workshop

模具制造中心

► 配备当今国际顶尖设备,拥有现代化的标准厂房与恒温恒湿车间，保证机床的稳定性。
International advanced wire cutting machine to ensure the high accuracy of the moulds and products.

► 瑞士HUASER坐标磨床、瑞士GF慢走丝、瑞士GF火花机、德国ZEISS三坐标检测仪、
德国keen加工中心，瑞典3R夹具体系，模具制造精度控制在±0.003MM。
Swiss HUASER coordinate grinder;Swiss GF Low Speed Wire Cutting; Swiss GF spark machine; German ZEISS coordinate detector; German Keen cutting center; Sweden 3R fixture system; Mold manufacturing accuracy is controlled at plus or minus 0.003mm.

► 模具库储备万套以上模具，可以满足不同需求。
More than ten thousand sets of moulds in our stock can meet customers different demands.

► 可根据客户量身定做3R模具。
3R mould can be customized according to customer demand.

▲坐标磨床

▲加工中心

◄三坐标

◄电火花机

◄慢走丝

OBLIGATION KEEPS EXCELLENCE 责任铸就卓越

Main Production Process

主要工艺流程

1 球磨
Mixing Milling

2 喷雾干燥塔
Granulation

3 混合料
Carbide Powder Granulate

4 压制成型
Pressing

5 加压烧结
HIP Sintering

6 成品
Products

Carbide Saw Tips

硬质合金锯齿

产品特点 Product Advantages

稳定
Stability

精度高
High accuracy

易焊
Easy for welding

硬质合金木、铝锯齿牌号性能
Grades for Woodworking and Aluminium

株洲OKE

牌号 Grade	粘结相(%) Binder	密度(g/cm³) Density	硬度Hardness		抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic	ISO标准 Code ISO	美国标准 Code U.S.
			Hv10	HRA				
OKE400	2	15.3	2150	95	2500	7.5	-	-
OKE402	2.8	15.2	2100	94.5	2600	7.5	-	-
OKE403	2.8	15.2	2080	94.2	2500	7.2	-	-
OKE406	3	15.2	2000	93.8	2500	8.0	< K01	C4
OKE405	3.3	15.2	1910	93.6	2500	8.2	K01	C3-C4
OKE302	4	15	1910	93.6	3400	8.7	K01	C3-C4
OKE303	4	15.15	1880	93.3	2400	8.8	K01	C3-C4
OKE305	5.5	14.95	1800	92.9	2500	8.9	K05	C3

硬质合金金属锯齿牌号性能
Grades for Metal Cutting

株洲OKE

牌号 Grade	粘结相(%) Binder	密度(g/cm³) Density	硬度Hardness		抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic	ISO标准 Code ISO	美国标准 Code U.S.
			Hv10	HRA				
New OKE519	12	12.45	1460	91.3	2200	10.5	P30	C6
OKE509	12	12.5	1440	91.2	2100	10	P30	C6
New OKE501	10	12.7	1420	91	2000	9.5	P30	C5/C6
OKE505	10	12.2	1420	91	2050	9.5	P30	C5/C6
OKE511+	11	12.55	1350	90.5	2200	10.5	P40	C5

硬质合金木、铝锯齿牌号性能
Grades for Woodworking and Aluminium

炎陵OKE

牌号 Grade	粘结相(%) Binder	密度(g/cm³) Density	硬度Hardness		抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic	ISO标准 Code ISO	美国标准 Code U.S.
			Hv10	HRA				
OKE106	16	12.30	1500	91	2000	13	K30	C2
OKE107	5.7	14.9	1500	91	2300	10.5	K30	C2
OKE109	6.5	14.8	1380	90.2	2500	11.5	K20	C1
OKE114	11	11.75	1420	90.5	2700	12	K20	C1
OKE116	33	8.65	1010	86	1800	-	>K40	-
OKE210	7	14.75	1500	91	2300	11.5	K20	C2
OKE211	8	14.7	1420	90.5	2500	10.5	K20	C1
OKE212	10	14.3	1440	90.7	2400	11.5	K20	C2
OKE213	12	14.35	1200	88.5	2600	-	K40	C1
OKE217	5.5	14.9	1650	92.2	2300	10	K01	C3
OKE216	8.5	14.7	1570	91.6	2650	11	K10	C3
OKE226	8	14.75	1360	90	2500	12.5	K30	C1
OKE225	8	14.75	1280	89.4	2500	15	K40	C1
OKE233	13	14.2	1180	88	2600	-	K40	C1
OKE236	16.5	13.9	1100	87	2800	-	>K40	-

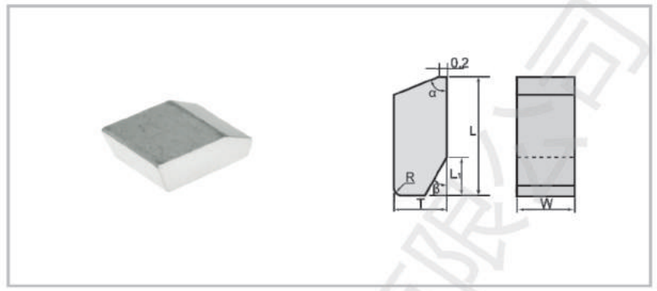
锯齿牌号应用推荐
Grade Recommendations

锯切材质 Cutting Applications	锯片名称 Saw Blade Name	推荐合金牌号 Recommended Grade		
		良好 Good	优秀 Very Good	卓越 Excellent
刨花板、密度板 Chipboard、Density Board	电子开料锯/往复锯用锯片 Panel Sizing Saw Blade and Reciprocating Saw Blade	OKE403	OKE402	OKE400
	裁板锯/推台锯用锯片 Panel Sizing Saw Blade and Sliding Table Saw Blade	OKE406	OKE403	OKE402
	单划线锯片 Single Scoring Saw Blade	OKE403	OKE402	OKE400
	双划线锯片 Double Scoring Saw Blade	OKE406	OKE403	OKE402
	加工相框、镜框用锯片 Saw Blade for Photo Frame and Mirror Frame Processing	OKE302	OKE405	OKE403
	音箱V槽机用锯片 V-Cutting Saw Blade	OKE302	OKE403	OKE402
实木（软木/硬木/旧木） Solid Wood (Softwood/Hardwood/Used-wood)	实木横截锯/纵切锯 Cross Cutting and Score Cutting Saw Blade for Solid Wood	OKE217	OKE303	OKE405
	实木精切锯/超薄段付锯 Accurate Cutting Saw Blade for Solid Wood/Super-Thin Rim Saw Blade	OKE303	OKE302	OKE405
	实木多片锯 Multi-ripping Saw Blade for Solid-wood	OKE303	OKE302	OKE405
	细木工板（原生木）专切锯 Saw Blade for Blockboard(Original Wood)	OKE216	OKE217	OKE305
	细木工板（旧木）专切锯 Saw Blade for Blockboard(Used Wood)	OKE107	OKE216	OKE217
	旧木多片锯 Multi-ripping Saw Blade for Used Wood	OKE211	OKE210	OKE107
	硬质合金带锯/框锯(普通木工用） Band Saw Blade/Frame Saw Blade(General Woodworking)	OKE109	OKE217	OKE303
	硬质合金带锯(木工用） Carbide Tips for Bandsaw(Woodworking)	——	——	DNS10
黑色金属（铁、钢、不锈钢） Ferrous Metal （Iron、Steel、Stainless Steel）	无缝钢管锯切冶金锯 Metallurgy Saw Blade for Seamless Steel Pipe	OKE509	OKE505	OKE511
	无缝钢管坯锯切冶金锯 Metallurgy Saw Blade for Seamless Steel Pipe Billet	OKE519	OKE509	OKE505
	彩钢瓦锯切专用锯片 Saw Blade for Color Steel Tile	NEW OKE501	OKE509	OKE505
	不锈钢薄壁管、装饰条专切锯片 Saw Blade for Stainless Steel Thin-Wall Pipe、Decoration Strip	OKE616	OKE505	OKE511
	硬质合金带锯(金工用） Tungsten Carbide Band Saw(For Metalworking）	——	——	DSP10
有色金属（铝、铝合金、黄铜） Non-Ferrous Metal （Aluminum、Aluminum Alloy、Brass）	双头锯断桥铝（建筑门窗用）合金锯切专用锯片 Saw Blade for Two-Cutted Saw	OKE406	OKE403	OKE402
	铝锭、铝管、铝棒切割用锯片 Saw Blade for Aluminium Ignot、Aluminium Pipe、Aluminium Bar	OKE211	OKE217	OKE305
	铝合金角码切割用锯片 Saw Blade for Aluminum Bracket	OKE405	OKE406	OKE403
	铜棒切割锯片 Saw Blade for Copper Bar	OKE217	OKE305	OKE405
有机材料 Other Organic Materials	有机玻璃、亚克力、塑料专切用锯片 Saw Blade for PMMA、Acrylic、Plastic	OKE217	OKE303	OKE302
	泡沫锯切用锯片 Saw Blade for Polystyrene Foam	OKE210	OKE217	OKE303

锯齿牌号应用推荐
Grade Recommendations

锯片名称 Saw Blade Name	推荐合金牌号 Recommended Grade		
	良好 Good	优秀 Very Good	卓越 Excellent
便携式电动工具用锯片 Saw Blade for Portable Power Tools	OKE211	OKE210	OKE217
割草专用锯片 Saw Blade for Cutting Grass	OKE-GC5	OKE-GC3	OKE-GC1
超市专售DIY合金锯片 DIY TCT Saw Blade for Supermarket Sale	OKE106	OKE211	OKE107
装修用锯片 Saw Blade for Decoration	OKE106	OKE109	OKE107

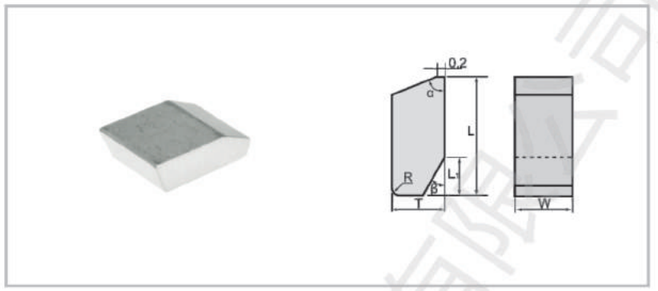
锯齿-JX系列
Saw Tips-JX Series



单位/Unit：毫米/Minllimetre

型号（Type）	L	T	α°	β°	L1	R
Jx3219652010	3.2	1.9	65	20	1.0	0.5
JX4014601110	4.0	1.4	60	11	1.0	0.5
JX4314602010	4.3	1.4	60	20	1.0	0.5
JX4515602610	4.5	1.5	60	26	1.0	0.5
JX4520653010	4.5	2.0	65	30	1.0	0.5
JX4815702610	4.8	1.5	70	26	1.0	0.5
JX5015602015	5.0	1.5	60	20	1.5	0.5
JX5015702015	5.0	1.5	70	20	1.5	0.5
JX5016652213	5.0	1.6	65	22	1.3	0.5
JX5017602813	5.0	1.7	60	28	1.3	0.5
JX5020602020	5.0	2.0	60	20	2.0	0.5
JX5216652017	5.2	1.6	65	20	1.7	0.5
JX5316602118	5.3	1.6	60	21	1.8	0.5
JX5417602013	5.4	1.7	60	20	1.3	0.5
JX5516601420	5.5	1.6	60	14	2.0	0.5
JX5517602118	5.5	1.7	60	21	1.8	0.5
JX5518602217	5.5	1.8	60	22	1.7	0.5
JX5520602019	5.5	2.0	60	20	1.9	0.5
JX5716602014	5.7	1.6	60	20	1.4	0.5
JX5718602021R06	5.7	1.8	60	20	2.1	0.6
JX5818602014	5.8	1.8	60	20	1.4	0.5
JX5919602016	5.9	1.9	60	20	1.6	0.5
JX6018652418	6.0	1.8	65	24	1.8	0.5
JX6020602014	6.0	2.0	60	20	1.4	0.5
JX6022602014	6.0	2.2	60	20	1.4	0.5
JX6218623012	6.2	1.8	62	30	1.2	0.5
JX6319701820	6.3	1.9	70	18	2.0	0.5
JX6320652521	6.3	2.0	65	25	2.1	0.5
JX6518602014	6.5	1.8	60	20	1.4	0.5
Jx6520602422	6.5	2.0	60	24	2.2	0.5
JX6522602016	6.5	2.2	60	20	1.6	0.5
Jx6525602015	6.5	2.5	60	20	1.5	0.5

