SHAREATE

CEMENTED CARBIDE ROD

SHAREATE TOOLS LTD.

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COMPANY PROFILE

Shareate Tools was established in August 2005 as a multinational corporation engaged in the research and development, manufacturing, service, and sales of cemented carbide products and rock drilling tools. Shareate owns several domestic and overseas subsidiary companies, including Shareate Wuhan, Zhuzhou Wecan, Australia AMS, America AMS, and others, which were acquired or established through joint ventures.In October 2021, Shareate was officially listed on the SSE STAR Market (stock code 688257).

As a national strategic emerging industry, our company focuses on developing cemented carbide technology and progressively mastering core technologies in mining, cutting, and wear-resistant applications. With advanced production technology and a strong market position, we have built a complete industrial chain covering cemented carbide production and tool manufacturing.

Currently, our group company serves six fields: carbide, rock drilling tools, cutting tools, petroleum instrumentation, electric drilling equipment, and mining exploration services. Our main products include cone drill bits, carbide buttons and rods, molds, precision components for drilling tools, and carbide inserts. These products find wide application in various industries such as petroleum engineering, automotive manufacturing, infrastructure construction, mining operations, electronics production, machinery fabrication, new energy development, and comprehensive mining consumables services.

Over the years, Shareate has been granted 42 invention patents and 118 utility model patents. We are accredited with the API Spec Q1 and ISO 9001 certifications. Shareate has established itself as the leading supplier of rock drilling tools in Asia and one of the top five globally.

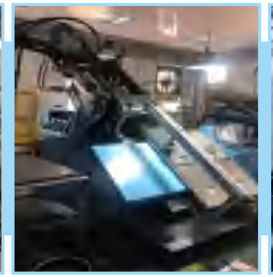
Our products are exported to five continents and distributed in over 40 countries. We currently collaborate with renowned companies such as Rio Tinto, BHP, Glencore, Barrick, FMG, Vale, and Anglo American.

Shareate takes pride in being a leader in modern manufacturing and service integration. We operate state-of-the-art factories that adhere to the highest international standards. We understand that product success relies on the trust and support of our customers.

Therefore, Shareate works closely with customers worldwide to create best-in-class products and solutions to overcome the most challenging technical problems. Whatever your carbide-related situation may be, Shareate can provide an appropriate technical solution.

ADVANCED MANUFACTURING EQUIPMENT

Spray Granulation

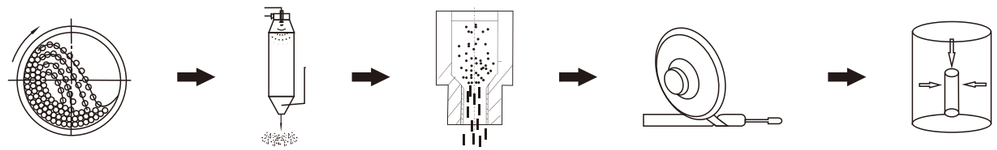


Extrusion Machine

Dry-bag Isostatic Pressing Machine

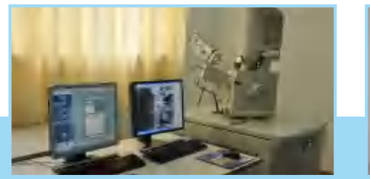
ALD Sintering Furnance

Process Demonstration



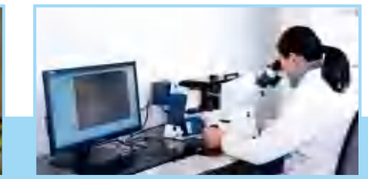
Ball milling | Spraying | Extrusion Moulding | Modification | Sintering

ADVANCED INSPECTION EQUIPMENT



Scanning Electron Microscope/ Energy Spectrometer

Microhardness Tester



ZEISS Metallography Microscope

Projector

LECO Carbon Analyzer

LECO Oxycen Analyzer

Fine Grain Rod Product Category

Product Type

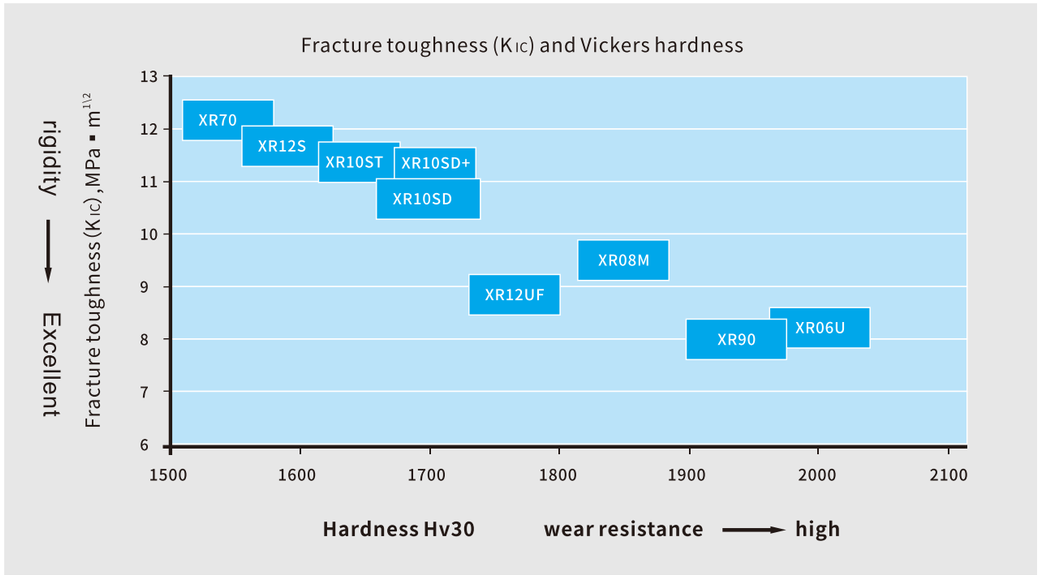
Grade	Co (%)	Grain Size (μm)	Density (g/cm³)	Hardness		Flexural Strength (MPa)	Fracture Toughness (MNmm$^{-3/2}$)	ISO Category	Application Recommend
				HRA	HV30				
XR06U	6.5	0.4	14.75	94.0	2000	>3600	9.5	K05-K10	High wear resistance, excellent performance in high speed milling, suitable for non-ferrous metal, acrylic, fiber reinforced materials, etc. Can be used for PCB drilling and milling.
XR08M	8.5	0.4	14.60	93.3	1840	>4000	9.8	K05-K10	High wear resistance, good adhesion with coating, suitable for quenched steel, medium and high hard die steel and other rough processing.
XR90	9	0.2	14.45	94.0	1980	>4000	9.5	K05-K10	High wear resistance, high heat conduction, suitable for hardening steel, high hardening die steel and other finishing.
XR10SD	10	0.6	14.40	92.1	1640	>4000	11.5	K30-K40	High wear resistance and good toughness, excellent performance in medium speed milling, suitable for carbon steel, alloy steel, stainless steel and other rough machining.
XR12UF	12	0.4	14.10	92.6	1720	>4200	9.5	K20-K30	High wear-resisting and excellent hardness, excellent performance in high-speed light cutting, suitable for carbon steel, stainless steel, nonferrous metals and other finishing.
XR12S	12	0.6	14.10	91.8	1590	>4000	11.8	K30-K40	High toughness and good wear resistance, suitable for 3C stainless
XR70	12	0.7	14.10	91.5	1550	>4000	12.2	K30-K40	High toughness, high red hardness, has excellent performance in low speed and high feed cutting, suitable for high temperature alloy and other rough machining.
XR10ST	10	0.7	14.40	91.8	1580	>4000	12.0	K30-K40	Excellent wear-resisting and toughness, universal drilling and milling brand, suitable for processing carbon steel, cast iron, stainless steel, etc.
XR10SD+	10	0.6	14.40	92.0	1620	>4000	11.7	K30-K40	High toughness and good wear resistance, excellent performance in medium speed drilling, suitable for carbon steel, alloy steel, stainless steel and other hole processing.

