



关注VKD  
您将获得最新的行业资讯  
Welcome to VKD  
You will get our latest information

# 硬质合金型材

CEMENTED CARBIDE  
RODS & BARS



株洲威克多硬质合金有限公司  
Zhuzhou Weikeduo Cemented Carbide Co., LTD.

ADDRESS : Building B, Smart Cube, No. 460, Jinshan Road, Hetang District, Zhuzhou City, Hunan Province, China

Phone : +86 137 8633 2019 +86 186 7080 5093

Wechat&WhatsApp: +86 137 8633 2019

Email: cathy@weikeduocarbide.com  
admin@weikeduocarbide.com

2024年版

## 生产能力 Production Capacity

公司拥有2个生产基地，拥有完备的喷雾制粒、精密压制成型、挤压成型、压力烧结、精密磨削、CVD和PVD涂层及模具制造、精密过程检测等生产手段。

公司组建了钻掘合金、切削工具、工具材料三条生产线，具备年产2000吨硬质合金及1000万片高性能专用数控刀片的生产能力。产品远销欧美、日韩、印巴、东南亚、中东及大洋洲等市场，出口比例已达到40%以上。

The company has 2 production bases and complete product process from spray granulation to precision pressing forming, sintering and inspection.

We have the production capacity to produce 2000 tons of cemented carbide and 10 million high-performance carbide inserts annually. The products are exported to markets such as Europe, America, Japan, South Korea, India, Pakistan, Southeast Asia, the Middle East, and Australia, with an export proportion of over 40%.



## 科研能力 Innovation Ability

公司笃信技术创新的力量，坚持“人才领先、共创共享”的用人理念，自主培育了一支高水平科技人才队伍，拥有湖南省发改委和湖南省工信厅双机构认定的“湖南省企业技术中心”，累计获得各项专利20余项。

在探索先进硬质材料的征途中，公司获得了多项国家级荣誉，被评为“国家高新技术企业”、“国家火炬计划产业化示范项目”“国家级重点专精特新小巨人企业”。

At Kingtal, we treat our people as the greatest asset and believe that "talent is the key to leading the industry, after that we could grow together". It is our goal to create a working environment that encourage innovation, originality and autonomy. Until now, we have obtained 20 patents as result of constant research and development.

In the journey of exploring advanced hard materials, Kingtal Corporation has been recognized for several national demonstration programs in the industry.



## 质量保证 Quality Assurance

公司本着“全力满足客户需求，共同和谐发展”的理念，通过了质量、环境、能源、职业健康安全等四大体系认证。精密的检测设备结合严格细致的检测过程，从细微之处出发，精益求精，全方位确保产品品质。

We have been recognized as a "National Green Factory" and obtained certifications for four major systems, including the "Occupational Health and Safety Management System." With advanced testing equipment and a rigorous and meticulous inspection process, we start from the minutest details to ensure the all-around product quality.



## 工具材料事业部简介 Cemented Carbide Rods

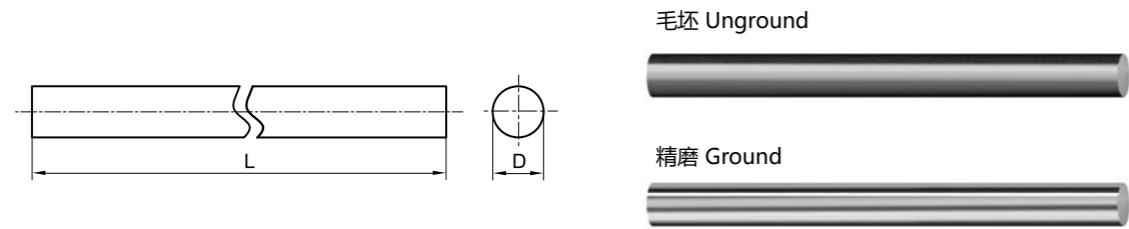
工具材料事业部专注于硬质合金超细晶棒材的研发和生产。拥有专业的硬质合金超细晶棒材生产装备和技术人员，一流的性能检测实验室，采用成熟的“模压成型”+“挤压成型”与“压力烧结”的工艺，生产各种规格的高品质硬质合金实心棒材、内冷孔棒材和片材，适用于制作各种切削刀具、PCB 刀具、冲针、耐磨零件等，广泛应用于金属切削加工、3C 加工、精密冲压、耐磨等领域。

