



CEMENTED CARBIDE ROD

硬质合金圆棒



株洲美特优硬质合金
Zhuzhou Meetyou Carbide



About Us

株洲美特优硬质合金有限公司是一家集硬质合金制品开发、设计、生产、销售于一体的高新技术企业。公司成立于2001年，现有各类固定资产超过一亿元，占地面积超过25000多平方米。公司的主要产品有：硬质合金棒材、硬质合金板材、硬质合金冷墩模及众多非标异型产品，广泛应用于机械、矿山、电子、航天航空等领域，年产能力超过500吨。十几年来公司稳健发展，在客户中拥有很高的信誉度，公司多次被评为“守合同重信用企业”“湖南省冶金行业先进集体”；“美特优”牌硬质合金系列产品被评为“中国名优品牌”，“美特优”商标被评为“湖南省著名商标”，公司持续创新荣获“科技项目创新奖”“专利资助奖”“创响新时代中国创翼奖”等多项荣誉，并且拥有五十多种发明专利和实用新型专利。

Zhuzhou Meetyou Cemented Carbide Co., Ltd. is a private technology enterprise integrated with development, design, production and marketing of cemented carbide products. The company was established in 2001. Now, its total fixed assets exceed 100 million RMB, and the floor area surpasses 25,000m². The company's products mainly include cemented carbide rods, special disc cutters for electronic circuit board industry, special cold-heading stamping dies for standard component industry, and numerous non-standard abnormal-shape products.

Recognized world-wide for quality carbide cutting tool blanks & preforms for a variety of applications, beyond an extensive product line, Meetyou Carbide focus on customer service deeply in heart.



Tungsten Carbide Rods Grade

硬质合金圆棒牌号



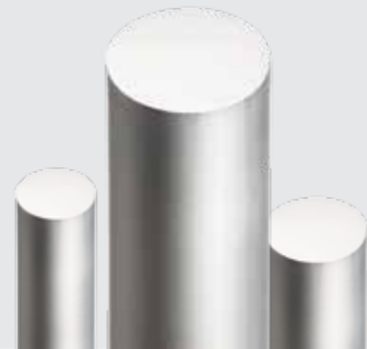
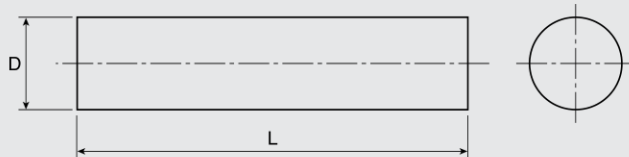
Grade		MT09S	MT10S	MT12S	MT25S	MT30S	MT06U	MT13S
ISO range		K10-K20	K20-K40	K20-K40	K20-K40	K20-K40	K05-K10	K40-K50
WC + other carbides	%	91	90	88	88	88	93.5	87
Co	%	9	10	12	12	12	6.5	13
WC grain size	um	0.4	0.8	0.6	0.4	0.6	0.4	0.8
Density	g/cm ³	14.50	14.42	14.12	14.10	14.10	14.85	14.15
Hardness	Hv30	1890	1600	1580	1750	1680	1890	1500
	HRA	93.5	91.5	91.2	92.5	92.0	93.5	91
Transverse rupture strength	N/mm ²	3800	4100	4200	4400	4200	3700	4000
	kpsi	551	590	609	638	551	540	580
Fracture toughness	Mpa.m ^{1/2}	10.2	14.2	14.7	13.5	13.9	10.1	14.9
Young's modulus	kpsi	86,780	85,360	80,860	80,000	80,050	91,000	81,000
Compressive strength	kpsi	1,145	1,015	1,010	1,109	1,090	1,156	1,000

Properties & Application 性能及应用

Grade	Properties and application 性能及应用	Micro structure
MT09S	<ul style="list-style-type: none"> 超高速超高硬，精加工 适用于加工高硬钢，塑料，纤维增强材料等HRC55-65的高硬度材料 High cutting speed milling, finishing For use on hardened steel, plastics, fiber reinforced materials, HRC55-65 	
MT10S	<ul style="list-style-type: none"> 高效全能王 适用于各类HRC45以下的材料加工，通用型极强 High cutting speed milling & drilling For general usage and suitable for all kinds of material below HRC 45 	
MT12S	<ul style="list-style-type: none"> 不锈钢加工专用材料 适用于加工不锈钢，镍合金，钛合金，特种合金等 Specially designed for machining stainless steel For use on stainless steel, nickel based alloys, titanium alloy and special alloy 	
MT25S	<ul style="list-style-type: none"> 高速高硬 适用于加工淬火钢，热处理钢，铸铁，模具钢等HRC45-55的材料 Suitable for finishing processing and roughing of steels with hardness between 45 and 55 HRC, steels for surface treatments, nickel and nickel alloys. 	
MT30S	<ul style="list-style-type: none"> 硬度、强度、韧性的完美组合 通用性极强，寿命极长，适用于各类HRC45以下的材料加工 Perfect balance for hardness and toughness For general usage and can provide extremely long life 	
MT06U	<ul style="list-style-type: none"> 超高硬度，PCB专用材料 适用于加工塑料，复合材料，PCB，陶瓷，纤维增强木材等高硬度材料 High cutting speed milling For drilling and milling of plastic composites, PCB, ceramics, woods and MDF 	
MT13S	<ul style="list-style-type: none"> 细颗粒WC，含钴13%，高耐磨，高强度 适用于制作钨钢冲头，冲针 Fine Grain WC with 13% Cobalt, High wear resistance High toughness and strength. For use on solid carbide punches 	

