



CEMENTED CARBIDE RODS

硬质合金棒材



GESAC

公司简介

About GESAC

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

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

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

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

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

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



○ 金鹭工厂分布 | GESAC Facilities

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Solid Carbide Rods

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编码体系

GESAC Code System

棒材或板材 Rods or Plates

H2	U20	BR	2	040	050	A
①	②	③	⑤	⑦	⑧	⑪

带内冷孔棒材 Rods with Coolant Holes

H2	U20	GD	30	2	040	075	020	050	A
①	②	③	④	⑥	⑦	⑧	⑨	⑩	⑪

① 产品类别 Product Category	② 金鹭牌号 GESAC Grade	③ 产品规格种类 Type Classification	
H0-毛坯/ Unground	U25U-GU25UF	BR-圆棒/ Solid Rods	
H1-半精磨/ Semi Fine Ground	U20F-GU20F	BQ-球头棒/ Ballnose Endmill Blanks	
H2-精磨h6/ Ground h6	U20-GU20	BT-台阶棒/ Combined Drill and Countersink Blanks	
H7-精磨h5/ Ground h5	K05A-GK05A	BK-带定位孔棒/ Rods with Center Holes	
	K20-GK20	BZ-尖锥棒/ Rods with Tapered End	
		TS+形状代码-板材/ TS + Shape Code-Plates	
		GA-单直孔棒材/ Rods with Central Coolant Hole	
		GB-双直孔棒材/ Rods with 2 Straight Coolant Holes	
		GD-双螺旋棒材/ Rods with 2 Helical Coolant Holes	
		GE-三螺旋棒材/ Rods with 3 Helical Coolant Holes	
		GN- “Y” 形内冷孔棒材/ Milling Cutter Blanks with Axial Coolant Hole and Lateral Exits	
			
		⑨ 孔径 Hole Diameter	⑩ 孔间距 Bolt Circle

牌号介绍
Grade Introduction

牌号 Grade	ISO牌号ISO Grade	晶粒度 Grain Size	钴含量 Cobalt Content	硬度 Hardness		密度 Density	抗弯强度 TRS	牌号应用 Application
		um	%	HRA	HV30	g/cm³	N/mm²	
GU092	K05-K10	0.2	9	94	2050	14.44	4100	适用于高硬材料（HRC58以上）精加工， 不锈钢、铝合金等高光表面处理。 Special ultrafine carbide grade for finishing high hardened materials (above HRC58), high light surface treatment of stainless steel, aluminum alloy and so on
GU10UF	K05-K10	0.4	6	94	2050	14.8	3800	适用于高硬材料、复合材料精加工，PCB刀 具，雕刻刀。 Suitable for high hardened materials and finish-machining of compostie material ; also application for PCB tools and gravers
GU15UF	K10-K20	0.4	8.5	93.5	1940	14.52	3800	适用于高硬材料、复合材料加工，PCB铣 刀、钻头。 Suitable for processing high hard materials, composite materials, PCB milling cutter and drills
GU25UF	K20-K40	0.4	12	92.6	1750	14.1	4200	适用于不锈钢、有色金属、钛合金、高温合 金、高硬材料（HRC50-58）的铣削加工。 Suitable for milling of stainless steel, nonferrous metal, titanium alloy, high temperature alloy and high hard material (HRC50-58)
GU20F	K20-K40	0.6	10	92.3	1700	14.37	4000	适用于合金钢、不锈钢、有色金属、高温合 金等材料的切削加工。 Suitable for cutting alloy steel, stainless steel, non-ferrous metal, high temperature alloy and so on
GU20	K20-K40	0.7	10	91.9	1630	14.4	3800	通用型铣刀、钻头材质，适用于合金钢、不锈 钢、有色金属、高温合金等材料的切削加工。 For general use of milling and drilling, suitable for cutting alloy steel, stainless steel, non-ferrous metal, high temperature alloy and so on
GK05A	K15	1.0	6	92.5	1740	14.9	2450	适用于有色金属、高硅铝合金和石墨制品 （金刚石涂层）。 Suitable for machining non-ferrous metal, aluminium with a high silicon content and graphite (with diamond coating)

牌号推荐

Grade Selection Guide

加工材料 Workpiece		刀具种类 Type of Cutting Tools		GU092	GU10UF	GU15UF	GU25UF	GU20F	GU20	GK05A
P	钢 Steel	立铣刀 Endmill	粗加工 Roughing					●	★	
			精加工 Finishing			★	●	●		
		钻头 Drill						●	★	
M	不锈钢 Stainless steel	立铣刀 Endmill	粗加工 Roughing					●	★	
			精加工 Finishing	●		●	★			
		钻头 Drill						●	★	
K	铸铁 Cast Iron	立铣刀 Endmill	粗加工 Roughing						★	
			精加工 Finishing				★	●	▲	
		钻头 Drill						●	★	
N	有色金属 Nonferrous Material	立铣刀 Endmill	粗加工 Roughing					●	★	
			精加工 Finishing	●		★	●	●	▲	
		钻头 Drill							★	
S	耐热合金 Heat Resistance Material	立铣刀 Endmill	粗加工 Roughing			●			★	
			精加工 Finishing			★		●		
		钻头 Drill						●	★	
H	高硬材料 Hardened Material	立铣刀 Endmill	粗加工 Roughing	●		★	●			
			精加工 Finishing	★	●	●				
		钻头 Drill				●		●	★	
Others	石墨Graphite									▲
	碳纤维增强塑料CFRP			●	●	●				▲
	印刷电路板PCB			●	★	●				

★	优选 First Choice
●	备选 Second Choice
▲	金刚石涂层 Diamond Coating



SOLID RODS

实心圆棒

B

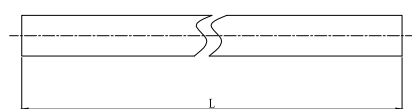
公制长棒

Solid Long Rods-Metric

GU20

GU20F

GU25UF



规格 Type	直径 ØD	长度 L
BR1020310/330	2	310/330
BR1030310/330	3	310/330
BR1040310/330	4	310/330
BR1050310/330	5	310/330
BR1060310/330	6	310/330
BR1070310/330	7	310/330
BR1080310/330	8	310/330
BR1090310/330	9	310/330
BR1100310/330	10	310/330
BR1110310/330	11	310/330
BR1120310/330	12	310/330
BR1130310/330	13	310/330
BR1140310/330	14	310/330
BR1150310/330	15	310/330
BR1160310/330	16	310/330
BR1170310/330	17	310/330
BR1180310/330	18	310/330
BR1190310/330	19	310/330
BR1200310/330	20	310/330
BR1210310/330	21	310/330
BR1220310/330	22	310/330

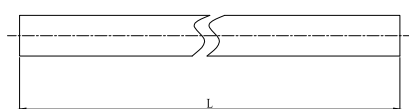
规格 Type	直径 ØD	长度 L
BR1230310/330	23	310/330
BR1240310/330	24	310/330
BR1250310/330	25	310/330
BR1260310/330	26	310/330
BR1270310/330	27	310/330
BR1280310/330	28	310/330
BR1290310/330	29	310/330
BR1300310/330	30	310/330
BR1310310/330	31	310/330
BR1320310/330	32	310/330
BR1330310/330	33	310/330
BR1340310/330	34	310/330
BR1350310/330	35	310/330
BR1360310/330	36	310/330
BR1370310/330	37	310/330
BR1380310/330	38	310/330
BR1390310/330	39	310/330
BR1400310/330	40	310/330
BR1410310/330	41	310/330
BR1420310/330	42	310/330

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

英制长棒

Solid Long Rods-Inch

GU20 GU20F GU25UF



规格 Type	直径 ØD	长度 L
BR1031333	0.1250	13-1/8
BR1035333	0.1406	13-1/8
BR1039333	0.1563	13-1/8
BR1043333	0.1719	13-1/8
BR1047333	0.1875	13-1/8
BR1051333	0.2031	13-1/8
BR1055333	0.2188	13-1/8
BR1059333	0.2344	13-1/8
BR1063333	0.2500	13-1/8
BR1071307	0.2813	12-1/8
BR1075307	0.2969	12-1/8
BR1079307	0.3125	12-1/8
BR1083307	0.3281	12-1/8
BR1087307	0.3438	12-1/8
BR1091307	0.3594	12-1/8
BR1095307	0.3750	12-1/8
BR1099307	0.3906	12-1/8

规格 Type	直径 ØD	长度 L
BR1103307	0.4063	12-1/8
BR1107307	0.4219	12-1/8
BR1111307	0.4375	12-1/8
BR1115307	0.4531	12-1/8
BR1119307	0.4688	12-1/8
BR1123307	0.4844	12-1/8
BR1127307	0.5000	12-1/8
BR1134307	0.5313	12-1/8
BR1142307	0.5625	12-1/8
BR1158307	0.6250	12-1/8
BR1174307	0.6875	12-1/8
BR1190307	0.7500	12-1/8
BR1206307	0.8125	12-1/8
BR1222307	0.8750	12-1/8
BR1238307	0.9375	12-1/8
BR1254307	1.0000	12-1/8

GESAC Standard	毛坯 Unground ØD (mm)		精磨 Ground ØD (mm)		长度L (mm)
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)	公差 (Tol.)
	1/8 ≤ ØD ≤ 1/4	+0.012 , +0.020	1/8 ≤ ØD ≤ 1	h5/h6	+1/8 , +3/8
	1/4 < ØD ≤ 31/64	+0.012 , +0.024			
	31/64 < ØD ≤ 5/8	+0.012 , +0.028			
	5/8 < ØD ≤ 1	+0.012 , +0.032			
	16 < ØD ≤ 42	+0.30, +0.80			

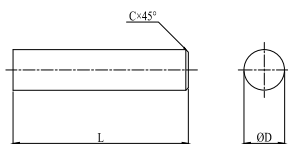
公制精磨倒角短棒 (h5/h6)

Ground Rods with Chamfer—Metric

GU20

GU20F

GU25UF



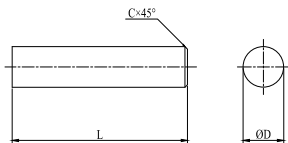
规格 Type	直径 ØD	长度 L	倒角尺寸 C
BR2030040	3	40	0.4
BR2030050	3	50	0.4
BR2030070	3	70	0.4
BR2030100	3	100	0.4
BR2030150	3	150	0.4
BR2040040	4	40	0.4
BR2040050	4	50	0.4
BR2040075	4	75	0.4
BR2040100	4	100	0.4
BR2040150	4	150	0.4
BR2050050	5	50	0.4
BR2050055	5	55	0.5
BR2050060	5	60	0.5
BR2050070	5	70	0.5
BR2050080	5	80	0.5
BR2050100	5	100	0.5
BR2050150	5	150	0.5
BR2060050	6	50	0.5
BR2060060	6	60	0.5
BR2060075	6	75	0.5
BR2060100	6	100	0.5
BR2060150	6	150	0.5
BR2070055	7	55	0.6
BR2070060	7	60	0.6
BR2080060	8	60	0.6
BR2080075	8	75	0.6

