

SHAREATE

SHAREATE

CONTACT US

Phone : +86 0512-62850656

Address : No.6, Weixi Road, Suzhou Industrial Park

Email : info@shareate.com

www.shareate.com



CEMENTED CARBIDE ROD

Shareate Tools Ltd.

CONTENTS

COMPANY PROFILE	02	CARBIDE GRADE DATA	06
MAIN EQUIPMENT	04	CARBIDE GRADE FEATURES	07
NOMENCLATURE EXPLANATION	05	APPLICATIONS BY CARBIDE GRADE	08

SHAREATE SOLID RODS 11-13

Solid Rods in Metric Sizes	11
Solid Rods Ground in Metric Sizes	12
Solid Rods with Chamfer and Specified Length Ground in Metric Sizes	13

COOLANT RODS WITH HELICAL HOLES 17-21

Deep Hole Drilling	17
Coolant Rods with 2 Holes and 30° Helix	18
Coolant Rods with 2 constricted Holes and 30° Helix	19
Coolant Rods with 3 Holes and 30° Helix	19
Coolant Rods with 2 Holes and 40° Helix	20
Coolant Rods with 2 constricted Holes and 40° Helix	20
Coolant Rods with 3 Holes and 40° Helix	21
Coolant Rods with 2 Holes and Non-Standard Helix	21

APPENDIX 26-28

Performance Characterization of Carbide Materials	26
Introduction to Post-processing	27
Technical Documentation	27
Tolerance Grade	28

COOLANT RODS WITH STRAIGHT HOLES 14-16

Coolant Rods with Central Hole	14
Coolant Rods with 2 Parallel Holes	15
Coolant Rods with 2 Parallel Constricted Holes	16

SPECIAL RODS 22-26

Drill Blanks with Chamfered One End	22
Preforms	24
Gear Hobs	25
Customized Products	26



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 72 invention patents and 380 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 60 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.



**PASSION WINS DREAM
QUALITY WINS RESPECT**

Continuous Accumulation and Innovation of
Cemented Carbide Technology for
Over 40 Years

- © In 1982, we were the first company in China who brought in the cemented carbide production equipment and technology from US.
- © The forerunner of low pressure sintering technology with the greatest sintering pressure in China at present.
- © The advanced and complete physical & chemical testing and experimental center, owning the prospective research and development in the industry.

MAIN EQUIPMENT

MANUFACTURING EQUIPMENT



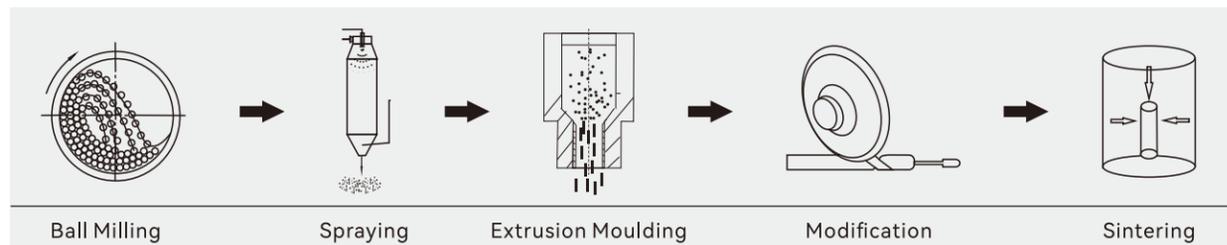
Spray Granulation

Extrusion Machine

Dry-bag Isostatic Pressing Machine

ALD Sintering Furnace

Process Demonstration



Ball Milling

Spraying

Extrusion Moulding

Modification

Sintering

INSPECTION EQUIPMENT



Scanning Electron Microscope /Energy Spectrometer

Microhardness Tester

ZEISS Metallography Microscope

Projector

LECO Carbon Analyzer

LECO Oxygen Analyzer

NOMENCLATURE EXPLANATION

SHAPE	PRINCIPAL FEATURE	PRINCIPAL DIMENSION		GRADE	AUXILIARY FEATURE		AUXILIARY DIMENSION		SHAPE STANDARDS		
SHAPE	PRINCIPAL FEATURE	DIAMETER	LENGTH	GRADE	HELIX ANGLE	NOS. OF HOLE	HOLE DIAMETER	TK	GROUND DIMENSION	REQUIREMENT OF CHAMFER ANGLE	REQUIREMENTS OF SHAPE
R	S	103	3300	SD+	30	2	140	058	h5	C	Y
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫

① SHAPE R-Round Rods Y-Special-shaped Rods V-VRods with V-Slot ...	③ DIAMETER	⑥ HELIX ANGLE	⑩ GROUND DIMENSION Blank-As Sintered h5-Ground to h5 h6-Ground to h6 H7-Special Tolerance H8-Semi-ground ...
② PRINCIPAL FEATURE S-Solid C-With Central Hole P-With 2 Parallel Holes H-With Helix Holes ...	④ LENGTH	⑦ NOS. OF HOLE	⑪ REQUIREMENT OF CHAMFER ANGLE Blank-No Chamfer Angle C-Chamfer Angle
⑤ GRADE ST-XR10ST SD-XR10SD SD+-XR10SD+ UF-XR12UF 2S-XR12S U1-XR06U U2-XR09U KA-XR50 CS-XR70 M+-XR80 U2+-XR90 MT-XR100	⑧ HOLE DIAMETER	⑨ TK	⑫ REQUIREMENTS OF SHAPE Y-Cone Point O-Connection Slot T-Connection Slot with Cone Point ...

CARBIDE GRADE DATA

HOLEMAKING SERIES

GRADE	CO (%)	GRAIN SIZE (um)	DENSITY (g/cm)	HARDNESS		TRS (MPa)	FRACTURE TOUGHNESS (MPa*m ^{1/2})	CLASSIFICATION
				HRA	HV30			
XR10ST	10	0.7	14.40	91.8	1580	>4000	10.4	K30-K40
XR10SD+	10	0.6	14.40	92.0	1620	>4000	10.2	K30-K40

APPLICATION SPECIFIC SERIES

GRADE	CO (%)	GRAIN SIZE (um)	DENSITY (g/cm)	HARDNESS		TRS (MPa)	FRACTURE TOUGHNESS (MPa*m ^{1/2})	CLASSIFICATION
				HRA	HV30			
XR50	6	0.9	14.95	92.5	1720	>3600	10.0	K20-K30
XR100	6	0.6	14.80	93.2	1840	>3800	9.4	K10-K20
XR06U	6.5	0.4	14.75	94.0	2040	>3800	9.0	K05-K10
XR09U	9	0.4	14.45	93.8	1950	>4000	9.3	K05-K15
XR80	8.5	0.4	14.60	93.3	1850	>4000	9.5	H10-H20
XR90	9	0.2	14.45	94.0	2020	>4200	9.2	H05-H10
XR12UF	12	0.4	14.10	92.6	1740	>4200	9.9	K20-K30
XR12S	12	0.6	14.10	91.8	1580	>4000	10.3	S20-S40
XR70	12	0.7	14.10	91.5	1550	>4000	11.0	S20-S40