Model Selection (★:first selection;○:secondary selection)

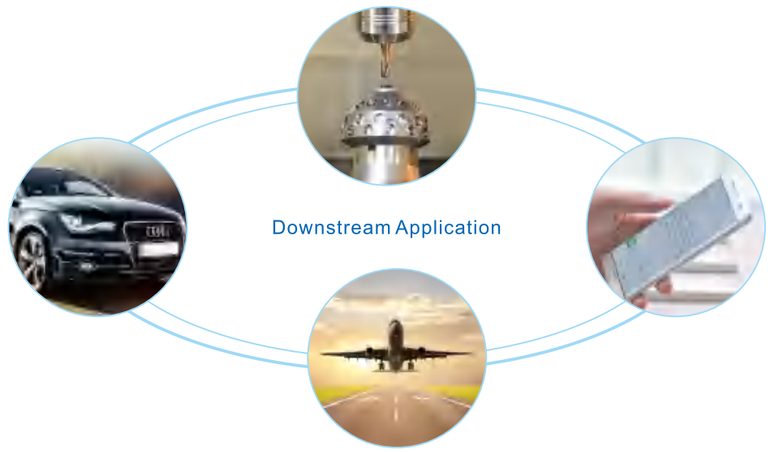
Processing Materials		Tool Type		XR06U	XR08M	XR90	XR10SD	XR12UF	XR12S	XR70	XR10ST	XR10SD+
P	Steel	Drill bit									○	★
		End mill	Rough machining				★					
			Fine machining					★				
M	Stainless Steel	Drill bit									○	★
		End mill	Rough machining				★		★	○		
			Fine machining					★				
K	Cast Iron	Drill bit									★	○
		End mill	Rough machining				★					
			Fine machining					★				
N	Non-ferrous	Drill bit									★	○
		End mill	Rough machining				★					
			Fine machining					★				
S	Heat-resistant Alloy	Drill bit									○	★
		End mill	Rough machining				★		○	★		
			Fine machining			○		○	★			
H	High Hardness Materia	Drill bit										★
		End mill	Rough machining		★		○					
			Fine machining	★	○	★						
Other	Compound Material	Drill bit		○		○						
		End mill	Rough machining									
			Fine machining	★		★						

Model	Comparison table for brands				
	Sandvik	Guhring	Ceratizit	KFC	IMC
XR06U		KFM308			
XR08M	DM80				
XR90	PN90	K55SF	TSF22	K55SF	UF09
XR10ST		DK400N		K40XF	UF10
XR10SD/XR10SD+	H10F	DK460UF	MG18	K40UF	
XR12UF		DK500UF	TSF44	K44UF	UF12
XR70/XR12S	AM70				

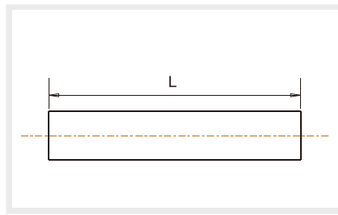
Material properties

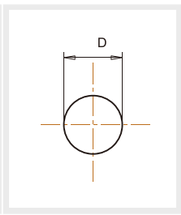


- Use raw materials with high purity and high quality after strict screening
- Advanced production equipment and unique manufacturing technology to achieve stable quality and short lead time
- Advanced quality assurance system
- Unremitting development of new materials
- Build a strong customer service team



Solid Rods-Metric





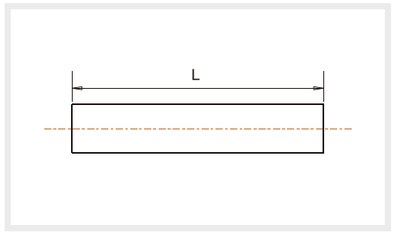
Length(mm)	Tolerance(mm)
310	+2.0/+5.0
330	+2.0/+5.0
415	+2.0/+5.0

