TOONNEY®

通耐钨钢

Toonney tungsten carbide

厦门通耐合金材料有限公司

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2018 VERSION

TOONNEY®

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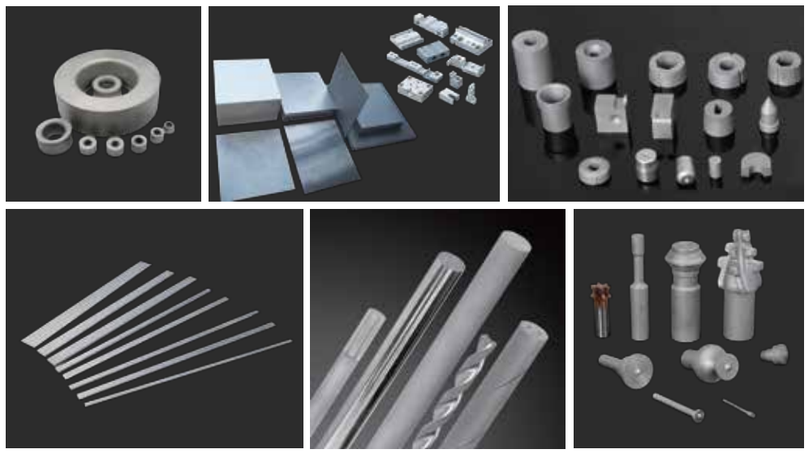

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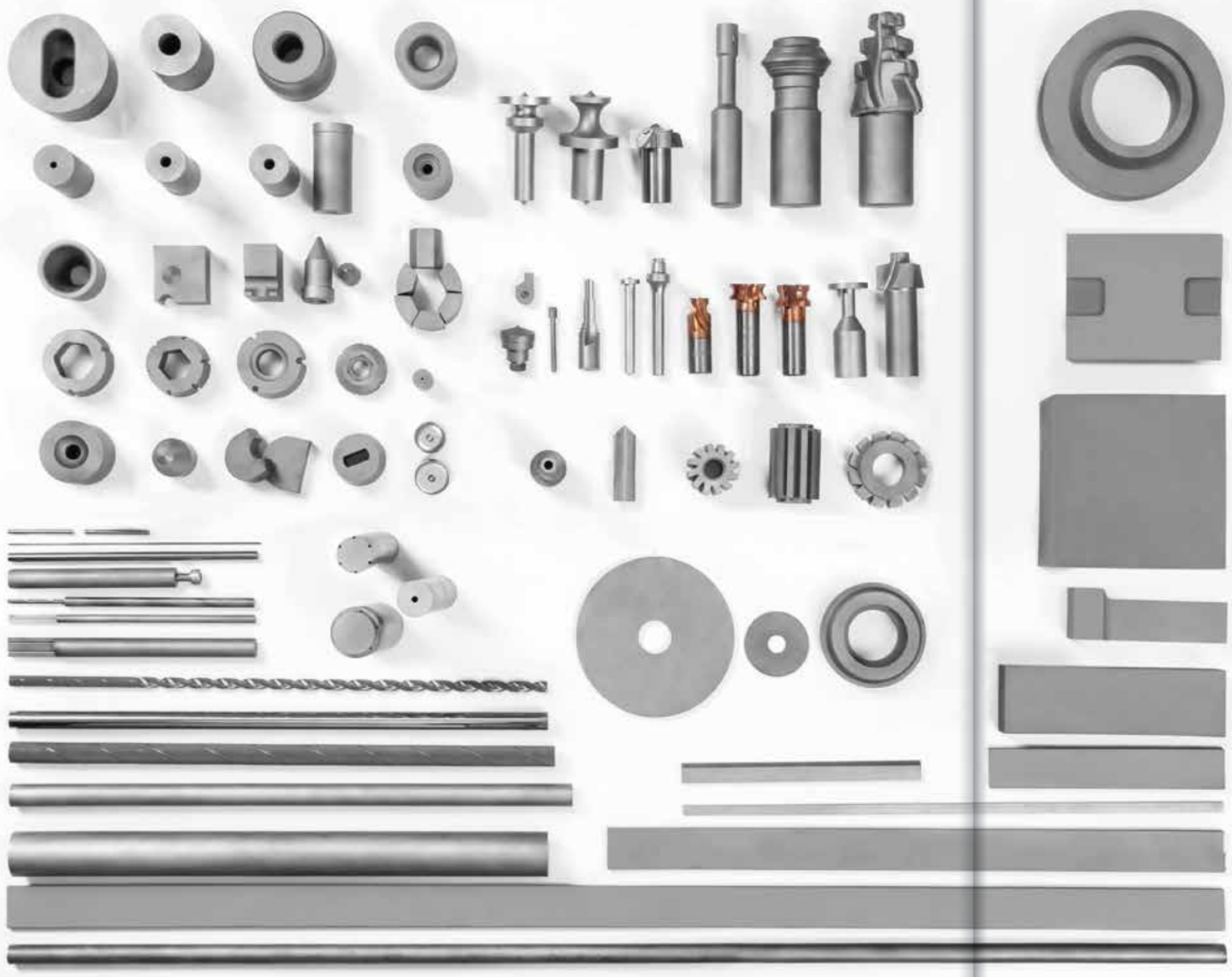
TOOL

TOONNEY®



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1# 灌口工厂 占地5000m²
Guankou work plant, 5000 m²

公司简介
COMPANY PROFILE

厦门通耐合金材料有限公司成立于2008年，是一家国家级高新技术企业，是中国硬质合金行业内技术领先者，是高品质硬质合金产品的制造商。产品系列包括标准圆棒、异型棒、冷镦模仁、规格板、板条、耐磨件等，尤其擅长客制化产品。

我司拥有15,000m²杏林工厂、5000m²灌口工厂两个生产基地，拥有世界先进的生产设备（10MPa气压烧结炉、闭环式喷雾干燥塔、全自动压机、250T连续式挤压机、150MPa干袋等静压机）以及专业的技术研发团队，专注于硬质合金材料的研发和生产。我司还与国内知名学府厦门大学、中南大学、四川大学等知名高校建立了深入合作关系以加强研发能力。

我司通过ISO9001国际质量体系认证，通过构建高质量管理系统、严格贯彻质量方针，严格把控原材料供应链、保证100%生产工序的可追溯性，竭诚为全球用户提供品质如一的高品质硬质合金材料及解决方案。

目前我司产品畅销国内、欧美、日本、韩国、东南亚、中东、南美等全球市场。

2# 杏林工厂 占地15,000m²
Xinglin work plant, 15,000m²

闭环式喷雾干燥塔
Closed loop spray drying tower

全自动压机
Automatic press machine

Xiamen Toonney Tungsten Carbide Co.,Ltd was established in 2008, it is a manufacturer of high-quality cemented carbide products meanwhile a state-level high-tech enterprise and a leader of China's cemented carbide industry technology. The product series includes standard carbide rod, carbide preform, cold heading die, carbide blank, carbide strip, wear parts, etc. Toonney is specilly good at customized products.