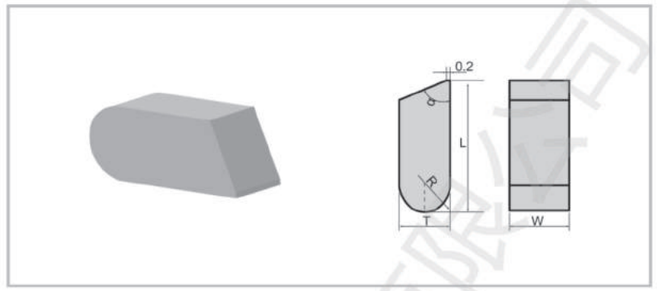
锯齿-JX系列
Saw Tips-JX Series



单位/Unit：毫米/Minllimetre

型号（Type）	L	T	α°	β°	L1	R
Jx6820702019	6.8	2.0	70	20	1.9	0.5
JX7020702016	7.0	2.0	70	20	1.6	0.5
JX7022601624	7.0	2.2	60	16	2.4	0.5
JX7023652025	7.0	2.3	65	20	2.5	0.5
JX7025652220	7.0	2.5	65	22	2.0	0.5
JX7222652521	7.2	2.2	65	25	2.1	0.5
JX7520622022	7.5	2.0	62	20	2.2	0.5
JX7522601628	7.5	2.2	60	16	2.8	0.5
JX7523602018	7.5	2.3	60	20	1.8	0.5
JX7525652029	7.5	2.5	65	20	2.9	0.5
JX8020701515	8.0	2.0	70	15	1.5	0.5
JX8022601628	8.0	2.2	60	16	2.8	0.5
JX8023652025	8.0	2.3	65	20	2.5	0.5
JX8024701926	8.0	2.4	70	19	2.6	0.5
JX8025602028	8.0	2.5	60	20	2.8	0.5
JX8025752118	8.0	2.5	75	21	1.8	0.5
JX8525622030	8.5	2.5	62	20	3.0	0.5
JX8525702026	8.5	2.5	70	20	2.6	0.5
JX9025652032	9.0	2.5	65	20	3.2	0.5
JX9028652025	9.0	2.8	65	20	2.5	0.5
JX9030603016	9.0	3.0	60	30	1.6	0.5
JX9528652030	9.5	2.8	65	20	3.0	0.5
JX10025652425	10.0	2.5	65	24	2.5	0.5
JX10028602030	10.0	2.8	60	20	3.0	0.5
JX10030622538	10.0	3.0	62	25	3.8	0.5
JX10525601534	10.5	2.5	60	15	3.4	0.5
JX10528602528	10.5	2.8	60	25	2.8	0.5
JX10530652030	10.5	3.0	65	20	3.0	0.5
JX10535603026	10.5	3.5	60	30	2.6	0.5
JX12040603026R	12.0	4.0	60	30	2.6	0.8
JX12540603026	12.5	4.0	60	30	2.6	0.5
JX13040552055R	13.0	4.0	55	20	5.5	0.8

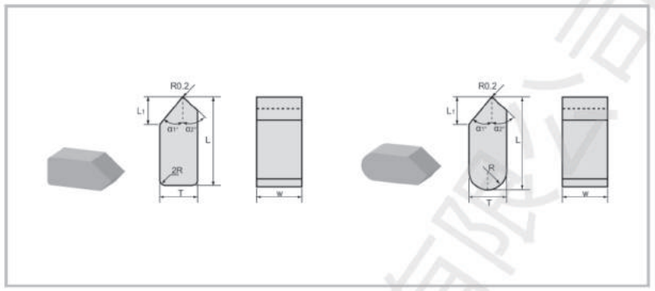
锯齿-JP系列
Saw Tips-JP Series



单位/Unit：毫米/Minllimetre

型号（Type）	L	T	α°	R	P
JP45146005-W	4.5	1.4	60	0.5	
JP50156005-W	5.0	1.5	60	0.5×45°	
JP54146005F-W	5.3	1.8	60	0.5×45°	
JP55166005-W	5.5	1.6	60	0.5	
JP55186005-W	5.5	1.8	60	0.5	
JP57207005-W	5.7	2.0	70	0.5	
JP58186005-W	5.8	1.8	60	0.5	
JP60175805-W	6.0	1.7	58	0.5	
JP63206705-W	6.3	2.0	67	0.5	
JP65207005-W	6.5	2.0	70	0.5	
JP70206505-W	7.0	2.0	65	0.5	
JP70236005-W	7.0	2.3	60	0.5	
JP80257505-W	8.0	2.5	75	0.5	
Jp50208205	5.0	2.0	82	0.5	0.2
JP531560F	5.3	1.5	60	0.5×45°	0.2
JP60308205F	6.0	3.0	82	0.5×45°	0.2
JP652070F	6.5	2.0	70	0.5×45°	0.2
JP803090F	8.0	3.0	90	0.5×45°	0.2
JP853082F	8.5	3.0	82	0.5×45°	0.2
JP1004082R15	10.0	4.0	82	1.5	0.2
JP1206082R15	12.0	6.0	82	1.5	0.4
JP1406082R15	14.0	6.0	82	1.5	0.4
JP1504067	15.0	4.0	67	0.5	0.4
JP1606082R15	16.0	6.0	82	1.5	0.4
JP1806082R15	18.0	6.0	82	1.5	0.4
JP2006082R15	20.0	6.0	82	1.5	0.4

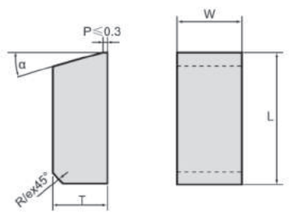
锯齿-JA系列
Saw Tips-JA Series



单位/Unit：毫米/Minllimetre

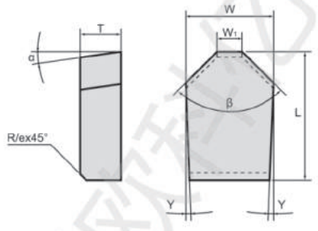
型号（Type）	L	T	a1°	a2°	L1	R
JA552010-W	5.5	2.0	39	80	1.23	1.0
JA602211-W	6.0	2.2	15	55	2.8	1.1
JA652010-W	6.5	2.0	40	40	1.37	1.0
JA652211-W	6.5	2.2	15	55	2.7	1.1
JA652211A-W	6.5	2.2	25	45	2.7	1.1
JA6522505-W	6.5	2.25	30	30	2.75	0.5
JA6522509-W	6.5	2.25	30	45	2.25	0.9
JA6523115-W	6.5	2.3	23.2	55	2.92	1.15
JA662010-W	6.6	2.0	30	50	1.56	1.0
JA702304-W	7.0	2.3	40	42	2.15	0.4
JA964824-W	9.6	4.8	21	53	3.6	2.4
JA995010-W	9.9	5.0	30	45	3.34	1.0

金属加工锯齿
Saw Tips for Metal Cutting



单位/Unit：毫米/Minllimetre

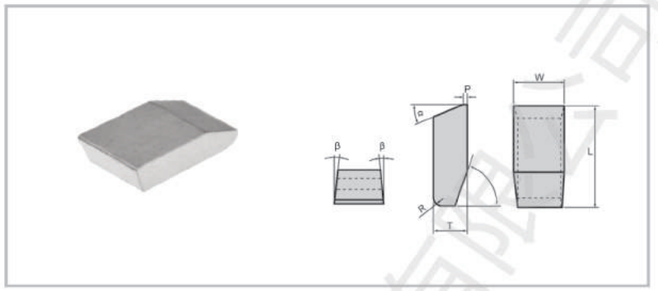
L×W×T	α°	R
5.5×W×1.6	8	0.5
5.5×W×2.0	10	0.5
6.0×W×2.0	10	0.5
6.5×W×2.2	10	0.5
7.5×W×2.5	8	0.5×45°
8.0×W×3.0	8	0.5×45°
8.5×W×3.0	8	0.5×45°
9.0×W×4.0	8	0.5×45°
10.0×W×4.0	8	0.5×45°
12.0×W×4.0	8	0.7×45°
13.0×W×6.0	8	0.5×45°
15.0×W×4.0	8	0.5×45°
17.0×W×5.0	8	0.5×45°
20.0×W×6.0	8	0.5×45°



单位/Unit：毫米/Minllimetre

L×W×T	α°	W1	β°	γ°	R/e×45°
7.1×7.2×4.0	8	2.0	90	/	0.5×45°
8.1×7.2×4.0	8	2.0	90	/	0.5×45°
11.8×8.7×4.0	8	2.3	120	1	0.7×45°
12.0×7.3×4.0	8	2.5	90	1	0.5×45°
12.3×9.3×4.0	8	2.7	90	1	0.7×45°
15.3×7.8×4.0	8	2.6	90	1	0.7×45°