规格 Type	直径 ØD	长度 L	倒角尺寸 C
BR2080080	8	80	0.6
BR2080090	8	90	0.6
BR2080100	8	100	0.6
BR2080150	8	150	0.6
BR2100070	10	70	0.6
BR2100075	10	75	0.6
BR2100090	10	90	0.6
BR2100100	10	100	0.6
BR2100125	10	125	0.6
BR2120110	11	110	0.8
BR2120075	12	75	0.8
BR2120090	12	90	0.8
BR2120100	12	100	0.8
BR2120120	12	120	0.8
BR2140075	14	75	0.8
BR2140110	14	110	0.8
BR2140125	14	125	0.8
BR2160100	16	100	0.8
BR2160125	16	125	0.8
BR2180100	18	100	0.8
BR2180150	18	150	0.8
BR2200100	20	100	1.0
BR2200120	20	120	1.0
BR2200150	20	150	1.0
BR2250100	25	100	1.0
BR2250150	25	150	1.0

GESAC Standard	毛坯 Unground ØD (mm)		倒角尺寸C (mm)	倒角角度Angle of Chamfer (°)	长度L(mm)
	范围 (Range)	公差 (Tol.)	公差 (Tol.)	公差 (Tol.)	公差 (Tol.)
	3≤ØD≤25	h5/h6	±0.1	45°±3°	0,+1.0

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

- GU20
- GU20F
- GU25UF



规格 Type	直径 ØD	长度L (公差Tol./0,+1/16)	倒角尺寸 Chamfer Size	
			C	公差Tol.
BR2031038	1/8	1-1/2	0.015	±0.004
BR2031050	1/8	2	0.015	±0.004
BR2031063	1/8	2-1/2	0.015	±0.004
BR2031076	1/8	3	0.015	±0.004
BR2047050	3/16	2	0.015	±0.004
BR2047076	3/16	3	0.015	±0.004
BR2063050	1/4	2	0.015	±0.004
BR2063063	1/4	2-1/2	0.015	±0.004
BR2063076	1/4	3	0.015	±0.004
BR2063101	1/4	4	0.015	±0.004
BR2079063	5/16	2-1/2	0.015	±0.004
BR2095063	3/8	2-1/2	0.015	±0.004
BR2095076	3/8	3	0.015	±0.004
BR2127063	1/2	2-1/2	0.031	±0.008
BR2127076	1/2	3	0.031	±0.008
BR2127101	1/2	4	0.031	±0.008
BR2158088	5/8	3-1/2	0.031	±0.008
BR2190101	3/4	4	0.031	±0.008
BR2190127	3/4	5	0.031	±0.008
BR2254101	1	4	0.031	±0.008

GESAC Standard	精磨 Ground ØD(inch)		倒角角度Angle of Chamfer (°)
	范围 (Range)	公差 (Tol.)	公差 (Tol.)
	0.0125≤ØD≤1.25	h5/h6	45°±3°

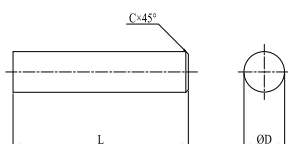
DIN精磨倒角短棒 (h5/h6)

Ground Rods with Chamfer-DIN

GU20

GU20F

GU25UF



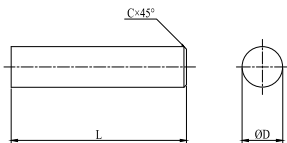
规格 Type	直径 ØD	长度 L	倒角尺寸 C	标准 Standard
BR2030038	3	38	0.4	D6527K/D6527L
BR2035050	3.5	50	0.4	D6528
BR2040050	4	50	0.4	D6528
BR2045050	4.5	50	0.5	D6528
BR2050050	5	50	0.5	D6528
BR2055057	5.5	57	0.5	D6528
BR2060050	6	50	0.5	D6527K
BR2060057	6	57	0.5	D6527L/D6528
BR2060054	6	54	0.5	D6527K
BR2065060	6.5	60	0.6	D6528
BR2070060	7	60	0.6	D6528
BR2075063	7.5	63	0.6	D6528
BR2080058	8	58	0.6	D6527K
BR2080063	8	63	0.6	D6527L/D6528
BR2085067	8.5	67	0.6	D6528
BR2090067	9	67	0.6	D6528

规格 Type	直径 ØD	长度 L	倒角尺寸 C	标准 Standard
BR2095072	9.5	72	0.6	D6528
BR2100066	10	66	0.6	D6527K
BR2100072	10	72	0.6	D6527L/D6528
BR2110083	11	83	0.8	D6528
BR2120073	12	73	0.8	D6527K
BR2120083	12	83	0.8	D6527L/D6528
BR2130083	13	83	0.8	D6528
BR2140075	14	75	0.8	D6527K
BR2140083	14	83	0.8	D6527L/D6528
BR2150092	15	92	0.8	D6528
BR2160082	16	82	0.8	D6527K
BR2160092	16	92	0.8	D6527L/D6528
BR2180084	18	84	0.8	D6527K
BR2180092	18	92	0.8	D6527L/D6528
BR2200092	20	92	1.0	D6527K
BR2200104	20	104	1.0	D6527L/D6528

GESAC Standard	精磨 Unground ØD(mm)		倒角尺寸C (mm)	倒角角度Angle of Chamfer (°)	长度L(mm)
	范围(Range)	公差	公差 (Tol.)	公差 (Tol.)	公差 (Tol.)
	ØD≤42	h5/h6	±0.1	45°±3°	0,+1.0

DIN精磨倒角短棒 (h5/h6)
Ground Rods with Chamfer-DIN

- GU20
- GU20F
- GU25UF



规格 Type	直径 ØD	长度 L	倒角尺寸 C	标准 Standard
BR2030047	3	47	0.4	D6539
BR2040056	4	56	0.4	D6539
BR2050063	5	63	0.5	D6539
BR2060063	6	63	0.5	D6537K
BR2060067	6	67	0.5	D6537K/D6537L/D6539
BR2060075	6	75	0.5	D6537L
BR2060083	6	83	0.5	D6537L
BR2070075	7	75	0.6	D6539
BR2080080	8	80	0.6	D6537K/D6539
BR2080092	8	92	0.6	D6537L
BR2090085	9	85	0.6	D6539
BR2100090	10	90	0.6	D6537K/D6539
BR2100104	10	104	0.6	D6537L
BR2110096	11	96	0.8	D6539
BR2085067	8.5	67	0.6	D6528
BR2090067	9	67	0.6	D6528

规格 Type	直径 ØD	长度 L	倒角尺寸 C	标准 Standard
BR2120103	12	103	0.8	D6537K/D6539
BR2120119	12	119	0.8	D6537L
BR2130103	13	103	0.8	D6539
BR2140108	14	108	0.8	D6537K/D6539
BR2140125	14	125	0.8	D6537L
BR2150112	15	112	0.8	D6539
BR2160116	16	116	0.8	D6537K/D6539
BR2160134	16	134	0.8	D6537L
BR2170120	17	120	0.8	D6539
BR2180124	18	124	0.8	D6537K/D6539
BR2180144	18	144	0.8	D6537L
BR2190128	19	128	1.0	D6539
BR2200132	20	132	1.0	D6537K/D6539
BR2200154	20	154	1.0	D6537L
BR2200092	20	92	1.0	D6527K
BR2200104	20	104	1.0	D6527L/D6528

GESAC Standard	精磨 Ground ØD(mm)		倒角尺寸C (mm)	倒角角度Angle of Chamfer (°)	长度L(mm)
	范围(Range)	公差	公差 (Tol.)	公差 (Tol.)	公差 (Tol.)
	ØD≤42	h5/h6	±0.1	45°±3°	0,+1.0

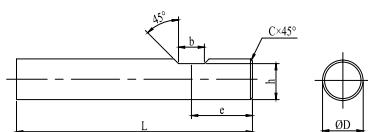
精磨倒角侧固短棒 (h5/h6)

Endmill Blanks with Weldon

GU20

GU20F

GU25UF



规格 Type	直径 ØD	长度 L	侧固槽宽 b (Tol./0,+0.5)	端面到侧固槽中心距离 e(公差Tol./0,-1)	侧固槽深h	(公差Tol.)	倒角尺寸 C(Tol. /±0.1)
BM2006050	6	50	4.2	15.9	4.8	+0,-0.075	0.5
BM2060057	6	57	4.2	18.0	5.1	+0,-0.075	0.5
BM2080063	8	63	5.5	18.0	6.9	+0,-0.090	0.6
BM2100072	10	72	7.0	20.0	8.5	+0,-0.090	0.6
BM2120083	12	83	8.0	22.5	10.4	+0,-0.110	0.8
BM2140083	14	83	8.0	22.5	12.7	+0,-0.110	0.8
BM2160092	16	92	10.0	24.0	14.2	+0,-0.110	0.8
BM2180092	18	92	10.0	24.0	16.2	+0,-0.110	0.8
BM2200104	20	104	11.0	25.0	18.2	+0,-0.130	1.0

GESAC Standard	精磨 Ground ØD(mm)		倒角尺寸C (mm)	倒角角度Angle of Chamfer (°)	长度L(mm)
	范围(Range)	公差	公差 (Tol.)	公差 (Tol.)	公差 (Tol.)
	ØD≤42	h5/h6	±0.1	45°±3°	0,+1.0



RODS WITH COOLANT HOLES
帶內冷孔棒材

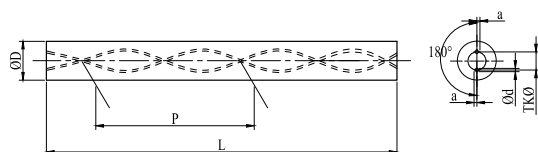
B

30°双螺旋孔棒材

Rods with 2 Helical Coolant Holes (30°)