WITHOUT COOLANT HOLE

Unground 330mm

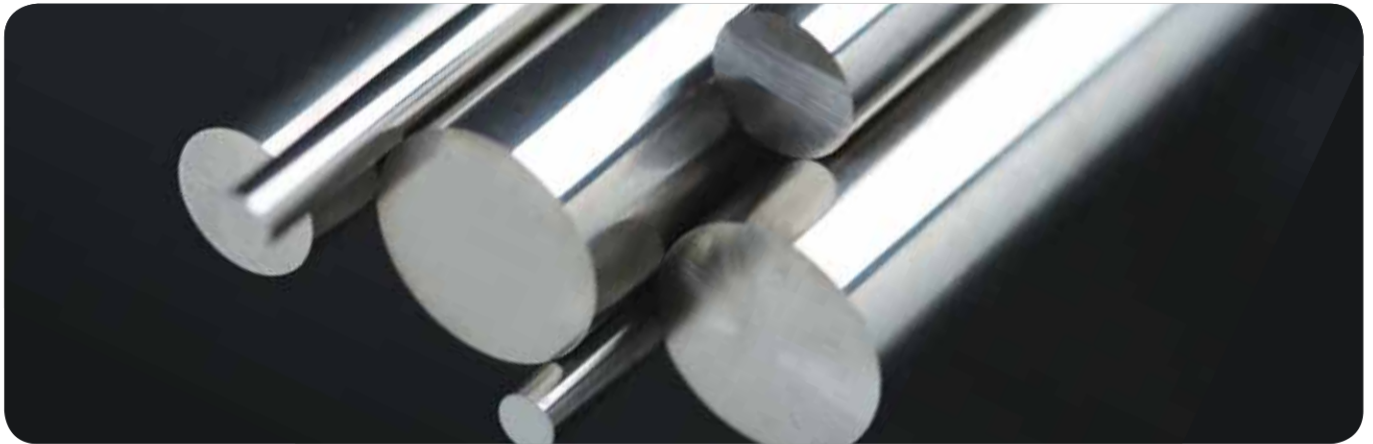


Type	D (mm)	Tolerance D(mm)	L (mm)	Tolerance L(mm)
BΦ0.5×330	0.5	+0.10/0.25	330	-0/+10.0
BΦ1.0×330	1.0	+0.10/0.25	330	-0/+10.0
BΦ1.2×330	1.2	+0.10/0.25	330	-0/+10.0
BΦ1.6×330	1.6	+0.10/0.25	330	-0/+10.0
BΦ1.8×330	1.8	+0.10/0.25	330	-0/+10.0
BΦ2.3×330	2.3	+0.10/0.35	330	-0/+10.0
BΦ2.5×330	2.5	+0.10/0.35	330	-0/+10.0
BΦ3.0×330	3.0	+0.10/0.35	330	-0/+10.0
BΦ3.5×330	3.5	+0.10/0.35	330	-0/+10.0
BΦ4.0×330	4.0	+0.20/0.35	330	-0/+10.0
BΦ4.5×330	4.5	+0.20/0.35	330	-0/+10.0
BΦ5.0×330	5.0	+0.20/0.40	330	-0/+10.0
BΦ5.5×330	5.5	+0.20/0.40	330	-0/+10.0
BΦ6.0×330	6.0	+0.20/0.40	330	-0/+10.0
BΦ6.5×330	6.5	+0.20/0.40	330	-0/+10.0
BΦ7.0×330	7.0	+0.20/0.40	330	-0/+10.0
BΦ7.5×330	7.5	+0.20/0.40	330	-0/+10.0
BΦ8.0×330	8.0	+0.20/0.40	330	-0/+10.0
BΦ8.5×330	8.5	+0.20/0.40	330	-0/+10.0
BΦ9.0×330	9.0	+0.20/0.40	330	-0/+10.0
BΦ9.5×330	9.5	+0.20/0.40	330	-0/+10.0
BΦ10.0×330	10.0	+0.20/0.40	330	-0/+10.0
BΦ10.5×330	10.5	+0.20/0.50	330	-0/+10.0
BΦ11.0×330	11.0	+0.20/0.50	330	-0/+10.0
BΦ11.5×330	11.5	+0.20/0.50	330	-0/+10.0
BΦ12.0×330	12.0	+0.20/0.50	330	-0/+10.0
BΦ12.5×330	12.5	+0.20/0.50	330	-0/+10.0
BΦ13.0×330	13.0	+0.20/0.50	330	-0/+10.0
BΦ13.5×330	13.5	+0.20/0.50	330	-0/+10.0

Type	D (mm)	Tolerance D(mm)	L (mm)	Tolerance L(mm)
BΦ14.0×330	14.0	+0.20/0.50	330	-0/+10.0
BΦ14.5×330	14.5	+0.20/0.50	330	-0/+10.0
BΦ15.0×330	15.0	+0.20/0.50	330	-0/+10.0
BΦ15.5×330	15.5	+0.20/0.50	330	-0/+10.0
BΦ16.0×330	16.0	+0.20/0.50	330	-0/+10.0
BΦ16.5×330	16.5	+0.20/0.50	330	-0/+10.0
BΦ17.0×330	17.0	+0.20/0.50	330	-0/+10.0
BΦ17.5×330	17.5	+0.20/0.50	330	-0/+10.0
BΦ18.0×330	18.0	+0.20/0.50	330	-0/+10.0
BΦ18.5×330	18.5	+0.20/0.50	330	-0/+10.0
BΦ19.0×330	19.0	+0.20/0.50	330	-0/+10.0
BΦ19.5×330	19.5	+0.20/0.50	330	-0/+10.0
BΦ20.0×330	20.0	+0.20/0.50	330	-0/+10.0
BΦ21.0×330	21.0	+0.20/0.65	330	-0/+10.0
BΦ22.0×330	22.0	+0.20/0.65	330	-0/+10.0
BΦ23.0×330	23.0	+0.20/0.65	330	-0/+10.0
BΦ24.0×330	24.0	+0.20/0.65	330	-0/+10.0
BΦ25.0×330	25.0	+0.20/0.65	330	-0/+10.0
BΦ26.0×330	26.0	+0.20/0.65	330	-0/+10.0
BΦ27.0×330	27.0	+0.20/0.65	330	-0/+10.0
BΦ28.0×330	28.0	+0.20/0.65	330	-0/+10.0
BΦ29.0×330	29.0	+0.20/0.65	330	-0/+10.0
BΦ30.0×330	30.0	+0.20/0.65	330	-0/+10.0
BΦ31.0×330	31.0	+0.20/0.65	330	-0/+10.0
BΦ32.0×330	32.0	+0.20/0.65	330	-0/+10.0
BΦ33.0×330	33.0	+0.20/0.65	330	-0/+10.0
BΦ34.0×330	34.0	+0.20/0.65	330	-0/+10.0
BΦ35.0×330	35.0	+0.20/0.65	330	-0/+10.0

WITHOUT COOLANT HOLE

Ground to h6 330mm

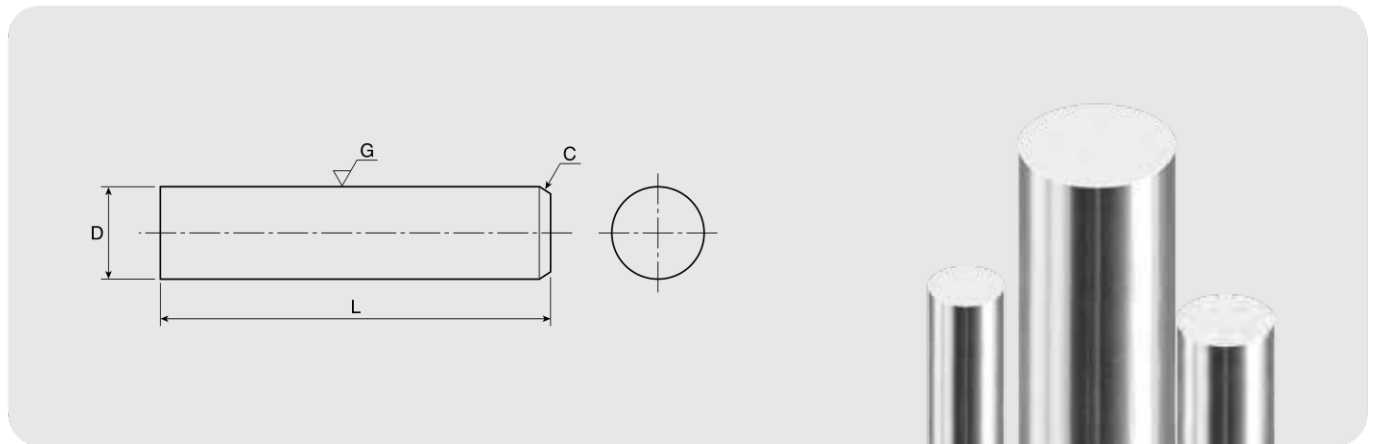


Type	D (mm)	L(mm)	Tolerance L(mm)
Φ1.0×330	1.0	330	0/+10.0
Φ1.5×330	1.5	330	0/+10.0
Φ2.0×330	2.0	330	0/+10.0
Φ2.5×330	2.5	330	0/+10.0
Φ3.0×330	3.0	330	0/+10.0
Φ3.5×330	3.5	330	0/+10.0
Φ4.0×330	4.0	330	0/+10.0
Φ4.5×330	4.5	330	0/+10.0
Φ5.0×330	5.0	330	0/+10.0
Φ5.5×330	5.5	330	0/+10.0
Φ6.0×330	6.0	330	0/+10.0
Φ6.5×330	6.5	330	0/+10.0
Φ7.0×330	7.0	330	0/+10.0
Φ7.5×330	7.5	330	0/+10.0
Φ8.0×330	8.0	330	0/+10.0
Φ8.5×330	8.5	330	0/+10.0
Φ9.0×330	9.0	330	0/+10.0
Φ9.5×330	9.5	330	0/+10.0
Φ10.0×330	10.0	330	0/+10.0
Φ10.5×330	10.5	330	0/+10.0
Φ11.0×330	11.0	330	0/+10.0
Φ11.5×330	11.5	330	0/+10.0
Φ12.0×330	12.0	330	0/+10.0
Φ12.5×330	12.5	330	0/+10.0