Carbide rod products belong to the Cemented carbide Division. We built a designated plant for our cemented carbide rods product line, and hired a team of experts in the industry for constant innovation and development. The company produces a complete range of solid rods, rods with coolant channels, and sheet products, offering different series to better meet customer demands. These products are widely utilized in the fields of engines, power transmission components, precision parts for the 3C industry, and mold manufacturing, providing extensive services in these domains.





公制长棒  
Solid Rods-Metric

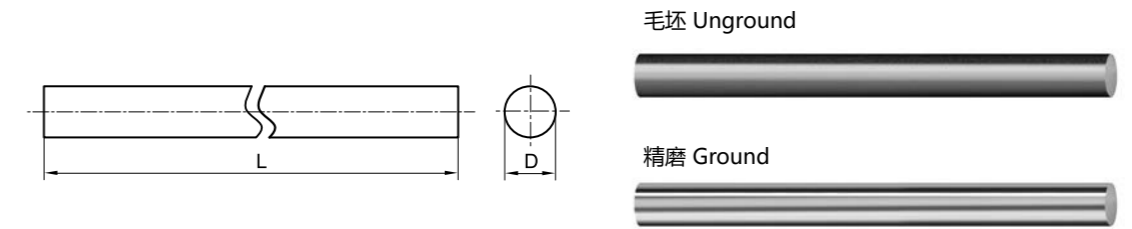


单位: mm

直径D			长度L			
D	公差下限	公差上限	长度一	长度二	公差下限	公差上限
3.0	+0.1	+0.3	330	310	0	+5
3.2	+0.1	+0.3	330		0	+5
3.5	+0.1	+0.3	330		0	+5
4.0	+0.2	+0.5	330	310	0	+5
4.5	+0.2	+0.5	330		0	+5
5.0	+0.2	+0.5	330	310	0	+5
5.5	+0.2	+0.5	330		0	+5
6.0	+0.2	+0.5	330	310	0	+5
6.5	+0.2	+0.5	330		0	+5
7.0	+0.2	+0.5	330		0	+5
7.5	+0.2	+0.5	330		0	+5
8.0	+0.2	+0.5	330	310	0	+5
8.5	+0.2	+0.5	330		0	+5
9.0	+0.2	+0.5	330		0	+5
9.5	+0.2	+0.5	330		0	+5
10.0	+0.2	+0.5	330	310	0	+5
10.5	+0.2	+0.5	330		0	+5
11.0	+0.2	+0.5	330		0	+5