GU20

GU20F



规格 Type	直径 ØD	长度L (公差Tol. / 0,+5)	内孔径 Ød	孔间距 Bolt Circle TKØ	螺距(±0.5°) Pitch		孔中心偏离 Hole Deviation a
					P	Tol.	
GD301030330040017A	3	330	0.40	1.70	16.32	-0.32 +0.33	0.15
GD301040330060022A	4	330	0.60	2.20	21.77	-0.43 +0.45	0.15
GD301050330070026A	5	330	0.70	2.60	27.21	-0.54 +0.56	0.15
GD301060330070026A	6	330	0.70	2.60	32.65	-0.65 +0.67	0.15
GD301070330100037A	7	330	1.00	3.70	38.09	-0.76 +0.78	0.15
GD301080330100040A	8	330	1.00	4.00	43.53	-0.86 +0.89	0.15
GD301090330140048A	9	330	1.40	4.80	48.97	-0.97 +1.00	0.20
GD301100330140048A	10	330	1.40	4.80	54.41	-1.08 +1.11	0.20
GD301110330140053A	11	330	1.40	5.30	59.86	-1.19 +1.22	0.30
GD301120330140062A	12	330	1.40	6.25	65.30	-1.30 +1.34	0.30
GD301130330175065A	13	330	1.75	6.50	70.74	-1.40 +1.45	0.37

GESAC 标准 Standard	毛坯 Unground ØD (mm)		精磨 Ground ØD (mm)	
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)
	3≤ØD≤6	+0.60, +1.00	3≤ØD≤25	h5/h6
	6 < ØD≤24	+0.70,+1.10		
	ØD=25	+0.80,+1.20		
	内孔径 Ød (mm)		孔间距 TKØ (mm)	
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)
	0.40≤Ød≤0.90	±0.10	TKØ≤4.00	+0, -0.40
	0.90 < Ød≤1.70	±0.15	4.00 < TKØ≤5.00	+0, -0.60
	Ød=1.75	±0.20	5.00 < TKØ≤10.10	+0, -0.80
Ød=2.00	±0.25	10.10 < TKØ≤13.30	+0, -1.00	

30°双螺旋孔棒材
Rods with 2 Helical Coolant Holes (30°)

GU20 GU20F



规格 Type	直径 ØD	长度 L (公差 Tol. / 0,+5)	内孔径 Ød	孔间距 Bolt Circle TKØ	螺距(±0.5°) Pitch			孔中心偏离 Hole Deviation a
					P	Tol.		
GD301140330175071S	14	330	1.75	7.10	76.18	-1.51	+1.56	0.40
GD301140330190067N	14	330	1.90	6.70	76.18	-1.51	+1.56	0.40
GD301150330175077S	15	330	1.75	7.70	81.62	-1.62	+1.67	0.40
GD301160330175083S	16	330	1.75	8.30	87.06	-1.73	+1.78	0.40
GD301160330210080N	16	330	2.10	8.00	87.07	-1.73	+1.78	0.45
GD301160330250088N	16	330	2.50	8.80	87.06	-1.73	+1.78	0.45
GD301170330175089S	17	330	1.75	8.90	92.50	-1.84	+1.89	0.45
GD301180330200095S	18	330	2.00	9.55	97.95	-1.94	+2.00	0.50
GD301180330280099N	18	330	2.80	9.90	97.95	-1.95	+2.00	0.50
GD301190330200101S	19	330	2.00	10.10	103.39	-2.05	+2.12	0.50
GD301200330200104S	20	330	2.00	10.40	108.83	-2.16	+2.23	0.50
GD301200330250100N	20	330	2.50	10.00	108.83	-2.16	+2.23	0.50
GD301210330200111S	21	330	2.00	11.15	114.27	-2.27	+2.34	0.50
GD301220330200116S	22	330	2.00	11.60	119.71	-2.38	+2.45	0.50
GD301230330200122S	23	330	2.00	12.20	125.15	-2.48	+2.56	0.50
GD301240330200128S	24	330	2.00	12.80	130.59	-2.59	+2.67	0.50
GD301250330200133S	25	330	2.00	13.30	136.03	-2.70	+2.78	0.50

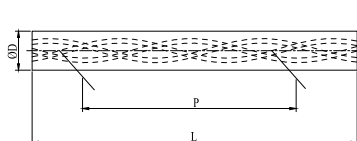
GESAC 标准 Standard	毛坯 Unground ØD (mm)		精磨 Ground ØD (mm)	
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)
	3≤ØD≤6	+0.60, +1.00	3≤ØD≤25	h5/h6
	6<ØD≤24	+0.70, +1.10		
	ØD=25	+0.80, +1.20		
	内孔径 Ød (mm)		孔间距 TKØ (mm)	
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)
	0.40≤Ød≤0.90	±0.10	TKØ≤4.00	+0, -0.40
	0.90<Ød≤1.70	±0.15	4.00<TKØ≤5.00	+0, -0.60
	Ød=1.75	±0.20	5.00<TKØ≤10.10	+0, -0.80
Ød=2.00	±0.25	10.10<TKØ≤13.30	+0, -1.00	

30°三螺旋孔棒材

Rods with 3 Helical Coolant Holes (30°)

GU20

GU20F



规格 Type	直径 ØD	长度 L (公差 Tol. / 0,+5)	内孔径 Ød	孔间距 Bolt Circle TKØ	螺距(±0.5°) Pitch			孔中心偏离 Hole Deviation	
					P	Tol.		a	α
GE301060330070027S	6	330	0.70	2.75	32.65	-0.65	+0.67	0.15	±4°
GE301060330050029N	6	330	0.50	2.90	32.65	-0.65	+0.67	0.15	±4°
GE301080330100040S	8	330	1.00	4.00	43.53	-0.86	+0.89	0.15	±4°
GE301080330070040N	8	330	0.70	4.00	43.53	-0.86	+0.89	0.15	±4°
GE301100330140050S	10	330	1.40	5.00	54.41	-1.08	+1.11	0.20	±4°
GE301100330085051N	10	330	0.85	5.10	54.41	-1.08	+1.11	0.20	±4°
GE301120330140060S	12	330	1.40	6.00	65.30	-1.30	+1.34	0.30	±4°
GE301120330110063N	12	330	1.10	6.30	65.30	-1.30	+1.34	0.30	±4°
GE301140330175070S	14	330	1.75	7.00	76.18	-1.51	+1.56	0.40	±4°
GE301140330140073N	14	330	1.40	7.30	76.18	-1.51	+1.56	0.40	±4°
GE301160330175080S	16	330	1.75	8.00	87.06	-1.73	+1.78	0.40	±4°
GE301160330160083N	16	330	1.60	8.30	87.06	-1.73	+1.78	0.40	±4°
GE301180330200095S	18	330	2.00	9.55	97.95	-1.94	+2.00	0.50	±4°
GE301180330170095N	18	330	1.70	9.50	97.95	-1.94	+2.00	0.50	±4°
GE301200330200100S	20	330	2.00	10.00	108.83	-2.16	+2.23	0.50	±4°
GE301200330190102N	20	330	1.90	10.20	108.83	-2.16	+2.23	0.50	±4°
GD301250330200133S	25	330	2.00	13.30	136.03	-2.70	+2.78	0.50	±4°

GESAC Standard	毛坯 Unground ØD (mm)		精磨 Ground ØD (mm)	
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)
	ØD=6	+0.60,+1.00	6≤ØD≤20	h5/h6
	6<ØD≤20	+0.70,+1.10		
	内孔径 Ød (mm)		孔间距 TKØ (mm)	
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)
	0.40≤Ød≤0.90	±0.10	TKØ≤4.00	+0, -0.40
	0.90 < Ød≤1.70	±0.15	4.00 < TKØ≤6.00	+0, -0.60
	Ød=1.75	±0.20	6.00 < TKØ≤9.55	+0, -0.80
	Ød=2.00	±0.25	TKØ=10.00	+0, -1.00

40°双螺旋孔棒材

Rods with 2 Helical Coolant Holes (40°)

GU20 GU20F



规格 Type	直径 ØD	长度 L (公差 Tol. / 0,+5)	内孔径 Ød	孔间距 Bolt Circle TKØ	螺距(±0.5°) Pitch			孔中心偏离 Hole Deviation a
					P	Tol.		
GD401060330050022S	6	330	0.50	2.20	22.46	-0.39	+0.40	0.15
GD401070330065024S	7	330	0.65	2.40	26.21	-0.46	+0.47	0.15
GD401080330065027S	8	330	0.65	2.70	29.95	-0.53	+0.54	0.15
GD401090330075032S	9	330	0.75	3.20	33.70	-0.59	+0.60	0.20
GD401100330080035S	10	330	0.80	3.50	37.44	-0.66	+0.67	0.20
GD401110330080037S	11	330	0.80	3.70	41.18	-0.72	+0.74	0.30
GD401120330090042S	12	330	0.90	4.20	44.93	-0.79	+0.80	0.30
GD401130330090044S	13	330	0.90	4.40	48.67	-0.85	+0.87	0.37
GD401140330100047S	14	330	1.00	4.70	52.42	-0.92	+0.94	0.40
GD401150330110051S	15	330	1.10	5.10	56.16	-0.99	+1.01	0.40
GD401160330120055S	16	330	1.20	5.50	59.90	-1.05	+1.07	0.40
GD401170330120059S	17	330	1.20	5.90	63.65	-1.12	+1.14	0.45
GD401180330140063S	18	330	1.40	6.30	67.39	-1.18	+1.21	0.50
GD401190330140067S	19	330	1.40	6.70	71.14	-1.25	+1.27	0.50
GD401200330150071S	20	330	1.50	7.10	74.88	-1.31	+1.34	0.50

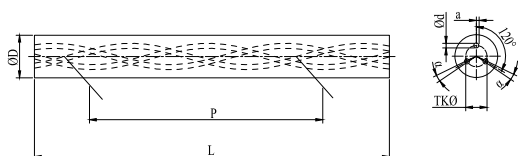
GESAC Standard	毛坯 Unground ØD (mm)		精磨 Ground ØD (mm)	
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)
	6≤ØD≤20	+1.10, +1.50	6≤ØD≤20	h5/h6
	内孔径 Ød (mm)		孔间距 TKØ (mm)	
	范围(Range)	公差 (Tol.)	范围(Range)	公差 (Tol.)
	0.40≤Ød≤0.60	±0.10	TKØ≤2.20	+0, -0.40
	0.60<Ød≤0.90	±0.15	2.20<TKØ≤2.70	+0, -0.60
	0.90<Ød≤1.20	±0.20	2.70<TKØ≤6.30	+0, -0.80
	1.20<Ød≤1.50	±0.25	6.3<TKØ≤7.1	+0, -1.00