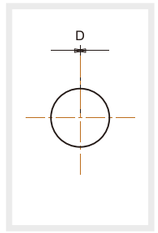
The following services are available

定长

Diameter D(mm)	Tolerance (mm)	Series Number
2.2	-0~+0.2	RS022****
3.2	-0~+0.2	RS032****
4.2	-0~+0.2	RS042****
5.2	-0~+0.2	RS052****
6.2	-0~+0.2	RS062****
7.2	+0.1~+0.3	RS072****
8.2	+0.1~+0.4	RS082****
9.2	+0.1~+0.4	RS092****
10.2	+0.1~+0.4	RS102****
11.2	+0.1~+0.4	RS112****
12.2	+0.1~+0.4	RS122****
13.2	+0.2~+0.5	RS132****
14.2	+0.2~+0.5	RS142****
15.2	+0.2~+0.5	RS152****
16.2	+0.2~+0.5	RS162****
17.2	+0.2~+0.5	RS172****
18.2	+0.2~+0.5	RS182****
19.2	+0.2~+0.5	RS192****
20.2	+0.3~+0.7	RS202****
21.2	+0.3~+0.7	RS212****
22.2	+0.3~+0.7	RS222****
23.2	+0.3~+0.7	RS232****
24.2	+0.3~+0.7	RS242****
25.2	+0.3~+0.7	RS252****
26.2	+0.3~+0.7	RS262****
27.2	+0.3~+0.7	RS272****
28.2	+0.3~+0.7	RS282****
29.2	+0.3~+0.7	RS292****
30.2	+0.3~+0.8	RS302****
31.2	+0.3~+0.8	RS312****
32.2	+0.3~+0.8	RS322****
33.2	+0.3~+0.8	RS332****
34.2	+0.3~+0.8	RS342****
35.2	+0.3~+0.8	RS352****
36.2	+0.3~+0.8	RS362****
37.2	+0.3~+0.8	RS372****
38.2	+0.3~+0.8	RS382****
39.2	+0.3~+0.8	RS392****
40.2	+0.3~+0.8	RS402****

Fixed Length Unground Solid Rod



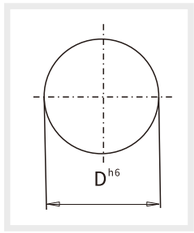


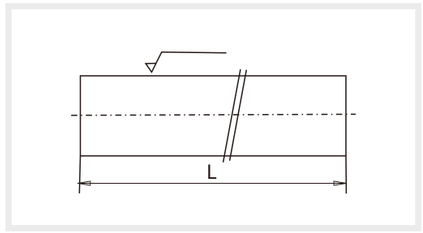
Length(mm)	Tolerance(mm)
＜150	+0.5/+1.0
150≤L≤300	+1.0/+2.0
＞300	+2.0/+5.0

❄ The following services are available

Diamete D(mm)	Tolerance (mm)	Series Number
2.0	+0.15~+0.20	RS020****
3.0	+0.15~+0.20	RS030****
4.0	+0.15~+0.20	RS040****
5.0	+0.15~+0.20	RS050****
6.0	+0.15~+0.20	RS060****
7.0	+0.15~+0.20	RS070****
8.0	+0.15~+0.20	RS080****
9.0	+0.15~+0.20	RS090****
10.0	+0.15~+0.20	RS100****
11.0	+0.15~+0.20	RS110****
12.0	+0.15~+0.20	RS120****
13.0	+0.15~+0.20	RS130****
14.0	+0.15~+0.20	RS140****
15.0	+0.15~+0.20	RS150****
16.0	+0.15~+0.20	RS160****
17.0	+0.15~+0.20	RS170****
18.0	+0.15~+0.20	RS180****
19.0	+0.15~+0.20	RS190****
20.0	+0.15~+0.20	RS200****
21.0	+0.15~+0.20	RS210****
22.0	+0.15~+0.20	RS220****
23.0	+0.15~+0.20	RS230****
24.0	+0.15~+0.20	RS240****
25.0	+0.15~+0.20	RS250****
26.0	+0.15~+0.20	RS260****
27.0	+0.15~+0.20	RS270****
28.0	+0.15~+0.20	RS280****
29.0	+0.15~+0.20	RS290****
30.0	+0.15~+0.20	RS300****
31.0	+0.15~+0.20	RS310****
32.0	+0.15~+0.20	RS320****
33.0	+0.15~+0.20	RS330****
34.0	+0.15~+0.20	RS340****

Ground Solid Round Rod





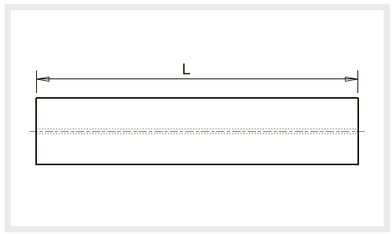
Diameter(mm)	Tolerance(mm)
All	ISO h6/h5

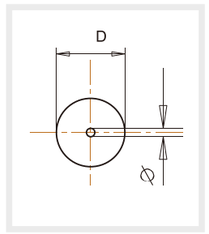
Length(mm)	Tolerance(mm)
≤50	+0.2/+0.8
50＜L≤150	+0.5/+1.0

❄ The following services are available

Diamete D(mm)	Length L(mm)	Series Number
3.0	≤150	RS030****M
4.0	≤150	RS040****M
5.0	≤150	RS050****M
6.0	≤150	RS060****M
7.0	≤150	RS070****M
8.0	≤150	RS080****M
9.0	≤150	RS090****M
10.0	≤150	RS100****M
11.0	≤150	RS110****M
12.0	≤150	RS120****M
13.0	≤150	RS130****M
14.0	≤150	RS140****M
15.0	≤150	RS150****M
16.0	≤150	RS160****M
17.0	≤150	RS170****M
18.0	≤150	RS180****M
19.0	≤150	RS190****M
20.0	≤150	RS200****M
21.0	≤150	RS210****M
22.0	≤150	RS220****M
23.0	≤150	RS230****M
24.0	≤150	RS240****M
25.0	≤150	RS250****M
26.0	≤150	RS260****M
27.0	≤150	RS270****M
28.0	≤150	RS280****M
29.0	≤150	RS290****M
30.0	≤150	RS300****M
31.0	≤150	RS310****M
32.0	≤150	RS320****M
33.0	≤150	RS330****M
34.0	≤150	RS340****M
35.0	≤150	RS350****M
36.0	≤150	RS360****M
37.0	≤150	RS370****M
38.0	≤150	RS380****M
39.0	≤150	RS390****M
40.0	≤150	RS400****M