GENERAL PURPOSE SERIES

GRADE	CO (%)	GRAIN SIZE (um)	DENSITY (g/cm)	HARDNESS		TRS (MPa)	FRACTURE TOUGHNESS (MPa*m ^{1/2})	CLASSIFICATION
				HRA	HV30			
XR10S	10	0.8	14.40	91.7	1560	>4000	10.6	K30-K40
XR10SD	10	0.6	14.40	92.1	1640	>4000	10.2	K30-K40
XR12U+	12	0.6	14.10	92.5	1720	>3800	10.0	K20-K30

CARBIDE GRADE FEATURES

APPLICATION	GRADE	FEATURE DESCRIPTION	APPLICABLE FIELDS
Holemaking	XR10ST	Owns a high versatility for applications with uncertain working conditions. Especially for holemaking in carbon steel, cast iron, stainless steel, and so on.	    
Holemaking	XR10SD+	Designed for tool users seeking exceptional tool performance. Particularly excels in medium-speed drilling, suitable for machining carbon steel, stainless steel, and alloy steel.	    
Precision machining	XR50	Ideal for machining non-ferrous metals, aluminum alloys, and graphite products (diamond-coated). Particularly effective for diamond coatings, offering excellent compatibility with various post-treatment processes and coating structures, with high coating adhesion strength.	    
Precision machining	XR100	Ideal for machining materials such as aluminum alloys, fiber-reinforced materials, composites, and graphite products (diamond-coated). Particularly well-suited for use as reamers for stainless steel, alloy steel, and carbon steel, offering strong versatility.	    
Precision machining	XR06U	Highly wear-resistant with excellent performance in high-speed milling, suitable for non-ferrous metals, acrylics, and fiber-reinforced materials. Also applicable for PCB drilling and milling.	  
Precision machining	XR09U	Ideal choice for fine machining of high-hardness materials, such as carbon steel, stainless steel, non-ferrous metals, and fiber-reinforced materials.	     
Aerospace	XR70	Featuring high toughness and excellent hot hardness, it delivers outstanding performance in low-speed, high-feed cutting operations, making it ideal for rough machining of high-temperature alloys.	
Electronics	XR12S	Combining high toughness with excellent wear resistance, particularly suitable for medium to rough machining of stainless steel in electronics, titanium alloys, and high-temperature alloys.	
Die & Mold	XR80	Designed for semi-finishing of quenched steel and mold steel, as well as finishing of carbon steel, stainless steel, and non-ferrous metals.	 
Die & Mold	XR90	Excels at machining high-hardness materials such as >54HRC high-hardness steel.	 
Die & Mold	XR12UF	Offers excellent performance in high-speed light cutting, ideal for semi-finishing and finishing of carbon steel, stainless steel, and non-ferrous metals.	 
Universal	XR10S	Exhibits exceptional versatility, particularly suited for rough machining of stainless steel and aluminum alloys.	     
Universal	XR12U+	Offers impressive versatility, delivering outstanding performance in the semi-finishing and finishing of stainless steel and aluminum alloys.	     
Universal	XR10SD	Highly wear-resistant while maintaining excellent toughness. Delivers superior performance in medium-speed milling for carbon steel, alloy steel, and stainless steel.	     

Automotive Industry 	Electrics 	Electronics 	Machining 	Aerospace 	Mold 	Healthcare 
--	--	--	--	--	---	---

APPLICATIONS BY CARBIDE GRADE

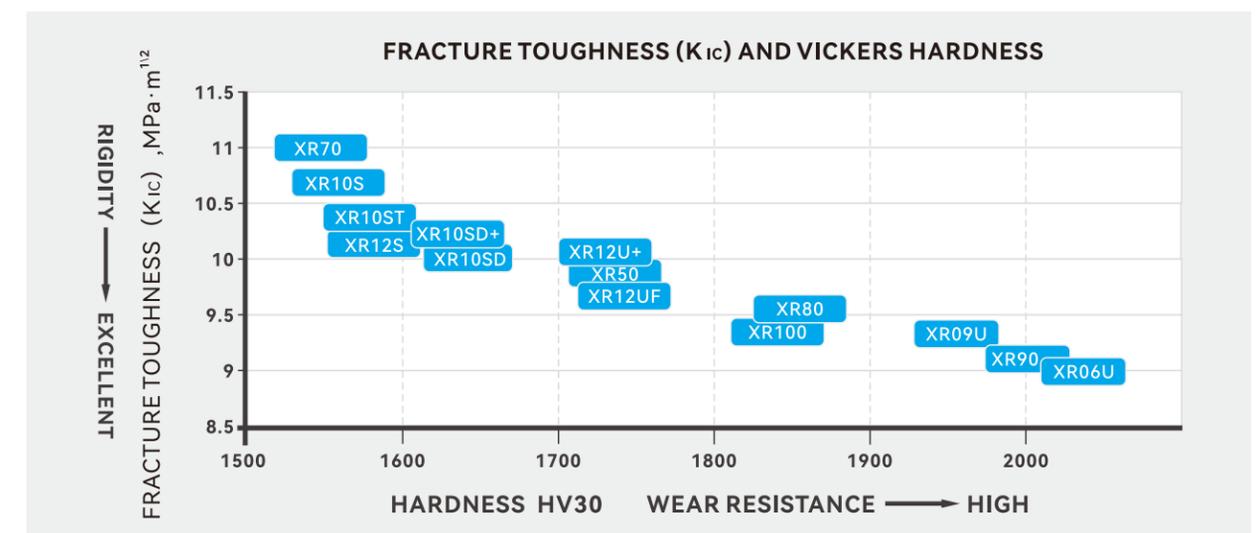
WORKPIECE MATERIALS	TOOL TYPE	HOLEMAKING SERIES		APPLICATION SPECIFIC SERIES								GENERAL PURPOSE SERIES			
		XR10ST	XR10SD+	XR50	XR100	XR06U	XR09U	XR12UF	XR80	XR90	XR70	XR12S	XR10S	XR10SD	XR12U+
P Steel	Drill	●	★												
	End Mill	Roughing											★	★	
		Finishing							★					●	★
M Stainless Steel	Drill	●	★												
	End Mill	Roughing								★	●	★	★		
		Finishing				★			★	★		●	●	●	★
K Cast Iron	Drill	★	●												
	End Mill	Roughing										★	★		
		Finishing				★			★				●	★	
N Non-ferrous	Drill	★	●												
	End Mill	Roughing										★	★		
		Finishing			●	★		★	★				●	★	
S Heat-resistant Alloy	Drill	●	★												
	End Mill	Roughing								★	●		●		
		Finishing				★		●	★	★	★			●	
H High Hardness Material	Drill		★												
	End Mill	Roughing							★	●				●	
		Finishing						●	●	★	★				
Other	Fiber Composites				●	★	●								
	Graphite			△	△										

- Preferred Option ★
- Alternative Option ●
- Diamond Coating △

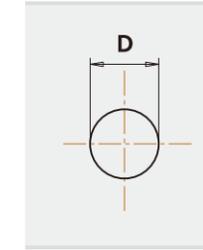
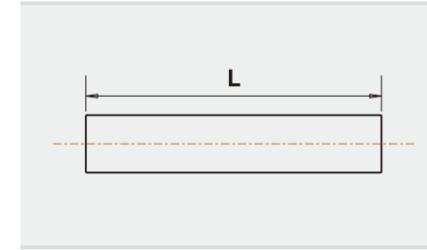
COMPARISON TABLE FOR BRANDS