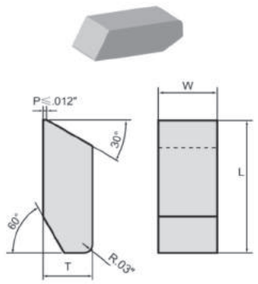
欧洲标准锯齿
Saw Tips-European Style



单位/Unit：毫米/Minllimetre

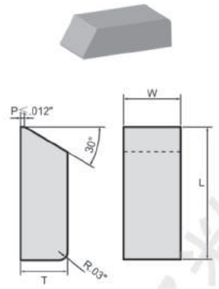
L	W	T	α°	β°	γ
5.0	1.8/2.2/2.4/2.8/3.2/3.5/4.0	1.5	28	45	0
5.5	2.0/2.3/2.8/3.4/5.5	1.5	20	75	0
6.0	2.3/2.5/2.7/3.0/5.0	1.8	20	65	4
6.0	2.0/2.4/2.6/2.8/3.0/3.2/3.5/3.8/4.5/5.0	1.8	28	45	0
6.0	2.4/2.6/2.8/3.2/3.4/3.6/4.0/5.0	2.0	28	45	0
6.5	1.9/2.2/2.7/3.3/6.5	1.6	28	70	5
6.5	2.6/3.0/3.2/3.4/3.5/3.8/ 4.0/4.2/6.0	2.0	30	65	5
6.5	2.2/2.4/2.6/2.8/3.2/3.3/3.5/3.7/3.8/6.0	2.0	28	56	0
6.5	2.2/2.3/2.5/2.8/3.0/3.1/3.2/3.3/3.6/4.3/4.5/5.3/6.0	2.0	28	56	5
7.0	2.0/2.3/2.5/2.7/3.2/3.3/3.6/3.8/4.4/6.0	2.0	28	70	5
7.0	3.0/3.3/3.6/3.8/4.0/4.2/4.6/5.0	2.2	28	70	5
7.0	2.8/3.0/3.2/3.4/3.7/4.0/6.5/7.0	2.3	20	76	0
7.5	2.0/2.2/2.4/2.8/3.0/3.2/3.6/3.8/6.0	2.0	28	70	5
7.5	2.5/2.8/3.0/3.2/3.4/3.6/3.8/4.0/4.2/4.4/4.5/5.2/6.0	2.5	28	70	5
7.5	2.8/3.2/3.5/3.7/4.5/5.0/5.6/6.0/6.5	2.4	30	50	0
8.0	2.4/2.8/2.9/3.0/3.1/3.2/3.3/3.4/3.5/3.6/3.8/3.9/4.04.3/4.4/4.5/4.8/5.0/5.2/5.5/6.0/6.8/8.0	2.3	28	70	5
8.0	2.8/3.0/3.3/3.5/3.8/4.1/4.2/4.6/5.0/5.2/5.5/10.0	2.5	28	70	5
8.0	3.6/4.1/4.3/4.6/4.8/5.0/5.5/5.5/6.0	3.0	25	45	0
8.5	2.8/3.0/3.3/3.4/3.5/3.6/3.8/4.1/4.2/4.3/4.6/5.0/6.0	2.5	28	70	5
9.0	3.6/4.3/4.5/5.2/5.5	2.7	28	45	5
9.0	3.1/3.3/3.5/3.6/3.8/4.3/4.5/4.7/5.2/5.5/5.8/6.0	2.7	28	70	5
10.0	3.4/3.5/4.3/6.5	2.5	20	68	0
10.0	3.5/3.7/3.9/4.0/4.3/4.5/4.7/5.0/5.5/6.0/6.5/7.0/7.5/10.0	2.8	28	70	5
10.0	3.5/3.8/4.3/4.5/4.7/4.8/5.0/5.3/5.4/5.5/6.0	3.0	15	72	0
10.5	3.0/3.5/3.8/7.0	2.3	28	70	5
10.5	3.0/3.3/3.4/3.5/3.6/3.8/4.0/4.1/4.3/4.4/4.5/4.6/5.2/5.5/6.5	2.5	28	70	5
10.5	3.0/3.4/3.5/3.6/3.8/4.1/4.3/4.5/4.6/4.7/4.8/5.0/5.3/5.5/5.6/5.6/6.0/6.5/7.0/7.5/14.5	3.0	28	70	5
10.5	3.5/3.9/4.0/4.2/4.3/4.4/4.5/4.6/4.7/4.8/5.0/5.3/5.5/5.8/6.0/6.5/7.0/8.0/8.5/9.0/10.5	3.5	28	70	5
10.5	3.5/3.9/4.0/4.1/4.3/4.5/4.7/4.8/4.9/5.1/5.5/6.0/6.5/7.0/9.0	3.5	39	59	5
10.5	4.1/4.8/5.0/5.5/6.0/6.5/7.5/8.5/9.5/11.0	3.5	30	75	0
12.0	4.5/4.6/4.7/5.1/5.5/5.8/6.0/6.3/6.5/7.0/8.0/8.5/10.0/12.5/17.0	3.5	30	45	10

美国标准锯齿
Saw Tips U.S.-Canadian Style



Unit: inch

Code	L	W	T
CWB 7050–CWB 7500	.281	.050–.500	.078
CWD 7050–CWD 7500	.312	.050–.500	.093
CWE 7050–CWE 7500	.375	.050–.500	.093
CWF 7050–CWF 7800	.500	.050–.800	.125
CWG 7050–CWG 7800	.375	.050–.800	.125
CWH 7050–CWH 7800	.344	.050–.800	.125

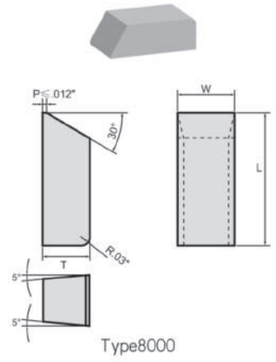


Type7000

Unit: inch

Code	L	W	T
WA 7050–WA 7500	.250	.050–.500	.062
WB 7050–WB 7500	.281	.050–.500	.078
WC 7050–WC 7500	.281	.050–.500	.093
WD 7050–WD 7800	.312	.050–.800	.093
WE 7050–WE 7800	.375	.050–.800	.093
WF 7050–WF 7800	.500	.050–.800	.125
WG 7050–WG 7800	.375	.050–.800	.125
WH 7050–WH 7800	.344	.050–.800	.125
WQ 7050–WQ 7800	.375	.050–.800	.156

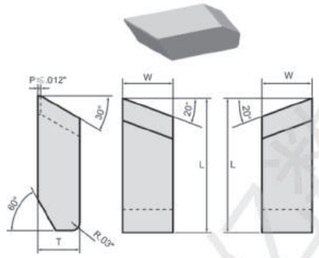
美国标准锯齿
Saw Tips U.S.-Canadian Style



Type8000

Unit: inch

Code	L	W	T
WA 8050–WA 8500	.250	.050–.500	.062
WB 8050–WB 8500	.281	.050–.500	.078
WC 8050–WC 8500	.281	.050–.500	.093
WD 8050–WD 8800	.312	.050–.800	.093
WE 8050–WE 8800	.375	.050–.800	.093
WF 8050–WF 8800	.500	.050–.800	.125
WG 8050–WG 8800	.375	.050–.800	.125
WH 8050–WH 8800	.344	.050–.800	.125
WQ 8050–WQ 8800	.375	.050–.800	.156

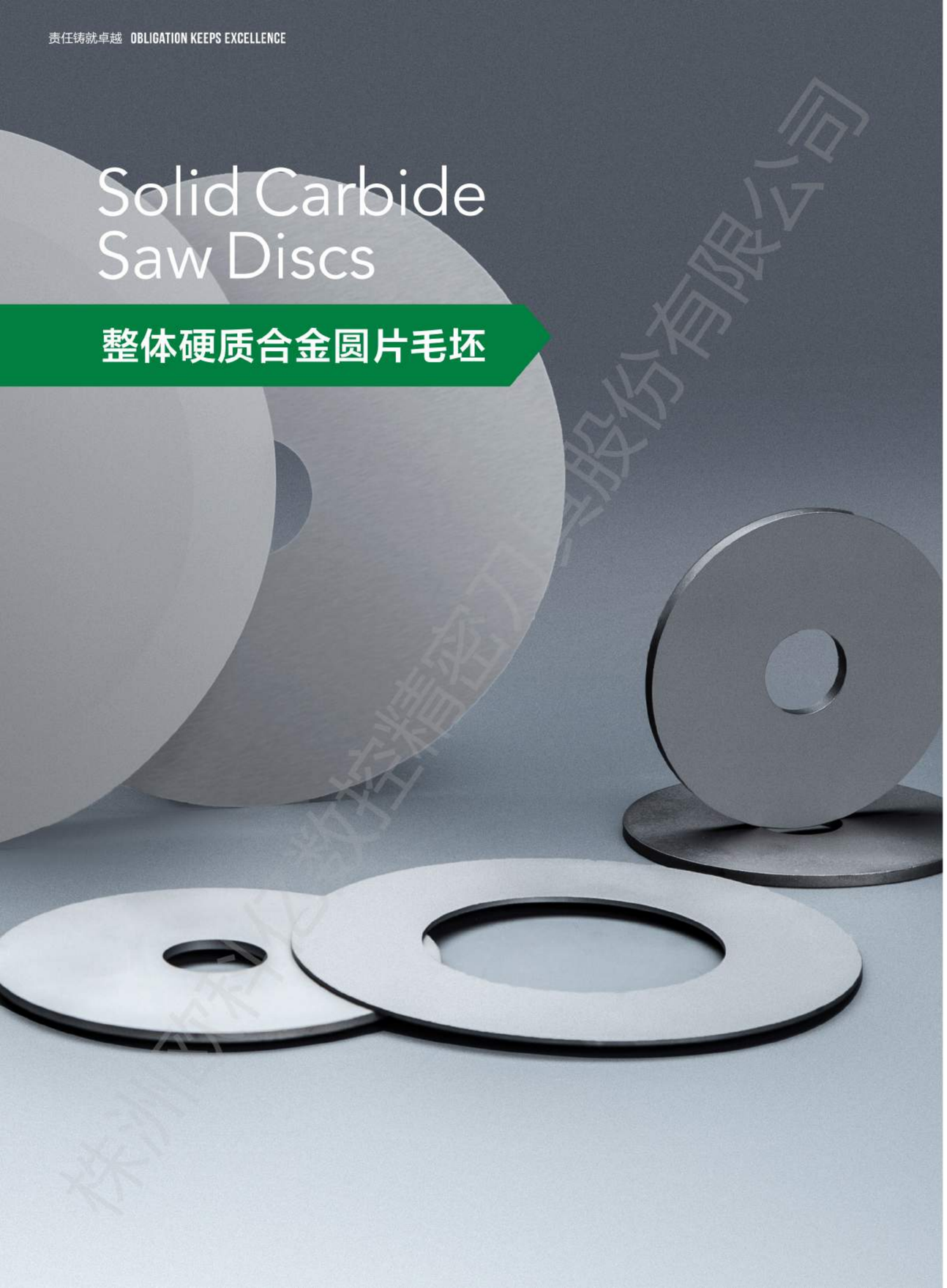


Unit: inch

Code	L	W	T
CWD–R/L 7050–7500	.312	.050–.500	.093
CWE–R/L 7050–7500	.375	.050–.500	.093
CWF–R/L 7050–7500	.500	.050–.500	.125
CWG–R/L 7050–7500	.375	.230–.270	.125

Solid Carbide Saw Discs

整体硬质合金圆片毛坯



整体硬质合金圆片牌号性能

Grades of Solid Carbide Saw Discs

牌号 Grade	粘结相(%) Binder	密度(g/cm³) Density	硬度Hardness		抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic	ISO标准 Code ISO	推荐用途 Recommended cutting applications
			Hv10	HRA				
OKE618	11	14.3	1620	92.2	3200	11.5	M10	超细晶粒，耐磨性与韧性优良，切割高温合金、钛合金、不锈钢，性能优良 Submiron grain, High wear resistance and toughness; Cutting high-temperature alloy, titanium alloy, stainless steel; Good performance.
OKE616	10	14.45	1590	92.0	3500	12.5	M10	切割有色金属、铸铁、铝合金（如换向器） Cutting non-ferrous metal, cast iron, aluminum alloy, such as redirector.
OKE628	11	14.3	1600	92.1	2800	10.5	M10	切割高温合金、钛合金、不锈钢（如针机板） Cutting high-temperature alloy, titanium alloy,stainless steel, such as pin machine.
OKE630	10	14.35	1560	91.7	2500	10.0	M15	切割不锈钢、高温合金、钛合金、低碳钢、中碳钢 Cutting stainless steel, high temperature alloy, titanium alloy, low carbon steel, medium carbon steel.
OKE615	7	14.8	1710	92.5	2700	9.7	K10	切割不锈钢、低碳钢、中碳钢 Cutting stainless steel, low carbon steel, medium carbon steel.