Type	D (mm)	L(mm)	Tolerance L(mm)
Φ13×330	13.0	330	0/+10.0
Φ14×330	14.0	330	0/+10.0
Φ15×330	15.0	330	0/+10.0
Φ16×330	16.0	330	0/+10.0
Φ17×330	17.0	330	0/+10.0
Φ18×330	18.0	330	0/+10.0
Φ19×330	19.0	330	0/+10.0
Φ20×330	20.0	330	0/+10.0
Φ21×330	21.0	330	0/+10.0
Φ22×330	22.0	330	0/+10.0
Φ23×330	23.0	330	0/+10.0
Φ24×330	24.0	330	0/+10.0
Φ25×330	25.0	330	0/+10.0
Φ26×330	26.0	330	0/+10.0
Φ28×330	28.0	330	0/+10.0
Φ30×330	30.0	330	0/+10.0
Φ32×330	32.0	330	0/+10.0
Φ33×330	33.0	330	0/+10.0
Φ34×330	34.0	330	0/+10.0
Φ35×330	35.0	330	0/+10.0
Φ36×330	36.0	330	0/+10.0
Φ38×330	38.0	330	0/+10.0
Φ40×330	40.0	330	0/+10.0

WITHOUT COOLANT HOLE >>>

Ground cut-to-length - ISO h6

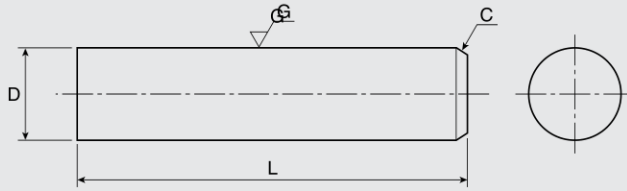


Metric mm

Type	Type	Type
Φ4×50	Φ4×75	Φ4×100
Φ6×50	Φ6×75	Φ6×100
Φ8×60	Φ8×75	Φ8×100
Φ10×75	Φ10×100	Φ10×150
Φ12×75	Φ12×100	Φ12×150
Φ14×100	Φ16×100	Φ16×150
Φ18×100	Φ20×100	Φ20×150

WITHOUT COOLANT HOLE

Ground cut-to-length - ISO h6



D(inch)	Tolerance(inch)	L(inch)	Tolerance(inch)
All types	h6	$L \leq 2.0$	+0.032
		$2.0 < L \leq 4.0$	+0.059
		$4.0 < L \leq 6.3$	+0.079
		$6.3 < L \leq 9.8$	+0.012

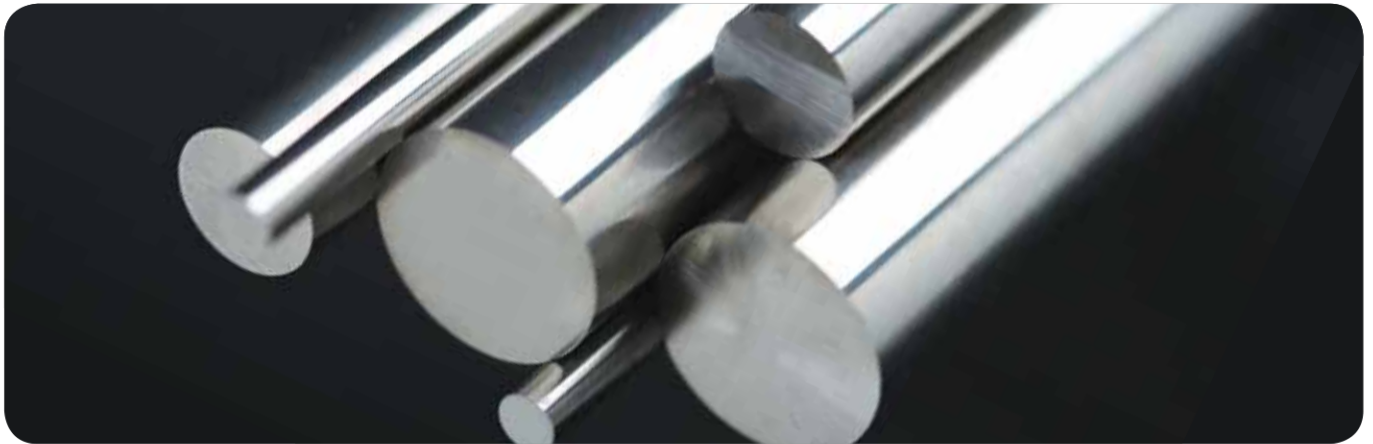


Inch

Type	Type	Type	Type	Type
1/16×1-1/2	.1935×2-3/4	23/64×8	1/2×6	3/4×10
3/32×1.04	13/64×3	3/8×2	1/2×7	3/4×12
3/32×1-3/4	7/32×3	3/8×2-1/2	1/2×8	7/8×4
3/32×2	0.2188×2.5	3/8×3	1/2×8-1/2	7/8×5
1/8×1	1/4×1-1/2	3/8×3-1/4	1/2×12	7/8×6
1/8×1-1/2	1/4×2	3/8×4	9/16×3	1×3
1/8×2	1/4×2-1/2	3/8×4-1/2	9/16×3-1/2	1×4
1/8×2-1/4	1/4×3	3/8×5	9/16×4	1×5
1/8×2-1/2	1/4×3-1/2	3/8×6	9/16×5	1×6
1/8×3	1/4×4	3/8×8	9/16×6	1×7
1/8×4	1/4×4-1/2	3/8×6-1/2	5/8×3	1×8
1/8×4-1/2	1/4×5	3/8×12	5/8×3-1/8	1×9
1/8×12	1/4×6	27/64×4	5/8×3-1/4	1×10
5/32×2	1/4×6-1/2	27/64×4-1/2	5/8×3-1/2	1×12
5/32×2-1/2	1/4×7	7/16×2-1/2	5/8×4	1×12-1/2
5/32×3	1/4×8	7/16×3	5/8×4-1/2	1×13
5/32×12	1/4×12	7/16×3-1/2	5/8×5	1-1/8×4-1/2
.1610×2-1/2	9/32×1-1/2	7/16×4	5/8×6	1-1/4×4
11/64×2-3/4	9/32×2-13/16	7/16×4-1/2	5/8×7	1-1/4×5
11/64×6-1/2	5/16×1-1/4	7/16×6	5/8×8	1-1/4×5-1/2
11/64×7	5/16×2-1/2	7/16×12	5/8×10	1-1/4×6
3/16×1-1/2	5/16×3	1/2×2-1/2	5/8×12	1-1/4×6-1/2
3/16×2	5/16×3-1/2	1/2×3	3/4×3	1-1/4×7
3/16×2-3/16	5/16×3-3/4	1/2×3-1/4	3/4×4	1-1/4×7-1/2
3/16×2-1/4	5/16×4	1/2×3-1/2	3/4×5	1-1/4×8
3/16×2-1/2	5/16×6	1/2×4	3/4×6	1-1/4×9
3/16×3	5/16×12	1/2×4-1/2	3/4×7	1-1/4×12-1/2
3/16×4	11/32×4	1/2×5	3/4×8	1-1/2×7-1/2
3/16×6				