40°三螺旋孔棒材

Rods with 3 Helical Coolant Holes (40°)

GU20

GU20F



规格 Type	直径 ØD	长度 L (公差 Tol. / 0,+5)	内孔径 Ød	孔间距 Bolt Circle TKØ	螺距(±0.5°) Pitch			孔中心偏离 Hole Deviation	
					P	Tol.		a	α
GE401060330050022S	6	330	0.50	2.20	22.46	-0.39	+0.40	0.15	±4°
GE401080330065027S	8	330	0.65	2.70	29.95	-0.53	+0.54	0.15	±4°
GE401100330080035S	10	330	0.80	3.50	37.44	-0.66	+0.67	0.15	±4°
GE401120330090042S	12	330	0.90	4.20	44.93	-0.79	+0.80	0.30	±4°
GE401140330100047S	14	330	1.00	4.70	52.42	-0.92	+0.94	0.40	±4°
GE401160330120055S	16	330	1.20	5.50	59.90	-1.05	+1.07	0.40	±4°
GE401180330140063S	18	330	1.40	6.30	67.39	-1.18	+1.21	0.50	±4°
GE401200330150071S	20	330	1.50	7.10	74.88	-1.31	+1.34	0.50	±4°

GESAC Standard	毛坯 Unground ØD (mm)		精磨 Ground ØD (mm)	
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)
	6 ≤ ØD ≤ 20	+1.10, +1.50	6 ≤ ØD ≤ 20	h5/h6
	内孔径 Ød(mm)		孔间距 TKØ(mm)	
	范围(Range)	公差 (Tol.)	范围(Range)	公差 (Tol.)
	0.40 ≤ Ød ≤ 0.80	±0.15	2.20 < TKØ ≤ 2.50	+0, -0.30
	0.80 < Ød ≤ 1.20	±0.20	3.50 < TKØ ≤ 6.30	+0, -0.50
	1.20 < Ød ≤ 1.50	±0.25	6.30 < TKØ ≤ 7.10	+0, -0.70
	1.20 < Ød ≤ 1.50	±0.25	6.3 < TKØ ≤ 7.1	+0, -1.00

其他角度双螺旋孔棒材
Other Rods with Helical Coolant Holes

GU20
GU20F



规格 Type	直径 ØD	角度 C	长度 L	内孔径 Hole Diameter		孔间距 Bolt Circle		螺距 Pitch			孔中心偏离 Hole Deviation a
				Ød	Tol.	TKØ	Tol.	P	Tol.		
GD151060330070028S	6	15	330	0.70	±0.10	2.80	-0.40	70.35	-2.38	+2.54	0.15
GD151080330125038S	8	15	330	1.25	±0.15	3.80	-0.40	93.80	-3.17	+3.38	0.15
GD151100330140051S	10	15	330	1.40	±0.15	5.10	-0.60	117.25	-3.96	+4.23	0.20
GD151120330155065S	12	15	330	1.55	±0.15	6.55	-0.60	140.70	-4.76	+5.08	0.30
GD151140330190071S	14	15	330	1.90	±0.20	7.10	-0.80	164.14	-5.55	+5.92	0.40
GD151160330210084S	16	15	330	2.10	±0.20	8.40	-0.80	187.59	-6.34	+6.77	0.40
GD151180330230094S	18	15	330	2.30	±0.25	9.40	-0.80	211.04	-7.13	+7.61	0.50
GD151200330250105S	20	15	330	2.50	±0.25	10.50	-1.00	234.49	-7.93	+8.46	0.50
GD361060330060023N	6	36	330	0.60	±0.10	2.30	-0.40	25.84	-0.46	+0.49	0.15
GD431060330050019N	6	43	330	0.50	±0.10	1.90	-0.40	20.40	-0.34	+0.37	0.15
GD431060330060015N	6	43	330	0.60	±0.10	1.50	-0.20	20.40	-0.34	+0.37	0.15
GD361060330080020N	6	36	330	0.80	±0.10	2.00	-0.20	25.84	-0.46	+0.49	0.15
GD331060330090023N	6	33	330	0.90	±0.10	2.30	-0.20	29.00	-0.58	+0.59	0.15
GD461060330050017N	6	46.3	330	0.50	±0.10	1.70	-0.20	18.00	-0.31	+0.32	0.15
GD361060330080020N	6	36	330	0.80	±0.10	2.00	-0.20	25.84	-0.46	+0.49	0.15
GD431060330060015N	6	43	330	0.60	±0.10	1.50	-0.20	20.40	-0.34	+0.37	0.15
GD401060330070019N	6	40	330	0.70	±0.10	1.90	-0.20	22.46	-0.39	+0.40	0.15
GD401060330070020H	6	40	330	0.70	±0.10	2.00	-0.20	22.46	-0.39	+0.40	0.15
GD361080330100034N	8	35.7	330	1.00	±0.10	3.40	-0.20	35.00	-1.28	+1.30	0.15
GD401080330070030N	8	40	330	0.70	±0.10	3.05	-0.30	29.95	-0.53	+0.54	0.15
GD341100330115046H	10	34.3	330	1.15	±0.15	4.60	-0.40	46.05	-0.85	+0.87	0.20
GD321100330135046N	10	32.9	330	1.35	± 0,075	4.60	-0.40	48.56	-0.92	+0.94	0.20
GD331120330150056N	12	33.5	330	1.50	±0.15	5.60	-0.40	57.00	-1.11	+1.05	0.30
GD321120330165056N	12	32.1	330	1.65	±0.15	5.60	-0.40	60.09	-1.15	+1.18	0.30
GD301250330320123N	25	29.4	330	3.20	±0.30	12.30	-0.60	139.39	-2.80	+2.89	0.50

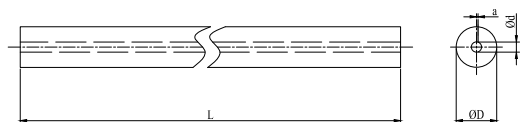
单直孔棒材

Rods with Central Coolant Hole

GU20

GU20F

GU25UF

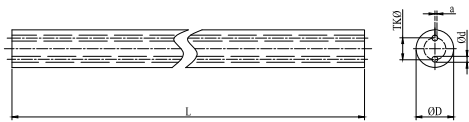


规格 Type	直径 Diameter			长度 L (公差 Tol. / 0,+5)	内孔径 Hole Diameter	
	ØD	毛坯公差 Tol. of Unground	精品公差 Tol. of Ground		Ød	Tol.
GA1030330050	3	+0.30,+0.50	h5/h6	330	0.50	±0.10
GA1040330080	4	+0.30,+0.50	h5/h6	330	0.80	±0.10
GA1050330080	5	+0.30,+0.50	h5/h6	330	0.80	±0.10
GA1060330100	6	+0.30,+0.50	h5/h6	330	1.00	±0.15
GA1070330100	7	+0.30,+0.60	h5/h6	330	1.00	±0.15
GA1080330100	8	+0.30,+0.60	h5/h6	330	1.00	±0.15
GA1090330140	9	+0.30,+0.60	h5/h6	330	1.40	±0.15
GA1100330140	10	+0.30,+0.60	h5/h6	330	1.40	±0.15
GA1110330140	11	+0.30,+0.60	h5/h6	330	1.40	±0.15
GA1120330175	12	+0.30,+0.60	h5/h6	330	1.75	±0.15
GA1130330175	13	+0.30,+0.70	h5/h6	330	1.75	±0.15
GA1140330175	14	+0.30,+0.70	h5/h6	330	1.75	±0.15
GA1150330200	15	+0.30,+0.70	h5/h6	330	2.00	±0.20
GA1160330200	16	+0.30,+0.70	h5/h6	330	2.00	±0.20
GA1170330200	17	+0.30,+0.80	h5/h6	330	2.00	±0.20
GA1180330200	18	+0.30,+0.80	h5/h6	330	2.00	±0.20
GA1190330200	19	+0.30,+0.80	h5/h6	330	2.00	±0.20
GA1200330250	20	+0.30,+0.80	h5/h6	330	2.50	±0.25
GA1210330250	21	+0.30,+0.80	h5/h6	330	2.50	±0.25
GA1220330250	22	+0.30,+0.80	h5/h6	330	2.50	±0.25
GA1230330250	23	+0.30,+0.80	h5/h6	330	2.50	±0.25
GA1240330300	24	+0.30,+0.80	h5/h6	330	3.00	±0.25
GA1250330300	25	+0.30,+0.80	h5/h6	330	3.00	±0.25
GA1260330300	26	+0.30,+0.80	h5/h6	330	3.00	±0.25
GA1270330300	27	+0.30,+0.80	h5/h6	330	3.00	±0.25
GA1280330300	28	+0.30,+0.80	h5/h6	330	3.00	±0.25
GA1290330300	29	+0.30,+0.80	h5/h6	330	3.00	±0.25
GA1300330300	30	+0.30,+0.80	h5/h6	330	3.00	±0.25

双直孔棒材

Rods with Two Straight Coolant Holes

- GU20
- GU20F
- GU25UF



规格 Type	直径 Diameter			长度 L (公差 Tol. / 0,+5)	内孔径 Hole Diameter		孔间距 Bolt Circle	
	直径 ØD	毛坯公差 Tol. of Unground	精品公差 Tol. of Ground		Ød	Tol.	TKØ	Tol.
GB1040330080018	4	+0.30,+0.50	h5/h6	330	0.80	±0.10	1.80	+0,-0.15
GB1050330080020	5	+0.30,+0.50	h5/h6	330	0.80	±0.10	2.00	+0,-0.15
GB1060330100030	6	+0.30,+0.50	h5/h6	330	1.00	±0.15	3.00	+0,-0.20
GB1070330100035	7	+0.30,+0.60	h5/h6	330	1.00	±0.15	3.50	+0,-0.20
GB1080330100040	8	+0.30,+0.60	h5/h6	330	1.00	±0.15	4.00	+0,-0.30
GB1090330140040	9	+0.30,+0.60	h5/h6	330	1.40	±0.15	4.00	+0,-0.30
GB1100330140050	10	+0.30,+0.60	h5/h6	330	1.40	±0.15	5.00	+0,-0.30
GB1110330140050	11	+0.30,+0.60	h5/h6	330	1.40	±0.15	5.00	+0,-0.30
GB1120330175060	12	+0.30,+0.60	h5/h6	330	1.75	±0.15	6.00	+0,-0.30
GB1130330175060	13	+0.30,+0.70	h5/h6	330	1.75	±0.15	6.00	+0,-0.30
GB1140330175070	14	+0.30,+0.70	h5/h6	330	1.75	±0.15	7.00	+0,-0.30
GB1150330200070	15	+0.30,+0.70	h5/h6	330	2.00	±0.20	7.00	+0,-0.30
GB1160330200080	16	+0.30,+0.70	h5/h6	330	2.00	±0.20	8.00	+0,-0.30
GB1170330200080	17	+0.30,+0.80	h5/h6	330	2.00	±0.20	8.00	+0,-0.30
GB1180330200090	18	+0.30,+0.80	h5/h6	330	2.00	±0.20	9.00	+0,-0.30
GB1190330200090	19	+0.30,+0.80	h5/h6	330	2.00	±0.20	9.00	+0,-0.30
GB1200330250100	20	+0.30,+0.80	h5/h6	330	2.50	±0.25	10.00	+0,-0.40
GB1210330250100	21	+0.30,+0.80	h5/h6	330	2.50	±0.25	10.00	+0,-0.40
GB1220330250110	22	+0.30,+0.80	h5/h6	330	2.50	±0.25	11.00	+0,-0.40
GB1230330250110	23	+0.30,+0.80	h5/h6	330	2.50	±0.25	11.00	+0,-0.40
GB1240330300120	24	+0.30,+0.80	h5/h6	330	3.00	±0.25	12.00	+0,-0.50
GB1250330300120	25	+0.30,+0.80	h5/h6	330	3.00	±0.25	12.00	+0,-0.50
GB1260330300130	26	+0.30,+0.80	h5/h6	330	3.00	±0.25	13.00	+0,-0.50