Toonney has two work plants, one is in Xinglin covering an area of 15,000m², the other is in Guankou covering an area of 5000m², which both equiped with the world's advanced production facilities (10MPa HIP sintering furnace, closed loop spray drying tower, automatic press machines, 250T continuous extrusion machine, 150MPa dry bag isostatic press etc.) and professional technical research and development team, focusing on the research and production of cemented carbide materials. Meanwhile Toonney established in-depth cooperative relationships with well-known universities such as Xiamen University, Central South University and Sichuan University to strengthen its R & D capability.

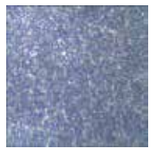
Our company has passed the ISO 9001 international quality system certification, dedicated to providing global users with stable good quality cemented carbide materials and solutions through the construction of high quality management system, strict implementation of quality policy, strict control of raw materials supply chain and 100% production process traceability.

150MPa 自动式干袋等静压机
Automatic dry bag isostatic press

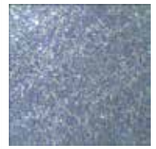
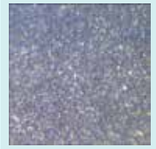
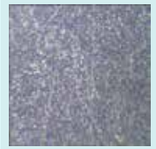
SIP5518-10MPa 低压烧结炉
10MPa sintering furnace

圆棒 Carbide Rod

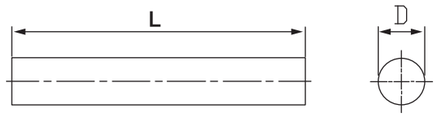
牌号表 Grade table

牌号 Grade	钴含量 Co%	晶粒度 Grain Size (μm)	比重 Density (g/cm³)	硬度 Hardness (HRA)	抗弯强度 TRS	推荐用途 Application	金相 Micro structure
TU90	9.0	0.2	14.35	94.1	5200	HRC70 左右淬硬材料，硬木，高光刀加工，不锈钢316L精加工。 Material for cutting tools machining quenched materials (HRC65-70), hardwood and high polishing cutters. Finish machining 316L stainless steel.	
TF06	6.0	0.6	14.81	93.1	4000	石墨、碳纤维复合材料、铝镁合金加工 Material for cutting tools machining aluminum magnesium alloy, graphite and composite carbon fiber.	
TU06	6.0	0.4	14.8	94.3	4600	PCB微钻、高硬度加工立铣刀 Material for PCB micro-drill and end mill machining super high hardness material.	

牌号推荐用途 Application

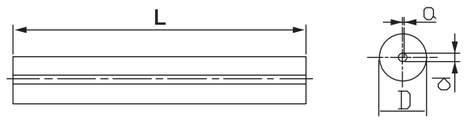
牌号 Grade	钴含量 Co%	晶粒度 Grain Size (μm)	比重 Density (g/cm³)	硬度 Hardness (HRA)	抗弯强度 TRS	推荐用途 Application	金相 Micro structure
TU08	8.0	0.4	14.52	93.5	4800	PCB微钻、微型铣刀 Material for PCB micro-drill, mini milling cutter.	
TU08S	8.0	0.3	14.50	93.6	5000	淬硬精加工（HRC60-65）微小径PCB钻头，316L不锈钢精加工，高光片，电机硅钢片 Material for Micro PCB drill, cutting tools finish machining quenched material (HRC60-65), 316L stainless steel, high polishing metal sheet and silicon steel sheet of motor.	
TU40	10.0	0.8	14.40	91.7	4600	通用钻头、立铣刀、冲模材料 Material for common drill bit, end mill and punching die.	
TU40F	10.0	0.6	14.45	92.3	4600	通用钻头、立铣刀、钛合金、不锈钢、灰铸铁加工 Material for cutting tools machining common drill bit, end mill, titanium alloy, stainless steel and gray cast iron.	
TU40S	10.0	0.5	14.50	92.5	4800	不锈钢316L加工、最佳通用圆切片材料 Material for cutting tools machining 316L stainless steel, best material for common circular cutter.	
TU44	12.0	0.4	14.10	92.6	4800	钛合金、耐热合金、不锈钢、淬硬钢（HRC55以上）、灰铸铁加工 Material for cutting tools machining titanium alloy, heat resistant alloy, stainless steel, quenched steel(HRC55 and above), gray cast iron.	
TU25	12.0	0.6	14.06	92.3	4200	热处理钢材（HRC45以上），铸铁，不锈钢加工 Material for cutting tools machining heat treated steel(Hardness HRC45 and above), cast iron, stainless steel.	
TU45	13.0	0.3	13.95	92.7	4800	钛合金、耐热合金、不锈钢、淬硬钢（HRC55以上）加工 Material for cutting tools machining titanium, heat resistant alloy, stainless steel, quenched steel (HRC55 and above).	