注: 1. 可定制各种长度小于330mm的毛坯棒材。  
2. 可定制h5/h6精度的棒材。

公制长棒  
Solid Rods-M

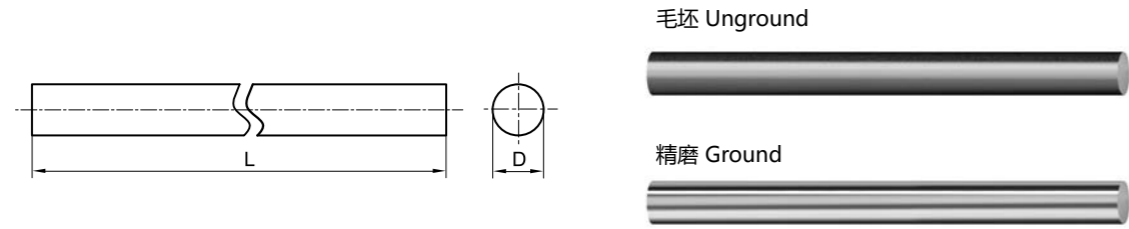


单位: mm

直径D			长度L			
D	公差下限	公差上限	长度一	长度二	公差下限	公差上限
11.5	+0.2	+0.5	330		0	+5
12.0	+0.2	+0.5	330	310	0	+5
12.5	+0.25	+0.6	330		0	+5
13.0	+0.25	+0.6	330		0	+5
13.5	+0.25	+0.6	330		0	+5
14.0	+0.25	+0.6	330		0	+5
14.5	+0.25	+0.6	330		0	+5
15.0	+0.25	+0.6	330		0	+5
16.0	+0.25	+0.6	330	310	0	+5
17.0	+0.25	+0.6	330		0	+5
18.0	+0.25	+0.6	330		0	+5
19.0	+0.25	+0.6	330		0	+5
20.0	+0.25	+0.6	330	310	0	+5
21.0	+0.25	+0.65	330		0	+5
22.0	+0.25	+0.65	330		0	+5
23.0	+0.25	+0.65	330		0	+5
24.0	+0.25	+0.65	330		0	+5
25.0	+0.25	+0.65	330		0	+5

注: 1. 可定制各种长度小于330mm的毛坯棒材。  
2. 可定制h5/h6精度的棒材。

英制长棒  
Solid Rods-Inch

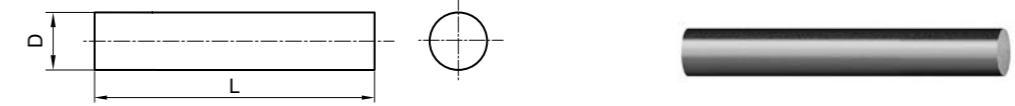


单位: inch

直径D			长度L		
D	直径下限	直径上限	长度	公差下限	公差上限
1/8	0.135	0.15	12.2	0	+0.2
9/64	0.151	0.166	12.2	0	+0.2
5/32	0.166	0.181	12.2	0	+0.2
11/64	0.182	0.197	12.2	0	+0.2
3/16	0.198	0.213	12.2	0	+0.2
13/64	0.213	0.228	12.2	0	+0.2
7/32	0.229	0.244	12.2	0	+0.2
1/4	0.260	0.275	12.2	0	+0.2
9/32	0.291	0.306	12.2	0	+0.2
5/16	0.323	0.338	12.2	0	+0.2
11/32	0.354	0.369	12.2	0	+0.2
3/8	0.385	0.400	12.2	0	+0.2
13/32	0.416	0.431	12.2	0	+0.2
7/16	0.448	0.463	12.2	0	+0.2
15/32	0.479	0.494	12.2	0	+0.2
1/2	0.51	0.525	12.2	0	+0.2
5/8	0.635	0.650	12.2	0	+0.2
3/4	0.76	0.775	12.2	0	+0.2
7/8	0.886	0.901	12.2	0	+0.2
1	1.011	1.026	12.2	0	+0.2