GRADE	SANDVIK	GUHRING	CERATIZIT	KFC	IMC
XR06U		KFM308		K5UF	SF060
XR80	DM80				
XR90	PN90		TSF22	K55SF	UF09
XR10ST	AFK40UF	DK400N		K40XF	UF10
XR10SD/XR10SD+	H10F	DK460UF	CTS20D	K40UF	
XR12UF		DK500UF	TSF44	K44UF	UF12
XR70/XR12S	AM70		CTS24Z		
XR100		DK12UF	CTS12D	K06UF	UF1

MATERIAL PROPERTIES



SOLID RODS IN METRIC SIZES



LENGTH(mm)	TOL.(mm)
L≤50	+0.5/+1.0
50 < L < 150	+0.75/+1.25
150 ≤ L ≤ 300	+1.0/+2.0
> 300	+2.0/+5.0

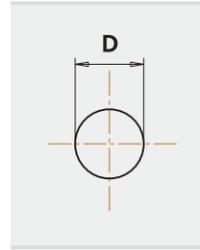
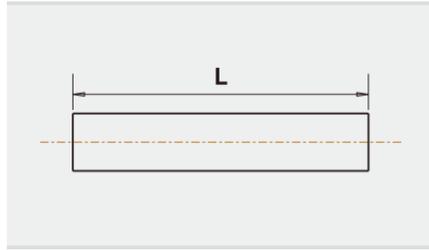
- Customizable
- In stock

Services Available

Fixed Length h5/h6

SN	DIAMETER (mm)	TOL. (mm)	LENGTH (mm)	INVENTORY
RS0223100***	2.2	+0.0~+0.2	310/330	★
RS0323100***	3.2	+0.0~+0.2	310/330	★
RS0423100***	4.2	+0.0~+0.2	310/330	★
RS0433100***	4.3	+0.05~+0.25	310/330	★
RS0523100***	5.2	+0.0~+0.2	310/330	★
RS0623100***	6.2	+0.0~+0.2	310/330	★
RS0633100***	6.3	+0.05~+0.25	310/330	★
RS0723100***	7.2	+0.1~+0.4	310/330	★
RS0823100***	8.2	+0.1~+0.4	310/330	★
RS0923100***	9.2	+0.1~+0.4	310/330	★
RS1023100***	10.2	+0.1~+0.4	310/330	★
RS1123100***	11.2	+0.1~+0.4	310/330	★
RS1223100***	12.2	+0.1~+0.4	310/330	★
RS1323100***	13.2	+0.2~+0.5	310/330	★
RS1423100***	14.2	+0.2~+0.5	310/330	★
RS1523100***	15.2	+0.2~+0.5	310/330	★
RS1623100***	16.2	+0.2~+0.5	310/330	★
RS1723100***	17.2	+0.2~+0.5	310/330	★
RS1823100***	18.2	+0.2~+0.5	310/330	★
RS1923100***	19.2	+0.2~+0.5	310/330	★
RS2023100***	20.2	+0.3~+0.7	310/330	★
RS2123100***	21.2	+0.3~+0.7	310/330	★
RS2223100***	22.2	+0.3~+0.7	310/330	★
RS2323100***	23.2	+0.3~+0.7	310/330	★
RS2423100***	24.2	+0.3~+0.7	310/330	★
RS2523100***	25.2	+0.3~+0.7	310/330	★
RS2623100***	26.2	+0.3~+0.7	310/330	★
RS2723100***	27.2	+0.3~+0.7	310/330	★
RS2823100***	28.2	+0.3~+0.7	310/330	★
RS2923100***	29.2	+0.3~+0.7	310/330	★
RS3023100***	30.2	+0.3~+0.8	310/330	★
RS3123100***	31.2	+0.3~+0.8	310/330	★
RS3223100***	32.2	+0.3~+0.8	310/330	★
RS3323100***	33.2	+0.3~+0.8	310/330	●
RS3423100***	34.2	+0.3~+0.8	310/330	●
RS3523100***	35.2	+0.3~+0.8	310/330	●
RS3623100***	36.2	+0.3~+0.8	310/330	●
RS3723100***	37.2	+0.3~+0.8	310/330	●
RS3823100***	38.2	+0.3~+0.8	310/330	●
RS3923100***	39.2	+0.3~+0.8	310/330	●
RS4023100***	40.2	+0.3~+0.8	310/330	●

SOLID RODS GROUND IN METRIC SIZES



LENGTH(mm)	TOL.(mm)
L≤50	+0.5/+1.0
50 < L < 150	+0.75/+1.25
150 ≤ L ≤ 300	+1.0/+2.0
> 300	+2.0/+5.0

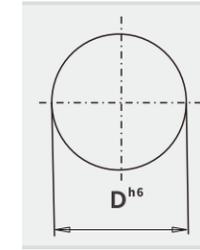
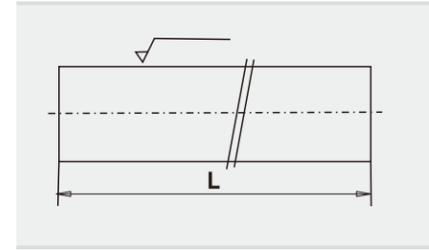
Services Available

h5

SN	DIAMETER (mm)	TOL. (mm)	LENGTH (mm)	INVENTORY
RS0203100***H6	2.0	h6	310/330	●
RS0303100***H6	3.0	h6	310/330	●
RS0403100***H6	4.0	h6	310/330	★
RS0503100***H6	5.0	h6	310/330	●
RS0603100***H6	6.0	h6	310/330	★
RS0703100***H6	7.0	h6	310/330	★
RS0803100***H6	8.0	h6	310/330	★
RS0903100***H6	9.0	h6	310/330	★
RS1003100***H6	10.0	h6	310/330	★
RS1103100***H6	11.0	h6	310/330	★
RS1203100***H6	12.0	h6	310/330	★
RS1303100***H6	13.0	h6	310/330	★
RS1403100***H6	14.0	h6	310/330	★
RS1503100***H6	15.0	h6	310/330	★
RS1603100***H6	16.0	h6	310/330	★
RS1703100***H6	17.0	h6	310/330	★
RS1803100***H6	18.0	h6	310/330	★
RS1903100***H6	19.0	h6	310/330	★
RS2003100***H6	20.0	h6	310/330	★
RS2103100***H6	21.0	h6	310/330	●
RS2203100***H6	22.0	h6	310/330	★
RS2303100***H6	23.0	h6	310/330	●
RS2403100***H6	24.0	h6	310/330	●
RS2503100***H6	25.0	h6	310/330	★
RS2603100***H6	26.0	h6	310/330	●
RS2703100***H6	27.0	h6	310/330	●
RS2803100***H6	28.0	h6	310/330	●
RS2903100***H6	29.0	h6	310/330	●
RS3003100***H6	30.0	h6	310/330	●
RS3103100***H6	31.0	h6	310/330	●
RS3203100***H6	32.0	h6	310/330	●
RS3403100***H6	34.0	h6	310/330	●
RS3603100***H6	36.0	h6	310/330	●
RS3803100***H6	38.0	h6	310/330	●
RS4003100***H6	40.0	h6	310/330	●