实心圆棒 Solid carbide rod



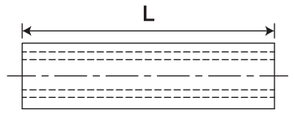
Dia. Ø (mm)	Tolerance. (mm)	Length (mm)	Tolerance Tol. (mm)	Dia.Ø (mm)	Tolerance. (mm)	Length (mm)	Tolerance Tol. (mm)
2	+0.30/+0.15	330	1.5	16.5	+0.8/+0.3	330	1.5
2.5	+0.30/+0.15	330	1.5	17	+0.8/+0.3	330	1.5
3	+0.40/+0.20	330	1.5	17.5	+0.8/+0.3	330	1.5
3.5	+0.40/+0.20	330	1.5	18	+0.8/+0.3	330	1.5
4	+0.40/+0.20	330	1.5	18.5	+0.8/+0.3	330	1.5
4.5	+0.40/+0.20	330	1.5	19	+0.8/+0.3	330	1.5
5	+0.40/+0.20	330	1.5	19.5	+0.8/+0.3	330	1.5
5.5	+0.40/+0.20	330	1.5	20	+0.8/+0.3	330	1.5
6	+0.40/+0.20	330	1.5	20.5	+0.8/+0.3	330	1.5
6.5	+0.50/+0.30	330	1.5	21	+0.8/+0.3	330	1.5
7	+0.50/+0.30	330	1.5	21.5	+0.8/+0.3	330	1.5
7.5	+0.50/+0.30	330	1.5	22	+0.8/+0.3	330	1.5
8	+0.50/+0.30	330	1.5	22.5	+0.8/+0.3	330	1.5
8.5	+0.50/+0.30	330	1.5	23	+0.8/+0.3	330	1.5
9	+0.60/+0.30	330	1.5	23.5	+0.8/+0.3	330	1.5
9.5	+0.60/+0.30	330	1.5	24	+0.8/+0.3	330	1.5
10	+0.60/+0.30	330	1.5	24.5	+0.8/+0.3	330	1.5
10.5	+0.60/+0.30	330	1.5	25	+0.8/+0.3	330	1.5
11	+0.60/+0.30	330	1.5	25.5	+0.8/+0.3	330	1.5
11.5	+0.60/+0.30	330	1.5	26	+0.8/+0.3	330	1.5
12	+0.60/+0.30	330	1.5	26.5	+0.8/+0.3	330	1.5
12.5	+0.60/+0.30	330	1.5	27	+0.8/+0.3	330	1.5
13	+0.60/+0.30	330	1.5	27.5	+0.8/+0.3	330	1.5
13.5	+0.60/+0.30	330	1.5	28	+0.8/+0.3	330	1.5
14	+0.70/+0.30	330	1.5	28.5	+0.8/+0.3	330	1.5
14.5	+0.70/+0.30	330	1.5	29	+0.8/+0.3	330	1.5
15	+0.70/+0.30	330	1.5	29.5	+0.8/+0.3	330	1.5
15.5	+0.70/+0.30	330	1.5	30	+0.8/+0.3	330	1.5
16	+0.70/+0.30	330	1.5	30.5	+0.8/+0.3	330	1.5

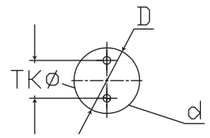
单直孔圆棒 Carbide rod with one straight hole



Outer D(mm)	OD Tol.(mm)	Inner Hole d(mm)	ID Tol.(mm)	Hole center diviation value α	Length (mm)	L Tol.(mm)
3.0	+0.40/+0.20	0.5	±0.10	0.10	330	+1.5
4.0	+0.40/+0.20	0.8	±0.10	0.10	330	+1.5
5.0	+0.40/+0.20	0.8	±0.10	0.13	330	+1.5
6.0	+0.40/+0.20	1.0	±0.15	0.15	330	+1.5
7.0	+0.60/+0.30	1.0	±0.15	0.15	330	+1.5
8.0	+0.60/+0.30	1.0	±0.15	0.15	330	+1.5
9.0	+0.60/+0.30	1.4	±0.15	0.20	330	+1.5
10.0	+0.60/+0.30	1.4	±0.15	0.20	330	+1.5
11.0	+0.60/+0.30	1.4	±0.15	0.28	330	+1.5
12.0	+0.60/+0.30	1.8	±0.15	0.30	330	+1.5
13.0	+0.70/+0.30	1.8	±0.15	0.34	330	+1.5
14.0	+0.70/+0.30	1.8	±0.15	0.37	330	+1.5
15.0	+0.70/+0.30	2.0	±0.20	0.40	330	+1.5
16.0	+0.70/+0.30	2.0	±0.20	0.40	330	+1.5
17.0	+0.80/+0.30	2.0	±0.20	0.47	330	+1.5
18.0	+0.80/+0.30	2.0	±0.20	0.50	330	+1.5
19.0	+0.80/+0.30	2.0	±0.20	0.50	330	+1.5
20.0	+0.80/+0.30	2.5	±0.25	0.50	330	+1.5
21.0	+0.80/+0.30	2.5	±0.25	0.50	330	+1.5
22.0	+0.80/+0.30	2.5	±0.25	0.50	330	+1.5
23.0	+0.80/+0.30	3.0	±0.25	0.50	330	+1.5
24.0	+0.80/+0.30	3.0	±0.25	0.50	330	+1.5
25.0	+0.80/+0.30	3.0	±0.25	0.50	330	+1.5
26.0	+0.80/+0.30	3.0	±0.25	0.50	330	+1.5
27.0	+0.80/+0.30	3.0	±0.25	0.50	330	+1.5
28.0	+0.80/+0.30	3.0	±0.25	0.50	330	+1.5
29.0	+0.80/+0.30	3.0	±0.25	0.50	330	+1.5
30.0	+0.80/+0.30	3.0	±0.25	0.50	330	+1.5