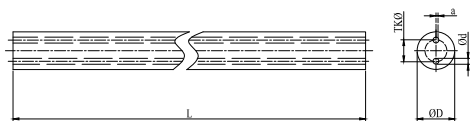
双直孔棒材

Rods with Two Straight Coolant Holes

GU20

GU20F

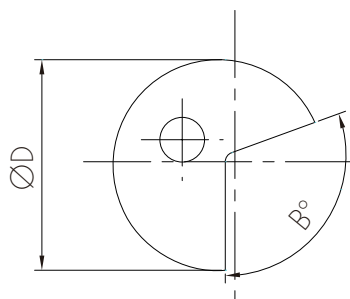
GU25UF



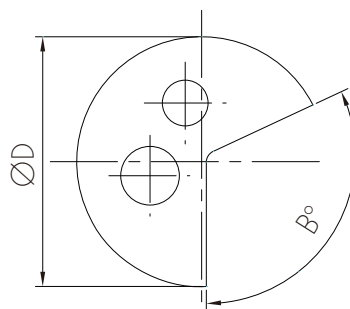
规格 Type	直径 Diameter			长度 L (公差 Tol. / 0, +5)	内孔径 Hole Diameter		孔间距 Bolt Circle	
	直径 ØD	毛坯公差 Tol. of Unground	精品公差 Tol. of Ground		Ød	Tol.	TKØ	Tol.
GB1060330080015	6	+0.30,+0.50	h5/h6	330	0.80	±0.10	1.50	+0,-0.20
GB1070330080015	7	+0.30,+0.60	h5/h6	330	0.80	±0.10	1.50	+0,-0.20
GB1080330100015	8	+0.30,+0.60	h5/h6	330	1.00	±0.15	1.50	+0,-0.30
GB1090330100026	9	+0.30,+0.60	h5/h6	330	1.00	±0.15	2.60	+0,-0.30
GB1100330100026	10	+0.30,+0.60	h5/h6	330	1.00	±0.15	2.60	+0,-0.30
GB1110330120036	11	+0.30,+0.60	h5/h6	330	1.20	±0.15	3.60	+0,-0.30
GB1120330120036	12	+0.30,+0.60	h5/h6	330	1.20	±0.15	3.60	+0,-0.30
GB1130330120036	13	+0.30,+0.70	h5/h6	330	1.20	±0.15	3.60	+0,-0.30
GB1140330150050	14	+0.30,+0.70	h5/h6	330	1.50	±0.15	5.00	+0,-0.30
GB1150330150050	15	+0.30,+0.70	h5/h6	330	1.50	±0.15	5.00	+0,-0.30
GB1160330150050	16	+0.30,+0.70	h5/h6	330	1.50	±0.15	5.00	+0,-0.30
GB1170330200062	17	+0.30,+0.80	h5/h6	330	2.00	±0.20	6.20	+0,-0.30
GB1180330200062	18	+0.30,+0.80	h5/h6	330	2.00	±0.20	6.20	+0,-0.30
GB1190330200062	19	+0.30,+0.80	h5/h6	330	2.00	±0.20	6.20	+0,-0.30
GB1200330200062	20	+0.30,+0.80	h5/h6	330	2.00	±0.20	6.20	+0,-0.40
GB1210330200062	21	+0.30,+0.80	h5/h6	330	2.00	±0.20	6.20	+0,-0.40
GB1220330200062	22	+0.30,+0.80	h5/h6	330	2.00	±0.20	6.20	+0,-0.40
GB1230330200075	23	+0.30,+0.80	h5/h6	330	2.00	±0.20	7.50	+0,-0.40
GB1240330200075	24	+0.30,+0.80	h5/h6	330	2.00	±0.20	7.50	+0,-0.50
GB1250330200075	25	+0.30,+0.80	h5/h6	330	2.00	±0.20	7.50	+0,-0.50
GB1260330200075	26	+0.30,+0.80	h5/h6	330	2.00	±0.20	7.50	+0,-0.50
GB1250330300120	25	+0.30,+0.80	h5/h6	330	3.00	±0.25	12.00	+0,-0.50
GB1260330300130	26	+0.30,+0.80	h5/h6	330	3.00	±0.25	13.00	+0,-0.50

毛坯枪钻 (深孔钻)

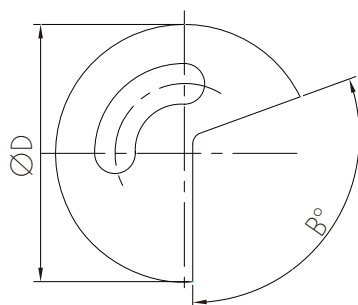
Gun Drill Blanks



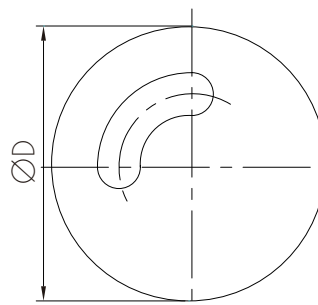
带槽单孔型
Gun Drill Blank- I



带槽双孔型
Gun Drill Blank- II



带槽肾形
Gun Drill Blank-III



无槽肾形
Gun Drill Blank-IV

- 适用范围：深孔钻
Application Area : Gun Drill
- 产品规格：直径Ø6-Ø25 mm、长度30-330 mm
Production Type : Diameter Ø6-Ø25 mm、Length 30-330 mm
- 尺寸公差：具体尺寸根据图纸定制
Tolerance : To Customer Specification



PREFORMS
异型棒

B

精磨油槽尖锥螺旋孔棒材

Ground Drill Blanks with Point, Slot and Helical Coolant Holes (30°)

GU20



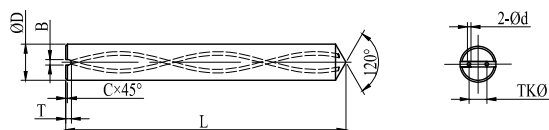
规格 Type	直径 ØD	长度 L	槽宽 B	槽深 T	倒角尺寸 C	内孔径 Ød	孔间距 TKØ	螺距(±0.5°) Pitch		系列 Series
								P	Tol.	
GD305060067070026A	6	67.0	1.50	0.90	0.50	0.70	2.60	32.65	-0.65,+0.67	3×D
GD305080080100040A	8	80.5	2.00	1.40	0.60	1.00	4.00	43.53	-0.86,+0.89	
GD305100090140048A	10	90.5	2.50	1.65	0.60	1.40	4.80	54.41	-1.08,+1.12	
GD305120104140062A	12	104.0	2.50	1.75	0.80	1.40	6.25	65.30	-1.30,+1.33	
GD305140109175071A	14	109.0	3.00	2.15	0.80	1.75	7.10	76.18	-1.51,+1.56	
GD305160117175083A	16	117.5	3.00	2.30	0.80	1.75	8.30	87.06	-1.73,+1.78	
GD305180125200095A	18	125.5	3.50	2.50	0.80	2.00	9.55	97.95	-1.95,+2.00	
GD305200134200104A	20	134.0	3.50	2.70	1.00	2.00	10.40	108.8	-2.16,+2.22	5×D
GD305060083070026A	6	83.0	1.50	0.90	0.50	0.70	2.60	32.65	-0.65,+0.67	
GD305080092100040A	8	92.5	2.00	1.40	0.60	1.00	4.00	43.53	-0.86,+0.89	
GD305100104140048A	10	104.5	2.50	1.65	0.60	1.40	4.80	54.41	-1.08,+1.12	
GD305120120140062A	12	120.0	2.50	1.75	0.80	1.40	6.25	65.30	-1.30,+1.33	
GD305140126175071A	14	126.0	3.00	2.15	0.80	1.75	7.10	76.18	-1.51,+1.56	
GD305160135175083A	16	135.5	3.00	2.30	0.80	1.75	8.30	87.06	-1.73,+1.78	
GD305180145200095A	18	145.5	3.50	2.50	0.80	2.00	9.55	97.95	-1.95,+2.00	
GD305200156200104A	20	156.0	3.50	2.70	1.00	2.00	10.40	108.8	-2.16,+2.22	

GESAC Standard	精磨 Ground ØD (mm)		长度 L (mm)		槽宽B	槽深T
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)	公差 (Tol.)	公差 (Tol.)
	6≤ØD≤20	h5/h6	L < 120	0,+1.50	±0.2	0 , +0.40
			120≤L	0,+2.00		
	内孔径 Ød (mm)		孔间距 TKØ (mm)			
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)		
	Ød≤0.70	±0.10	TKØ≤4.00	+0,-0.40		
	0.70 < Ød≤1.40	±0.15	TKØ=4.80	+0,-0.60		
	Ød=1.75	±0.20	4.80 < TKØ≤9.55	+0,-0.80		
	Ød=2.00	±0.25	TKØ=10.40	+0,-1.00		

精磨油槽尖锥螺旋孔棒材

Ground Drill Blanks with Point, Slot and Helical Coolant Holes (30°)