WITHOUT COOLANT HOLE >>>

PCB Cutting tool

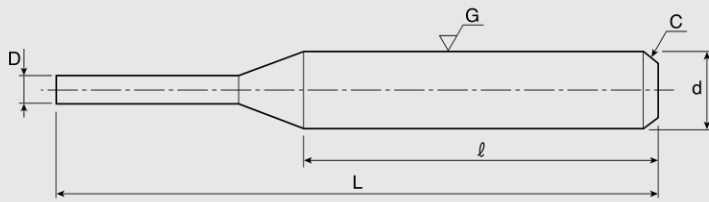


Type	Diameter(mm)	Tolerance(mm)	Length(mm)	Tolerance(mm)
BΦ3.21×38.5	3.21	0/+0.02	38.5	-0.10/+0.2
BΦ3.22×40	3.22	0/+0.04	40.0	0/+0.5
BΦ3.22×45	3.22	0/+0.04	45.0	0/+0.5
BΦ3.25×50	3.25	0/+0.05	50.0	0/+0.5
BΦ3.25×38.7	3.25	0/+0.05	38.7	-0.20/+0.3
BΦ3.5×38.5	3.50	+0.05/0.25	38.5	±0.20
BΦ4.0×38.5	4.00	+0.05/0.25	38.5	±0.20
BΦ4.5×38.5	4.50	+0.05/0.25	38.5	±0.20
BΦ5.0×38.5	5.00	+0.05/0.25	38.5	±0.20
BΦ5.5×38.5	5.50	+0.05/0.25	38.5	±0.20
BΦ6.0×38.5	6.00	+0.05/0.25	38.5	±0.20
BΦ6.5×38.5	6.50	+0.05/0.25	38.5	±0.20
BΦ1.2×110	1.20	0/+0.2	110.0	0/+2
BΦ1.35×110	1.35	0/+0.2	110.0	0/+2
BΦ1.5×110	1.50	0/+0.2	110.0	0/+2
BΦ1.8×110	1.80	0/+0.2	110.0	0/+2
BΦ2.0×110	2.00	0/+0.2	110.0	0/+2

Other types				
BΦ3.5×12.5	BΦ3.5×13.0	BΦ3.5×13.2	BΦ2.0×24.5	BΦ3.25×12.5
BΦ4.0×12.5	BΦ4.0×13.0	BΦ4.0×13.2	BΦ2.0×25.5	BΦ3.25×12.7
BΦ4.5×12.5	BΦ4.5×13.0	BΦ4.5×13.2	BΦ2.0×26	BΦ3.25×13.1
BΦ5.0×12.5	BΦ5.0×13.0	BΦ5.0×13.2	BΦ2.0×28	BΦ3.25×14.5
BΦ5.5×12.5	BΦ5.5×13.0	BΦ5.5×13.2	BΦ2.0×31	BΦ3.3×13.1
BΦ6.0×12.5	BΦ6.0×13.0	BΦ6.0×13.2	BΦ3.26×14.0	BΦ4.0×46
BΦ6.5×12.5	BΦ6.5×13.0	BΦ6.5×13.2	BΦ3.25×11.5	BΦ6.0×40
BΦ7.0×12.5	BΦ7.0×13.0	BΦ7.0×13.2	BΦ3.25×12.0	BΦ6.0×50

WITHOUT COOLANT HOLE »»»

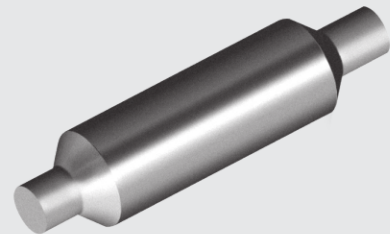
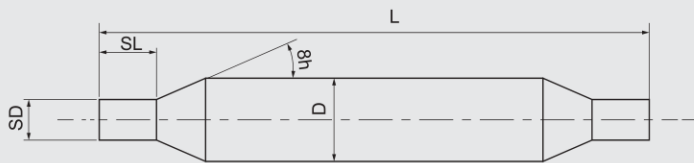
Ground ROD



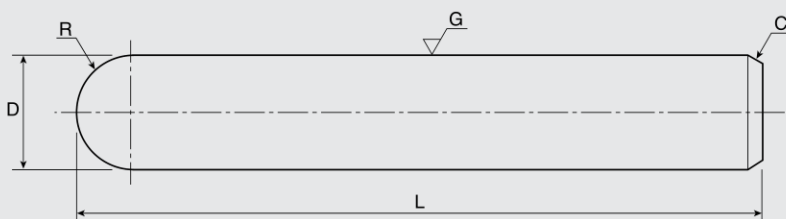
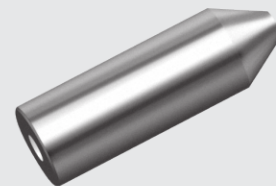
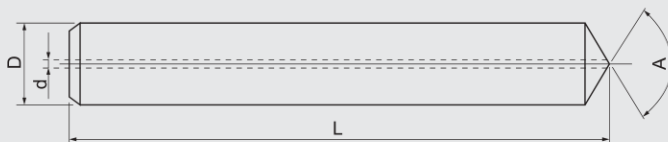
D(mm)	Tolerance(mm)	L(mm)	Tolerance(mm)
d	h6	l	+0.4
D	+0.1	L	+1.0



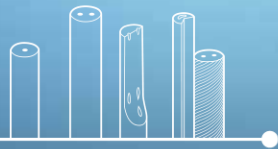
Step Rods



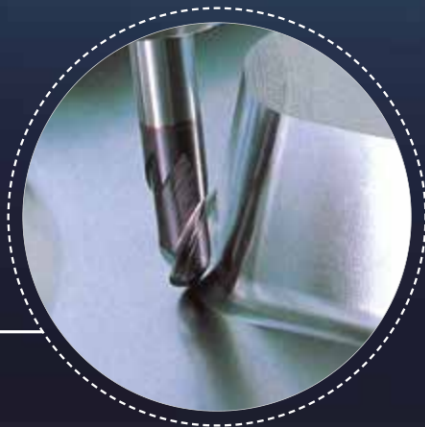
Rods with Taper End (With Hole)



On request, we supply special rod blanks with your specification.



WITH
coolant hole rods

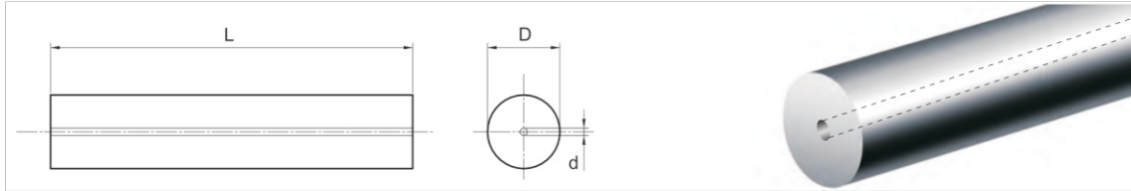


WITHOUT
coolant hole rods



內冷孔圓棒

粗胚直孔圓棒



粗胚單直孔圓棒

內冷孔圓棒

		粗胚單直孔圓棒			
D外徑	d內孔	L長度	孔位偏差	材質	
mm	mm	mm	mm	MT10S	
3.0	0.7	330	0.3	○	
4.0	0.6	330	0.3	○	
4.0	0.8	330	0.3	●	
5.0	1.0	330	0.3	○	
6.0	1.0	330	0.3	●	
6.0	1.5	330	0.3	●	
7.0	0.8	330	0.3	●	
8.0	1.2	330	0.3	●	
8.0	1.5	330	0.35	●	
9.0	1.0	330	0.35	○	
10.0	1.5	330	0.35	●	
10.0	2.0	330	0.35	●	
11.0	1.0	330	0.35	○	
12.0	2.0	330	0.35	●	
13.0	1.0	330	0.35	○	
14.0	2.0	330	0.35	●	
15.0	2.0	330	0.35	○	
16.0	2.0	330	0.35	●	
17.0	3.0	330	0.4	○	
18.0	3.0	330	0.4	●	
20.0	3.0	330	0.4	●	
20.0	4.0	330	0.4	●	
22.0	3.0	330	0.4	○	
24.0	4.0	330	0.4	○	
25.0	3.0	330	0.4	●	
25.0	4.0	330	0.4	●	
26.0	4.0	330	0.4	○	