整体硬质合金圆锯片铣刀毛坯 有库存型号

Stock Items of Solid Carbide Saw Discs

单位/Unit：毫米/Minllimetre

规格(ΦD×Φd×T) Specifications	规格(ΦD×Φd×T) Specifications
OKEYP001	ϕ3.8×ϕ3.7×8.3
OKEYP002	ϕ25×ϕ7.5×0.6
OKEYP003	ϕ25×ϕ7.5×0.7
OKEYP004	ϕ33×ϕ7.5×0.7
OKEYP005	ϕ41.5×ϕ12×0.6
OKEYP006	ϕ51.5×ϕ15.3×1.7
OKEYP007	ϕ64.5×ϕ15.3×0.6
OKEYP008	ϕ64.5×ϕ15.3×0.7
OKEYP009	ϕ76.5×ϕ15×1.0

规格(ΦD×Φd×T) Specifications	规格(ΦD×Φd×T) Specifications
OKEYP010	ϕ81.5×ϕ15×1.0
OKEYP011	ϕ87×ϕ30.5×1.3
OKEYP012	ϕ102×ϕ21×1.0
OKEYP013	ϕ102×ϕ20.5×1.0
OKEYP014	ϕ102×ϕ48.5×1.45
OKEYP015	ϕ152×ϕ30.5×1.0
OKEYP016	ϕ162×ϕ24×1.0
OKEYP017	ϕ162×ϕ30.5×1.0
OKEYP018	ϕ162×ϕ30.5×1.2

整体硬质合金圆锯片铣刀 常用加工切削参数推荐表

Commonly Used Processing Cutting Parameters Recommended List of Solid Carbide Saw Discs

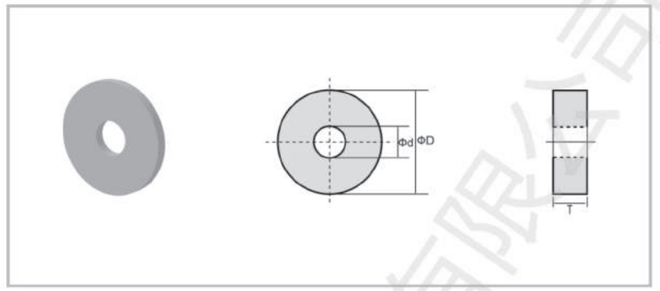
单位/Unit：毫米/Minllimetre

被加工材料 Processed Material	线速度 (Vc(m/min) Linear Speed		每齿进给f(mm) Feed Rate/1 tooth
	不涂层 Non-coating	涂层 Coating	
铝合金 Aluminium alloy	500-1200	-	0.003-0.10
白铜，黄铜 Cupronickel,Brass	400-800	-	0.003-0.10
不锈钢 Stainless steel	200-400	300-500	0.003-0.006
钛合金 Titanium alloy	150-250	200-300	0.003-0.006
低碳钢 Low carbon steel	200-350	300-500	0.003-0.10

被加工材料 Processed Material	线速度 (Vc(m/min) Linear Speed		每齿进给f(mm) Feed Rate/1 tooth
	不涂层 Non-coating	涂层 Coating	
中碳钢 Medium carbon steel	150-300	250-400	0.003-0.008
热处理钢HRC30-38° Heat-treatedsteel HRC30-38°	100-200	200-300	0.003-0.006
热处理钢HRC39-47° Heat-treatedsteel HRC39-47°	80-150	150-200	0.003-0.006
热处理钢HRC48-55° Heat-treatedsteel HRC48-55°	50-100	100-150	0.003-0.006
铸铁 Cast iron	250-350	300-400	0.02-0.30

整体硬质合金 圆锯片铣刀毛坯

Solid Carbide Saw Discs



单位/Unit：毫米/Minllimetre

规格(ΦD×Φd×T) Specifications	规格(ΦD×Φd×T) Specifications	规格(ΦD×Φd×T) Specifications	规格(ΦD×Φd×T) Specifications	规格(ΦD×Φd×T) Specifications	规格(ΦD×Φd×T) Specifications
Φ5×Φ2.5×T	Φ15.7×Φ5.7×T	Φ33×Φ5.5×T	Φ58×Φ24×T	Φ81.5×Φ24×T	Φ113×Φ18×T
Φ8.7×Φ2.0×T	Φ16×Φ2×T	Φ33×Φ7.2×T	Φ61.5×Φ9.5×T	Φ82×Φ12×T	Φ118×Φ45×T
Φ8.7×Φ3.7×T	Φ16×Φ4.5×T	Φ33×Φ7.5×T	Φ61.5×Φ11.5×T	Φ82×Φ24×T	Φ118×Φ86.5×T
Φ10×Φ3.2×T	Φ16×Φ4.7×T	Φ33×Φ9.2×T	Φ61.5×Φ15×T	Φ82×Φ30.5×T	Φ122×Φ10.5×T
Φ10.7×Φ3.7×T	Φ16.5×Φ3×T	Φ33×Φ11.5×T	Φ61.5×Φ21×T	Φ83×Φ25.5×T	Φ122×Φ21×T
Φ10.7×Φ3×T	Φ16.5×Φ7.7×T	Φ37×Φ7.5×T	Φ61.5×Φ24×T	Φ86.5×Φ15×T	Φ122×Φ24×T
Φ11.7×Φ5.7×T	Φ16.7×Φ5.7×T	Φ37×Φ12×T	Φ64.5×Φ12×T	Φ86.5×Φ21×T	Φ122×Φ38.5×T
Φ11×Φ3×T	Φ17×Φ4.2×T	Φ37.5×Φ12×T	Φ64.5×Φ15×T	Φ87×Φ24×T	Φ126×Φ21.5×T
Φ12×Φ4.2×T	Φ17×Φ4.5×T	Φ39.5×Φ15×T	Φ64.5×Φ21×T	Φ87×Φ30.5×T	Φ127×Φ20.5×T
Φ12×Φ4.5×T	Φ17×Φ4.7×T	Φ41.5×Φ12×T	Φ67×Φ15×T	Φ91.5×Φ21.5×T	Φ127×Φ68.5×T
Φ12.7×Φ3.7×T	Φ17×Φ5.2×T	Φ41.5×Φ8.5×T	Φ67×Φ24.5×T	Φ91.5×Φ24.3×T	Φ127×Φ21×T
Φ12.7×Φ5.7×T	Φ17×Φ5.5×T	Φ41.5×Φ9.5×T	Φ71.5×Φ12×T	Φ92.5×Φ24.5×T	Φ127×Φ24×T
Φ13×Φ3.5×T	Φ17.5×Φ4.2×T	Φ42×Φ5.6×T	Φ71.5×Φ15×T	Φ96.5×Φ20.5×T	Φ132×Φ20.5×T
Φ13×Φ4.5×T	Φ17.5×Φ5.5×T	Φ42×Φ7.5×T	Φ71.5×Φ20.5×T	Φ96.5×Φ24.5×T	Φ132×Φ30.5×T
Φ13×Φ5.6×T	Φ17.7×Φ5.7×T	Φ42×Φ8.5×T	Φ72×Φ12×T	Φ96.5×Φ30.5×T	Φ152×Φ21×T
Φ13×Φ5.6×T	Φ20×Φ5.2×T	Φ46.5×Φ12×T	Φ72×Φ15×T	Φ101.5×Φ15×T	Φ152×Φ24×T
Φ13.5×Φ2.0×T	Φ20×Φ7.5×T	Φ46.5×Φ15×T	Φ72×Φ24×T	Φ102×Φ12×T	Φ152×Φ30.5×T
Φ13.7×Φ5.7×T	Φ21×Φ3×T	Φ47×Φ9.2×T	Φ76.5×Φ15×T	Φ102×Φ20.5×T	Φ162×Φ20.5×T
Φ13.7×Φ3.5×T	Φ21×Φ4.5×T	Φ47×Φ12×T	Φ76.5×Φ21×T	Φ102×Φ21×T	Φ162×Φ24×T
Φ14×Φ4.2×T	Φ21×Φ7.5×T	Φ51.5×Φ8.5×T	Φ76.5×Φ24×T	Φ102×Φ24×T	Φ162×Φ30.5×T
Φ14×Φ4.5×T	Φ22×Φ7.5×T	Φ51.5×Φ9.5×T	Φ76.5×Φ30.5×T	Φ102×Φ30.5×T	Φ162×Φ38.5×T
Φ14×Φ5.2×T	Φ22×Φ9.2×T	Φ51.5×Φ12×T	Φ77×Φ12×T	Φ102×Φ38×T	Φ171×Φ24×T
Φ14×7.5×T	Φ23×Φ7.5×T	Φ51.5×Φ15×T	Φ77×Φ15×T	Φ102×Φ48.5×T	Φ182×Φ30×T
Φ14.5×7.5×T	Φ25×Φ7.5×T	Φ52×Φ7.5×T	Φ77×Φ21×T	Φ102×Φ58×T	Φ203×Φ30.5×T
Φ14.7×Φ5.7×T	Φ26×Φ5.2×T	Φ52×Φ12×T	Φ77.5×Φ15×T	Φ104×Φ30.5×T	Φ228×Φ20.5×T
Φ14.7×Φ7.5×T	Φ26×Φ7.5×T	Φ52×Φ15×T	Φ77.5×Φ24×T	Φ108×Φ24×T	Φ252×Φ30.5×T
Φ15×Φ4×T	Φ26×Φ7.2×T	Φ52×Φ24×T	Φ79×Φ24×T	Φ108×Φ30.5×T	Φ284×Φ20×T
Φ15×Φ4.7×T	Φ26×Φ9.2×T	Φ57×Φ12×T	Φ81.5×Φ15×T	Φ112×Φ24.5×T	Φ263×Φ155×T
Φ15×Φ5.5×T	Φ28.7×Φ8.2×T	Φ57×Φ15×T	Φ81.5×Φ21×T	Φ112×Φ25.4×T	Φ300×Φ152×T
Φ15.7×Φ5.7×T	Φ28.7×Φ7.5×T	Φ58×Φ21×T	Φ81.5×Φ24×T	Φ112×Φ30.5×T	Φ314×Φ217.5×T