● Customizable ★ In stock

SOLID RODS WITH CHAMFER AND SPECIFIED LENGTH GROUND IN METRIC SIZE



LENGTH(mm)	TOL.(mm)
All	ISO h6/h5

LENGTH(mm)	TOL.(mm)
≤50	+0.2/+0.5
50 < L ≤ 150	+0.5/+1.0

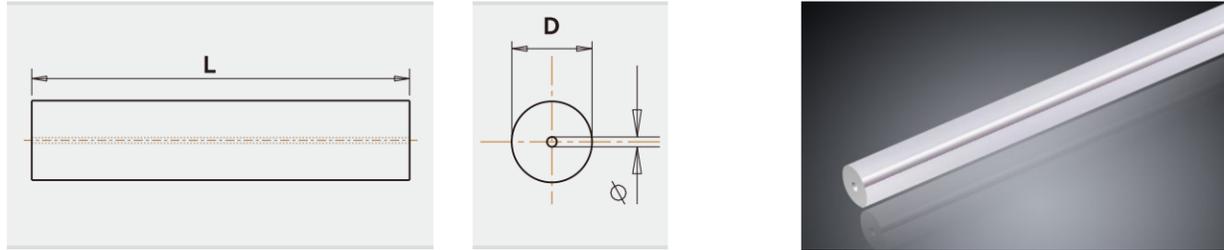
Services Available

h5/h6

SN	DIAMETER (mm)	TOL. (mm)	LENGTH (mm)	TOL. (mm)	CHAMFER DIMENSION C°45°(±3°)	INVENTORY
RS0400400***H5	4	h5/h6	40	+0.2~+0.5	0.4±0.1	★
RS0400500***H5	4	h5/h6	50	+0.2~+0.5	0.4±0.1	★
RS0400750***H5	4	h5/h6	75	+0.5~+1.0	0.4±0.1	★
RS0401000***H5	4	h5/h6	100	+0.5~+1.0	0.4±0.1	★
RS0600500***H5	6	h5/h6	50	+0.2~+0.5	0.5±0.1	★
RS0600600***H5	6	h5/h6	60	+0.5~+1.0	0.5±0.1	★
RS0600660***H5	6	h5/h6	66	+0.5~+1.0	0.5±0.1	★
RS0600750***H5	6	h5/h6	75	+0.5~+1.0	0.5±0.1	★
RS0600820***H5	6	h5/h6	82	+0.5~+1.0	0.5±0.1	★
RS0601000***H5	6	h5/h6	100	+0.5~+1.0	0.5±0.1	★
RS0800600***H5	8	h5/h6	60	+0.5~+1.0	0.6±0.1	★
RS0800750***H5	8	h5/h6	75	+0.5~+1.0	0.6±0.1	★
RS0800790***H5	8	h5/h6	79	+0.5~+1.0	0.6±0.1	★
RS0800910***H5	8	h5/h6	91	+0.5~+1.0	0.6±0.1	★
RS0801000***H5	8	h5/h6	100	+0.5~+1.0	0.6±0.1	★
RS1000750***H5	10	h5/h6	75	+0.5~+1.0	0.6±0.1	★
RS1000890***H5	10	h5/h6	89	+0.5~+1.0	0.6±0.1	★
RS1001000***H5	10	h5/h6	100	+0.5~+1.0	0.6±0.1	★
RS1001030***H5	10	h5/h6	103	+0.5~+1.0	0.6±0.1	★
RS1001500***H5	10	h5/h6	150	+0.5~+1.0	0.6±0.1	★
RS1200750***H5	12	h5/h6	75	+0.5~+1.0	0.8±0.1	★
RS1201000***H5	12	h5/h6	100	+0.5~+1.0	0.8±0.1	★
RS1201180***H5	12	h5/h6	118	+0.5~+1.0	0.8±0.1	★
RS1201500***H5	12	h5/h6	150	+0.5~+1.0	0.8±0.1	★
RS1401000***H5	14	h5/h6	100	+0.5~+1.0	0.8±0.1	★
RS1401240***H5	14	h5/h6	124	+0.5~+1.0	0.8±0.1	★
RS1601000***H5	16	h5/h6	100	+0.5~+1.0	0.8±0.1	★
RS1601150***H5	16	h5/h6	115	+0.5~+1.0	0.8±0.1	★
RS1601330***H5	16	h5/h6	133	+0.5~+1.0	0.8±0.1	★
RS1801000***H5	18	h5/h6	100	+0.5~+1.0	1.0±0.1	★
RS1801500***H5	18	h5/h6	150	+0.5~+1.0	1.0±0.1	★
RS2001000***H5	20	h5/h6	100	+0.5~+1.0	1.0±0.1	★
RS2001500***H5	20	h5/h6	150	+0.5~+1.0	1.0±0.1	★
RS2501000***H5	25	h5/h6	100	+0.5~+1.0	1.0±0.1	★
RS2501500***H5	25	h5/h6	150	+0.5~+1.0	1.0±0.1	★