1.標準外徑：Ø3 ~ Ø32，其它規格可接受訂製。
2.標準長度：330mm，其它規格可接受訂製。

● = 標準庫存
○ = 接受訂製

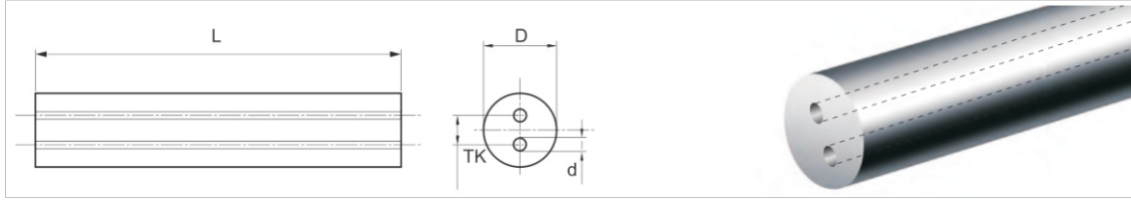
可提供下列製程服務



公差標準	外徑 (D)		內孔 (d)	
	φ3-φ9	+0.45 +0.55	φ3-φ4	±0.10
φ10-φ15	+0.50 +0.60	φ5-φ10	±0.15	
		φ11-φ16	±0.20	
φ16-φ26	+0.65 +0.80	φ17-φ20	±0.25	
		φ21-φ26	±0.30	

內冷孔圓棒

粗胚雙直孔圓棒



粗胚雙直孔圓棒					
D外徑	TK孔距	d內孔	L長度	孔位偏差	材質
mm	mm	mm	mm	mm	MT10S
4.0	1.6	0.5	330	0.3	○
5.0	2.1	0.6	330	0.3	○
6.0	2.4	1.0	330	0.3	●
6.0	2.6	0.9	330	0.3	○
6.0	3.0	0.9	330	0.3	●
7.0	3.0	0.9	330	0.3	●
8.0	2.6	1.0	330	0.3	●
8.0	2.6	0.8	330	0.3	○
9.0	2.6	0.9	330	0.3	○
10.0	2.5	1.0	330	0.35	●
11.0	3.5	1.2	330	0.35	○
12.0	3.5	1.2	330	0.35	●
12.0	5.0	1.8	330	0.35	○
12.0	5.8	1.8	330	0.35	○
13.0	5.0	1.5	330	0.35	○
14.0	5.0	1.5	330	0.35	○
14.0	5.5	1.8	330	0.35	○
15.0	5.0	1.5	330	0.35	●
16.0	5.0	1.0	330	0.35	○
16.0	5.5	1.8	330	0.4	●
18.0	6.0	2.0	330	0.4	●
20.0	6.0	2.0	330	0.4	●
21.0	6.0	2.0	330	0.4	●
22.0	6.0	2.0	330	0.4	○
23.0	7.5	2.0	330	0.4	○
24.0	7.5	2.0	330	0.4	○
25.0	7.5	2.0	330	0.4	●

- 1.標準外徑：Ø4 ~ Ø25，其它規格可接受訂製。
 2.標準長度：330mm，其它規格可接受訂製。

- = 標準庫存
 ○ = 接受訂製

可提供下列製程服務



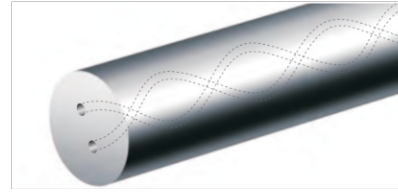
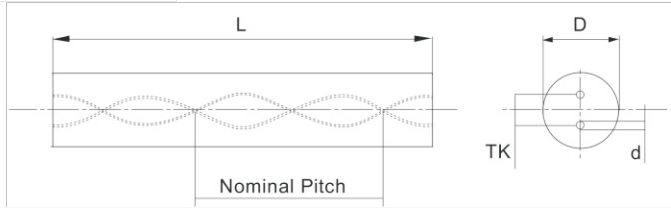
公差標準	外徑 (D)		內孔 (d)		孔距 (TK)	
	φ4-φ9	+0.45 +0.55	φ4-φ6	±0.10	φ4-φ6	±0.10
	φ10-φ15	+0.50 +0.60	φ7-φ12	±0.15	φ7-φ18	±0.15
	φ16-φ26	+0.65 +0.80	φ13-φ18 φ19-φ26	±0.20 ±0.25	φ20-φ26	±0.20

粗胚雙直孔圓棒

內冷孔圓棒

內冷孔圓棒

粗胚雙孔螺旋圓棒(30度)



粗胚孔螺旋圓棒 (30度)

內冷孔圓棒

粗胚雙孔螺旋圓棒 (30度)

D外徑 mm	TK孔距 mm	d內孔 mm	L長度 mm	材質 MT10S	鑽頭最 小直徑	孔位偏差 mm	Nominal Pitch導程參考值
3.0	1.2	0.4	330	●	2.5	0.08	15.89-16.77
3.0	1.6	0.4	330	○	2.9	0.08	15.89-16.77
4.0	1.6	0.4	330	●	3.1	0.1	21.19-22.36
4.0	1.8	0.5	330	●	3.5	0.1	21.19-22.36
4.0	2.1	0.6	330	●	3.8	0.1	21.19-22.36
5.0	2.4	0.7	330	●	4.5	0.13	26.49-27.95
6.0	1.8	0.5	330	●	3.9	0.15	31.79-33.54
6.0	2.4	0.7	330	●	4.7	0.15	31.79-33.54
7.0	3.5	1.0	330	●	6.3	0.15	37.09-39.13
8.0	2.8	0.6	330	○	5.4	0.15	42.38-44.73
8.0	3.5	1.0	330	●	6.5	0.15	42.38-44.73
8.0	3.8	1.0	330	●	6.8	0.15	42.38-44.73
9.0	4.5	1.4	330	●	8.2	0.2	47.68-50.32
10.0	3.5	1.0	330	○	7.0	0.2	52.98-55.91
10.0	4.5	1.4	330	●	8.4	0.2	52.98-55.91
10.0	4.8	1.4	330	○	8.8	0.2	52.98-55.91
11.0	4.9	1.4	330	●	9.1	0.3	58.28-61.50
12.0	4.9	1.4	330	○	9.3	0.3	63.58-67.09
12.0	5.85	1.4	330	●	10.2	0.3	63.58-67.09
13.0	6.1	1.75	330	●	11.1	0.3	63.87-72.68
14.0	6.7	1.75	330	●	11.9	0.4	74.17-78.27
15.0	7.1	1.75	330	●	12.5	0.4	79.47-83.86
16.0	7.9	1.75	330	●	13.5	0.4	84.77-89.45
16.0	7.9	2.0	330	○	13.7	0.4	84.77-89.45
17.0	7.9	1.75	330	●	13.7	0.5	90.07-95.04
18.0	9.0	1.7	330	○	15.0	0.5	95.37-100.63
18.0	9.15	2.0	330	●	15.4	0.5	95.37-100.63
19.0	9.7	2.0	330	○	16.2	0.5	100.66-106.22
20.0	9.9	2.0	330	●	16.7	0.5	105.96-111.81
20.0	9.9	2.5	330	○	17.2	0.5	105.96-111.81
21.0	10.5	2.0	330	○	17.5	0.5	111.26-117.40
22.0	11.1	2.0	330	○	18.3	0.5	116.56-122.99
22.0	11.1	2.5	330	●	18.8	0.5	116.56-122.99