Rods with Central Coolant Hole





Diameter D(mm)	Tolerance (mm)	Inner Diameter Φ(mm)	Tolerance (mm)	Series Number
2.2	+0.1~+0.3	0.20～1.00	±0.05	RC022****
3.2	+0.1~+0.3			RC032****
4.2	+0.1~+0.3			RC042****
5.2	+0.1~+0.3			RC052****
6.2	+0.1~+0.3			RC062****
7.2	+0.1~+0.4			RC072****
8.2	+0.1~+0.4	1.00～2.00	±0.15	RC082****
9.2	+0.1~+0.4			RC092****
10.2	+0.1~+0.4			RC102****
11.2	+0.1~+0.4			RC112****
12.2	+0.1~+0.4			RC122****
13.2	+0.2~+0.5	1.45～6.00	±0.20	RC132****
14.2	+0.2~+0.5			RC142****
15.2	+0.2~+0.5			RC152****
16.2	+0.2~+0.6			RC162****
17.2	+0.2~+0.6			RC172****
18.2	+0.2~+0.6			RC182****
19.2	+0.2~+0.6			RC192****
20.2	+0.3~+0.8			RC202****
21.2	+0.3~+0.8			RC212****
22.2	+0.3~+0.8			RC222****
23.2	+0.3~+0.8			RC232****
24.2	+0.3~+0.8			RC242****
25.2	+0.3~+0.8			RC252****
26.2	+0.3~+0.8			RC262****
28.2	+0.3~+0.8			RC282****
30.2	+0.3~+0.8			RC302****
32.2	+0.3~+0.8			RC322****

Length(mm)	Tolerance(mm)
＜150	+0.5/+1.0
150≤L≤300	+1.0/+2.0
＞300	+2.0/+5.0

❊The following services are available

h6 定长

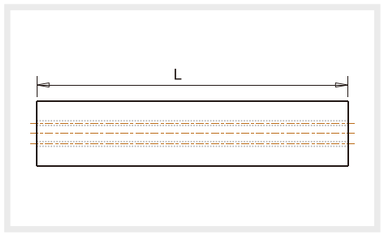
❊Available Grade

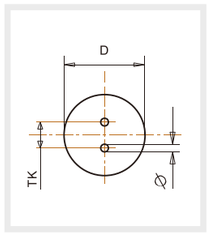
XR10SD XR09U XR12UF

❊Regular Length

330

Rods with Two Straight Coolant Holes





Diameter D(mm)	Tolerance (mm)	TK (mm)	Tolerance (mm)	Inner diameter d (mm)	Tolerance (mm)	Length (mm)	Series number
4.2	+0.1~+0.3	1.73	±0.07	0.80	±0.10	330	RP043******
6.2	+0.1~+0.3	3.00	±0.10	1.00	±0.10	330	RP062******
8.2	+0.1~+0.4	3.80	±0.20	1.00	±0.15	330	RP082******
8.2	+0.1~+0.4	2.50	±0.10	0.80	±0.15	330	RP082******
10.2	+0.1~+0.4	4.80	±0.20	1.40	±0.15	330	RP102******
10.2	+0.1~+0.4	2.60	±0.10	1.00	±0.15	330	RP102******
12.2	+0.1~+0.4	5.85	±0.20	1.75	±0.15	330	RP122******
12.2	+0.1~+0.4	3.35	±0.10	1.20	±0.15	330	RP122******
13.2	+0.2~+0.5	5.85	±0.20	1.75	±0.25	330	RP132******
13.2	+0.2~+0.5	4.50	±0.20	1.40	±0.25	330	RP132******
14.2	+0.2~+0.5	6.80	±0.20	1.75	±0.25	330	RP142******
14.2	+0.2~+0.5	4.80	±0.20	1.50	±0.25	330	RP142******
15.2	+0.2~+0.5	4.80	±0.20	1.50	±0.25	330	RP152******
16.2	+0.2~+0.6	7.80	±0.20	2.00	±0.25	330	RP162******
16.2	+0.2~+0.6	4.80	±0.20	1.50	±0.25	330	RP162******
18.2	+0.2~+0.6	6.00	±0.20	2.00	±0.30	330	RP182******
18.2	+0.2~+0.6	8.85	±0.20	2.00	±0.30	330	RP182******
20.2	+0.3~+0.8	6.20	±0.20	2.00	±0.30	330	RP202******
20.2	+0.3~+0.8	9.80	±0.20	2.50	±0.30	330	RP202******
21.2	+0.3~+0.8	9.80	±0.20	2.50	±0.30	330	RP210******
22.2	+0.3~+0.8	10.80	±0.20	2.50	±0.30	330	RP222******
23.2	+0.3~+0.8	10.80	±0.20	2.50	±0.30	330	RP232******
25.2	+0.3~+0.8	11.75	±0.25	3.00	±0.30	330	RP252******
26.2	+0.3~+0.8	12.75	±0.25	3.00	±0.30	330	RP262******
28.2	+0.3~+0.8	13.75	±0.25	3.00	±0.30	330	RP282******
30.2	+0.3~+0.8	13.75	±0.25	3.00	±0.30	330	RP302******
32.2	+0.3~+0.8	13.75	±0.25	3.00	±0.30	330	RP322******

Length(mm)	Tolerance(mm)
＜150	+0.5/+1.0
150≤L≤300	+1.0/+2.0
＞300	+2.0/+5.0

❊The following services are available

h6 定长

❊Available Grade

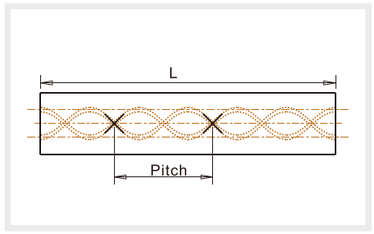
XR10SD XR12UF

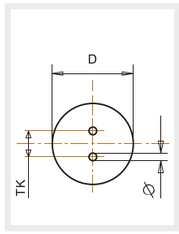
❊Regular Length

330

❊Can be used for PCD tool shank

Rods with 2 Helical Coolant Holes(30°)