GU20



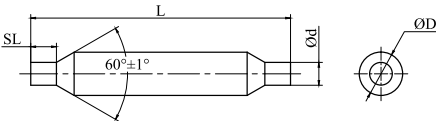
规格 Type	直径 ØD	长度 L	槽宽 B	槽深 T	倒角尺寸 C	内孔径 Ød	孔间距 TKØ	螺距(±0.5°) Pitch		系列 Series
								P	Tol.	
GD305060098070026A	6	98.0	1.50	0.90	0.50	0.70	2.60	32.65	-0.65,+0.67	7×D
GD305080107100040A	8	107.5	2.00	1.40	0.60	1.00	4.00	43.53	-0.86,+0.89	
GD305100132140048A	10	132.5	2.50	1.65	0.60	1.40	4.80	54.41	-1.08,+1.12	
GD305120157140062A	12	157.0	2.50	1.75	0.80	1.40	6.25	65.30	-1.30,+1.33	
GD305140184175071A	14	184.0	3.00	2.15	0.80	1.75	7.10	76.18	-1.51,+1.56	
GD305160206175083A	16	206.5	3.00	2.30	0.80	1.75	8.30	87.06	-1.73,+1.78	
GD305180225200095A	18	225.5	3.50	2.50	0.80	2.00	9.55	97.95	-1.95,+2.00	
GD305200247200104A	20	247.0	3.50	2.70	1.00	2.00	10.40	108.8	-2.16,+2.22	

GESAC Standard	精磨 Ground ØD (mm)		长度 L (mm)		槽宽B	槽深T
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)	公差 (Tol.)	公差 (Tol.)
	6≤ØD≤20	h5/h6	L < 120	0,+1.50	±0.2	0 , +0.40
			120≤L	0,+2.00		
	内孔径 Ød (mm)		孔间距 TKØ (mm)			
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)		
	Ød≤0.70	±0.10	TKØ≤4.00	+0,-0.40		
	0.70 < Ød≤1.40	±0.15	TKØ=4.80	+0,-0.60		
	Ød=1.75	±0.20	4.80 < TKØ≤9.55	+0,-0.80		
	Ød=2.00	±0.25	TKØ=10.40	+0,-1.00		

精磨台阶棒

Combined Drill and Countersink Blanks

GU20

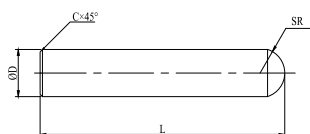


规格 Type	直径 ØD (公差Tol./h5/h6)	长度 Length		台阶直径 Step Diameter		台阶长度 Step Length	
		L	Tol.	ØSD	Tol.	SL	Tol.
BT0404704701	4.763	47.75	0, + 0.79	3.12	±0.13	2.54	0,+0.41
BT0406305001	6.350	50.80	0, + 0.79	3.91	±0.13	3.56	0,+0.41
BT0407905301	7.938	53.85	0, + 0.79	4.32	±0.13	4.06	0,+0.41
BT0411106901	11.113	69.85	0, + 0.79	5.89	±0.13	6.10	0,+0.41
BT0412707601	12.700	76.20	0, + 0.79	6.68	±0.13	7.24	0,+0.41

精磨球头棒

Ground Ballnose Endmill Blanks

GU20



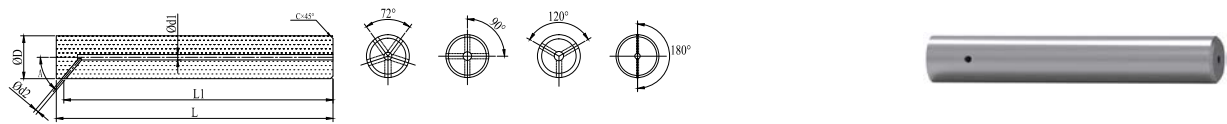
规格 Type	尺寸 (公制) Dimension (Metric)		
	直径 ØD (h5/h6)	长度 L(公差 Tol./0,+1)	球头半径 SR(公差 Tol. /0, + 0.38)
BQ3060058	6	58	3.15
BQ3060080	6	80	3.15
BQ3080064	8	64	4.19
BQ3080100	8	100	4.19
BQ3100073	10	73	5.24
BQ3100100	10	100	5.24
BQ3120084	12	84	6.29
BQ3120120	12	120	6.29
BQ3140084	14	84	7.34
BQ3140120	14	120	7.34
BQ3160093	16	93	8.39
BQ3160140	16	140	8.39
BQ3180093	18	93	9.44
BQ3180160	18	160	9.44
BQ3200105	20	105	10.49
BQ3200160	20	160	10.49

规格 Type	尺寸 (英制) Dimension (Inch)		
	直径 ØD (h5/h6)	长度 L(公差 Tol./0,+1)	球头半径 SR(公差 Tol. /0, + 0.38)
BQ3063050	0.2500	2.0	0.13
BQ3063063	0.2500	2.5	0.13
BQ3079050	0.3125	2.0	0.16
BQ3079063	0.3125	2.5	0.16
BQ3095063	0.3750	2.5	0.20
BQ3095076	0.3750	3.0	0.20
BQ3095101	0.3750	4.0	0.20
BQ3111069	0.4375	2.8	0.23
BQ3127076	0.5000	3.0	0.26
BQ3127101	0.5000	4.0	0.26
BQ3158088	0.6250	3.5	0.33
BQ3190101	0.7500	4.0	0.39
BQ3254101	1.0000	4.0	0.52

精磨Y形孔棒材

Ground Milling Cutter Blanks with Axial Coolant Hole and Lateral Exits

GU20



规格 Type	直径 ØD	长度 L	内孔径 Ød1	其它尺寸 L1	斜孔径 Ød2	倒角尺寸 C
GN3206005817501	6	58.0	1.75	55.0	1.00	0.50
GN3206006517501	6	65.0	1.75	62.0	1.00	0.50
GN3208006417501	8	64.2	1.75	60.0	1.20	1.00
GN3208007917501	8	79.0	1.75	74.8	1.20	1.00
GN3210007320001	10	73.2	2.00	68.0	1.20	1.00
GN3210010120001	10	101.2	2.00	96.0	1.20	1.00
GN3212008420001	12	84.2	2.00	78.0	1.50	1.00
GN3212010120001	12	101.1	2.00	95.0	1.50	1.00
GN3216009340001	16	93.2	4.00	85.0	1.50	1.50
GN3216012840001	16	128.0	4.00	119.8	1.50	1.50
GN3216013340001	16	133.2	4.00	125.0	1.50	1.50
GN3220011040001	20	110.0	4.00	99.8	2.00	1.50
GN3220015140001	20	151.5	4.00	141.0	2.00	1.50
GN3220016141501	20	161.2	4.00	151.0	2.00	1.50
GN3225013040001	25	130.0	4.00	117.5	2.00	1.50
GN3225018540001	25	185.0	4.00	172.5	2.00	1.50
GN3225018641501	25	186.0	4.00	173.5	2.00	1.50

GESAC Standard	毛坯 Unground	尺寸公差 Dimension (Tol.) (mm)		
	范围 (Range)	直径 ØD	长度 L	内孔径 Ød1
	6≤ØD≤32	h5/h6	0,+1.0	0,+0.30
		长度L1	斜孔径Ød2	倒角尺寸C
		±0.30	±0.15	±0.10

毛坯尖锥棒

Rods with Tapered End

GU20



规格 Type	尺寸 Dimension (DIN1897)	
	直径 ØD	长度 L
BZ1050063	5	63
BZ1060067	6	67
BZ1070075	7	75
BZ1080080	8	80
BZ1090085	9	85
BZ1100090	10	90
BZ1110096	11	96
BZ1120103	12	103
BZ1130103	13	103
BZ1140108	14	108
BZ1150112	15	112
BZ1160116	16	116
BZ1170120	17	120
BZ1180124	18	124
BZ1190128	19	128
BZ1200132	20	132
BZ1210137	21	137
BZ1200142	22	142

规格 Type	尺寸 Dimension (DIN1897)	
	直径 ØD	长度 L
BZ1230147	23	147
BZ1240152	24	152
BZ1250152	25	152
BZ1260157	26	157
BZ1270163	27	163
BZ1280163	28	163
BZ1290169	29	169
BZ1300169	30	169
BZ1310175	31	175
BZ1320181	32	181
BZ1330181	33	181
BZ1340187	34	187
BZ1350187	35	187
BZ1360194	36	194
BZ1370194	37	194
BZ1380201	38	201
BZ1390201	39	201
BZ1400201	40	201

GESAC Standard	毛坯 Unground ØD (mm)		精磨 Ground ØD (mm)		长度L(mm)
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)	公差 (Tol.)
	$2 \leq \text{ØD} < 3$	+0.15, +0.30	$2 \leq \text{ØD} \leq 42$	h5/h6	0, +1.0
	$3 \leq \text{ØD} \leq 6$	+0.30, +0.50			
	$6 < \text{ØD} \leq 12$	+0.30, +0.60			
	$12 < \text{ØD} \leq 16$	+0.30, +0.70			
	$16 < \text{ØD} \leq 42$	+0.30, +0.80			

毛坯尖锥棒
Rods with Tapered End

GU20



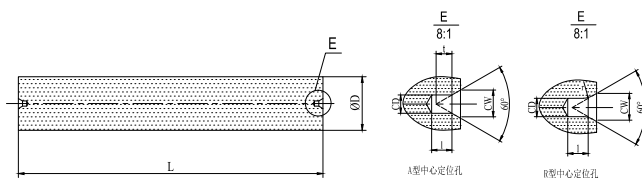
规格 Type	尺寸 Dimension (DIN1897)	
	直径 ØD	长度 L
BZ1050087	5	87
BZ1060094	6	94
BZ1070110	7	110
BZ1080118	8	118
BZ1090126	9	126
BZ1100134	10	134
BZ1110143	11	143
BZ1120152	12	152
BZ1130152	13	152
BZ1140161	14	161
BZ1150170	15	170
BZ1160179	16	179
BZ1170185	17	185
BZ1180192	18	192
BZ1190199	19	199
BZ1200206	20	206
BZ1060063	6	63

GESAC Standard	毛坯 Unground ØD (mm)		精磨 Ground ØD (mm)		长度L(mm)
	范围 (Range)	公差 (Tol.)	范围 (Range)	公差 (Tol.)	公差 (Tol.)
	2≤ØD<3	+0.15,+0.30	2≤ØD≤42	h5/h6	0,+1.0
	3≤ØD≤6	+0.30,+0.50			
	6<ØD≤12	+0.30,+0.60			
	12<ØD≤16	+0.30,+0.70			
	16<ØD≤42	+0.30,+0.80			