- 1.標準外徑：Ø4 ~ Ø25，其它規格可接受訂製。
- 2.標準長度：330mm，其它規格可接受訂製。

● = 標準庫存
○ = 接受訂製

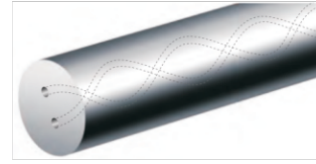
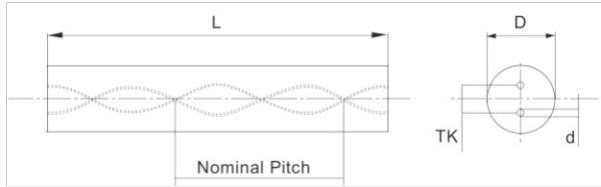
可提供下列製程服務



公差標準	外徑 (D)		內孔 (d)		孔距 (TK)	
	φ3-φ6	+0.90 +1.30	φ3-φ6	±0.10	φ3-φ4	±0.10
φ3-φ26	+0.90 +1.30	φ7-φ12	±0.15	φ50-φ8	±0.20	
		φ13-φ17	±0.20	φ9-φ10	±0.30	
		φ18-φ26	±0.25	φ11-φ19	±0.40	
		φ20-φ26	±0.50	φ20-φ26	±0.50	

內冷孔圓棒

粗胚雙孔螺旋圓棒 (30度 & 40度)



粗胚雙孔螺旋圓棒 (30度 & 40度)

內冷孔圓棒

粗胚雙孔螺旋圓棒 (30度)							
D外徑	Tk孔距	d內孔	L長度	材質	鑽頭最 小直徑	孔位偏差	Nominal Pitch導程參考值
mm	mm	mm	mm	MT10S		mm	
23.0	11.7	2.5	330	○	19.6	0.5	121.86-128.58
24.0	12.3	2.0	330	○	19.6	0.5	127.15-134.18
25.0	12.3	2.5	330	○	20.6	0.5	132.45-139.77
25.0	12.8	2.0	330	●	20.6	0.5	132.45-139.77
26.0	13.3	2.0	330	○	21.6	0.5	137.9-145.26

公差標準	外徑 (D)		內孔 (d)		孔距 (TK)	
	φ3-φ26	+0.90 +1.30	φ3-φ6	±0.10	φ3-φ4	±0.10
		φ7-φ12	±0.15	φ50-φ8	±0.20	
		φ13-φ17	±0.20	φ9-φ10	±0.30	
		φ18-φ26	±0.25	φ11-φ19	±0.40	
				φ20-φ26	±0.50	

粗胚雙孔螺旋圓棒 (40度)							
D外徑	Tk孔距	d內孔	L長度	材質	鑽頭最 小直徑	孔位偏差	Nominal Pitch導程參考值
mm	mm	mm	mm	MT10S		mm	
6.0	1.6	0.4	330	○	3.5	0.15	21.68-23.28
6.0	1.9	0.7	330	●	4.1	0.15	21.68-23.28
8.0	2.4	0.65	330	●	5.0	0.15	28.91-31.04
9.0	3.0	0.7	330	○	6.0	0.2	32.53-34.92
10.0	3.2	1.0	330	●	6.7	0.2	36.14-38.80
12.0	3.8	1.2	330	●	8.0	0.3	43.37-46.55
14.0	4.3	1.2	330	●	8.9	0.3	50.60-54.31
16.0	5.1	1.3	330	●	10.2	0.4	57.82-62.07
18.0	5.9	1.4	330	●	11.6	0.5	65.05-69.83
20.0	6.6	1.5	330	○	12.9	0.5	72.28-77.59
22.0	7.2	1.75	330	○	14.2	0.5	79.72-85.22
25.0	7.6	1.75	330	○	15.1	0.5	90.35-96.99

1. 導程參考值：分三區間，提供 12 倍徑以下□考，顏色標注在外包裝及圓棒上。
2. 12 倍徑以上，請依實際導程開刀。導程標注在圓棒端面。

● = 標準庫存
○ = 接受訂製

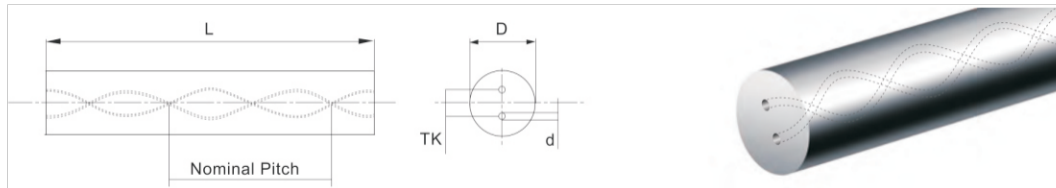
可提供下列製程服務



公差標準	外徑 (D)		內孔 (d)		孔距 (TK)	
	φ3-φ26	+0.90 +1.30	φ6-φ9	±0.15	φ6	±0.10
		φ12-φ16	±0.20	φ8-φ10	±0.30	
		φ18-φ25	±0.25	φ12-φ18	±0.40	
				φ20-φ26	±0.50	

內冷孔圓棒

粗胚雙孔螺旋圓棒 (15 度 & 特殊角度)



粗胚雙孔螺旋圓棒 (15 度)

D外徑	TK孔距	d內孔	L長度	材質	鑽頭最 小直徑	孔位偏差	Nominal Pitch導程參考值
mm	mm	mm	mm	MT10S		mm	
6.0	2.6	0.7	330	○	4.9	0.15	68.75-72.02
8.0	3.8	1.25	330	○	7.2	0.15	91.66-96.03
10.0	3.3	1.0	330	○	6.8	0.2	114.58-120.03
12.0	6.25	1.55	330	○	10.8	0.3	137.49-144.04
14.0	6.7	1.9	330	○	12.0	0.4	160.41-168.05
16.0	8.0	2.1	330	○	13.9	0.4	183.32-192.06
18.0	18.0	2.3	330	○	15.6	0.5	206.24-216.06
20.0	10.0	2.5	330	○	17.2	0.5	229.15-240.07

1. 導程參考值：分三區間，提供 12 倍徑以下參考，顏色標注在外包裝及圓棒上。
2. 12 倍徑以上，請依實際導程開刀。導程標注在圓棒端面。

○ = 接受訂製

可提供下列製程服務

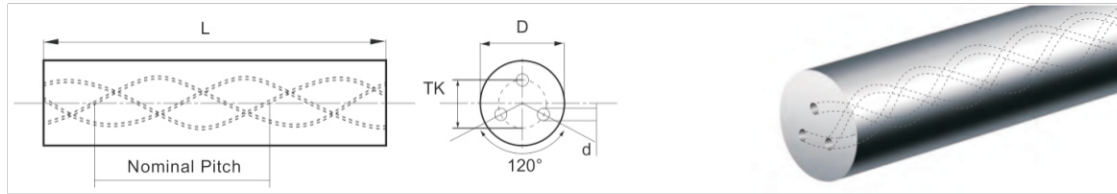


公差標準	外徑 (D)		內孔 (d)		孔距 (TK)	
φ3-φ26	+0.90	+1.30	φ6-φ9	± 0.15	φ6	± 0.10
			φ12-φ16	± 0.20	φ8-φ10	± 0.30
			φ18-φ25	± 0.25	φ12-φ18	± 0.40
				φ20-φ26	± 0.50	