Carbide Rods

实心圆棒

硬质合金金属用圆棒毛坯牌号介绍

Grade Introduction Of Carbide Rods For Metal Cutting

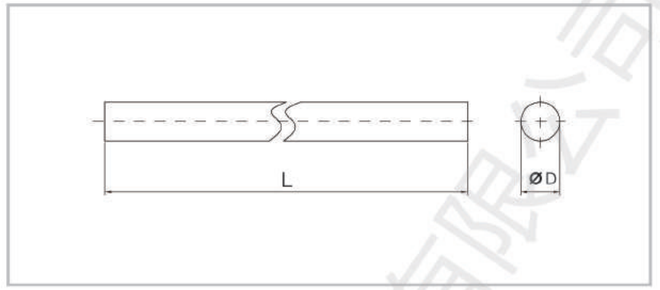
牌号 Grade	ISO牌号 ISO	晶粒度 (μm) Grain Size	钴含量(%) Cobalt Content	硬度 (HRA) Hardness	密度 (g/cm^3) Density	抗弯强度 (N/mm^2) T.R.S	推荐用途 Recommended cutting applications
MC06U	K05-K10	0.4	6.3	94.0	14.82	3800	高耐磨性、高韧性；制作钻石涂层刀具、PCB刀具、适用于加工PCB、复合材料、纤维强化塑料。 High wear resistance, high toughness; Used for diamond coating tools. PCB tools, suitable for cutting PCB, composite material and fiber reinforced plastics.
MC12U	K20-K40	0.4	12	92.6	14.15	4200	高速切削、精加工，材质耐磨性和韧性达到理想的平衡，制作高性能立铣刀和铰刀，适合加工材质：碳钢、合金钢（HRC：45°-58°）、6/7系铝合金、镍基合金、钛合金等。 High speed milling, finishing, with excellent hardness and toughness; Used for endmill and reamer, suitable for processing carbon steel, alloy steel (HRC: 45°-58°), Al alloy of 6/7 series, nickel base alloy and Ti alloy.
MC10UF	K20-K40	0.6	10	92.4	14.32	3800	用于制作通用加工钻头，立铣刀，特别适用于不锈钢、耐热合金、铸铁等。 Used for drill and endmill, especially suitable for cutting stainless steel, heat resistant alloy and cast iron.
MC20F	K20-K40	0.8	10	91.8	14.45	3600	材质通用性强，适用于制作钻头，立铣刀，适用于普通合金钢（HRC<48°），灰口铸铁，不锈钢的加工。 With a strong universality, used for drill and endmill. especially suitable for cutting ordinary alloyed steel(HRC<48°), grey cast iron,stainless steel.
MC30	K15	1.0	6.0	92.5	14.95	2600	制作钻头，立铣刀和旋转锉刀，加工灰口铸铁、冷硬铸铁、合金钢、有色金属，制作钻石涂层刀具。 Used for Drill, endmill and burrs ;Suitable forcutting grey cast iron, chilled cast iron, alloy steel, nonferrous metal;used to make diamond coating tools.

牌号推荐
Grade Selection Guide

推荐图例Notes　可用 Acceptable★　优选 Good★★　涂层 Coating●

加工材料 Workpiece	刀具类别 Type of Cutting Tools		MC06U	MC12U	MC10UF	MC20F	MC30
P 钢 Steel	钻头 Drill				★	★★	
	立铣刀 Endmill	粗加工Roughing				★★	
		精加工Finishing		★★	★★	★	
M 不锈钢 Stainless Steel	钻头 Drill				★	★★	
	立铣刀 Endmill	粗加工Roughing				★	
		精加工Finishing			★★		
K 铸铁 Cast Iron	钻头 Drill				★	★★	
	立铣刀 Endmill	粗加工Roughing				★★	
		精加工Finishing			★	★	★★
N 有色金属 Nonferrous Material	钻头 Drill					★★	●
	立铣刀 Endmill	粗加工Roughing				★★	
		精加工Finishing		★★			●
S 耐热合金 Heat Resistance Material	钻头 Drill				★	★★	
	立铣刀 Endmill	粗加工Roughing			★	★	
		精加工Finishing		★★	★	★	
H 高硬材料 Hardened Material	钻头 Drill		★★		★		
	立铣刀 Endmill	粗加工Roughing	★				
		精加工Finishing	★	★			
O Others 复合材料 Composite Material	钻头 Drill		★★		★		
	立铣刀 Endmill	粗加工Roughing	★★				
		精加工Finishing	★	★			

公制长棒
Solid Rods-Metric



●=有库存Stock ○=需订货Order　单位unit(mm)

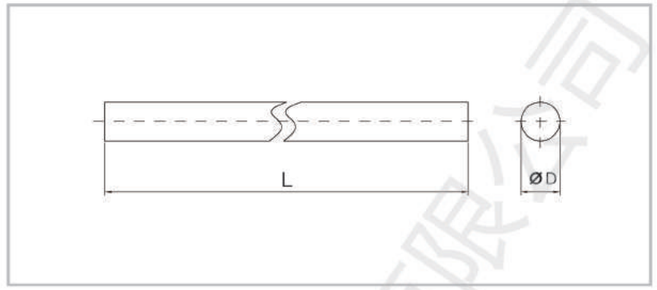
直径ΦD	长度L	MC20F/MC12U	MC10UF
2	330	●	○
3	310	●	●
3	330	●	●
4	310	●	●
4	330	●	●
5	310	●	●
5	330	●	●
6	310	●	●
6	330	●	●
7	330	●	○
8	310	●	●
8	330	●	●
9	330	●	○
10	310	●	●
10	330	●	●
11	330	●	●
12	310	●	●
12	330	●	●
13	330	●	○
14	310	●	●
14	330	●	●
15	330	●	○
16	310	●	●
16	330	●	●
17	330	●	○
18	330	●	●


毛坯Unground


精磨Ground

毛坯Unground ΦD(mm)		精磨Ground ΦD(mm)		长度L(mm)
范围(Range)	公差(Tol.)	范围(Range)	公差(Tol.)	
2≤ΦD＜3	+0.15，+0.30	2≤ΦD≤42	h5/h6	0,+5
3≤ΦD≤6	+0.30，+0.50			
6＜ΦD≤12	+0.30，+0.60			
12＜ΦD≤16	+0.30，+0.70			
16＜ΦD≤42	+0.30，+0.80			

公制长棒
Solid Rods-Metric



●=有库存Stock ○=需订货Order 单位unit(mm)

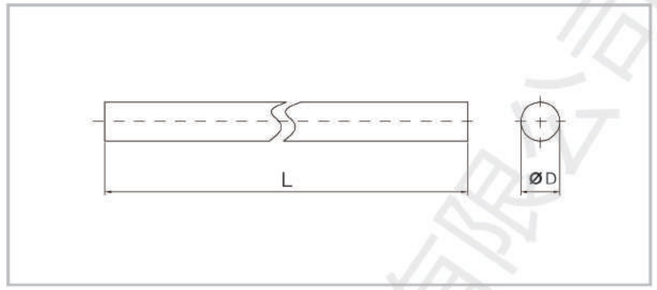
直径ΦD	长度L	MC20F/MC12U	MC10UF	直径ΦD	长度L	MC20F/MC12U	MC10UF
19	330	●	○	31	330	○	○
20	310	●	○	32	330	○	○
20	330	●	●	33	330	○	○
21	310	○	○	34	330	○	○
22	330	○	○	35	330	○	○
23	310	○	○	36	330	○	○
24	330	○	○	37	330	○	○
25	310	●	○	38	330	○	○
26	330	○	○	39	330	○	○
27	330	○	○	40	330	○	○
28	310	○	○	41	330	○	○
29	330	○	○	42	330	○	○
30	330	○	○				


毛坯Unground


精磨Ground

毛坯Unground ΦD(mm)		精磨Ground ΦD(mm)		长度L(mm)
范围(Range)	公差(Tol.)	范围(Range)	公差(Tol.)	
2≤ΦD＜3	+0.15，+0.30	2≤ΦD≤42	h5/h6	0,+5
3≤ΦD≤6	+0.30，+0.50			
6＜ΦD≤12	+0.30，+0.60			
12＜ΦD≤16	+0.30，+0.70			
16＜ΦD≤42	+0.30，+0.80			

英制长棒
Solid Rods–Inch



●=有库存Stock ○=需订货Order 单位unit(mm)

直径ΦD	长度L	MC20F/MC12U	MC10UF	直径ΦD	长度L	MC20F/MC12U	MC10UF
0.1250	13-1/8	○	○	0.4063	12-1/8	○	○
0.1406	13-1/8	○	○	0.4219	12-1/8	○	○
0.1563	13-1/8	○	○	0.4375	12-1/8	○	○
0.1719	13-1/8	○	○	0.4531	12-1/8	○	○
0.1875	13-1/8	○	○	0.4688	12-1/8	○	○
0.2188	13-1/8	○	○	0.4844	12-1/8	○	○
0.2344	13-1/8	○	○	0.5000	12-1/8	○	○
0.2500	13-1/8	○	○	0.5313	12-1/8	○	○
0.2813	12-1/8	○	○	0.5625	12-1/8	○	○
0.2969	12-1/8	○	○	0.6250	12-1/8	○	○
0.3125	12-1/8	○	○	0.6875	12-1/8	○	○
0.3281	12-1/8	○	○	0.7500	12-1/8	○	○
0.3438	12-1/8	○	○	0.8125	12-1/8	○	○
0.3594	12-1/8	○	○	0.8750	12-1/8	○	○
0.3750	12-1/8	○	○	0.9375	12-1/8	○	○
0.3906	12-1/8	○	○	1.0000	12-1/8	○	○

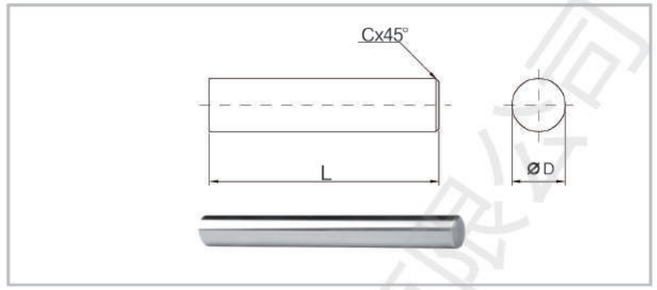

毛坯Unground


精磨Ground

毛坯Unground ΦD(mm)		精磨Ground ΦD(mm)		长度L(mm)
范围(Range)	公差(Tol.)	范围(Range)	公差(Tol.)	
1/8≤ΦD≤1/4	+0.012,+0.020	1/8≤ΦD≤1	h5/h6	+1/8,+3/8
1/4＜ΦD≤31/64	+0.012,+0.024			
31/64＜ΦD≤5/8	+0.012,+0.028			
5/8＜ΦD≤1	+0.012,+0.032			

精磨倒角短棒 (公制)

Ground Rods with Chamfer-Metric



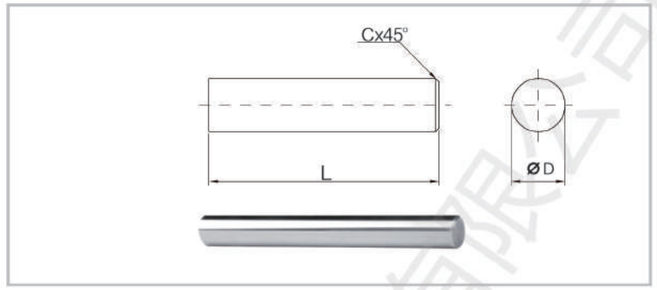
单位unit(mm)