● Customizable ★ In stock

COOLANT RODS WITH CENTRAL HOLE



LENGTH(mm)	TOL.(mm)
< 150	+0.5/+1.0
150≤L≤300	+1.0/+2.0
> 300	+2.0/+5.0

Services Available



Customization of Hole Diameter from 0.2 to 6.0 mm

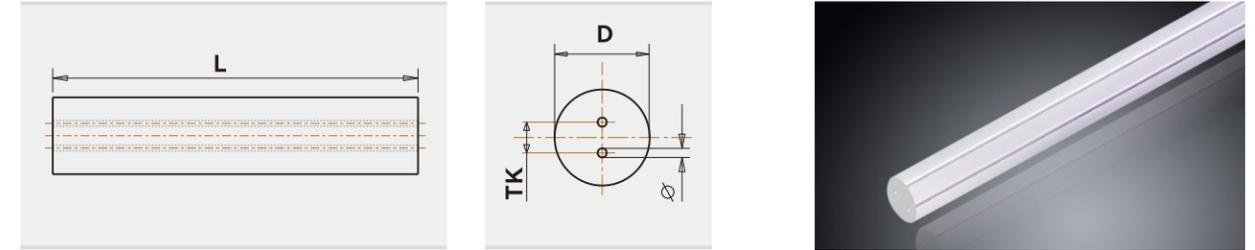
Grades Available

XR10SD XR09U XR100

SN	DIAMETER(mm)		LENGTH (mm) (Tol.+2~+5)	HOLE DIAMETER (mm)		ECCENTRICITY (mm) e≤	INVENTORY
	SINTERED	Tol.		d	Tol.		
RC0223300***1030	2.2	+0.1~+0.3	300	0.3	±0.10	0.10	★
RC0323300***1040	3.2	+0.1~+0.3	300	0.4	±0.10	0.10	★
RC0423300***1060	4.2	+0.1~+0.3	330	0.6	±0.10	0.10	★
RC0523300***1080	5.2	+0.1~+0.3	330	0.8	±0.10	0.15	★
RC0623300***1100	6.2	+0.1~+0.3	330/360	1.0	±0.15	0.15	★
RC0623300***1130	6.2	+0.1~+0.3	330/360	1.3	±0.15	0.15	★
RC0723300***1100	7.2	+0.1~+0.3	330/360	1.0	±0.15	0.15	★
RC0823300***1100	8.2	+0.1~+0.4	330/360	1.0	±0.15	0.15	★
RC0823300***1130	8.2	+0.1~+0.4	330/360	1.3	±0.15	0.15	★
RC0923300***1200	9.2	+0.1~+0.4	330/360	2.0	±0.20	0.15	★
RC1023300***1150	10.2	+0.1~+0.4	330/360/415	1.5	±0.15	0.15	★
RC1023300***1200	10.2	+0.1~+0.4	330/360/415	2.0	±0.20	0.15	★
RC1123300***1200	11.2	+0.1~+0.4	330/360/415	2.0	±0.20	0.15	★
RC1223300***1200	12.2	+0.1~+0.4	330/360/415	2.0	±0.20	0.15	★
RC1223300***1300	12.2	+0.1~+0.4	330/360/415	3.0	±0.20	0.15	★
RC1323300***1200	13.2	+0.2~+0.5	330/360/415	2.0	±0.20	0.15	★
RC1423300***1200	14.2	+0.2~+0.5	330/360/415	2.0	±0.20	0.20	★
RC1523300***1200	15.2	+0.2~+0.5	330/360/415	2.0	±0.20	0.20	★
RC1623300***1200	16.2	+0.2~+0.6	330/360/415	2.0	±0.20	0.20	★
RC1623300***1300	16.2	+0.2~+0.6	330/360/415	3.0	±0.20	0.20	★
RC1723300***1300	17.2	+0.2~+0.6	330/360/415	3.0	±0.20	0.20	★
RC1823300***1300	18.2	+0.2~+0.6	330/360/415	3.0	±0.20	0.20	★
RC1923300***1300	19.2	+0.2~+0.6	330/360/415	3.0	±0.20	0.20	★
RC2023300***1200	20.2	+0.3~+0.8	330/360/415	2.0	±0.20	0.20	★
RC2023300***1300	20.2	+0.3~+0.8	330/360/415	3.0	±0.20	0.20	★
RC2123300***1300	21.2	+0.3~+0.8	330/360/415	3.0	±0.20	0.20	★
RC2223300***1300	22.2	+0.3~+0.8	330/360/415	3.0	±0.20	0.20	★
RC2323300***1300	23.2	+0.3~+0.8	330/360/415	3.0	±0.20	0.20	★
RC2423300***1300	24.2	+0.3~+0.8	330/360/415	3.0	±0.20	0.20	★
RC2523300***1300	25.2	+0.3~+0.8	330/360/415	3.0	±0.20	0.20	★
RC2623300***1300	26.2	+0.3~+0.8	330	3.0	±0.20	0.25	★
RC2723300***1300	27.2	+0.3~+0.8	330	3.0	±0.20	0.25	★
RC2823300***1400	28.2	+0.3~+0.8	330	4.0	±0.25	0.25	★
RC2923300***1400	29.2	+0.3~+0.8	330	4.0	±0.25	0.25	★
RC3023300***1500	30.2	+0.3~+0.8	330	5.0	±0.25	0.25	★
RC3123300***1500	31.2	+0.3~+0.8	330	5.0	±0.25	0.25	★
RC3223300***1500	32.2	+0.3~+0.8	330	5.0	±0.25	0.25	★

● Customizable ★ In stock

COOLANT RODS WITH 2 PARALLEL HOLES



SN	DIAMETER(mm)		LENGTH (mm) (Tol.+2~+5)	HOLE DIAMETER (mm)		HOLE DISTANCE (mm)		ECCENTRICITY (mm) e≤	INVENTORY
	SINTERED	Tol.		d	Tol.	TK	Tol.		
RP0423300***2080017	4.2	+0.1~+0.3	330	0.80	±0.10	1.73	±0.07	0.10	★
RP0623300***2100030	6.2	+0.1~+0.3	330/360/415	1.00	±0.15	3.00	±0.10	0.15	★
RP0723300***2100035	7.2	+0.1~+0.3	330	1.00	±0.15	3.50	±0.10	0.15	★
RP0823300***2100038	8.2	+0.1~+0.4	330/360/415	1.00	±0.15	3.80	±0.20	0.15	★
RP0923300***2140040	9.2	+0.1~+0.4	330	1.40	±0.15	4.00	±0.20	0.20	★
RP1023300***2140048	10.2	+0.1~+0.4	330/360/415	1.40	±0.15	4.80	±0.20	0.28	★
RP1123300***2140048	11.2	+0.1~+0.4	330	1.40	±0.15	4.80	±0.20	0.28	★
RP1223300***2175058	12.2	+0.1~+0.4	330/360/415	1.75	±0.20	5.85	±0.15	0.34	★
RP1323300***2175058	13.2	+0.2~+0.5	330	1.75	±0.20	5.85	±0.15	0.37	★
RP1423300***2175068	14.2	+0.2~+0.5	330/360/415	1.75	±0.20	6.80	±0.20	0.40	★
RP1523300***2200068	15.2	+0.2~+0.5	330	2.00	±0.20	6.85	±0.15	0.40	★
RP1623300***2200078	16.2	+0.2~+0.6	330/360/415	2.00	±0.20	7.80	±0.20	0.47	★
RP1723300***2200078	17.2	+0.2~+0.6	330	2.00	±0.20	7.85	±0.15	0.47	★
RP1823300***2200088	18.2	+0.2~+0.6	330/360/415	2.00	±0.20	8.85	±0.15	0.50	★
RP1923300***2200088	19.2	+0.2~+0.6	330	2.00	±0.20	8.85	±0.15	0.50	★
RP2023300***2250098	20.2	+0.3~+0.8	330/360/415	2.50	±0.20	9.80	±0.20	0.50	★
RP2123300***2250098	21.2	+0.3~+0.8	330	2.50	±0.20	9.80	±0.20	0.50	★
RP2223300***2250108	22.2	+0.3~+0.8	330/360/415	2.50	±0.20	10.80	±0.20	0.50	★
RP2323300***2250108	23.2	+0.3~+0.8	330	2.50	±0.20	10.80	±0.20	0.50	★
RP2423300***2300117	24.2	+0.3~+0.8	330	3.00	±0.25	11.75	±0.25	0.50	★
RP2523300***2300117	25.2	+0.3~+0.8	330/360/415	3.00	±0.25	11.75	±0.25	0.50	★
RP2623300***2300127	26.2	+0.3~+0.8	330/360	3.00	±0.25	12.75	±0.25	0.50	★
RP2823300***2300137	28.2	+0.3~+0.8	330/360	3.00	±0.25	13.75	±0.25	0.50	★
RP3023300***2300137	30.2	+0.3~+0.8	330/360	3.00	±0.25	13.75	±0.25	0.50	★
RP3223300***2300137	32.2	+0.3~+0.8	330/360	3.00	±0.25	13.75	±0.25	0.50	★
RP3423300***2300137	34.2	+0.3~+0.8	330/360	3.00	±0.25	13.75	±0.25	0.50	★