內冷孔圓棒

粗胚三孔螺旋圓棒 (30度)



粗胚三孔螺旋圓棒 (30度)							
D外徑	TK孔距	d內孔	L長度	材質	鑽頭最 小直徑	孔位偏差	Nominal Pitch導程參考值
mm	mm	mm	mm	MT10S		mm	
6.0	3.0	0.6	330	●	5.2	0.15	31.79-33.54
8.0	4.0	0.75	330	○	6.7	0.15	42.38-44.73
10.0	4.9	1.0	330	○	8.4	0.2	52.98-55.91
12.0	6.0	1.1	330	●	10.1	0.3	63.58-67.09
14.0	7.1	1.3	330	○	11.8	0.4	74.17-78.27
16.0	8.3	1.5	330	○	13.7	0.4	84.77-89.45
18.0	9.7	1.7	330	○	15.7	0.5	95.37-100.63
20.0	10.4	2.0	330	●	17.2	0.5	105.96-111.81
25.0	12.5	2.0	330	○	20.3	0.5	132.45-139.77

1. 導程參考值：分三區間，提供 12 倍徑以下參考，顏色標注在外包裝及圓棒上。
2. 12 倍徑以上，請依實際導程開刀。導程標注在圓棒端面。

● = 標準庫存
○ = 接受訂製

可提供下列製程服務



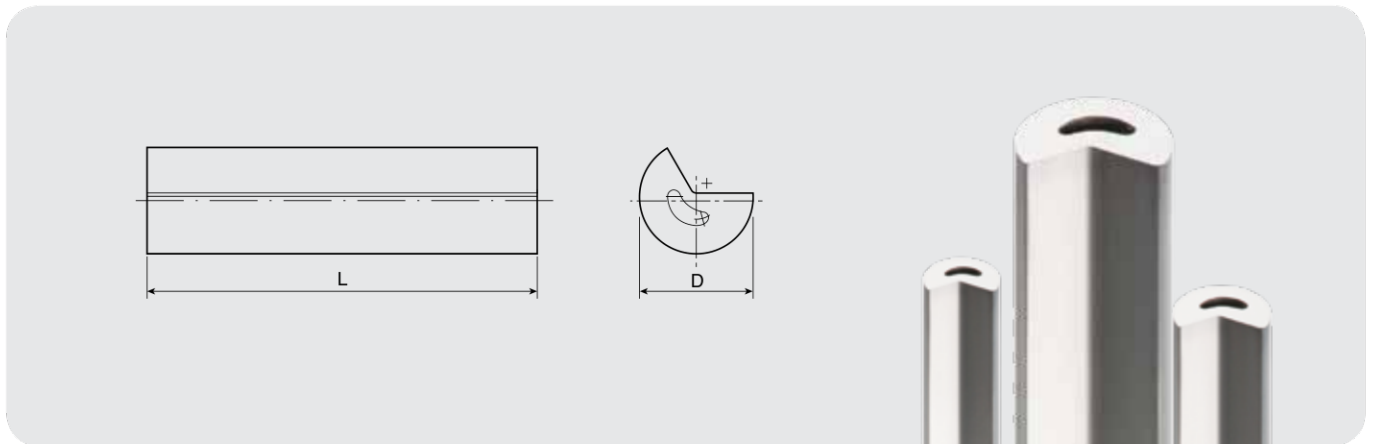
公差標準	外徑 (D)		內孔 (d)		孔距 (TK)	
φ3-φ26	+0.90	+1.30	φ4-φ8	±0.10	φ4	±0.10
			φ9-φ15	±0.15	φ5-φ10	±0.15
			φ16-φ19	±0.20	φ11-φ20	±0.25
			φ20-φ26	±0.25	φ21-φ26	±0.35

粗胚三孔螺旋圓棒 (30度)

內冷孔圓棒



Unground - Gun drill blanks with 1 kidney hole

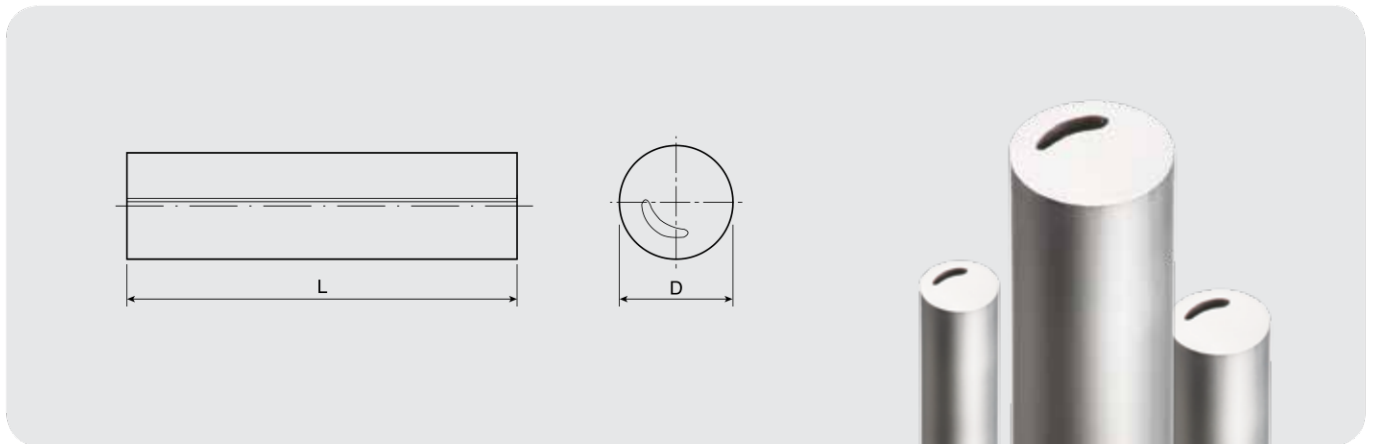


RS1GK Metric Type

Ordering code	Dimension (mm)		Grade
	D	L	K20
RS1GK 0345 3200	3.45	320	•
RS1GK 0390 3200	3.90	320	•
RS1GK 0440 3200	4.40	320	•
RS1GK 0490 3200	4.90	320	•
RS1GK 0550 3200	5.50	320	•
RS1GK 0600 3200	6.00	320	•
RS1GK 0650 3200	6.50	320	•
RS1GK 0710 3200	7.10	320	•
RS1GK 0760 3200	7.60	320	•
RS1GK 0810 3200	8.10	320	•
RS1GK 0870 3200	8.70	320	•