双直孔圆棒 Two straight holes carbide rod

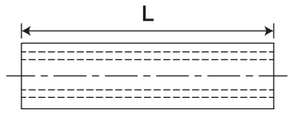


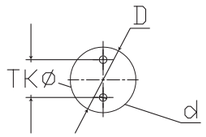


Outside Dia. Ø (mm)	OD Tol. (mm)	Inner d (mm)	ID Tol. (mm)	Distance between holes		Hole center diviation value α	L (mm)	Tol. (mm)
				mm	Tol.(mm)			
4.0	+0.40/+0.20	0.8	±0.10	1.8	+0/-0.15	0.10	330/310	+1.5
5.0	+0.40/+0.20	0.8	±0.10	2.0	+0/-0.15	0.13	330/310	+1.5
6.0	+0.40/+0.20	1.0	±0.15	3.0	+0/-0.20	0.15	330/310	+1.5
7.0	+0.60/+0.30	1.0	±0.15	3.5	+0/-0.20	0.15	330/310	+1.5
8.0	+0.60/+0.30	1.0	±0.15	4.0	+0/-0.30	0.15	330/310	+1.5
9.0	+0.60/+0.30	1.4	±0.15	4.0	+0/-0.30	0.20	330/310	+1.5
10.0	+0.60/+0.30	1.4	±0.15	5.0	+0/-0.30	0.20	330/310	+1.5
11.0	+0.60/+0.30	1.4	±0.15	5.0	+0/-0.30	0.28	330/310	+1.5
12.0	+0.60/+0.30	1.8	±0.15	6.0	+0/-0.30	0.30	330/310	+1.5
13.0	+0.70/+0.30	1.8	±0.15	6.0	+0/-0.30	0.34	330/310	+1.5
14.0	+0.70/+0.30	1.8	±0.15	7.0	+0/-0.30	0.37	330/310	+1.5
15.0	+0.70/+0.30	2.0	±0.20	7.0	+0/-0.30	0.40	330/310	+1.5
16.0	+0.70/+0.30	2.0	±0.20	8.0	+0/-0.30	0.40	330/310	+1.5
17.0	+0.80/+0.30	2.0	±0.20	8.0	+0/-0.30	0.47	330/310	+1.5
18.0	+0.80/+0.30	2.0	±0.20	9.0	+0/-0.30	0.50	330/310	+1.5
19.0	+0.80/+0.30	2.0	±0.20	9.0	+0/-0.30	0.50	330/310	+1.5
20.0	+0.80/+0.30	2.5	±0.25	10.0	+0/-0.40	0.50	330/310	+1.5
21.0	+0.80/+0.30	2.5	±0.25	10.0	+0/-0.40	0.50	330/310	+1.5
22.0	+0.80/+0.30	2.5	±0.25	11.0	+0/-0.40	0.50	330/310	+1.5
23.0	+0.80/+0.30	2.5	±0.25	11.0	+0/-0.40	0.50	330/310	+1.5
24.0	+0.80/+0.30	3.0	±0.25	12.0	+0/-0.50	0.50	330/310	+1.5
25.0	+0.80/+0.30	3.0	±0.25	12.0	+0/-0.50	0.50	330/310	+1.5
26.0	+0.80/+0.30	3.0	±0.25	13.0	+0/-0.50	0.50	330/310	+1.5

TOONNEY®
Toonney tungsten carbide www.tncarbide.com

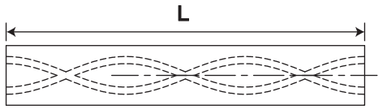
双直孔圆棒 Two straight holes carbide rod

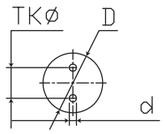




Outside Dia. Ø (mm)	OD Tol. (mm)	Inner d (mm)	ID Tol. (mm)	Distance between holes		Hole center diviation value α	L (mm)	Tol. (mm)
				mm	Tol. (mm)			
6.0	+0.40/+0.20	0.8	±0.10	1.5	+0/-0.20	0.15	330	+1.5
7.0	+0.60/+0.30	0.8	±0.10	1.5	+0/-0.20	0.15	330	+1.5
8.0	+0.60/+0.30	1.0	±0.15	1.5	+0/-0.30	0.15	330	+1.5
9.0	+0.60/+0.30	1.0	±0.15	2.6	+0/-0.30	0.20	330	+1.5
10.0	+0.60/+0.30	1.0	±0.15	2.6	+0/-0.30	0.20	330	+1.5
11.0	+0.60/+0.30	1.2	±0.15	3.6	+0/-0.30	0.28	330	+1.5
12.0	+0.60/+0.30	1.2	±0.15	3.6	+0/-0.30	0.30	330	+1.5
13.0	+0.70/+0.30	1.2	±0.15	3.6	+0/-0.30	0.34	330	+1.5
14.0	+0.70/+0.30	1.5	±0.15	5.0	+0/-0.30	0.37	330	+1.5
15.0	+0.70/+0.30	1.5	±0.15	5.0	+0/-0.30	0.40	330	+1.5
16.0	+0.70/+0.30	1.5	±0.15	5.0	+0/-0.30	0.40	330	+1.5
17.0	+0.80/+0.30	2.0	±0.20	6.2	+0/-0.30	0.47	330	+1.5
18.0	+0.80/+0.30	2.0	±0.20	6.2	+0/-0.30	0.50	330	+1.5
19.0	+0.80/+0.30	2.0	±0.20	6.2	+0/-0.30	0.50	330	+1.5
20.0	+0.80/+0.30	2.0	±0.20	6.2	+0/-0.40	0.50	330	+1.5
21.0	+0.80/+0.30	2.0	±0.20	6.2	+0/-0.40	0.50	330	+1.5
22.0	+0.80/+0.30	2.0	±0.20	6.2	+0/-0.40	0.50	330	+1.5
23.0	+0.80/+0.30	2.0	±0.20	7.5	+0/-0.40	0.50	330	+1.5
24.0	+0.80/+0.30	2.0	±0.20	7.5	+0/-0.50	0.50	330	+1.5
25.0	+0.80/+0.30	2.0	±0.20	7.5	+0/-0.50	0.50	330	+1.5
26.0	+0.80/+0.30	2.0	±0.20	7.5	+0/-0.50	0.50	330	+1.5

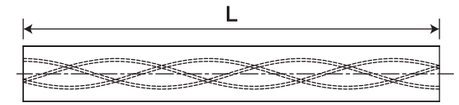
双螺旋孔圆棒（30°） Carbide rod with two helix holes (30°)