● Customizable ★ In stock

LENGTH(mm)	TOL.(mm)
< 150	+0.5/+1.0
150≤L≤300	+1.0/+2.0
> 300	+2.0/+5.0

Services Available

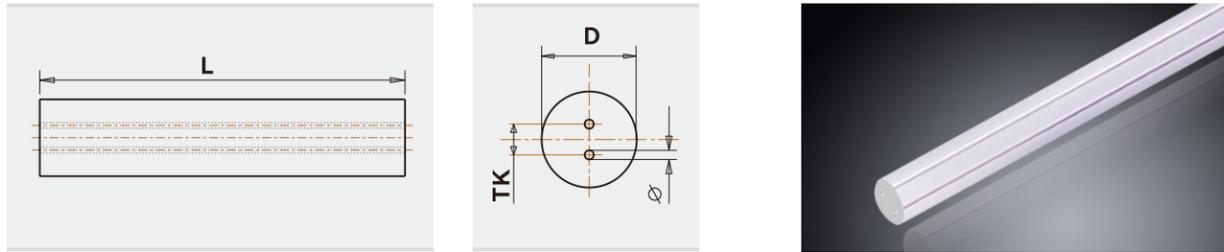


Grades Available

XR10ST XR10SD
XR12UF

Suitable for Diamond Tool Holders

COOLANT RODS WITH 2 PARALLEL CONSTRICTED HOLES



SN	DIAMETER(mm)		LENGTH (mm) (Tol.+2~+5)	HOLE DIAMETER (mm)		HOLE DISTANCE (mm)		ECCENTRICITY (mm) e±	INVENTORY
	SINTERED	Tol.		d	Tol.	TK	Tol.		
RP0623300***2080015	6.2	+0.1~+0.3	330/360/415	0.80	±0.10	1.50	±0.10	0.15	★
RP0723300***2080015	7.2	+0.1~+0.3	330	0.80	±0.10	1.50	±0.10	0.15	★
RP0823300***2080025	8.2	+0.1~+0.4	330	0.80	±0.10	2.50	±0.10	0.15	★
RP0823300***2100026	8.2	+0.1~+0.4	330/360/415	1.00	±0.15	2.60	±0.10	0.15	★
RP0923300***2100026	9.2	+0.1~+0.4	330	1.00	±0.15	2.60	±0.10	0.20	★
RP1023300***2100026	10.2	+0.1~+0.4	330/360/415	1.00	±0.15	2.60	±0.10	0.28	★
RP1023300***2100035	10.2	+0.1~+0.4	330	1.00	±0.15	3.50	±0.10	0.28	★
RP1123300***2120033	11.2	+0.1~+0.4	330	1.20	±0.15	3.35	±0.15	0.28	★
RP1223300***2120033	12.2	+0.1~+0.4	330/360/415	1.20	±0.15	3.35	±0.15	0.34	★
RP1323300***2120033	13.2	+0.2~+0.5	330	1.20	±0.15	3.35	±0.15	0.37	★
RP1423300***2150048	14.2	+0.2~+0.5	330/360/415	1.50	±0.20	4.80	±0.20	0.40	★
RP1523300***2150048	15.2	+0.2~+0.5	330	1.50	±0.20	4.80	±0.20	0.40	★
RP1623300***2150048	16.2	+0.2~+0.6	330/360/415	1.50	±0.20	4.80	±0.20	0.47	★
RP1623300***2180055	16.2	+0.2~+0.6	330	1.80	±0.20	5.50	±0.20	0.47	★
RP1723300***2200060	17.2	+0.2~+0.6	330	2.00	±0.20	6.00	±0.20	0.47	★
RP1823300***2200060	18.2	+0.2~+0.6	330/360/415	2.00	±0.20	6.00	±0.20	0.50	★
RP1923300***2200060	19.2	+0.2~+0.6	330	2.00	±0.20	6.00	±0.20	0.50	★
RP2023300***2200062	20.2	+0.3~+0.8	330/360/415	2.00	±0.20	6.20	±0.20	0.50	★
RP2123300***2200062	21.2	+0.3~+0.8	330	2.00	±0.20	6.20	±0.20	0.50	★
RP2223300***2200062	22.2	+0.3~+0.8	330/360/415	2.00	±0.20	6.20	±0.20	0.50	★
RP2323300***2200073	23.2	+0.3~+0.8	330	2.00	±0.20	7.30	±0.20	0.50	★
RP2423300***2200073	24.2	+0.3~+0.8	330	2.00	±0.20	7.30	±0.20	0.50	★
RP2523300***2200073	25.2	+0.3~+0.8	330/360/415	2.00	±0.20	7.30	±0.20	0.50	★
RP2523300***2250100	25.2	+0.3~+0.8	330	2.50	±0.20	10.00	±0.20	0.50	★
RP2623300***2200073	26.2	+0.3~+0.8	330/360	2.00	±0.20	7.30	±0.20	0.50	★
RP2823300***2250088	28.2	+0.3~+0.8	330/360	2.50	±0.20	8.80	±0.20	0.50	★
RP3023300***2250088	30.2	+0.3~+0.8	330/360	2.50	±0.20	8.80	±0.20	0.50	★
RP3223300***2250088	32.2	+0.3~+0.8	330/360	2.50	±0.20	8.80	±0.20	0.50	★

● Customizable ★ In stock

LENGTH(mm)	TOL.(mm)
< 150	+0.5/+1.0
150≤L≤300	+1.0/+2.0
> 300	+2.0/+5.0

Services Available

h5/h6 Fixed Length

Grades Available

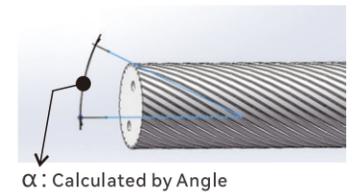
XR10ST XR10SD
XR12UF

Suitable for Diamond Tool Holders

DEEP HOLE DRILLING

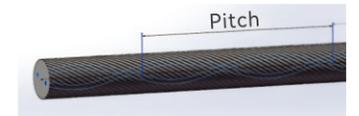
DEFINITION OF HELIX ANGLE

The acute angle between the tangent of the cylindrical helix and the directrix of the cylindrical surface passing through the point of tangency. It is commonly used to characterize the relationship between helix angle of coolant holes and the outer diameter of rod, in this case, as the outer diameter changes, the corresponding helix angle also changes.



DEFINITION OF PITCH

Pitch refers to the length required for inner hole to rotate 360°. The lead value is not related to the diameter of the rod.