Diameter D(mm)	Tolerance (mm)	Pitch(±0.5°) (mm)	Tolerance (mm)	TK (mm)	Tolerance (mm)	d (mm)	Tolerance (mm)	Series Number
4.3	+0.3~+0.8	21.77	-0.44~0.44	2.10	±0.10	0.60	±0.10	RH043*****
6.3	+0.3~+0.8	32.65	-0.65~0.67	2.40	±0.20	0.70	±0.15	RH063*****
7.3	+0.3~+0.8	38.09	-0.76~0.78	3.50	±0.20	1.00	±0.15	RH073*****
8.3	+0.3~+0.8	43.53	-0.86~0.89	3.80	±0.20	1.00	±0.15	RH083*****
9.3	+0.3~+0.8	48.97	-0.97~1.00	4.50	±0.30	1.40	±0.15	RH093*****
10.3	+0.3~+0.8	54.41	-1.08~1.12	4.50	±0.30	1.40	±0.15	RH103*****
11.3	+0.3~+0.8	59.86	-1.19~1.22	4.90	±0.40	1.40	±0.15	RH113*****
12.3	+0.3~+0.8	65.30	-1.30~1.33	5.85	±0.40	1.40	±0.20	RH123*****
13.3	+0.5~+1.1	70.74	-1.41~1.45	6.10	±0.40	1.75	±0.20	RH133*****
14.3	+0.5~+1.1	76.18	-1.51~1.56	6.70	±0.40	1.75	±0.20	RH143*****
15.3	+0.5~+1.1	81.62	-1.62~1.67	7.30	±0.40	1.75	±0.20	RH153*****
16.3	+0.5~+1.1	87.06	-1.73~1.78	7.90	±0.40	1.75	±0.20	RH163*****
17.3	+0.5~+1.1	92.50	-1.83~1.90	8.50	±0.40	1.75	±0.20	RH173*****
18.3	+0.5~+1.1	97.95	-1.95~2.00	9.15	±0.40	2.00	±0.25	RH183*****
19.3	+0.5~+1.1	103.39	-2.06~2.11	9.70	±0.50	2.00	±0.25	RH193*****
20.3	+0.5~+1.1	108.83	-2.16~2.22	9.90	±0.50	2.00	±0.25	RH203*****
22.3	+0.5~+1.1	119.71	-2.38~2.45	11.10	±0.50	2.00	±0.25	RH223*****
23.3	+0.5~+1.1	125.15	-2.48~2.56	11.70	±0.50	2.00	±0.25	RH233*****
25.3	+0.8~+1.5	136.03	-2.70~2.79	12.80	±0.50	2.00	±0.25	RH253*****
26.3	+0.8~+1.5	141.48	-2.81~2.89	13.30	±0.50	2.00	±0.25	RH263*****
28.3	+0.8~+1.5	152.36	-3.03~3.12	14.20	±0.60	2.50	±0.25	RH283*****
30.3	+0.8~+1.5	163.24	-3.24~3.34	15.40	±0.60	2.50	±0.25	RH303*****
32.3	+0.8~+1.5	174.12	-3.46~3.56	16.30	±0.60	3.00	±0.25	RH323*****

Length(mm)	Tolerance(mm)
＜150	+0.5/+1.0
150≤L≤300	+1.0/+2.0
＞300	+2.0/+5.0

❊ The following services are available

h6 定长

❊ Available Grade

XR10ST XR10SD+

❊ Regular Length

330 360 415

Rods with 2 Helical Coolant Shrinkage Holes (30°)

Diameter D(mm)	Tolerance (mm)	Pitch(±0.5°) (mm)	Tolerance (mm)	TK (mm)	Tolerance (mm)	d (mm)	Tolerance (mm)	Series Number
4.3	+0.3~+0.8	21.77	-0.44~0.44	1.20	±0.10	0.25	±0.10	RH043*****
6.3	+0.3~+0.8	32.65	-0.65~0.67	1.40	±0.10	0.40	±0.15	RH063*****
8.3	+0.3~+0.8	43.53	-0.86~0.89	2.40	±0.20	0.70	±0.15	RH083*****
10.3	+0.3~+0.8	54.41	-1.08~1.12	2.60	±0.20	0.70	±0.15	RH103*****
10.3	+0.3~+0.8	54.41	-1.08~1.12	3.80	±0.20	1.00	±0.15	RH103*****
12.3	+0.3~+0.8	65.30	-1.30~1.33	3.80	±0.20	1.00	±0.15	RH123*****
14.3	+0.5~+1.1	76.18	-1.51~1.56	4.30	±0.20	1.40	±0.15	RH143*****
16.3	+0.5~+1.1	87.06	-1.73~1.78	5.90	±0.30	1.40	±0.15	RH163*****
18.3	+0.5~+1.1	97.95	-1.95~2.00	5.90	±0.30	1.40	±0.15	RH183*****
20.3	+0.5~+1.1	108.83	-2.16~2.22	6.60	±0.30	1.50	±0.15	RH203*****

Rods with 3 Helical Coolant Holes (30°)

Diameter D(mm)	Tolerance (mm)	Pitch(±0.5°) (mm)	Tolerance (mm)	TK (mm)	Tolerance (mm)	d (mm)	Tolerance (mm)	Series Number
6.3	+0.5~+1.0	32.65	2.75	±0.15	0.50	±0.10	RH063*****
8.3	+0.5~+1.0	43.53	3.85	±0.15	1.00	±0.15	RH083*****
9.3	+0.5~+1.0	48.97	4.95	±0.15	0.85	±0.15	RH093*****
10.3	+0.5~+1.0	54.41	4.95	±0.15	0.85	±0.15	RH103*****
12.3	+0.5~+1.0	65.30	6.05	±0.25	1.10	±0.15	RH123*****
14.3	+0.5~+1.0	76.18	6.60	±0.25	1.75	±0.15	RH143*****
16.3	+0.5~+1.0	87.06	8.05	±0.25	1.60	±0.20	RH163*****
18.3	+0.5~+1.0	97.95	9.25	±0.25	1.70	±0.20	RH183*****
20.3	+0.5~+1.0	108.83	9.95	±0.25	1.90	±0.20	RH203*****
22.3	+0.5~+1.1	119.71	11.15	±0.35	2.00	±0.20	RH223*****
23.3	+0.5~+1.1	125.15	11.45	±0.35	2.00	±0.20	RH233*****

Length(mm)	Tolerance(mm)
＜150	+0.5/+1.0
150≤L≤300	+1.0/+2.0
＞300	+2.0/+5.0

❊ The following services are available

h6 定长

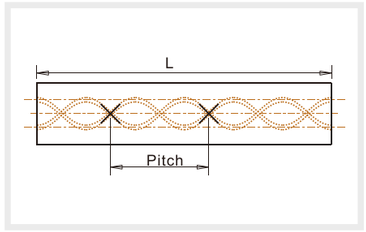
❊ Available Grade

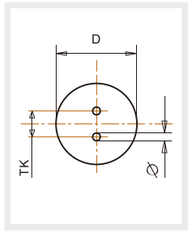
XR10SD+

❊ Regular Length

330 360 415

Rods with 2 Helical Coolant Holes (40°)