外径 mm Dia.	外径公差 Tol.	孔距 Hole distance	孔距公差 Tol	内孔 mm Hole dia.	内孔公差 Hole tol	螺距长度 Pitch
3.0	+0.5/+0.9	1.60	+/-0.15	0.40	+/-0.1	16.32
4.0	+0.6/+0.9	2.10	+/-0.15	0.60	+/-0.15	21.77
5.0	+0.6/+0.9	2.40	+/-0.20	0.70	+/-0.15	27.21
6.0	+0.7/+1.3	1.60	+/-0.15	0.40	+/-0.15	32.65
6.0	+0.7/+1.3	1.80	+/-0.15	0.50	+/-0.15	32.65
6.0	+0.7/+1.3	2.10	+/-0.15	0.60	+/-0.15	32.65
6.0	+0.7/+1.3	2.25	+/-0.15	0.70	+/-0.15	32.65
6.0	+0.7/+1.3	2.40	+/-0.15	0.70	+/-0.15	32.65
7.0	+0.7/+1.3	3.50	+/-0.15	1.00	+/-0.15	36.46
7.0	+0.7/+1.3	3.50	+/-0.15	1.00	+/-0.15	38.09
8.0	+0.7/+1.3	2.80	+/-0.15	0.60	+/-0.15	43.53
8.0	+0.7/+1.3	3.80	+/-0.15	1.00	+/-0.15	43.53
9.0	+0.7/+1.3	4.50	+/-0.15	1.40	+/-0.15	47.34
9.0	+0.7/+1.3	4.50	+/-0.15	1.40	+/-0.15	48.97
10.0	+0.7/+1.3	4.50	+/-0.15	1.40	+/-0.15	54.41
11.0	+0.7/+1.3	4.90	+/-0.15	1.40	+/-0.15	58.22
11.0	+0.7/+1.3	4.90	+/-0.15	1.40	+/-0.15	59.86
12.0	+0.6/+1.4	5.85	+/-0.15	1.40	+/-0.15	65.3
13.0	+0.6/+1.4	6.10	+/-0.15	1.4/1.75/2	+/-0.20	69.11
13.0	+0.6/+1.4	6.10	+/-0.15	1.4/1.75/2	+/-0.20	70.74
14.0	+0.7/+1.5	6.70	+/-0.15	1.4/1.75/2	+/-0.20	76.18
15.0	+0.7/+1.5	7.30	+/-0.15	1.4/1.75/2	+/-0.20	79.45
16.0	+0.6/+1.6	7.90	+/-0.15	1.4/1.75/2	+/-0.20	87.06
18.0	+0.7/+1.7	9.15	+/-0.15	1.4/1.75/2/2.5	+/-0.25	97.95
20.0	+0.7/+1.7	9.90	+/-0.15	1.4/1.75/2/2.5	+/-0.25	108.83
25.0	+0.7/+1.7	12.80	+/-0.15	1.4/1.75/2/2.5	+/-0.25	136.03

三螺旋孔圆棒 Carbide rod with three helix holes (30°)



Outer D (mm)	OD Tol. (mm)	TK (mm)	Distence Tol. (mm)	Inner Dia. (mm)	ID (mm)	Pitch (mm)	Pitch Tol. (mm)	
6	+1.0/+0.6	2.75	-0.4	0.7	±0.10	32.7	-0.7	0.62
8	+1.4/+0.7	3	-0.4	1	±0.15	43.53	-0.86	0.89
10	+1.4/+0.7	5	-0.6	1.4	±0.15	54.41	-1.08	1.12
12	+1.4/+0.7	6	-0.6	1.4	±0.15	65.3	-1.3	1.33
14	+1.5/+0.7	7	-0.8	1.75	±0.20	76.18	-1.51	1.56
16	+1.6/+0.7	8	-0.8	1.75	±0.20	87.06	-1.73	1.78
18	+1.7/+0.7	9.55	-0.8	2	±0.25	97.95	-1.95	2.00
20	+1.7/+0.7	10	-1	2	±0.25	108.83	-2.16	2.22

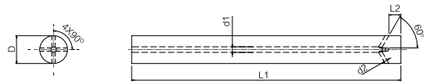
Length: 330+0/+1.5mm

Y型孔圆棒 Carbide rod with Y shaped holes

3Y孔

外径D	长度L1	盲孔d1	斜孔d2	长度L2
6	58	1.2	0.7	3
8	64	1.6	0.9	4
10	74	2.0	1.2	5
12	84	2.2	1.3	6
14	84	2.4	1.4	7
16	93	2.6	1.5	8
18	93	2.8	1.6	9
20	105	3.0	1.7	10

4Y孔



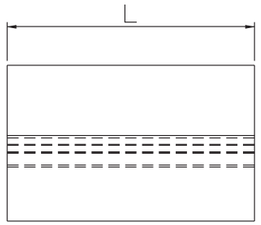
外径D	长度L1	盲孔d1	斜孔d2	长度L2
6	58	1.2	0.6	3
8	64	1.6	0.8	4
10	74	2.0	1.0	5
12	84	2.2	1.1	6
14	84	2.4	1.2	7
16	93	2.6	1.3	8
18	93	2.8	1.4	9
20	105	3.0	1.5	10

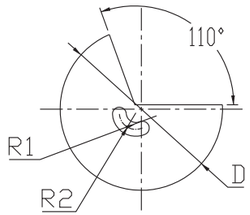
圆棒技术资料 Technical informations for rod grinding

精磨公差标准 Grinding tolerance

直径 Diameter	h4	h5	h6	h7
0<Ø≤3mm 0<Ø≤0.1181in	0.003mm 0.00012in	0.004mm 0.00015in	0.006mm 0.00024in	0.010mm 0.00039in
3<Ø≤6mm 0.11812<Ø≤0.23622in	0.004mm 0.00016in	0.005mm 0.00020in	0.008mm 0.00024in	0.012mm 0.00047in
6<Ø≤10.0mm 0.23623<Ø≤0.3937in	0.004mm 0.00016in	0.006mm 0.00024in	0.009mm 0.00035in	0.015mm 0.00059in
10<Ø≤18.0mm 0.39371<Ø≤0.70866in	0.005mm 0.00020in	0.008mm 0.0003in	0.011mm 0.00043in	0.018mm 0.00071in
18<Ø≤30.0mm 0.90867<Ø≤1.18110in	0.006mm 0.00024in	0.009mm 0.00035in	0.013mm 0.0005in	0.021mm 0.00083in
30<Ø≤50mm 1.8111<Ø≤1.96850in	0.007mm 0.00028in	0.011mm 0.00043in	0.016mm 0.00063in	0.025mm 0.00098in