RELATIONSHIP BETWEEN HELIX ANGLE AND PITCH

< Converting pitch to helix angle >

$$\alpha = \frac{180}{\pi} \times \arctan\left(\frac{D \times \pi}{P}\right)$$

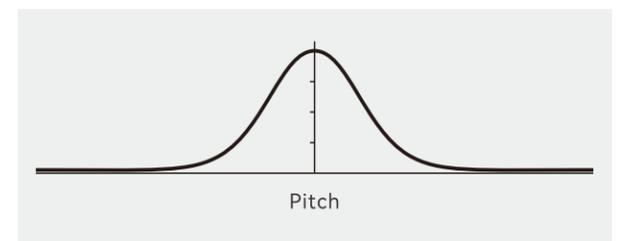
< Converting helix angle to pitch >

$$P = \frac{\pi \times D}{\tan \alpha}$$

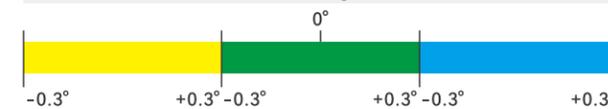
α : Helix Angle
P : Pitch
D : Diameter

CLASSIFICATION SYSTEM OF PITCH

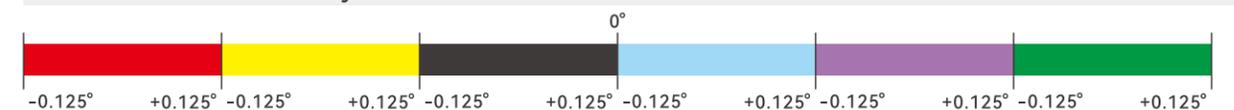
In order to ensure the pitch tolerance of the helix rod, the classification of pitch is based on the helix angle tolerance. In order to achieve the accuracy of pitch classification, the pitch of each helix rod is tested and then classified. Conventional helix rods use the Level 3 classification system for pitch categorization, while deep hole drilling (for helix rods with a diameter-to-length ratio greater than 15) uses a Level 6 classification system for pitch categorization;



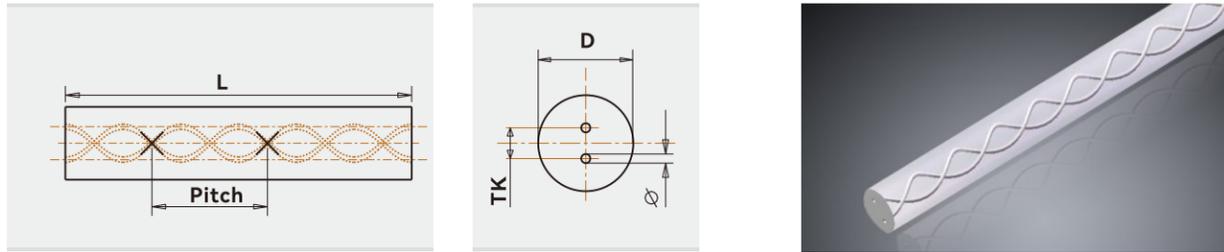
Level 3 Classification System



Level 6 Classification System



COOLANT RODS WITH 2 HOLES AND 30° HELIX



SN	DIAMETER(mm)		LENGTH (mm) (Tol.+2~+5)	HOLE DIAMETER (mm)		HOLE DISTANCE (mm)		PITCH(±0.5°)		ECCENTRICITY (mm) e≤	INVENTORY
	SINTERED	Tol.		d	ToI.	TK	ToI.	P	ToI.		
RH0333300***302040016	3.3	+0.3~+0.6	330	0.40	±0.10	1.60	±0.10	16.32	-0.32 +0.33	0.10	★
RH0433300***302060021	4.3	+0.3~+0.6	330	0.60	±0.10	2.10	±0.10	21.77	-0.43 +0.45	0.10	★
RH0533300***302070024	5.3	+0.3~+0.6	330	0.70	±0.15	2.40	±0.20	27.21	-0.54 +0.56	0.10	★
RH0633300***302070024	6.3	+0.3~+0.6	330/360	0.70	±0.15	2.40	±0.20	32.65	-0.65 +0.67	0.15	★
RH0733300***302100035	7.3	+0.3~+0.6	330	1.00	±0.15	3.50	±0.20	38.09	-0.76 +0.78	0.15	★
RH0833300***302100038	8.3	+0.4~+0.7	330/360	1.00	±0.15	3.80	±0.20	43.53	-0.86 +0.89	0.20	★
RH0933300***302140045	9.3	+0.4~+1.0	330	1.40	±0.15	4.50	±0.30	48.97	-0.97 +1.00	0.20	★
RH1033300***302140045	10.3	+0.4~+1.0	330/360/415	1.40	±0.15	4.50	±0.30	54.41	-1.08 +1.11	0.20	★
RH1133300***302140049	11.3	+0.4~+1.0	330	1.40	±0.15	4.90	±0.40	59.86	-1.19 +1.22	0.28	★
RH1233300***302140058	12.3	+0.4~+1.0	330/360/415	1.40	±0.15	5.85	±0.40	65.30	-1.30 +1.34	0.30	★
RH1333300***302175061	13.3	+0.4~+1.0	330	1.75	±0.20	6.10	±0.40	70.74	-1.40 +1.45	0.34	★
RH1433300***302175067	14.3	+0.4~+1.0	330/360/415	1.75	±0.20	6.70	±0.40	76.18	-1.51 +1.56	0.37	★
RH1533300***302175073	15.3	+0.4~+1.0	330	1.75	±0.20	7.30	±0.40	81.62	-1.62 +1.67	0.40	★
RH1633300***302175079	16.3	+0.5~+1.1	330/360/415	1.75	±0.20	7.90	±0.40	87.06	-1.73 +1.78	0.40	★
RH1733300***302175085	17.3	+0.5~+1.1	330	1.75	±0.20	8.50	±0.40	92.50	-1.84 +1.89	0.47	★
RH1833300***302200091	18.3	+0.6~+1.2	330/360/415	2.00	±0.25	9.15	±0.40	97.95	-1.94 +2.00	0.50	★
RH1933300***302200097	19.3	+0.6~+1.2	330	2.00	±0.25	9.70	±0.40	103.39	-2.05 +2.12	0.50	★
RH2033300***302200099	20.3	+0.6~+1.2	330/360/415	2.00	±0.25	9.90	±0.50	108.83	-2.16 +2.23	0.50	★
RH2133300***302200106	21.3	+0.6~+1.2	330	2.00	±0.25	10.65	±0.50	114.27	-2.27 +2.34	0.50	★
RH2233300***302200111	22.3	+0.7~+1.3	330/360/415	2.00	±0.25	11.10	±0.50	119.71	-2.38 +2.45	0.50	★
RH2333300***302200117	23.3	+0.7~+1.3	330	2.00	±0.25	11.70	±0.50	125.15	-2.45 +2.56	0.50	★
RH2433300***302200123	24.3	+0.7~+1.3	330	2.00	±0.25	12.30	±0.50	130.59	-2.59 +2.67	0.50	★
RH2533300***302200128	25.3	+0.7~+1.3	330/360/415	2.00	±0.25	12.80	±0.50	136.03	-2.70 +2.78	0.50	★
RH2633300***302200133	26.3	+0.7~+1.3	330/360	2.00	±0.25	13.30	±0.50	141.48	-2.81 +2.90	0.50	★
RH2833300***302250142	28.3	+0.7~+1.3	330/360	2.50	±0.25	14.20	±0.60	152.36	-3.02 +3.12	0.60	★
RH3033300***302250154	30.3	+0.7~+1.3	330/360	2.50	±0.25	15.40	±0.60	163.24	-3.24 +3.34	0.60	★
RH3233300***302300166	32.3	+0.7~+1.3	330/360	3.00	±0.30	16.60	±0.60	174.12	-3.46 +3.56	0.60	★