Diameter D(mm)	Tolerance (mm)	Pitch(±0.5°) (mm)	Tolerance (mm)	TK (mm)	Tolerance (mm)	d (mm)	Tolerance (mm)	Series Number
6.4	+0.5~+1.0	22.46	-0.39~0.40	2.00	±0.20	0.50	±0.15	RH064*****
8.4	+0.5~+1.0	29.95	-0.53~0.54	2.40	±0.30	0.65	±0.15	RH084*****
10.4	+0.5~+1.0	37.44	-0.66~0.67	3.20	±0.30	0.80	±0.15	RH104*****
12.4	+0.5~+1.0	44.93	-0.79~0.80	3.80	±0.40	0.90	±0.20	RH124*****
14.4	+0.5~+1.0	52.42	-0.92~0.94	4.30	±0.40	1.00	±0.20	RH144*****
16.4	+0.5~+1.0	59.90	-1.05~1.07	5.10	±0.40	1.20	±0.20	RH164*****
18.4	+0.5~+1.0	67.39	-1.18~1.21	5.90	±0.40	1.40	±0.25	RH184*****
20.4	+0.5~+1.0	74.88	-1.31~1.34	6.60	±0.50	1.50	±0.25	RH204*****

Rods with 3 Helical Coolant Holes (40°)

Diameter D(mm)	Tolerance (mm)	Pitch(±0.5°) (mm)	TK (mm)	Tolerance (mm)	d (mm)	Tolerance (mm)	Series Number
6.4	+0.5~+1.0	22.46	2.20	±0.10	0.50	±0.10	RH064*****
8.4	+0.5~+1.0	29.95	2.60	±0.15	0.65	±0.15	RH084*****
10.4	+0.5~+1.0	37.44	3.35	±0.15	0.80	±0.15	RH104*****
12.4	+0.5~+1.0	44.93	4.00	±0.20	0.90	±0.20	RH124*****
14.4	+0.5~+1.0	52.42	4.50	±0.20	1.00	±0.20	RH144*****
16.4	+0.5~+1.0	59.90	5.30	±0.20	1.20	±0.20	RH164*****
18.4	+0.5~+1.0	67.39	5.90	±0.30	1.40	±0.25	RH184*****
20.4	+0.5~+1.0	74.88	6.60	±0.40	1.50	±0.25	RH204*****

Length(mm)	Tolerance(mm)
＜150	+0.5/+1.0
150≤L≤300	+1.0/+2.0
＞300	+2.0/+5.0

❊ The following services are available

h6 定长

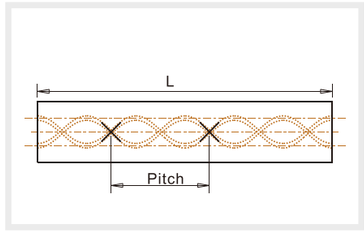
❊ Available Grade

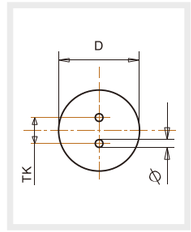
XR10SD+

❊ Regular Length

330

Non-Standard Angle Rods with Helical Coolant Holes





Diameter D(mm)	Twirl angle (±0.5°)	Tolerance (mm)	Pitch(±0.5°) (mm)	Tolerance (mm)	TK (mm)	Tolerance (mm)	d (mm)	Tolerance (mm)	Series Number
14.0	15	+0.5~+1.0	164.14	-5.55~5.92	6.70	±0.40	1.90	±0.20	RH143*****
16.0	15	+0.5~+1.0	187.59	-6.34~6.77	8.00	±0.40	2.10	±0.20	RH163*****
18.0	15	+0.5~+1.0	211.04	-7.13~7.61	9.00	±0.40	2.30	±0.25	RH183*****
20.0	15	+0.5~+1.0	234.49	-7.93~8.46	10.00	±0.50	2.50	±0.25	RH203*****
8.0	36	+0.5~+1.0	34.59	-0.63~0.64	3.40	±0.10	1.00	±0.20	RH083*****
6.0	43	+0.5~+1.0	20.21	-0.35~0.36	1.60	±0.10	0.60	±0.15	RH063*****
6.0	46	+0.5~+1.0	18.20	-0.32~0.32	1.70	±0.10	0.50	±0.15	RH063*****
4.0	35	+0.5~+1.0	17.95	-0.33~0.34	1.75	±0.10	0.40	±0.10	RH043*****

Length(mm)	Tolerance(mm)
＜150	+0.5/+1.0
150≤L≤300	+1.0/+2.0
＞300	+2.0/+5.0

❊ The following services are available

h6 定长

❊ Available Grade

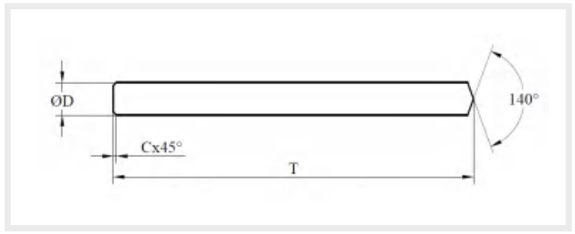
XR10SD+

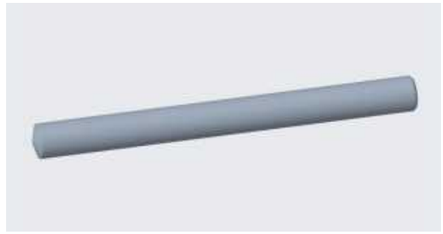
❊ Regular Length

330

Preforms

(To Customer Specification)