腰型孔枪钻 Waist hole gun drill

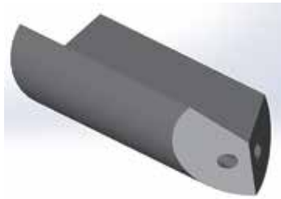


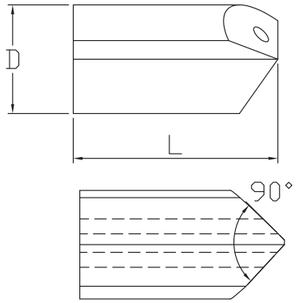


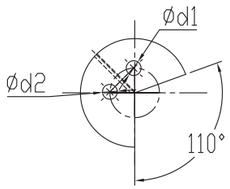
标准规格 Standard size

ØD (mm)	公差 Tol.(mm)	R1 (mm)	公差 Tol.(mm)	R2 (mm)	公差 Tol.(mm)	L (mm)	公差 Tol.(mm)
6.9	-0.1/+0.4	1.7	-0.15/+0.15	1.2	-0.20/+0.20	32	0/+3.0
4.5	-0.1/+0.4	1.1	-0.15/+0.15	0.7	-0.20/+0.20	32	0/+3.0
5.5	-0.1/+0.4	1.3	-0.15/+0.15	0.8	-0.20/+0.20	32	0/+3.0
6.3	-0.1/+0.4	1.6	-0.15/+0.15	0.9	-0.20/+0.20	32	0/+3.0
7.6	-0.1/+0.4	1.7	-0.15/+0.15	1.2	-0.20/+0.20	34	0/+3.0
8	-0.1/+0.4	1.8	-0.15/+0.15	1.3	-0.20/+0.20	34	0/+3.0
8.6	-0.1/+0.4	1.9	-0.15/+0.15	1.3	-0.20/+0.20	36	0/+3.0
9	-0.1/+0.4	2	-0.15/+0.15	1.4	-0.20/+0.20	36	0/+3.0
9.7	-0.1/+0.4	2.2	-0.15/+0.15	1.4	-0.20/+0.20	36	0/+3.0

双孔枪钻 Two holes gun drill







标准规格 Standard size

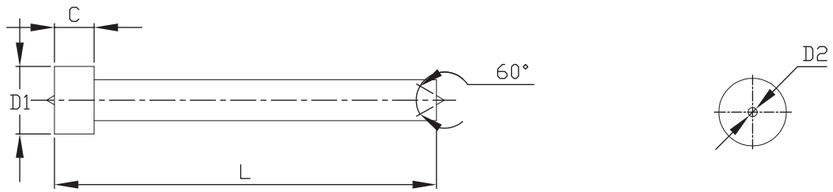
ØD (mm)	公差 Tol.(mm)	R1 (mm)	公差 Tol.(mm)	R2 (mm)	公差 Tol.(mm)	L (mm)	公差 Tol.(mm)
10.5	-0.10/+0.45	1.9	-0.20/+0.20	2.3	-0.20/+0.20	36	0/+3.0
15.0	-0.10/+0.45	2.4	-0.20/+0.20	3.3	-0.20/+0.20	42	0/+3.0
20.0	-0.10/+0.45	3.5	-0.20/+0.20	4.2	-0.20/+0.20	55	0/+3.0
30.0	-0.10/+0.45	5.0	-0.20/+0.20	6.0	-0.20/+0.20	65	0/+3.0
35.0	-0.10/+0.45	5.5	-0.20/+0.20	6.5	-0.20/+0.20	65	0/+3.0

T型刀胚 Preforms

通耐为各类刀具提供接近成品形状的粗坯，以最大程度上节省客户加工的工时和成本。

Toonney offers various kinds of near net shape carbide preforms to carbide tools, to save customer's labor and time cost at greatest extent.

T型刀胚 Preforms



ØD1	L	C	ØD2
17	104	4	10.3
	106	6	
	108	8	
	110	10	
21	104	4	10.3
	106	6	
	108	8	
	110	10	
27	104	4	12.3
	106	6	
	108	8	
	110	10	
33	104	4	16.3
	106	6	
	108	8	
	110	10	
	154	4	
	156	6	

ØD1	L	C	ØD2
33	158	8	16.3
	160	10	
37	104	4	16.3
	106	6	
	108	8	
	110	10	
	154	4	
	156	6	
	158	8	
	160	10	
41.3	104	4	16.3
	106	6	
	108	8	
	110	10	
	154	4	
	156	6	
	158	8	
	160	10	

尺寸范围 Size range:
外径 Dia:15-42mm 长度 Length: 100-160mm
其他定制尺寸 Other customized size

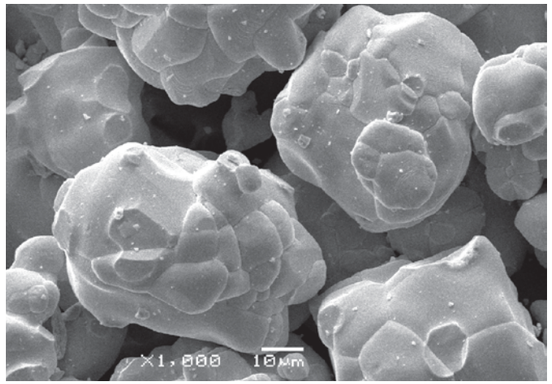
公差范围 Tolerance:
D+/-0.2mm d+/-0.3mm
Length: +1.0/+2.0mm C+0.2/+0.4mm

冷镦模仁 Heading die core

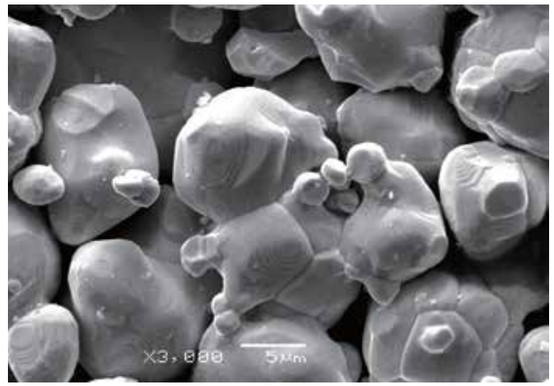
牌号表 Grade table

牌号 Grade	密度Density g/cm³±0.05	硬度Hardness HRA ±0.2	粒度 Grain size	抗弯强度 TRS	冲击韧性 Impact force	推荐用途 Application
RKG5	14.31	88.2	2.0-3.0	3400	0.70	拉伸、束杆模 Drawing die, rod die
RKG6	14.12	87.2	2.0-3.0	3200	0.76	
REA65	13.73	85.0	2.0-6.0	3000	0.80	小径螺丝模，锁芯模具 Small diameter screw die,lock core die
REA90	13.22	82.8	2.0-6.0	2700	0.90	大头型螺丝模 Big head screw die
RVA70	13.95	84.6	3.0-6.0	2600	0.78	耐冲击锻造模 Impact resistant forging die
RVA80	13.58	84.0	3.0-6.0	2740	0.85	
RVA90	13.39	82.5	3.0-6.0	2350	0.90	
RVA95	13.10	81.5	6.0-9.0	2150	0.96	
RST1	13.40	84.5	2.0-6.0	2640	0.81	不锈钢螺丝模具 Stainless steel screw die
RST6	13.70	85.8	3.0-6.0	2740	0.78	
RST7	13.40	85.0	2.0-6.0	2640	0.80	
RST8	13.30	84.0	2.0-6.0	2640	0.90	
RHA60	13.95	84.5	2.0-3.0	2640	0.76	热间锻造模 Hot forging die
RHA70	13.58	83.0	6.0-9.0	2350	0.82	
GH10	12.90	80.5	6.0-9.0	2140	0.97	不锈钢螺丝模，耐冲击锻造模 Stainless steel screw die, impact resistant forging die
GH15	13.60	86.5	2.0-3.0	2580	0.82	
GH20	13.40	85.0	2.0-6.0	2780	0.87	
GH30	13.50	84.0	3.0-9.0	2380	0.88	
GH35	13.20	83.8	2.0-6.0	2550	0.92	
GH40	13.30	83.0	2.0-6.0	2160	0.95	