毛坯带定位孔棒材

Rods with Centers

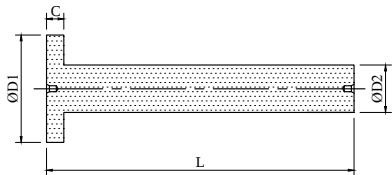
GU20



规格 Type	直径 Diameter		长度 Length	
	直径 ØD	公差 Tol.	长度 L	公差 Tol.
BK01030125	3	+0.30,+0.50	125	0, +1
BK01040105	4	+0.30,+0.50	105	0, +1
BK01040125	4	+0.30,+0.50	125	0, +1
BK01050105	5	+0.30,+0.50	105	0, +1
BK01050125	5	+0.30,+0.50	125	0, +1
BK01060105	6	+0.30,+0.50	105	0, +1
BK01060125	6	+0.30,+0.50	125	0, +1
BK01060145	6	+0.30,+0.50	145	0, +1
BK01070100	7	+0.30,+0.60	100	0, +1
BK01070105	7	+0.30,+0.60	105	0, +1
BK01070145	7	+0.30,+0.60	145	0, +1
BK01080100	8	+0.30,+0.60	100	0, +1
BK01090100	9	+0.30,+0.60	100	0, +1
BK01100100	10	+0.30,+0.60	100	0, +1
BK01100120	10	+0.30,+0.60	120	0, +1
BK01100125	10	+0.30,+0.60	125	0, +1

毛坯T形棒
T-Slot Endmill Blanks

GU20



规格 Type	直径 Diameter		长度 Length		台阶长度 Step Length		台阶直径 Step Diameter		
	ØD1	Tol.	L	Tol.	T	Tol.	ØD2	公差 Tol.	
								毛坯 Unground	精品 Ground
BT0317010401	17.0	0,+0.4	104	0,+2	4.0	±0.3	10	+0.6,+0.3	0,-0.009
BT0321010801	21.0	0,+0.4	108	0,+2	8.0	±0.3	10	+0.6,+0.3	0,-0.009
BT0327011001	27.0	0,+0.4	110	0,+2	10.0	±0.3	12	+0.6,+0.3	0,-0.011
BT0333015401	33.0	0,+0.4	154	0,+2	4.0	±0.3	16	+0.6,+0.3	0,-0.011
BT0337015801	37.0	0,+0.4	158	0,+2	8.0	±0.3	16	+0.6,+0.3	0,-0.011
BT0341316001	41.3	0,+0.4	160	0,+2	10.0	±0.3	20	+0.6,+0.3	0,-0.013

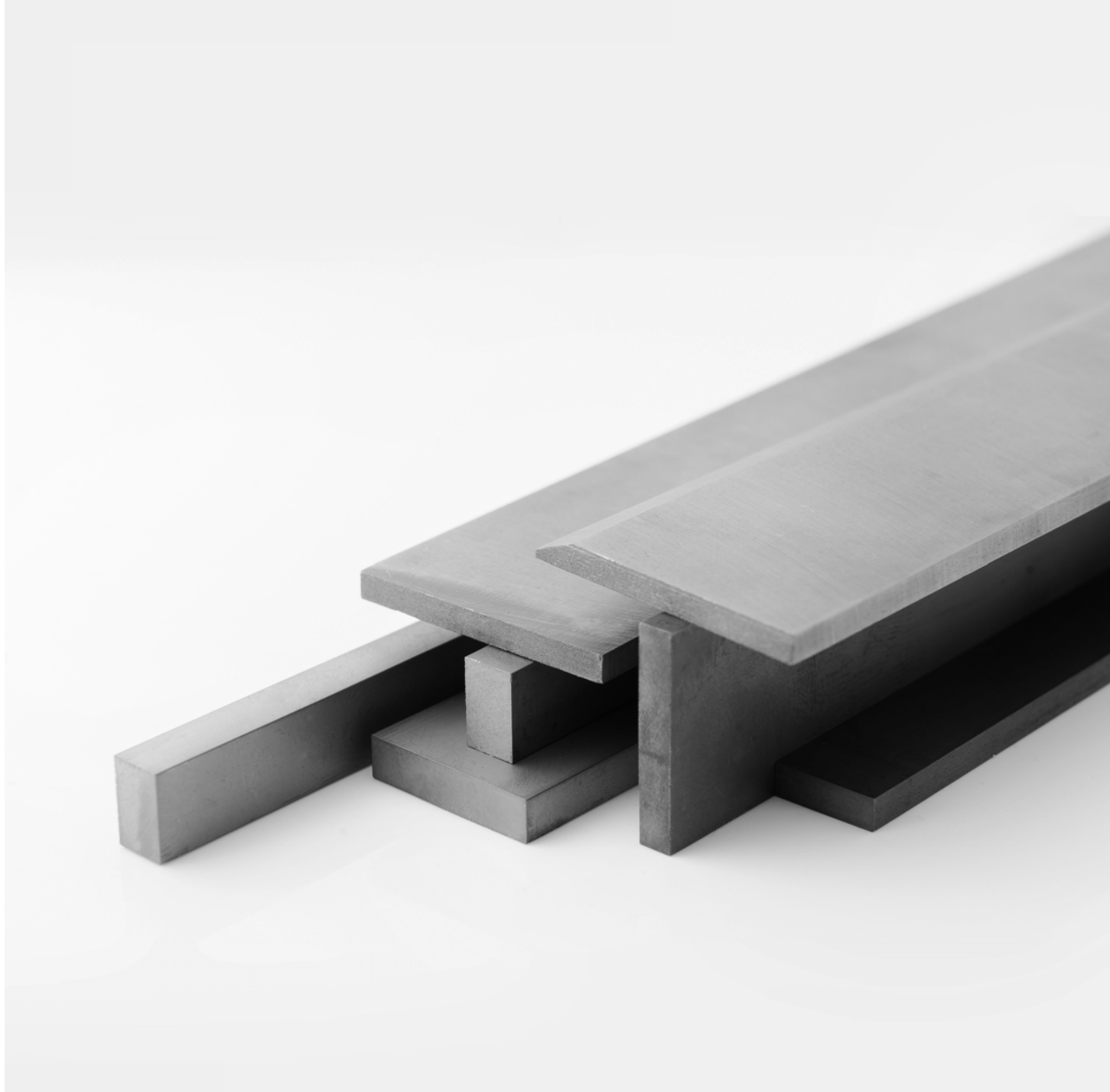
其他

Other Preformed Blanks

定制

Customized



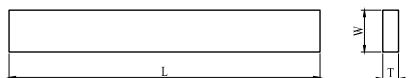


PLATES
板材产品

C

四边型材 STB

GU20

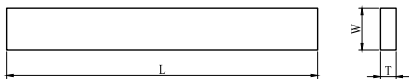


规格 Type	宽度 W	厚度 T	长度 L
TS0103003001	3	3	330
TS0104002001	4	2	330
TS0104004001	4	4	330
TS0105002001	5	2	330
TS0105003001	5	3	330
TS0105004001	5	4	330
TS0105005001	5	5	330
TS0106002001	6	2	330
TS0106002501	6	2.5	330
TS0106003001	6	3	330
TS0106004001	6	4	330
TS0106005001	6	5	330
TS0106006001	6	6	330
TS0107002001	7	2	330
TS0107003001	7	3	330
TS0107004001	7	4	330
TS0107005001	7	5	330
TS0108002001	8	2	330
TS0108002501	8	2.5	330
TS0108003001	8	3	330
TS0108004001	8	4	330
TS0108005001	8	5	330

规格 Type	宽度 W	厚度 T	长度 L
TS0108006001	8	6	330
TS0108008001	8	8	330
TS0109002001	9	2	330
TS0110002001	10	2	330
TS0110002501	10	2.5	330
TS0110003001	10	3	330
TS0110004001	10	4	330
TS0110005001	10	5	330
TS0110006001	10	6	330
TS0110010001	10	10	330
TS0112002001	12	2	330
TS0112002501	12	2.5	330
TS0112003001	12	3	330
TS0112004001	12	4	330
TS0112005001	12	5	330
TS0112006001	12	6	330
TS0112012001	12	12	330
TS0113004001	13	4	330
TS0113005001	13	5	330
TS0113006001	13	6	330
TS0114002001	14	2	330
TS0114002501	14	2.5	330

四边型材
STB

GU20

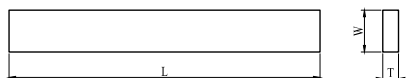


规格 Type	宽度 W	厚度 T	长度 L
TS0114003001	14	3	330
TS0114004001	14	4	330
TS0114005001	14	5	330
TS0114006001	14	6	330
TS0114014001	14	14	330
TS0115003001	15	3	330
TS0115005001	15	5	330
TS0115006001	15	6	330
TS0116002001	16	2	330
TS0116002501	16	2.5	330
TS0116003001	16	3	330
TS0116004001	16	4	330
TS0116005001	16	5	330
TS0116006001	16	6	330
TS0116016001	16	16	330
TS0118002001	18	2	330
TS0118002501	18	2.5	330
TS0118003001	18	3	330
TS0118004001	18	4	330
TS0118005001	18	5	330
TS0118006001	18	6	330
TS0120002001	20	2	330

规格 Type	宽度 W	厚度 T	长度 L
TS0120002501	20	2.5	330
TS0120003001	20	3	330
TS0120004001	20	4	330
TS0120005001	20	5	330
TS0120006001	20	6	330
TS0122003001	22	3	330
TS0122004001	22	4	330
TS0122005001	22	5	330
TS0122006001	22	6	330
TS0125003001	25	3	330
TS0125004001	25	4	330
TS0125005001	25	5	330
TS0126006001	26	6	330
TS0128003001	28	3	330
TS0128004001	28	4	330
TS0128005001	28	5	330
TS0128006001	28	6	330
TS0130003001	30	3	330
TS0130004001	30	4	330
TS0130005001	30	5	330
TS0130006001	30	6	330

四边型材 STB

GK05



规格 Type	宽度 W	厚度 T	长度 L
TS0112709501	1/2	3/8	12
TS0115803101	5/8	1/8	12
TS0115804701	5/8	3/16	12
TS0115806301	5/8	1/4	12
TS0119003101	3/4	1/8	12
TS0119004701	3/4	3/16	12
TS0119006301	3/4	1/4	12
TS0119009501	3/4	3/8	12
TS0125403101	1	1/8	12
TS0125404701	1	3/16	12
TS0125406301	1	1/4	12
TS0125409501	1	3/8	12
TS0131706301	1-1/4	3/16	12
TS0131706301	1-1/4	1/4	12

公差等级

Carbide Rod Tolerances

精磨外径公差

Tol. of Ground Rods' Diameter

外径 Diameter	h4	h5	h6	h7
0-3.0mm 0-0.1181 in.	0.003mm 0.00012 in.	0.004 mm 0.00015 in.	0.006 mm 0.00024 in.	0.010 mm 0.00039 in.
3.001-6.0mm 0.1181 - 0.2362 in.	0.004mm 0.00015 in.	0.005 mm 0.00020 in.	0.008 mm 0.00031 in.	0.012 mm 0.00047 in.
6.001-10.0 mm 0.2363 - 0.3937 in.	0.004mm 0.00015 in.	0.006 mm 0.00024 in.	0.009 mm 0.00035 in.	0.015 mm 0.00059 in.
10.001-18.0 mm 0.3938 - 0.7087 in.	0.005mm 0.00020 in.	0.008 mm 0.00031 in.	0.011 mm 0.00043 in.	0.018 mm 0.00071 in.
18.001-30.0 mm 0.7088 - 1.1811 in.	0.006mm 0.00024 in.	0.009 mm 0.00035 in.	0.013 mm 0.00051 in.	0.021 mm 0.00083 in.
30.001-50.0 mm 1.1812 - 1.9685 in.	0.007mm 0.00028 in.	0.011 mm 0.00043 in.	0.016 mm 0.00063 in.	0.025 mm 0.00098 in.