Ground Solid-Rods with Tapered End

Diameter (mm)	Length L(mm)	Diameter Tolerance (h5)/mm	Length Tolerance TK(mm)	Chamfer Angle	Chamfer Size (mm)	Taper Angle Standard	Taper Surface Roughness
6	66	-0.005~0	+0.2~+0.5	45°±3°	C0.6	140°~142°	Ra3.0
6	82	-0.005~0	+0.5~+1.0	45°±3°	C0.6	140°~142°	Ra3.0
8	80	-0.006~0	+0.5~+1.0	45°±3°	C0.6	140°~142°	Ra3.0
8	92	-0.006~0	+0.5~+1.0	45°±3°	C0.6	140°~142°	Ra3.0
10	90	-0.006~0	+0.5~+1.0	45°±3°	C0.6	140°~142°	Ra3.0
10	104	-0.006~0	+0.5~+1.0	45°±3°	C0.6	140°~142°	Ra3.0
12	103	-0.008~0	+0.5~+1.0	45°±3°	C0.8	140°~142°	Ra3.0
12	119	-0.008~0	+0.5~+1.0	45°±3°	C0.8	140°~142°	Ra3.0
14	108	-0.008~0	+0.5~+1.0	45°±3°	C0.8	140°~142°	Ra3.0
14	125	-0.008~0	+0.5~+1.0	45°±3°	C0.8	140°~142°	Ra3.0
16	115	-0.008~0	+0.5~+1.0	45°±3°	C0.8	140°~142°	Ra3.0
16	133	-0.008~0	+0.5~+1.0	45°±3°	C0.8	140°~142°	Ra3.0
18	124.5	-0.008~0	+0.5~+1.0	45°±3°	C0.8	140°~142°	Ra3.0
18	144.5	-0.008~0	+0.5~+1.0	45°±3°	C0.8	140°~142°	Ra3.0
20	133	-0.009~0	+0.5~+1.0	45°±3°	C1.0	140°~142°	Ra3.0
20	155	-0.009~0	+1.0~+1.5	45°±3°	C1.0	140°~142°	Ra3.0

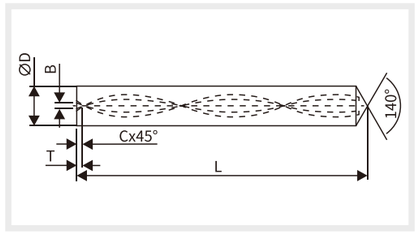
The following services are available

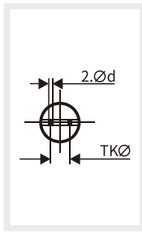
h5

The Taper End Angles can be Selected 120°~150°

Available Grade

XR10ST XR10SD+





Ground Drill Blanks with Slot and Tapered

Diameter (mm)	Length L (mm)	Diameter Tolerance (h5)	Length Tolerance (mm)	Slot Width B (±0.2mm)	Slot Depth T (+0~+0.4mm)	Chamfer Size C (±0.1mm)	Chamfer Angle	Point Angle	Eccentric Distance e	Screw pitch P	Taper Roughness
6	66	-0.005~0	0.2~0.5	1.5	0.90	0.5	45°±3°	140°~142°	≤0.15	32.65	Ra3.0
8	80	-0.006~0	0.5~1.0	2.0	1.40	0.6	45°±3°	140°~142°	≤0.15	43.53	Ra3.0
8	92	-0.006~0	0.5~1.0	2.0	1.40	0.6	45°±3°	140°~142°	≤0.15	43.53	Ra3.0
10	90	-0.006~0	0.5~1.0	2.5	1.65	0.6	45°±3°	140°~142°	≤0.2	54.41	Ra3.0
10	104	-0.006~0	0.5~1.0	2.5	1.65	0.6	45°±3°	140°~142°	≤0.2	54.41	Ra3.0
12	103	-0.008~0	0.5~1.0	2.5	1.75	0.8	45°±3°	140°~142°	≤0.3	65.3	Ra3.0
12	119	-0.008~0	0.5~1.0	2.5	1.75	0.8	45°±3°	140°~142°	≤0.3	65.3	Ra3.0
14	108	-0.008~0	0.5~1.0	3.0	2.15	0.8	45°±3°	140°~142°	≤0.4	76.18	Ra3.0
14	125	-0.008~0	0.5~1.0	3.0	2.15	0.8	45°±3°	140°~142°	≤0.4	76.18	Ra3.0
16	115	-0.008~0	0.5~1.0	3.0	2.30	0.8	45°±3°	140°~142°	≤0.4	87.06	Ra3.0
16	133	-0.008~0	0.5~1.0	3.0	2.30	0.8	45°±3°	140°~142°	≤0.4	87.06	Ra3.0
18	124.5	-0.008~0	0.5~1.0	3.5	2.50	0.8	45°±3°	140°~142°	≤0.4	97.95	Ra3.0
18	144.5	-0.008~0	0.5~1.0	3.5	2.50	0.8	45°±3°	140°~142°	≤0.4	97.95	Ra3.0
20	133	-0.009~0	0.5~1.0	3.5	2.70	1.0	45°±3°	140°~142°	≤0.4	108.83	Ra3.0
20	155	-0.009~0	1.0~1.5	3.5	2.70	1.0	45°±3°	140°~142°	≤0.4	108.83	Ra3.0

The following services are available

h5

The Taper End Angles can be Selected 120°~150°

Available Grade

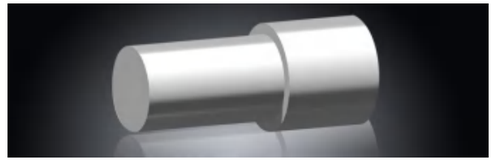
XR10ST XR10SD+

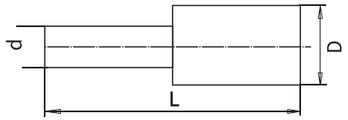
Unground Preforms Classification

capability description

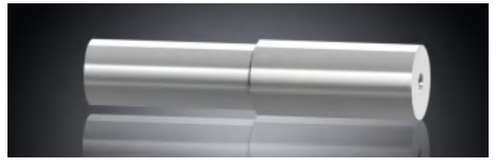
- Length can be completed from20 to 130mm
- The maximum diameter below 40mm, thickness above 3mm, minimum diameter above 10mm
- The production cycle of the Customized products are 7-10 days, inner and outer tipcan be customized