直径 ΦD	长度 L (公差Tol./0,+1)	倒角尺寸 C (公差Tol./±0.1)	倒角角度 Angle of Chamfer (公差Tol./±3°)
3	40	0.4	45°
3	50	0.4	45°
3	70	0.4	45°
3	100	0.4	45°
3	150	0.4	45°
4	40	0.4	45°
4	50	0.4	45°
4	75	0.4	45°
4	100	0.4	45°
4	150	0.4	45°
5	50	0.5	45°
5	55	0.5	45°
5	60	0.5	45°
5	70	0.5	45°
5	80	0.5	45°
5	100	0.5	45°
5	150	0.5	45°
6	50	0.5	45°
6	60	0.5	45°
6	75	0.5	45°
6	100	0.5	45°
6	150	0.5	45°
7	55	0.6	45°
7	60	0.6	45°
8	60	0.6	45°
8	75	0.6	45°

直径 ΦD	长度 L (公差Tol./0,+1)	倒角尺寸 C (公差Tol./±0.1)	倒角角度 Angle of Chamfer (公差Tol./±3°)
8	80	0.6	45°
8	90	0.6	45°
8	100	0.6	45°
8	150	0.6	45°
10	70	0.6	45°
10	75	0.6	45°
10	90	0.6	45°
10	100	0.6	45°
10	125	0.6	45°
11	110	0.8	45°
12	75	0.8	45°
12	90	0.8	45°
12	100	0.8	45°
12	120	0.8	45°
14	75	0.8	45°
14	110	0.8	45°
14	125	0.8	45°
16	100	0.8	45°
16	125	0.8	45°
18	100	0.8	45°
18	150	0.8	45°
20	100	1.0	45°
20	120	1.0	45°
20	150	1.0	45°
25	100	1.0	45°
25	150	1.0	45°

精磨倒角短棒 (英制)

Ground Rods with Chamfer-Inch

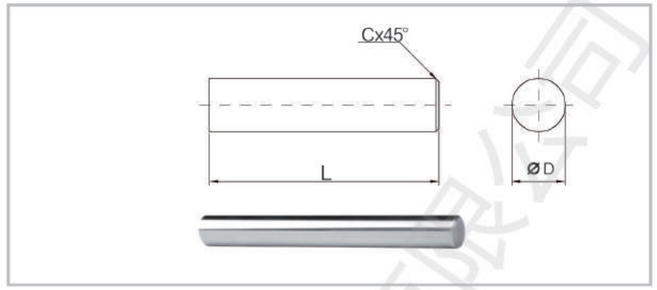


单位unit(mm)

直径 ΦD	长度 L (公差Tol./0,+1/16)	倒角尺寸		倒角角度 Angle of Chamfer (公差Tol./±3°)
		C	公差Tol	
0.1250	1-1/2	0.015	±0.004	45°
0.1250	2	0.015	±0.004	45°
0.1250	2-1/2	0.015	±0.004	45°
0.1250	3	0.015	±0.004	45°
0.1875	2	0.015	±0.004	45°
0.1875	3	0.015	±0.004	45°
0.2500	2	0.015	±0.004	45°
0.2500	2-1/2	0.015	±0.004	45°
0.2500	3	0.015	±0.004	45°
0.2500	4	0.015	±0.004	45°
0.3125	2-1/2	0.015	±0.004	45°
0.3750	2-1/2	0.015	±0.004	45°
0.3750	3	0.015	±0.004	45°
0.5000	2-1/2	0.031	±0.008	45°
0.5000	3	0.031	±0.008	45°
0.5000	4	0.031	±0.008	45°
0.6250	3-1/2	0.031	±0.008	45°
0.7500	4	0.031	±0.008	45°
0.7500	5	0.031	±0.008	45°
1.0000	4	0.031	±0.008	45°

精磨倒角短棒 (DIN)

Ground Rods with Chamfer-DIN

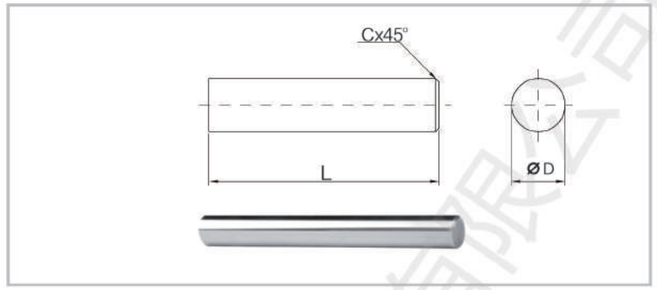


单位unit(mm)

直径 ΦD	长度 L (公差Tol./0,+1/16)	倒角尺寸 C (公差Tol./±0.1)	倒角角度 Angle of Chamfer (公差Tol./±3°)	标准 Standard
3	38	0.4	45°	D6527K/D6527L
3.5	50	0.4	45°	D6528
4	50	0.4	45°	D6528
4.5	50	0.5	45°	D6528
5	50	0.5	45°	D6528
5.5	57	0.5	45°	D6528
6	50	0.5	45°	D6527K
6	57	0.5	45°	D6527L/D6528
6	54	0.5	45°	D6527K
6.5	60	0.6	45°	D6528
7	60	0.6	45°	D6528
7.5	63	0.6	45°	D6528
8	58	0.6	45°	D6527K
8	63	0.6	45°	D6527L/D6528
8.5	67	0.6	45°	D6528
9	67	0.6	45°	D6528
9.5	72	0.6	45°	D6528
10	66	0.6	45°	D6527K
10	72	0.6	45°	D6527L/D6528
11	83	0.8	45°	D6528
12	73	0.8	45°	D6527K
12	83	0.8	45°	D6527L/D6528
13	83	0.8	45°	D6528
14	75	0.8	45°	D6527K
14	83	0.8	45°	D6527L/D6528
15	92	0.8	45°	D6528
16	82	0.8	45°	D6527K
16	92	0.8	45°	D6527L/D6528
18	84	0.8	45°	D6527K
18	92	0.8	45°	D6527L/D6528
20	92	1.0	45°	D6527K
20	104	1.0	45°	D6527L/D6528

精磨倒角短棒 (DIN)

Ground Rods with Chamfer-DIN



单位unit(mm)

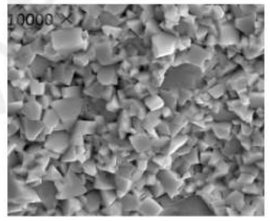
直径 ΦD	长度 L (公差Tol./0,+1/16)	倒角尺寸 C (公差Tol./±0.1)	倒角角度 Angle of Chamfer (公差Tol./±3°)	标准 Standard
3	47	0.4	45°	D6539
4	56	0.4	45°	D6539
5	63	0.5	45°	D6539
6	63	0.5	45°	D6537K
6	67	0.5	45°	D6537K/D6537L/D6539
6	75	0.5	45°	D6537L
6	83	0.5	45°	D6537L
7	75	0.6	45°	D6539
8	80	0.6	45°	D6537K/D6539
8	92	0.6	45°	D6537L
9	85	0.6	45°	D6539
10	90	0.6	45°	D6537K/D6539
10	104	0.6	45°	D6537L
11	96	0.8	45°	D6539
12	103	0.8	45°	D6537K/D6539
12	119	0.8	45°	D6537L
13	103	0.8	45°	D6539
14	108	0.8	45°	D6537K/D6539
14	125	0.8	45°	D6537L
15	112	0.8	45°	D6539
16	116	0.8	45°	D6537K/D6539
16	134	0.8	45°	D6537L
17	120	0.8	45°	D6539
18	124	0.8	45°	D6537K/D6539
18	144	0.8	45°	D6537L
19	128	1.0	45°	D6539
20	132	1.0	45°	D6537K/D6539
20	154	1.0	45°	D6537L

Carbide Rods for Wood cutting

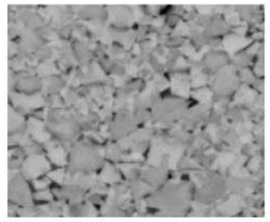
木工用整体硬质合金圆棒

木工用圆棒牌号介绍

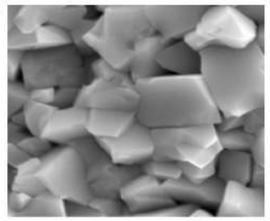
Carbide Rod Grades for Wood Cutting

牌号 Grade	ISO	成分 Composition	切削应用 Cutting Applications	显微组织 Microstructure
WP03	<K01	Co:2.850%, WC balance,Other0.65%	刨花板 密度板 Chipboard Density Board	

晶粒度 Grainsize	密度 Density	硬度 Hardness	强度 TRS	断裂韧性 Kic
Ultrafine grain 0.2-0.4um	15.2g/cm^3	94.5HRA	3200MPa	8.5MPa.m$^{1/2}$

牌号 Grade	ISO	成分 Composition	切削应用 Cutting Applications	显微组织 Microstructure
WP10	<K01	Co:3.0%, WC balance,Other0.55%	密度板 Density Board	

晶粒度 Grainsize	密度 Density	硬度 Hardness	强度 TRS	断裂韧性 Kic
Ultrafine grain 0.6um	15.15g/cm^3	93.8HRA	3400MPa	8.8MPa.m$^{1/2}$

牌号 Grade	ISO	成分 Composition	切削应用 Cutting Applications	显微组织 Microstructure
WP20	K20	Co:8.0%, WC balance	实木（软木、硬木） Wood（Soft Wood、Hard Wood）	

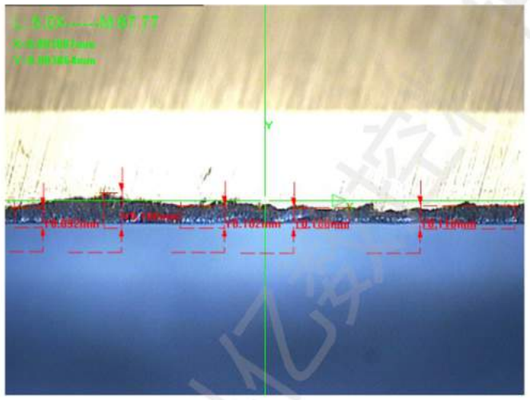
晶粒度 Grainsize	密度 Density	硬度 Hardness	强度 TRS	断裂韧性 Kic
Ultrafine grain 1.0-1.2um	14.7g/cm^3	91.6HRA	3800MPa	11MPa.m$^{1/2}$

WP03牌号切削实验数据对比

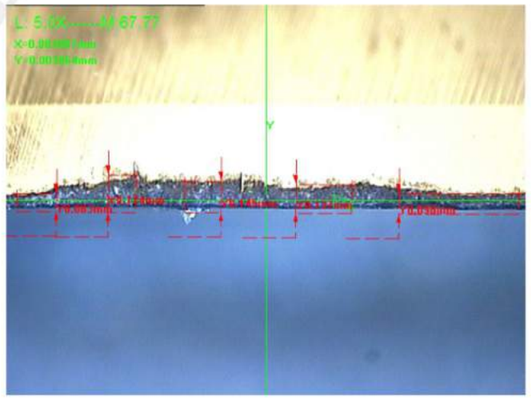
Cutting Experimental Data With WP03

切削材质 Cutting Material
刨花板 Chipboard
切削设备 Cutting Machine
数控雕刻机 CNC Engraving Machine
切削刀具 Cutting Tool
三刃开料刀 TCT 3-Edge Straight Bit