Unground - Gun drill blanks with 1 kidney hole

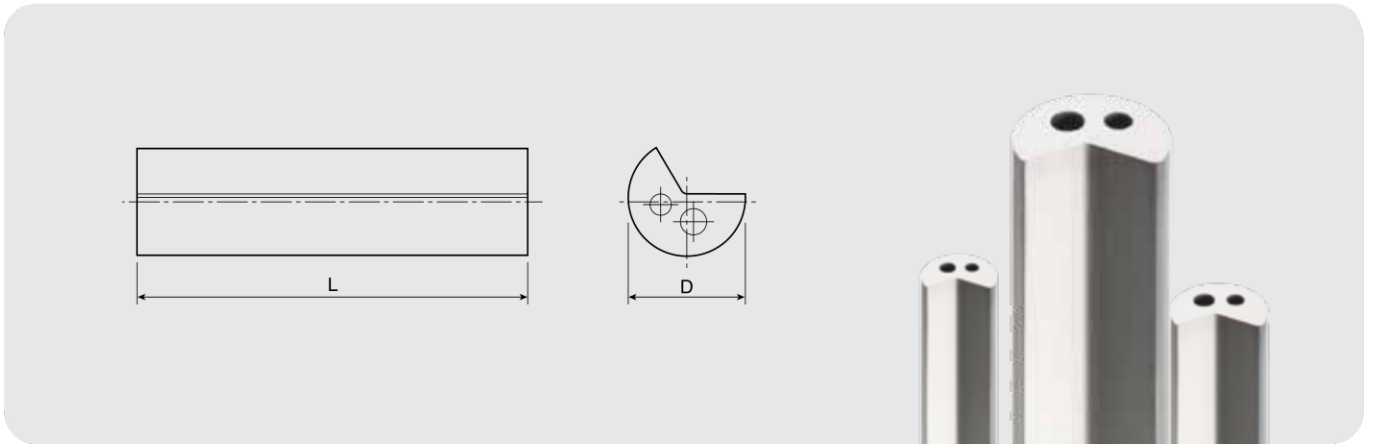


RS1GKR Metric Type

Ordering code	Dimension (mm)		Grade	
	D	L	MT10	K20
RS1GKR 0260 3200	2.60	320	•	
RS1GKR 0290 3200	2.60	320	•	
RS1GKR 0315 3200	3.15	320	•	
RS1GKR 0350 3200	3.50	320	•	
RS1GKR 0390 3200	3.90	320	•	
RS1GKR 0440 3200	4.40	320	•	
RS1GKR 0490 3200	4.90	320	•	
RS1GKR 0550 3200	5.50	320	•	
RS1GKR 0650 3200	6.50	320	•	
RS1GKR 0870 3200	8.70	320	•	
RS1GKR 0920 3200	9.20	320	•	



Unground - Gun drill blanks with 2 round holes



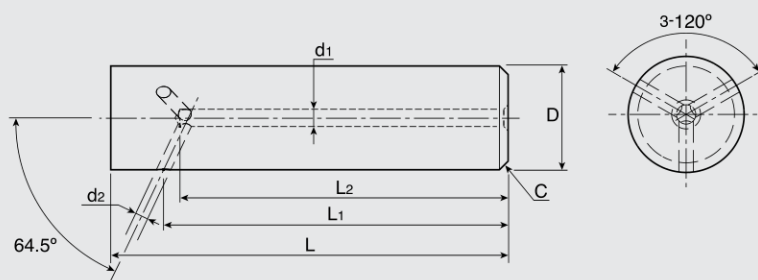
RS1GK Metric Type

Ordering code	Dimension (mm)		Grade
	D	L	K20
RS2GR 0550 3200	5.5	320	•
RS2GR 0600 3200	6.0	320	•
RS2GR 0650 3200	6.5	320	•
RS2GR 0710 3200	7.1	320	•
RS2GR 0760 3200	7.6	320	•
RS2GR 0810 3200	8.1	320	•
RS2GR 0870 3200	8.7	320	•
RS2GR 0920 3200	9.2	320	•
RS2GR 0970 3200	9.7	320	•
RS2GR 1080 3200	10.8	320	•
RS2GR 1180 3200	11.8	320	•
RS2GR 1280 3200	12.8	320	•
RS2GR 1350 3200	13.5	320	•
RS2GR 1450 3200	14.5	320	•
RS2GR 1550 3200	15.5	320	•
RS2GR 1650 3200	16.5	320	•
RS2GR 1960 3200	19.6	320	•

AXIAL COOLANT DUCT

and 3 lateral holes >>>

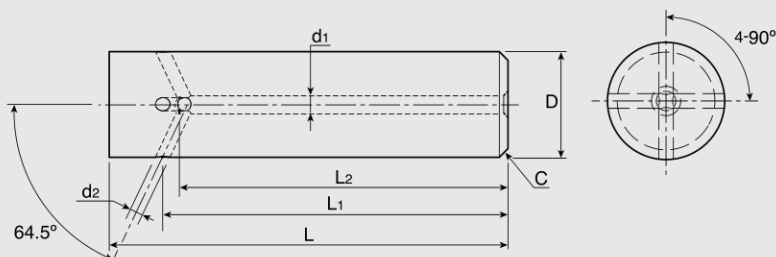
On request, we supply special rod blanks with your specification.



AXIAL COOLANT DUCT

and 4 lateral holes >>>

On request, we supply special rod blanks with your specification.



SAFETY INFORMATION FOR THE GRINDING OF CEMENTED CARBIDE PRODUCTS

Grinding cemented carbide products will produce dust of potentially hazardous ingredients which can be inhaled, swallowed or come in contact with the skin or eyes.

Inhalation: Dust from grinding can cause irritation of the nose and throat. It can also have the potential for causing transient permanent respiratory disease, including occupational asthma and interstitial fibrosis, in a small percentage of exposed individuals. It is reported that cobalt dust is the most probable cause of such respiratory diseases. Symptoms include productive cough, wheezing, shortness of breath, chest tightness, and weight loss. Interstitial fibrosis (lung scarring) can lead to permanent disability or DEATH. Certain pulmonary conditions may be aggravated by exposure.

Skin Contact: The dust from grinding can cause skin irritation or an allergic skin rash due to cobalt sensitization. Certain skin conditions, such as dry skin, may be aggravated by exposure.

Eye Contact: Contact of the dust with the eyes can cause irritation.

Ingestion: Reports outside the industry suggest that ingestion of significant amounts of cobalt has the potential for causing blood, heart and other organ problems.

EMERGENCY AND FIRST AID PROCEDURES (Applicable for dust or mists):

Inhalation: If symptoms of pulmonary involvement develop (coughing, wheezing, shortness of breath, etc.), remove from exposure, and seek medical attention.

Skin Contact: If irritation or rash occurs, thoroughly wash affected area with water and soap and isolate from exposure. If irritation or rash persists, seek medical attention.

Eye Contact: If irritation occurs, flush with copious amounts of water. If irritation persists, seek medical attention.

Ingestion: If substantial quantities are swallowed, dilute with a large amount of water, induce vomiting and seek medical attention.

PROTECTION INFORMATION:

Respiratory Protection: Use an appropriate NIOSH approved respirator if airborne dust concentrations exceed the appropriate PEL or TLV.

Ventilation: Use local exhaust ventilation which is adequate to limit personal exposure to airborne dust levels which do not exceed the PEL or TLV. If such equipment is not available use respirators as specified above.

Protective Gloves: Protective gloves or Barrier cream are recommended when contact with dust or mist is likely. Prior to applying the barrier cream or use of protective gloves, wash thoroughly.

Eye Protection: Safety glasses with side shields or goggles are recommended.

SPECIAL PRECAUTIONS TO BE TAKEN:

In Handling and Storage: Maintain good housekeeping procedures to prevent dust or accumulation during grinding. Avoid dust inhalation and direct skin contact with dust.

Other Precautions: Clean up using methods which avoid dust generation such as vacuum (with appropriate filter to prevent airborne dust levels which exceed the PEL or TLV), wet dust mop or wet clean up. If airborne dust is generated, use an appropriate NIOSH approved respirator.

Wash hands thoroughly after handling, and before eating or smoking. Wash exposed skin at the end of work shift. Do not shake clothing, rags or other items to remove dust. Dust should be removed by washing or vacuuming (with appropriate filters) the clothing, rags or other items.

FOR FURTHER INFORMATION PLEASE CONTACT:

Meetyou Carbides, Inc. +86(731) 28420963

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0731-28117278 18182060303

0731-28117279

E-mail mtty-998@vip.163.com

www.meet-you.cn

Zhuzhou Meeyou Cemented Carbide,.Co,.Ltd
471 JINSHAN ROAD,HETANG DISTRICT,ZHUZHOU,
HUNAN,CHINA 412000

Tel:008673128420963 Fax:008673128117279

US Number:+1(989)786-0147

sales@meetyoucarbide.com

www.meetyoucarbide.com