注: 1. 可定制各种长度小于13"的毛坯棒材。  
2. 可定制各种长度尺寸的h5/h6精度棒材。

标准公制短棒  
Rods-Metric

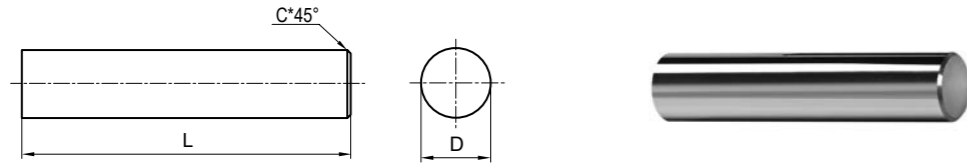


单位: mm

直径D			长度L		
D	公差下限	公差上限	长度	公差下限	公差上限
3.0	+0.1	+0.15	38	+0.5	+1.0
3.0	+0.1	+0.15	40	+0.5	+1.0
3.2	+0.1	+0.15	38	+0.5	+1.0
4.0	+0.1	+0.15	50	+0.5	+1.0
4.0	+0.1	+0.15	100	+0.5	+1.5
6.0	+0.1	+0.15	50	+0.5	+1.0
6.0	+0.1	+0.15	60	+0.5	+1.0
6.0	+0.1	+0.15	100	+0.5	+1.5
8.0	+0.1	+0.15	50	+0.5	+1.2
8.0	+0.1	+0.15	60	+0.5	+1.2
8.0	+0.1	+0.15	100	+0.5	+1.5
10.0	+0.1	+0.15	75	+0.5	+1.2
10.0	+0.1	+0.15	100	+0.5	+1.5
12.0	+0.1	+0.15	75	+0.5	+1.2
12.0	+0.1	+0.15	100	+0.5	+1.5

注: 1. 可定制各种直径不大于 $\phi 16.0\text{mm}$ , 长度不大于100mm的毛坯棒材。  
2. 可定制h5/h6精度的棒材。

英制精磨倒角短棒 (h5/h6)  
Ground Rods with Chamfer-Inch (h5/h6)

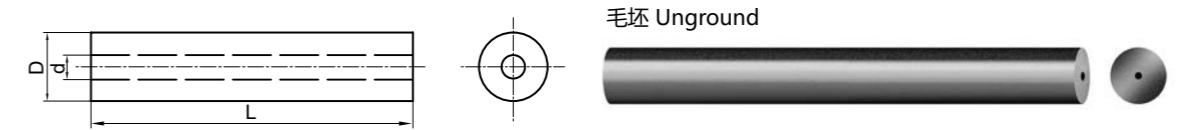


单位: inch

直径 (h5/h6)	长度L (+0.04/0)	倒角尺寸		倒角角度 (公差 Tol./ ± 3°)
		C	公差	
1/8	1-1/2	0.015	±0.004	45°
3/16	2	0.015	±0.004	45°
3/16	2-1/2	0.015	±0.004	45°
3/16	3	0.015	±0.004	45°
1/4	2	0.015	±0.004	45°
1/4	2-1/2	0.015	±0.004	45°
1/4	3	0.015	±0.004	45°
5/16	2	0.015	±0.004	45°
5/16	2-1/2	0.015	±0.004	45°
5/16	3	0.015	±0.004	45°
5/16	4	0.015	±0.004	45°
3/8	2-1/2	0.015	±0.004	45°
3/8	3	0.015	±0.004	45°
3/8	3-1/2	0.015	±0.004	45°
3/8	4	0.015	±0.004	45°
1/2	2-1/2	0.031	±0.008	45°
1/2	3	0.031	±0.008	45°
1/2	4	0.031	±0.008	45°