WP03材质和A公司材质磨损值对比
Wean comparison of WP03 and A-GRADE



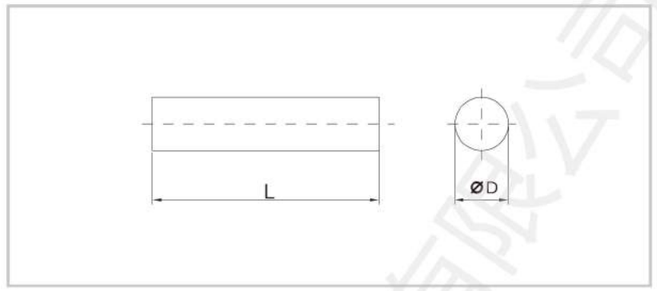
WP03牌号刀具刃口磨损图
WP03 cutter edge wear figure



国外某公司牌号刀具刃口磨损图
A-grade cutter edge wear figure

木工圆棒
常用规格型号

Carbide Rod Common Specifications for Wood Cutting



单位unit(mm)

直径ΦD	长度L	直径ΦD	长度L	直径ΦD	长度L
6.3	20	8.3	20	10.3	20
6.3	22	8.3	22	10.3	22
6.3	24	8.3	24	10.3	24
6.3	26	8.3	26	10.3	26
6.3	28	8.3	28	10.3	28
6.3	30	8.3	30	10.3	30
6.3	32	8.3	32	10.3	32
6.3	34	8.3	34	10.3	34
6.3	36	8.3	36	10.3	36
6.3	38	8.3	38	10.3	38
6.3	40	8.3	40	10.3	40
6.3	42	8.3	42	10.3	42
6.3	44	8.3	44	10.3	44
6.3	46	8.3	46	10.3	46

外径公差（mm） D(Tol.)	长度公差（mm） L(Tol.)
D （+0.05） （+0.0）	L （+0.3） （+0.0）

公差等级
Carbide Rod Tolerances

精磨外径公差
Tol. of Ground Rods' Diameter

"h"的公差均为+0.0/-　"h" Tolerance all +0.0/-

DIAMETER	h5	h6	h7
0-3.0mm	0.004mm	0.006mm	0.010mm
0-0.1181in.	0.00015in.	0.00024in.	0.00039in.
3.001-6.0mm	0.005mm	0.008mm	0.012mm
0.1181-0.2362in.	0.00020in.	0.00031in.	0.00047in.
6.001-10.0mm	0.006mm	0.009mm	0.015mm
0.2363-0.3937in.	0.00024in.	0.00035in.	0.00059in.
10.001-18.0mm	0.008mm	0.011mm	0.018mm
0.3938-0.7087in.	0.00031in.	0.00043in.	0.00071in.
18.001-30.0mm	0.009mm	0.013mm	0.021mm
0.7088-1.1811in.	0.00035in.	0.00051in.	0.00083in.
30.001-50.0mm	0.011mm	0.016mm	0.025mm
1.1812-1.9685in.	0.00043in.	0.00063in.	0.00098in.

棒材表面粗糙度
Surface Roughness of Rods

类型 Type	精度 Accuracy
镜面棒材 Polished Rods	0.00-0.05 μm
亚光洁度 Dull Finished	0.10-0.20 μm
精磨棒材 Ground Rods	0.00-0.10 μm

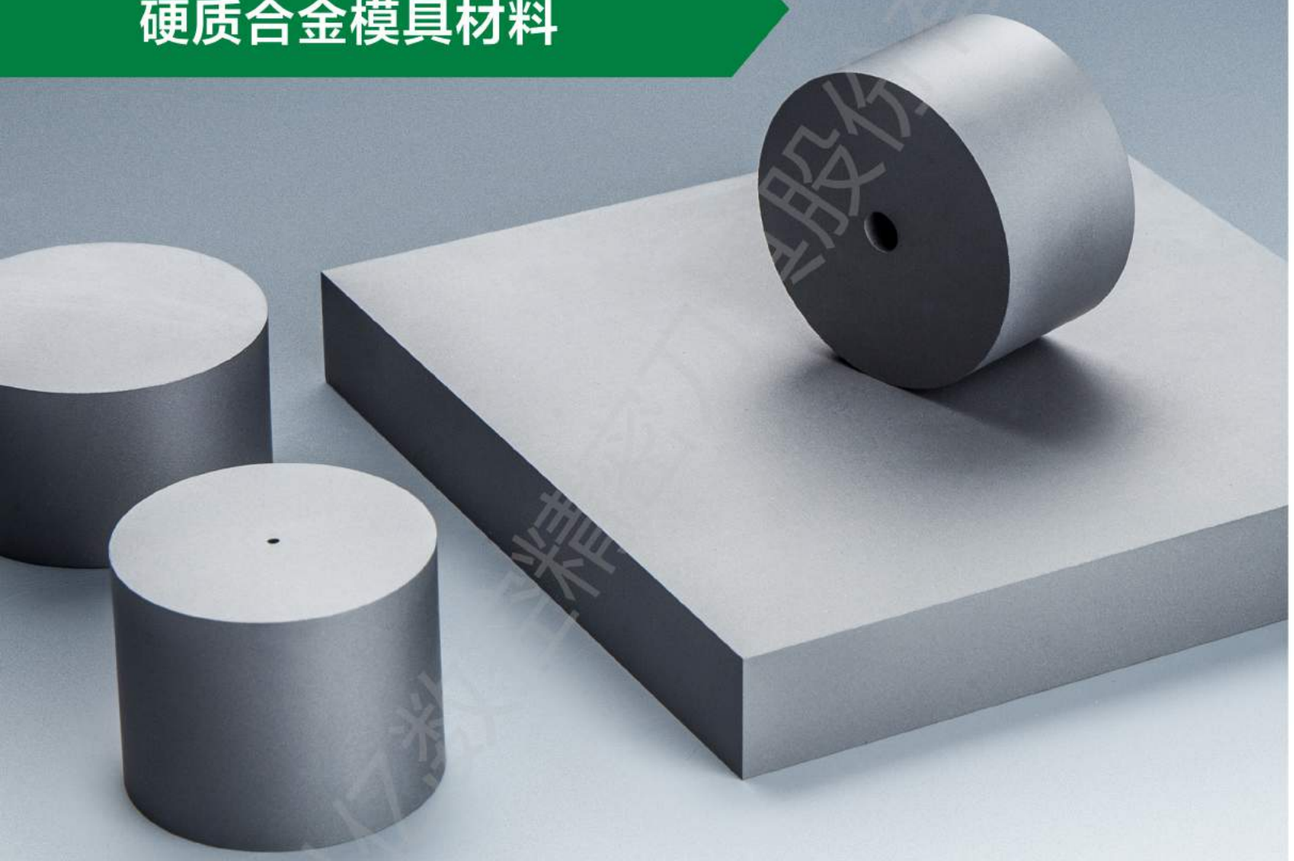
圆度
Roundness Tolerance

精磨圆棒圆度标准均为0.002 mm

The standard roundness tolerance of the ground rod is 0.002 mm.

Carbide Die Material

硬质合金模具材料



粉末冶金用模具材料牌号性能及适用范围

Grade Property and Application of Die Material for PM

牌号 Grade	钴含量 Co(%)	WC晶粒度 (μm)	硬度 Hardness	密度(g/m³) Density	抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic	推荐用途 Recommended Cutting Applications
OKEG8	8	1.6	90.2	14.8	3000	11.5	通用性能好，制作一般的粉末压制成型模具 Good general performance, PM pressing forming die
OKEG15	15	1.6	88	14.3	3200	16	
OKE712	12	1.4	89.3	14.2	3500	13.5	制作高精密粉末压制成型模具，如数控刀片压制成型模具 High precision powder pressing forming die. like CNC insert pressing forming die
OKE715	15	1.4	88.5	13.9	3500	17	

电机模用级进模具材料牌号性能及适用范围

Grade Property and Application of Die Material for Electric Tools

牌号 Grade	钴含量 Co(%)	WC晶粒度 (μm)	硬度 Hardness	密度(g/m³) Density	抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic	推荐用途 Recommended Cutting Applications
OKE712	12	1.4	89.3	14.2	3500	13.5	硅钢片（上模）冷轧板（上模）（下模） Silicon steel sheet (upper die) Cold rolled sheet (top die) (bottom die)
OKE715	15	1.4	88.5	13.9	3500	17	硅钢片（上模）冷轧板（下模） Silicon steel sheet (upper die) Cold rolled sheet (bottom die)
OKE720	20	1.2	86.4	13.5	3200	17	硅钢片（下模） Silicon steel sheet (bottom die)

IC模用级进模具材料牌号性能及适用范围

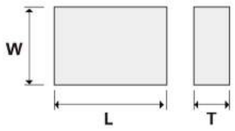
Grade Property and Application of Die Material for IC

牌号 Grade	钴含量 Co(%)	WC晶粒度 (μm)	硬度 Hardness	密度(g/m³) Density	抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic	推荐用途 Recommended Cutting Applications
OKE710	10	0.8	91.8	14.4	3800	11	厚度小于0.2毫米的铜、铝等薄片 Thin films of copper, aluminum, etc. less than 0.2 mm in thickness
OKE722	11	0.6	92.2	14.2	3800	11	铜、铝、不锈钢等薄片 Thin sections of copper, aluminum, stainless steel, etc
OKE725	12	0.4	92.2	14.1	4500	12	铜、铝、不锈钢等薄片 Thin sections of copper, aluminum, stainless steel, etc
OKE730	15	0.4	90.5	13.9	4500	13	EI片、SPCC板等 EI chip, SPCC board, etc