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

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
精磨棒材 Ground Rods	0.00-0.10 μm
亚光洁度 Dull Finished	0.10-0.20 μm

圆度

Roundness Tolerance

不论外径、长度，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.

材质项目名词解释

Definitions of Physical Properties

★ 硬度 Hardness

金属材料抵抗其它更硬物体压入表面的能力称为硬度，主要采用洛氏或维氏硬度测量法，两种硬度值转换时需要注意换算

The Hardness of material is defined as the ability to fight against the hard pressed into surface of the object, mainly using measurements of Rockwell and Vickers. As the principles of the Vickers and Rockwell tests are different, care must be taken when converting from one system to the other.

★ 矫顽磁力 Coercive Field Strength

矫顽磁力测量的是合金试样完全去磁化所需的反向磁场大小，它可用来评定合金的组织状况，矫顽力随钴含量降低而增大，当钴含量一定时，碳化钨晶粒越细，钴相分散程度越高，矫顽力也越大

Coercive Field Strength is a measure of the residual magnetism in the hysteresis loop when the Cobalt (Co) binder in grade of cemented carbide is magnetized and then demagnetized. It can be used to assess the status of alloy organization. The finer the grain size of the carbide phase the higher will be the coercive force value.

★ 磁饱和 Magnetic Saturation

磁饱和是最大磁化强度与质量的比值，通过测定硬质合金中具有磁性的钴（Co）粘结相的磁饱和，可以评定合金成份。低磁饱和值表示合金含碳量低，或者含有 η 相碳化物，高磁饱和值表示存在“游离碳或石墨”

Magnetic Saturation: is the ratio of magnetic intensity to quality. Magnetic Saturation measurements on the Cobalt (Co) binder phase in cemented carbide are used by the industry to evaluate its composition. Low Magnetic Saturation values indicate a low carbon level and/or the presence of Eta-Phase Carbides. High Magnetic Saturation values indicate the presence of 'free-carbon' or Graphite.

★ 密度 Density

材料的密度（比重）是材料质量与其体积的比率，使用液体置换法进行测定，硬质合金密度随WC-Co相中钴含量增加而减小

The Density (specific gravity) of a material is the ratio of its mass to its volume. It is measured using a water displacement technique. Cemented carbide density decreases linearly with increasing Cobalt content for the Wc-Co grades.

★ 抗弯强度 Transverse Rupture Strength

抗弯强度是表征材料抵抗弯曲不断裂的能力，即试样跨距中点加载负荷至断裂时，单位面积上所受的力大小

Transverse Rupture Strength (TRS) is the ability of material to resist bending, measured at the breaking point of a material in a standard three point bend test.

★ 金相 Metallographic Analysis

硬质合金烧结钴相粘结后，过量钴可能在某些结构区域中存在，形成“钴池”；而当粘结相不完全粘结，则将形成一些少量残余孔隙，合金中钴池及孔隙率使用金相显微镜检验得到

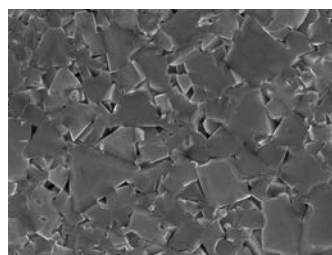
Cobalt Lakes will bond after sintering, excess cobalt may exist in certain area of the structure, forming the cobalt pool; If bonding phase is incompletely adhesive, there will form some residual pores. Cobalt pools and porosity can be detected by using metallographic microscope.



X100

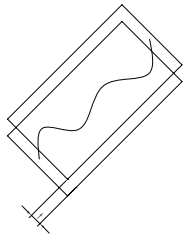
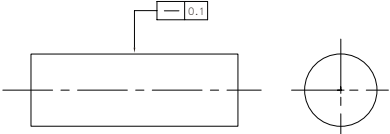
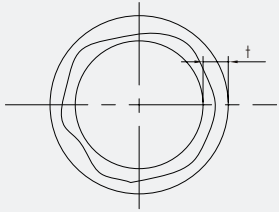
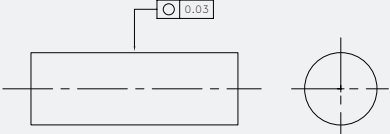
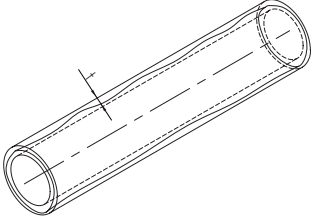
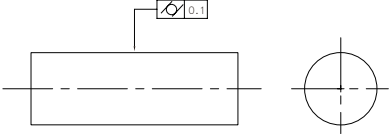


X1500



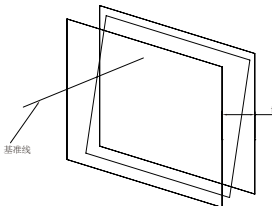
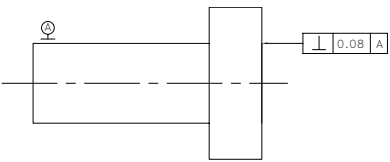
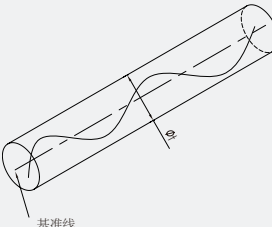
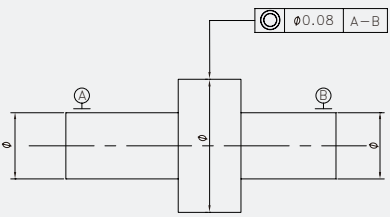
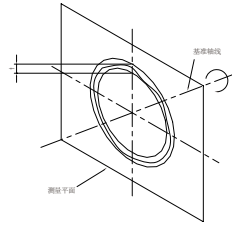
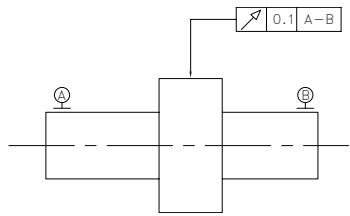
X30000

尺寸项目名词
Definitions of Geometrical Tolerance

	公差带定义 Definition of Tolerance Zone	标注和解释 Indication and Explanation
直线度 Straightness Tolerance	 在给定方向上公差带是距离为公差值t的两平行平面之间的区域 The tolerance zone, in the considered plane, is limited by two parallel straight lines a distance t apart and in the specified direction only.	 被测圆柱面的任一素线必须位于距离为公差值0.1的两平行平面之内 Any extracted (actual) line on the upper surface, parallel to the plane of projection in which the indication is shown, shall be contained between two parallel straight lines 0.1 apart.
圆度 Roundness Tolerance	 是在同一正截面上，半径值差为公差值t的两同心圆之间的区域 The tolerance zone, in the considered cross-section, is limited by two concentric circles with a difference in radii of t.	 被测圆柱面任一正截面的圆周必须位于半径差为公差值0.03的两同心圆之间 The extracted (actual) circumferential line, in any cross-section of the cylindrical and conical surfaces, shall be contained between two co-planar concentric circles, with a difference in radii of 0.03.
圆柱度 Cylindricity	 是半径差为公差值t的两同轴圆柱面之间的区域 The tolerance zone is limited by two coaxial cylinders with a difference in radii of t.	 是在同一正截面上，半径值差为公差值t的两同心圆之间的区域 The tolerance zone, in the considered cross-section, is limited by two concentric circles with a difference in radii of t.

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垂直度 Perpendicularity Tolerance of a Surface	 是距离为公差值t且垂直于基准线的两平行平面之间的区域 The tolerance zone is limited by two parallel planes a distance apart and perpendicular to the datum.	 被测面必须位于距离为公差值0.08且垂直于基准线A（基准轴线）的两平行平面之间 The extracted (actual) surface shall be contained between two parallel planes 0.08 apart that is perpendicular to datum axis A.
同轴度 Concentricity Tolerance of a Point	 是直径为公差值ϕt的圆柱面内区域，该圆柱面的轴线与基准轴线同轴 The tolerance zone is limited by a circle of diameter t; the tolerance value shall be preceded by the symbol ϕ. The centre of the circular tolerance zone coincides with the datum point.	 大圆柱面的轴线必须位于直径为公差值$\phi 0.08$且与公共基准线A-B（公共基准轴线）同轴的圆柱面内 The extracted (actual) median line of the tolerance cylinder shall be within a cylindrical zone of diameter 0.08 the axis of which is the common datum straight line A-B.
圆跳动 Circular run-out Tolerance	 是在垂直于基准轴线的任一半径位置的测量平面内、半径差为公差值t且圆心在基准轴线上的两同心圆之间的区域 The tolerance zone is limited within any cross-section perpendicular to the datum axis by two concentric circles with a difference in radii of t, the centers of which coincide with the datum.	 当被测要素围绕公共基准线A-B（公共基准轴线）旋转一周时，在任一测量平面内的径向圆跳动均不得大于0.1 The extracted (actual) line in any cross-section plane perpendicular to common datum straight line A-B shall be contained between two coplanar concentric circles with a difference in radii of 0.1.

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