注: 1、可定制各种英寸直径不大于5/8", 长度不大于4"的棒材。  
2、可定制h5/h6精磨棒材。

单直孔毛坯棒材  
Rods Blanks with One Straight Coolant Hole



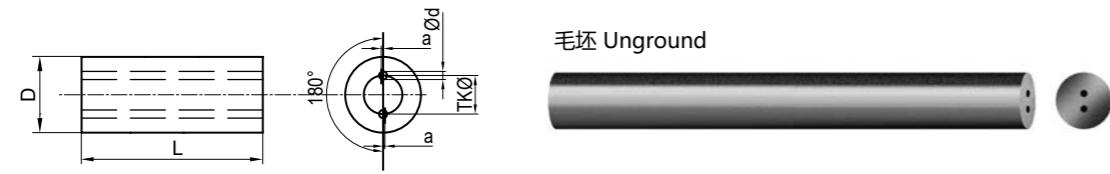
单位: mm

直径		内孔直径		同心度 e	长度 (公差0/+5)
D	公差	d	公差		
3.0	+0.2/+0.5	0.5	±0.10	0.20	330
4.0	+0.2/+0.5	1.0	±0.10	0.20	330
5.0	+0.2/+0.5	1.0	±0.10	0.20	330
6.0	+0.25/+0.6	1.0	±0.15	0.20	330
7.0	+0.25/+0.6	1.0	±0.15	0.20	330
8.0	+0.25/+0.6	1.5	±0.15	0.20	330
9.0	+0.25/+0.6	1.5	±0.15	0.25	330
10.0	+0.25/+0.6	1.5	±0.15	0.25	330
11.0	+0.25/+0.6	1.5	±0.15	0.25	330
12.0	+0.3/+0.7	1.75	±0.15	0.25	330
13.0	+0.3/+0.7	1.75	±0.15	0.25	330
14.0	+0.3/+0.7	1.75	±0.15	0.25	330
15.0	+0.3/+0.7	1.75	±0.15	0.25	330
16.0	+0.3/+0.7	2.0	±0.20	0.25	330
18.0	+0.3/+0.8	2.0	±0.20	0.30	330
20.0	+0.3/+0.8	2.5	±0.25	0.30	330
22.0	+0.3/+0.8	2.5	±0.25	0.30	330
24.0	+0.3/+0.8	3.0	±0.25	0.30	330
25.0	+0.3/+0.8	3.0	±0.25	0.30	330

注: 可定制各种不同内孔直径, 外径h5/h6精度的棒材。

双直孔毛坯棒材  
Rods Blanks with Two Straight Coolant Hole

板材  
Plates

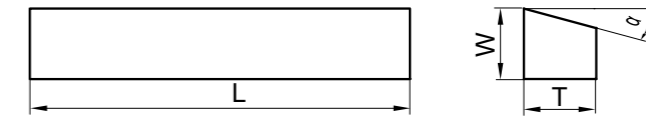
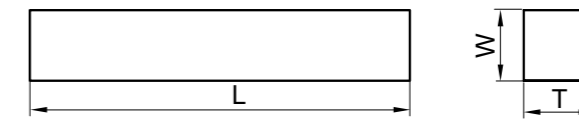


毛坯 Unground

单位: mm

直径		内孔直径		孔间距		孔中心偏离 a	长度 (公差0/+5)
D	公差	d	公差	TK	公差		
4.0	+0.3/+0.5	0.8	±0.10	1.80	-0.15/0	0.10	330
5.0	+0.3/+0.5	0.8	±0.10	2.00	-0.15/0	0.13	330
6.0	+0.3/+0.6	1.0	±0.15	3.00	-0.20/0	0.15	330
7.0	+0.3/+0.6	1.0	±0.15	3.50	-0.20/0	0.15	330
8.0	+0.3/+0.6	1.0	±0.15	4.00	-0.30/0	0.15	330
9.0	+0.3/+0.6	1.5	±0.15	4.00	-0.30/0	0.20	330
10.0	+0.3/+0.6	1.5	±0.15	5.00	-0.30/0	0.28	330
11.0	+0.3/+0.6	1.5	±0.15	5.00	-0.30/0	0.30	330
12.0	+0.3/+0.6	1.75	±0.15	6.00	-0.30/0	0.30	330
13.0	+0.3/+0.7	1.75	±0.15	6.00	-0.30/0	0.34	330
14.0	+0.3/+0.7	1.75	±0.15	7.00	-0.30/0	0.37	330
15.0	+0.3/+0.7	2.0	±0.15	7.00	-0.30/0	0.40	330
16.0	+0.3/+0.8	2.0	±0.20	8.00	-0.30/0	0.40	330
17.0	+0.3/+0.8	2.0	±0.20	8.00	-0.30/0	0.47	330
18.0	+0.3/+0.8	2.0	±0.20	9.00	-0.30/0	0.50	330
19.0	+0.3/+0.8	2.0	±0.20	9.00	-0.30/0	0.50	330
20.0	+0.3/+0.8	2.5	±0.25	10.00	-0.40/0	0.50	330
22.0	+0.3/+0.8	2.5	±0.25	11.00	-0.40/0	0.50	330
24.0	+0.3/+0.8	3.0	±0.25	12.00	-0.50/0	0.50	330
25.0	+0.3/+0.8	3.0	±0.25	12.00	-0.50/0	0.50	330