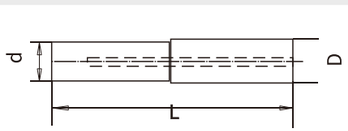
Step Bar



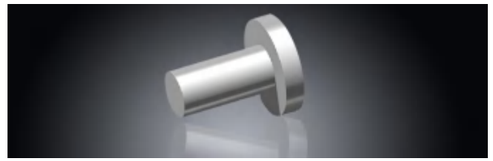


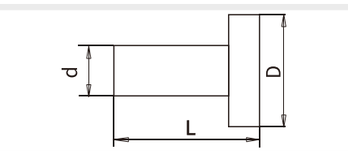
Blind-hole step bar

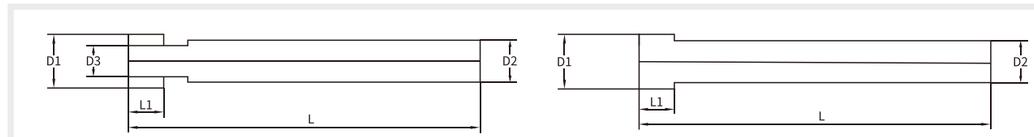




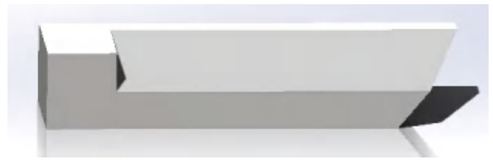
T-bar

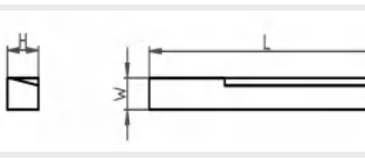




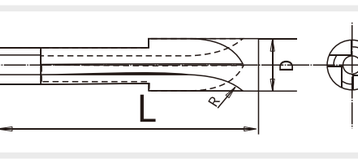


Knife blade

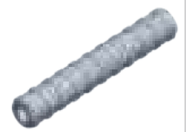
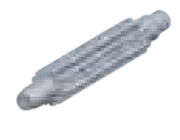
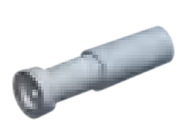
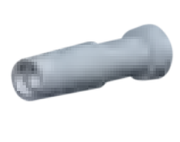




Preform tool blank



Gear Hobbing Cutter Product Series

Hole type hob	• The number and angle of the customizable grooves. (It is also possible not to slot according to actual requirements) • Customizable bevel of tooth end • Customizable chamfers for bores (single 45 degree chamfer, double 45 degree chamfer, sinking chamfer, etc.)	
	• Customizable positive or negative rake angles for hobs.(Negative front corner in right picture)	
	• Customizable spiral grooves	
Milling insert (worm and worm milling cutter)	• Foil products with multiple grooves • Both side steps can be made according to actual requirements	
Key broach	• Rough blank profile machining with periodic grooves to minimize accumulated errors	
	• It can machine inner hole avoidance	
Handle type hob	• Various handled hobs with or without grooves • Customizable two- end center holes, standard (A, B, partial C) and non-standard • Various shank tapers can be machined • Locking groove or keyway can be machined	
	• Outer diameter, length, number of teeth and angle can be customized	
	• The figure at right shows a handle-type hob with BT handle • Handle threads can be machined, M6 or higher meets 6H pass and stop gauge inspection US threads can also be made	
Bowl shaper cutter	• Cutters with bowl shape for front and rear angles • Chamfer protection for non- working face • The inner support surface makes a yield groove	
Taper shank gear shaper cutter	• One end (edge) with a central hole and one end with a threaded taper shank • Machinable sinking centre hole	
	• Tail can be machined, M6 or higher to meet the 6H pass gauge inspection of internal threads • Can also process US threads	

✲ Customized production can be made according to customer drawings.

Non-Standard Customized Products

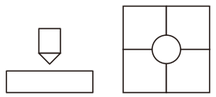
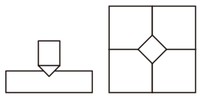
(customized according to customer drawings)

Interchangeable Drill Insert	Exchangeable Endmill Heads
	

❊ Properties characterization of cemented carbide materials

◎ 1、Hardness (ISO3738 and IOS3878)

The ability of the material to resist local modeling deformation. The common hardness determination method for cemented carbide is Rockwell hardness or Vickers hardness test method. The Unit are HRA (60kg load) and HV30 (30kg load).Due to the different measurement techniques, the two hardness shall be converted according to the reference table of the measurement materials.

Rockwell hardness	
Vickers hardness	

◎ 2、Fracture Toughness

Fracture toughness (KIC) refers to the ability of the material to resist the instability and expansion of the internal cracks. Its size depends on the material composition, tissue, etc,Refactors, to characterize the comprehensive performance of materials.

◎ 3、Transverse Rupture Strength (ISO3327)

Transverse Rupture Strength (TRS) is the ability of a material to resist bending without fracture. The value is the material in a standard three-point bending test Stress measured at the breakpoint. When this experiment is applied to the carbide, C sample is used according to GBT / 3851-2015 measure. The TRS uses the average of several measurements as the measurements, which can vary widely. This result depends greatly on the sample surface smoothness,Surface residual stress, surface corrosion and material defects

Introduction of Post Processing

SHAREATE has been quietly providing high-quality cemented carbide products to meet your expectations. In addition to cemented carbide products, SHAREATE also provides a range of post-processing services, a variety of shape and geometry of the Bar, all-round to meet the needs of customers and the tool market, just by providing the blueprints, SHAREATE can quickly respond to your needs with a combination of superior manufacturing capabilities and a variety of shape-shifting technologies.

Signs	Services	Account
	Cut Off	Provide round bar cutting service of any standard length or special length.
h5 h6	Fine grinding	Fine grinding to H6 tolerance, or other fine grinding tolerance, according to the drawing.
45°	Chamfer Angle	Provide round-rod chamfering service to improve your processing efficiency.
	Chamfer Angle	Provide repair service for large outside diameter or high segment difference to reduce grinding time.
	Gutter processing	Make all kinds of standard gutter.
定长	Customized Production	Custom length production service available

Technical Information

❊ Technical parameters of round Rod

Outside diameter		Ovality	
	Outside diameter of the Rod to be measured		Ovality is the radial distance between two concentric circles, including the circumference of the section of the bar
Length		**Bore diameter**	
	The length of the Rod to be measured		Diameter of inner cold hole of round Rod
Degree of finish		**Eccentricity ratio**	
	The surface quality of a round bar is usually expressed in terms of the maximum average finish Ra		The eccentricity ratio represents the deviation of the center of the Round Bar from the pitch circle formed by the inner cold hole, the deviation of the center of the Round Bar with a single straight hole and the center of the inner cold hole from the round bar
Flatness		**Spiral Angle**	
	A rotating Rod, mounted on two support points, is measured in the middle of its maximum curvature		The Helix Angle represents the angle between the Longitudinal center line and Helix of the Rod
Degree of concentricity		**Cylindricity**	
	Maximum bending of a Rod		The deviation of the surface of a bar from that of an ideal cylinder