板材规格型号及公差范围

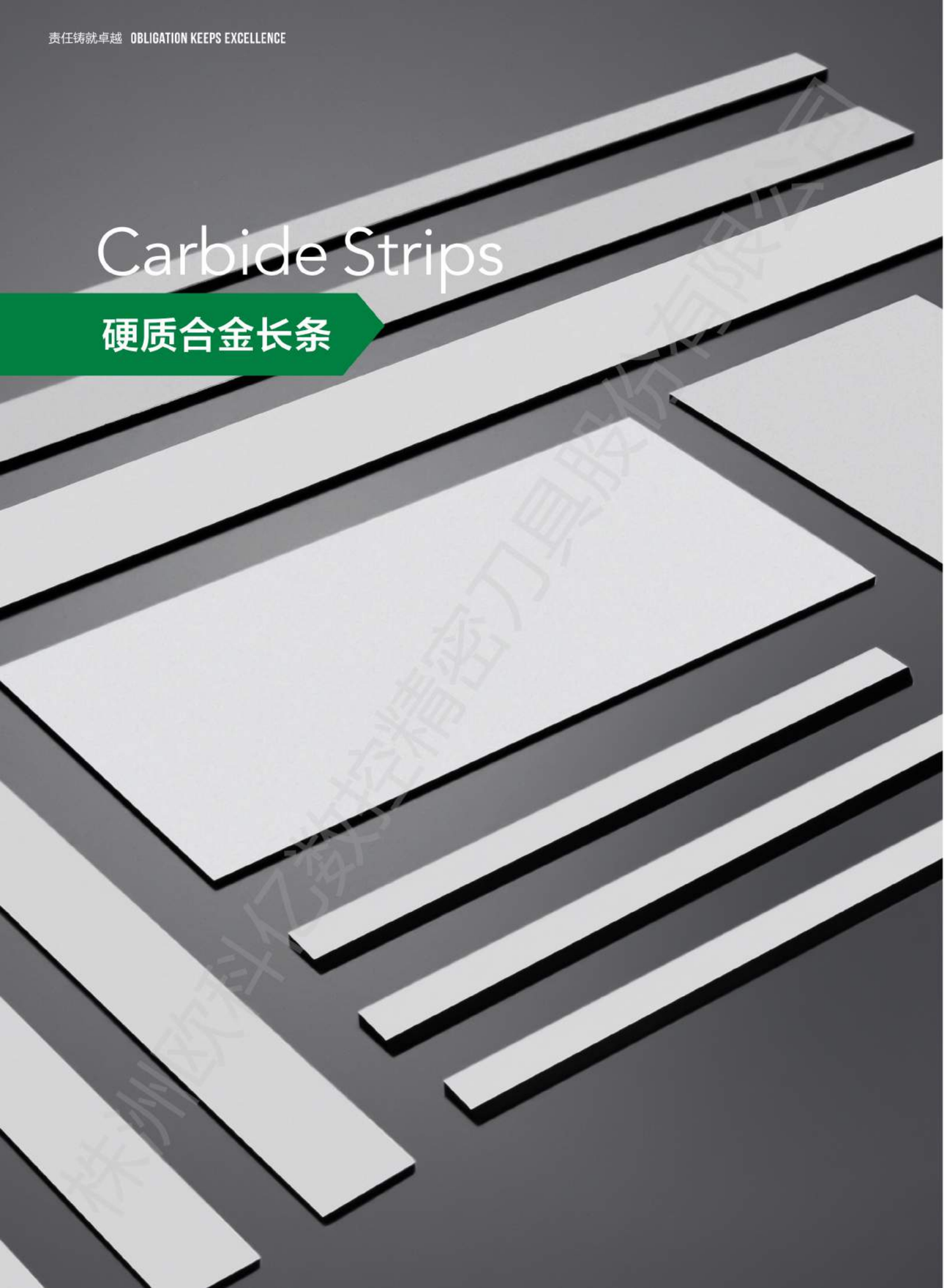
Carbide Plate Specification and Tolerance

规格 Specification	长度L宽度W公差(mm)	厚度T公差(mm)				
		1.5～5	>5～10	>10～30	>30～50	>50～70
100×100	+5.0	+0.3	+0.5	+0.8	+1.0	+1.20
120×120	+5.0	+0.3	+0.5	+0.8	+1.0	+1.20
150×150	+7.0	+0.3	+0.5	+0.8	+1.0	+1.20
200×200	+7.0	/	+0.5	+0.8	/	/



板块供货态：上下面平磨，HIP及去应力处理。

Plate moulds supply state:
surface grinding, HIP and stress treatment



Carbide Strips

硬质合金长条

长条牌号性能

Grades Property

牌号 Grade	粘结相(%) Binder	密度(g/cm³) Density	硬度(HRA) Hardness	抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic	ISO标准 Code ISO
RF15	5.5	14.9	92.2	2300	10.0	K01
RF28	8.5	14.7	91.6	2650	11.0	K10
RM36	7.0	14.75	91	2300	11.5	K20

切削推荐应用

Recommended Applications

牌号 Grade	软木/硬木 Softwood/Hardwood	密度板 Fiberboard	刨花板 Chipboard
RF15	★	★★	★★
RF28	★★	★★	★
RM36	★★★	☆	☆

推荐图例说明 Notes：

☆不合适 Not suitable

★可切削 Acceptable

★★切削效果好 Good

★★★切削效果非常好 Very Good

Carbide Tips for Router Bits

硬质合金木工镂铣刀

镂铣刀牌号性能

Grade Property

牌号 Grade	粘结相(%) Binder	密度(g/cm³) Density	硬度Hardness		抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic	ISO标准 Code ISO	美国标准 Code U.S.
			Hv10	HRA				
OKE400	2	15.3	2150	95	2500	7.5	——	——
OKE302	4	15	1910	93.6	3400	8.7	K01	C3-C4
OKE217	5.5	14.9	1650	92.2	2300	10	K10	C3
OKE211	8	14.7	1420	90.5	2500	10.5	K30	C1

切削推荐应用

Recommended Applications

牌号 Grade	刨花板 Chipboard	密度板 Fiberboard	胶合板 Plywood	大芯板 Big Core Board	红木 Rosewood	软木 Softwood	亚克力板 Acrylic Board	石墨 Graphite
OKE400	★★★	★★★	★★★	★★★	☆	☆	★★★	★
OKE302	★	★	★★	★★	★	★	★★	★★
OKE217	☆	★	★	★	★★	★★	★	☆
OKE211	☆	☆	☆	☆	★★	★★	☆	☆

推荐图例说明 Notes：

☆不推荐 Not suitable

★适当 Acceptable

★★良好 Good

★★★卓越 Excellent

指接刀系列
Finger Joint Cutter

牌号性能 Property

级别 Level	牌号 Grade	粘结相(%) Binder	密度(g/cm³) Density	硬度(HRA) Hardness	抗弯强度 (MPa) TRS	ISO标准 Code ISO	推荐用途 Recommended Cutting Applications
专业级 Professional	OKE213	12	14.35	88.5	2600	K40	旧木 Used-wood
	OKE211	8	14.70	90.5	2500	K20	旧木、软木 Used-wood, Softwood
工业级 Industrial	OKE217	5.5	14.90	92.2	2300	K01	硬木 Hardwood

硬质合金金属开孔器专用齿
Carbide Tips for Hole Saw

牌号性能 Property

牌号 Grade	粘结相(%) Binder	晶粒度 Grain size	密度(g/cm³) Density	硬度(HRA) Hardness	抗弯强度 (MPa) TRS	推荐用途 Recommended Cutting Applications
OKE505	10	1.4	12.2	91.0	2050	具有极佳的高温红硬性能，适用于中厚板，结构钢等深孔加工。 Great red hardness, suitable for holing middle thick plate and structural steel.
OKE211	8	1.0	14.7	90.5	2500	通用性好，适用于不锈钢薄板等材质孔加工。 Good versatility, suitable for holing stainless sheet steel and other materials.

竹木刀用合金刀片
Carbide Tips for Bamboo & Wood

牌号性能 Property

牌号 Grade	粘结相(%) Binder	密度(g/cm³) Density	硬度Hardness		抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic	ISO标准 Code ISO	美国标准 Code U.S.	推荐用途 Recommended Cutting Applications
			Hv10	HRA					
OKE309	6	14.9	1840	93	2700	9.2	K05	C3	超细晶粒，耐磨性优良 Ultrafine grain good wear-resistance

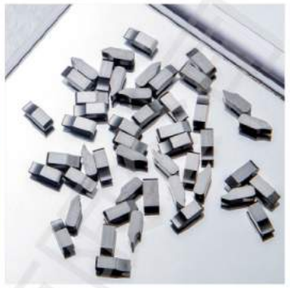
带锯锯齿
Carbide Tips for Band Saw

牌号性能 Property

牌号 Grade	粘结相(%) Binder	密度(g/cm³) Density	硬度Hardness		抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic	ISO标准 Code ISO	推荐用途 Recommended Cutting Applications
			Hv10	HRA				
DSN10	10	14.45	1590	92.0	3500	12.0	K10	木用，加工红木、硬木 woodworking, for rosewood and hardwood
DSP10	10	14.45	1560	91.8	3600	13.0	M10	金属加工用 Metalworking

割草锯片
硬质合金刀头

Carbide Tips for Grass Cutting Blade



牌号性能 Property

牌号 Grade	密度(g/cm³) Density	硬度Hardness		抗弯强度 (MPa) TRS	ISO标准 Code ISO	美国标准 Code U.S.	加工效果 Application Grade
		Hv10	HRA				
OKE-GC5	33	1010	86	1800	——	——	一般Good
OKE-GC3	11	1420	90.5	2700	——	——	良好Very Good
OKE-GC1	12	1200	88.5	2600	——	——	优秀Excellent

Tc轴承用
硬质合金块

Carbide Blocks For Tc Bearing

牌号性能 Property

牌号 Grade	粘结相(%) Binder	密度(g/cm³) Density	硬度Hardness		抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic	ISO标准 Code ISO	美国标准 Code U.S.
			Hv10	HRA				
OKE211	8	14.7	1420	90.5	2500	10.5	K20	C1
OKE216	8.5	14.7	1570	91.6	2650	11.0	K10	C3

防滑钉用
硬质合金

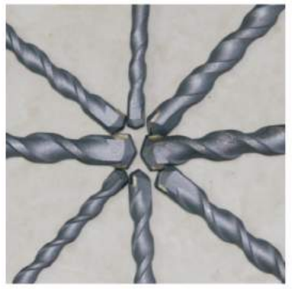
Tungsten Carbide for Tire Studs

牌号性能 Property

牌号 Grade	粘结相(%) Binder	密度(g/cm³) Density	硬度Hardness		抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic
			Hv10	HRA		
OKE233	13	14.2	1180	88	2600	15
OKE236	16.5	13.9	1100	87	2800	16

硬质合金
冲击钻片

Carbide Tips for Drill Bits



牌号性能 Property

牌号 Grade	粘结相(%) Binder	密度(g/cm³) Density	硬度Hardness		抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic	ISO标准 Code ISO	美国标准 Code U.S.	推荐用途 Recommended Cutting Applications
			Hv10	HRA					
SD08	8	14.75	1360	90	3000	12.5	K30	C1	建工类冲击钻头 Drill bit tip for construction
SD12	8	14.75	1260	89.4	3100	15	K40	C1	采石类冲击钻头 Drill bit tip for stone

硬质合金陶瓷钻片

Carbide Tips for Ceramic Drill Bit

牌号性能 Property

牌号 Grade	粘结相(%) Binder	密度(g/cm³) Density	硬度Hardness		抗弯强度 (MPa) TRS	断裂韧性 (Mpa.m1/2) Kic	ISO标准 Code ISO	美国标准 Code U.S.	推荐用途 Recommended Cutting Applications
			Hv10	HRA					
OKE309	6.2	14.9	1840	93.0	2700	9.2	K05	C3	超细晶粒 耐磨性能好，韧性优良 Ultrafine graingood wear-resistance good toughness.
OKE303	4	15.15	1880	93.3	2400	8.8	K01	C3-C4	细晶粒 耐磨性能好，韧性优良 Fine graingood wear-resistance good toughness.

硬质合金锯片刮刀条

Carbide Scraper for Saw Blade

牌号性能 Property

牌号 Grade	密度(g/cm³) Density	硬度Hardness		抗弯强度 (MPa) TRS	推荐用途 Recommended Cutting Applications	加工效果 Application Grade
		Hv10	HRA			
OKE212	14.3	1440	90.7	2400	实木圆切锯片用刮刀条合金 Solid wood multi-blade saw	良好Very Good
OKE210	14.75	1500	91.0	2300		优秀Excellent