注: 可定制直径≤φ25.0mm的非标准双直孔硬质合金毛坯棒材。



型号 L × W × T × a	范围	公差
厚度 T (mm)	3.0 ≤ T ≤ 16.0	+0.20/+0.60
宽度 W (mm)	3.0 ≤ W ≤ 25.0	+0.20/+0.6
长度 L (mm)	L ≤ 330	0/+5.0
角度 a (°)	0~35°	±1°



材质性能名词解释

- 硬度 (ISO 3738 及ISO 3878)  
材料抵抗局部塑性变形的能力。硬质合金常用硬度测定方法为洛氏硬度或维氏硬度测量法，单位分别为HRA和HV。需注意由于二者测量方法不相同，两种硬度值的转换应根据测量材料的参照表进行换算。
- 抗弯强度TRS (ISO 3327)  
抗弯强度是指材料抵抗弯曲不断裂的能力。其值为在一个标准的三点弯曲试验中在材料的破断点测得的应力。此试验应用于硬质合金时，使用一个标准夹具及试样 (Φ3.25mm×38.7mm)。TRS使用几个测量值的平均值作为测量值。随试样几何形状，表面状态及实验设备的不同，此值可以变化很大。特别要指出的是，此结果对表面光洁度，表面残留应力，表面腐蚀及材料内部的缺陷很敏感。必须注意，不能只用TRS值作为牌号选择的标准。
- 密度 (ISO 3369)  
密度是材料的质量与体积的比率，通常使用液体置换法进行测定。密度在硬质合金工业中通常用于确定一个牌号成分的准确性。与通常的理解不同的是，现代硬质合金的孔隙度水平不能用测量密度的方法来确定。碳化钨 (WC) 的密度是15.7g/cm<sup>3</sup>，钴 (Co) 的密度是8.9g/cm<sup>3</sup>。因此对于WC-Co牌号来说，随钴含量的增加，密度减小。

其他

- 公差等级Tolerance Grade

直径Diameter	公差Tolerance	
	h5	h6
0-3.0 mm 0-0.11811 in.	0.004 mm 0.00015 in	0.006 mm 0.00024 in
3.001-6.0 mm 0.11812-0.23622 in	0.005 mm 0.00020 in	0.008 mm 0.00031 in
6.001-10.0 mm 0.23623-0.39370 in	0.006 mm 0.00024 in	0.009 mm 0.00035 in
10.001-18.0 mm 0.39371-0.70866 in	0.008 mm 0.00031 in	0.011 mm 0.00043 in
18.001-30.0 mm 0.90867-1.18110 in	0.009 mm 0.00035 in	0.013 mm 0.00051 in
30.001-50.0 mm 1.8111-1.96850 in	0.011 mm 0.00043 in	0.016 mm 0.00063 in

硬度对照表 Hardness Comparison

洛氏硬度 (3R)			维氏硬度 HV30 荷重30Kg
HRA 荷重60Kg 金刚石	HRC 荷重150Kg 金刚石	HRD 荷重100Kg 金刚石	
93.0	81.0		1800
92.5	80.5		1700
92.0	80.0		1600
91.5	79.0		1550
91.0	78.0		1500
90.5	77.0		1450
90.0	76.0		1400
89.5	75.0		1350
89.0	74.0		1300
88.5	73.0		1250
88.0	72.0		1200
87.5	71.5		1150
87.0	71.0		1140
86.5	70.0		1076
86.0	69.0		1004
85.6	68.0	76.9	940
85.3	67.5	76.5	920
85.0	67.0	76.1	900
84.7	66.4	75.7	880
84.4	65.9	75.3	860
84.1	65.3	74.8	840
83.8	64.7	74.3	820
83.4	64.0	73.8	800
83.0	63.3	73.3	780
82.6	62.5	72.6	760
82.2	61.8	72.1	740
81.8	61.0	71.5	720
81.3	60.1	70.8	700
81.1	59.7	70.5	690
80.8	59.2	70.1	680
80.6	58.8	69.8	670
80.3	58.3	69.4	660
80.0	57.8	69.0	650