新一代GH系列高耐磨，高韧性牌号
New GH series grades super high wear resistant,super high toughness.



传统合金用WC的多晶组织
Traditional polycrystalline WC structure

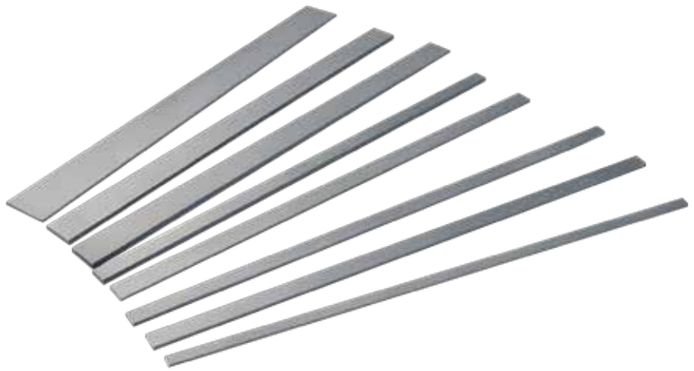


新一代GH系合金用WC的单晶圆形组织
Single crystal spherical WC powder for GH series

牌号表 Grade table

牌号 Grade	密度Density g/cm³	硬度Hardness HRA	抗弯强度 TRS	断裂韧性 Mpa.M1/2	推荐用途 Appilcation
GH11	14.70	89.5	3850	0.75	拉伸、束杆膜 Heading die draw or extrude
GH12	13.92	88.5	3700	0.80	
GH14	13.72	87.5	3550	0.82	
GH22	13.32	84.6	2740	0.87	不锈钢螺丝模具 Stainless steel screw die
GH24	13.85	86.2	2860	0.84	
GH25	13.46	85.0	2780	0.86	
GH26	13.13	84.2	2680	0.90	不锈钢螺丝模，耐冲击锻造模 Stainless steel screw die, impact resistant foring die
GH28	13.05	83.6	2640	0.92	
GH32	13.00	82.8	2550	0.95	耐冲击锻造模 Impact resistant forging die
GH36	12.86	81.3	2350	0.98	
GH39	12.80	80.2	2250	0.99	

硬质合金板条 Carbide strip



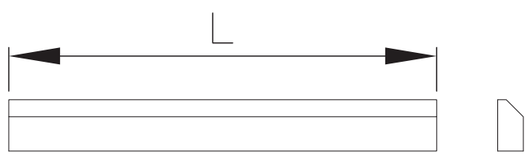
常用规格 Standard size

Size	Thickness (mm)	ThicknessTol. (mm)	Width (mm)	Width Tol. (mm)	Length (+1.5mm)
2×3	2	+0.3/+0.1	3	+0.4/+0.2	310
2×4	2	+0.3/+0.1	4	+0.4/+0.2	310
2×5	2	+0.3/+0.1	5	+0.4/+0.2	310
2×6	2	+0.3/+0.1	6	+0.4/+0.2	310
2×8	2	+0.3/+0.1	8	+0.4/+0.2	310
2×10	2	+0.3/+0.1	10	+0.4/+0.2	310
2×12	2	+0.3/+0.1	12	+0.4/+0.2	310
2×14	2	+0.3/+0.1	14	+0.4/+0.2	310
2×15	2	+0.3/+0.1	15	+0.4/+0.2	310
2×16	2	+0.3/+0.1	16	+0.4/+0.2	310
2×18	2	+0.3/+0.1	18	+0.4/+0.2	310
2×19	2	+0.3/+0.1	19	+0.4/+0.2	310
3×3	3	+0.3/+0.1	3	+0.4/+0.2	310
3×4	3	+0.3/+0.1	4	+0.4/+0.2	310
3×5	3	+0.3/+0.1	5	+0.4/+0.2	310
3×6	3	+0.3/+0.1	6	+0.4/+0.2	310
3×8	3	+0.3/+0.1	8	+0.4/+0.2	310
3×9	3	+0.3/+0.1	9	+0.6/+0.2	310
3×10	3	+0.3/+0.1	10	+0.6/+0.2	310
3×11	3	+0.3/+0.1	11	+0.6/+0.2	310
3×12	3	+0.3/+0.1	12	+0.6/+0.2	310
3×13	3	+0.3/+0.1	13	+0.6/+0.2	310
3×15	3	+0.3/+0.1	15	+0.6/+0.2	310

常用规格 Standard size

Size	Thickness (mm)	ThicknessTol. (mm)	Width (mm)	Width Tol. (mm)	Length (+1.5mm)
3×16	3	+0.3/+0.1	16	+0.6/+0.2	310
3×18	3	+0.3/+0.1	18	+0.6/+0.2	310
3×20	3	+0.3/+0.1	20	+0.6/+0.2	310
3×22	3	+0.3/+0.1	22	+0.6/+0.2	310
3×25	3	+0.3/+0.1	25	+0.6/+0.2	310
3×28	3	+0.3/+0.1	28	+1.0/+0.2	310
3×31	3	+0.3/+0.1	31	+1.0/+0.2	310
4×5	4	+0.3/+0.1	5	+1.0/+0.2	310
4×6	4	+0.3/+0.1	6	+0.6/+0.2	310
4×8	4	+0.3/+0.1	8	+0.6/+0.2	310
4×10	4	+0.3/+0.1	10	+0.6/+0.2	310
4×12	4	+0.3/+0.1	12	+0.6/+0.2	310
4×13	4	+0.3/+0.1	13	+0.6/+0.2	310
4×15	4	+0.3/+0.1	15	+0.6/+0.2	310
4×16	4	+0.3/+0.1	16	+0.6/+0.2	310
4×18	4	+0.3/+0.1	18	+0.6/+0.2	310
4×20	4	+0.3/+0.1	20	+0.6/+0.2	310
4×22	4	+0.3/+0.1	22	+1.0/+0.2	310
4×25	4	+0.3/+0.1	25	+1.0/+0.2	310
4×31	4	+0.3/+0.1	31	+1.0/+0.2	310

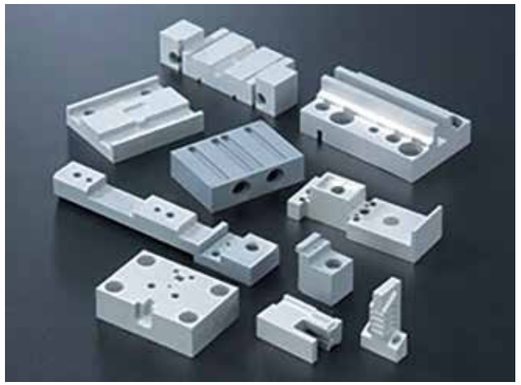
倒角板条 Carbide strip with chamfer



Size	Thickness (mm)	Thickness Tol. (mm)	Width W (mm)	Width Tol. (mm)	Length (+1.5mm)
3×6-55°	3	+0.3/+0.1	6	+0.4/+0.2	310
3×8-55°	3	+0.3/+0.1	8	+0.4/+0.3	310
3×9-55°	3	+0.3/+0.1	9	+0.4/+0.4	310
3×10-55°	3	+0.3/+0.1	10	+0.4/+0.5	310
3×12-55°	3	+0.3/+0.1	12	+0.4/+0.6	310
3×30-45°	3	+0.6/+0.4	30	+1.2/+0.6	310
4×10-55°	4	+0.3/+0.1	10	+0.4/+0.2	310

规格板 Carbide plate

板块毛坯 Plate blank



牌号表 Grade table

牌号 Grade	密度 Density g/cm³	硬度 Hardness HRA	抗弯强度 TRS N/mm²	冲击强度 Impact Strength Kgf-m/cm²
RKG3	14.61	89.30	3450	0.52
RKG4	14.31	89.30	3450	0.55
RKG5	14.32	88.30	3450	0.58
RKG6	14.12	87.20	3260	0.65
RKG7	13.95	89.30	3680	0.70
TF10	14.35	92.50	3680	0.25
TF15	14.36	91.80	3890	0.30
TF25	14.15	92.20	3880	0.35
TF30	14.15	90.00	3530	0.38
TF40	13.95	90.00	3680	0.40

耐磨件 Wear parts

拉丝拉管模 Wire drawing/tube drawing die

牌号表 Grade table

牌号 Grade	密度Density g/cm³	硬度Hardness HRA	抗弯强度 TRS N/mm²	冲击强度 Impact Strength Kgf-m/cm²	推荐用途 Application
RKG03	14.75	94.5	3660	0.20	拉钢丝，有色金属及合金线材细丝，2mm 以下直径，0.6mm 以下细丝效果尤佳。 For small wire drawing, specially good for steel, non-ferrous metal and alloy metal wire dia. less than 0.6mm.
RKG1	15.00	92.0	3120	0.26	拉6-2mm直径钢丝，有色金属及合金丝。 To draw steel, non-ferrous metal and alloy metal wire of which dia. 2 to 6mm.
RKG2	14.90	90.5	3270	0.28	拉20mm以下线材管材货10mm以下管材。 For Dia. 20mm rods or wire drawing, also for drawing tubes of which dia. smaller than 10mm.
RKG3	14.61	89.3	3450	0.52	拉50毫米以下钢，有色金属及合金棒材和35mm以下管材。 To draw steel, non-ferrous metal and alloy metal wire of which dia. less than 50mm, and dia. less than 35 tubes.
RKG6	14.12	87.2	3260	0.65	适用于应力很大条件下，拉钢棒及铜管。 To draw steel bars and copper pipes under very high stress conditions.

圆切片 Wear parts·Circular blank

常规圆切片规格 Standard size

Outside dia. Ø(mm)	OD Tol. (mm)	Thickness (mm)	T Tol. (mm)	Inner dia. (mm)	ID Tol. (mm)
10	+0.5/+0.3	T	+0.5/+0.3	4	-0.5/-0.3
20	+0.5/+0.7	T	+0.5/+0.7	5	-0.5/-0.3
30	+0.7/+0.9	T	+0.5/+0.7	8	-0.5/-0.3
40	+0.7/+0.9	T	+0.7/+0.9	10	-0.5/-0.3
50	+0.9/+1.1	T	+0.7/+0.9	13	-0.7/-0.5
60	+0.9/+1.1	T	+0.7/+0.9	16	-0.7/-0.5
70	+1.1/+1.3	T	+0.7/+0.9	25.4	-0.9/-0.7
80	+1.1/+1.3	T	+0.7/+0.9	22	-0.9/-0.7
90	+1.1/+1.3	T	+0.7/+0.9	22	-0.9/-0.7
100	+1.1/+1.3	T	+0.7/+0.9	25.4	-0.9/-0.7

其他耐磨件 Other wear parts

滚齿刀 Gear hob blank

喷嘴 Nozzle

轧辊 Roll

轴套 Bushings

水刀 water jet cutter

密封环 Seal Rings

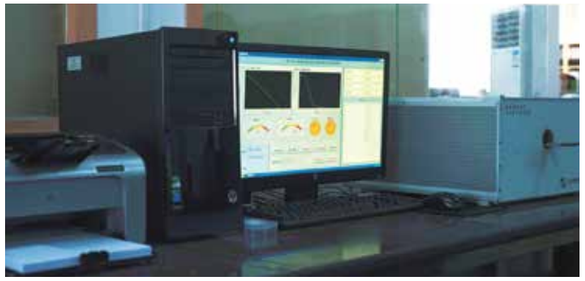
检测仪器
Inspection Instrument

碳含量分析仪
Carbon content analysis

洛氏硬度计
Rockwell for Hardness below90HRA

维氏硬度计
Vicker's hardness for 90HRA above

显微镜（测金相）
Microstructure



矫顽磁力
Coercive force

抗弯强度
TRS