● Customizable ★ In stock

LENGTH(mm)	TOL.(mm)
< 150	+0.5/+1.0
150≤L≤300	+1.0/+2.0
> 300	+2.0/+5.0

Services Available

Fixed Length

Grades Available

XR10ST XR10SD+

COOLANT RODS WITH 2 CONSTRICTED HOLES AND 30° HELIX

SN	DIAMETER(mm)		LENGTH (mm) (Tol.+2~+5)	HOLE DIAMETER (mm)		HOLE DISTANCE (mm)		PITCH(±0.5°)		ECCENTRICITY (mm) e≤	INVENTORY
	SINTERED	Tol.		d	ToI.	TK	ToI.	P	ToI.		
RH0433300***302025012	4.3	+0.3~+0.6	330	0.25	±0.10	1.20	±0.10	21.77	-0.43 +0.45	0.10	★
RH0433300***302060016	4.3	+0.3~+0.6	330	0.60	±0.10	1.60	±0.10	21.77	-0.43 +0.45	0.10	★
RH0633300***302040014	6.3	+0.3~+0.6	330	0.40	±0.10	1.40	±0.20	32.65	-0.65 +0.67	0.15	★
RH0633300***302090026	6.3	+0.3~+0.6	330	0.90	±0.15	2.60	±0.20	32.65	-0.65 +0.67	0.15	★
RH0833300***302070024	8.3	+0.4~+0.7	330	0.70	±0.10	2.40	±0.20	43.53	-0.86 +0.89	0.20	★
RH0833300***302125036	8.3	+0.4~+0.7	330	1.25	±0.20	3.60	±0.20	59.90	-0.86 +0.89	0.20	★
RH1033300***302070026	10.3	+0.4~+1.0	330	0.70	±0.10	2.60	±0.30	54.41	-1.08 +1.11	0.20	★
RH1033300***302100038	10.3	+0.4~+1.0	330	1.00	±0.15	3.80	±0.30	54.41	-1.08 +1.11	0.20	★
RH1233300***302100038	12.3	+0.4~+1.0	330	1.00	±0.15	3.80	±0.40	65.30	-1.30 +1.34	0.30	★
RH1433300***302045025	14.3	+0.4~+1.0	330	0.45	±0.10	2.50	±0.20	67.39	-1.51 +1.56	0.37	●
RH1433300***302140043	14.3	+0.4~+1.0	330	1.40	±0.20	4.30	±0.40	76.18	-1.51 +1.56	0.37	★
RH1633300***302140049	16.3	+0.5~+1.1	330	1.40	±0.20	4.90	±0.40	87.06	-1.73 +1.78	0.40	★
RH1833300***302140059	18.3	+0.6~+1.2	330	1.40	±0.20	5.90	±0.40	97.95	-1.94 +2.00	0.50	★
RH2033300***302150066	20.3	+0.6~+1.2	330	1.50	±0.20	6.60	±0.50	108.83	-2.16 +2.23	0.50	★
RH2033300***302320099	20.3	+0.6~+1.2	330	3.20	±0.25	9.90	±0.50	74.88	-2.16 +2.23	0.50	●
RH2233300***302175067	22.3	+0.7~+1.3	330	1.75	±0.20	6.70	±0.50	119.71	-2.38 +2.45	0.50	★
RH2233300***302320099	22.3	+0.7~+1.3	330	3.20	±0.25	9.90	±0.50	82.37	-2.38 +2.45	0.50	●
RH2533300***302175067	25.3	+0.7~+1.3	330	1.75	±0.20	6.70	±0.50	136.03	-2.70 +2.78	0.50	★
RH2533300***302320140	25.3	+0.7~+1.3	330	3.20	±0.25	14.00	±0.50	93.60	-2.70 +2.78	0.50	●
RH2633300***302320133	26.3	+0.7~+1.3	330	3.20	±0.25	13.30	±0.50	97.34	-2.81 +2.90	0.50	●

● Customizable ★ In stock

COOLANT RODS WITH 3 HOLES AND 30° HELIX

SN	DIAMETER(mm)		LENGTH (mm) (Tol.+2~+5)	HOLE DIAMETER (mm)		HOLE DISTANCE (mm)		PITCH(±0.5°)		ECCENTRICITY (mm)		INVENTORY
	SINTERED	Tol.		d	ToI.	TK	ToI.	P	ToI.	e≤	α	
RH0633300***303050027	6.3	+0.3~+0.6	330	0.50	±0.10	2.75	±0.15	32.65	-0.65 +0.67	0.15	±4°	★
RH0833300***303070038	8.3	+0.4~+0.7	330	0.70	±0.10	3.85	±0.15	43.53	-0.86 +0.89	0.15	±4°	★
RH0933300***303085049	9.3	+0.4~+1.0	330	0.85	±0.15	4.95	±0.15	48.97	-0.97 +1.00	0.20	±4°	★
RH1033300***303085049	10.3	+0.4~+1.0	330	0.85	±0.15	4.95	±0.15	54.41	-1.08 +1.11	0.20	±4°	★
RH1233300***303110060	12.3	+0.4~+1.0	330	1.10	±0.15	6.05	±0.25	65.30	-1.30 +1.34	0.30	±4°	★
RH1433300***303140070	14.3	+0.4~+1.0	330	1.40	±0.20	7.05	±0.25	76.18	-1.51 +1.56	0.37	±4°	★
RH1633300***303160080	16.3	+0.5~+1.1	330	1.60	±0.20	8.05	±0.25	87.06	-1.73 +1.78	0.40	±4°	★
RH1833300***303170092	18.3	+0.6~+1.2	330	1.70	±0.20	9.25	±0.25	97.95	-1.94 +2.00	0.50	±4°	★
RH2033300***303190099	20.3	+0.6~+1.2	330	1.90	±0.20	9.95	±0.25	108.83	-2.16 +2.23	0.50	±4°	★
RH2233300***303200111	22.3	+0.7~+1.3	330	2.00	±0.20	11.15	±0.35	119.71	-2.38 +2.45	0.50	±4°	★
RH2333300***303200114	23.3	+0.7~+1.3	330	2.00	±0.20	11.45	±0.35	125.15	-2.45 +2.56	0.50	±4°	★
RH2533300***303200121	25.3	+0.7~+1.3	330	2.00	±0.20	12.15	±0.35	136.03	-2.70 +2.78	0.50	±4°	★
RH2633300***303200127	26.3	+0.7~+1.3	330	2.00	±0.20	12.75	±0.35	141.48	-2.81 +2.90	0.50	±4°	★
RH2833300***303250136	28.3	+0.7~+1.3	330	2.50	±0.25	13.65	±0.45	152.36	-3.02 +3.12	0.60	±4°	★
RH3033300***303250145	30.3	+0.7~+1.3	330	2.50	±0.25	14.50	±0.60	163.24	-3.24 +3.34	0.60	±4°	★
RH3233300***303300155	32.3	+0.7~+1.3	330	3.00	±0.30	15.50	±0.60	174.12	-3.46 +3.56	0.60	±4°	★

● Customizable ★ In stock

LENGTH(mm)	TOL.(mm)
< 150	+0.5/+1.0
150≤L≤300	+1.0/+2.0
> 300	+2.0/+5.0

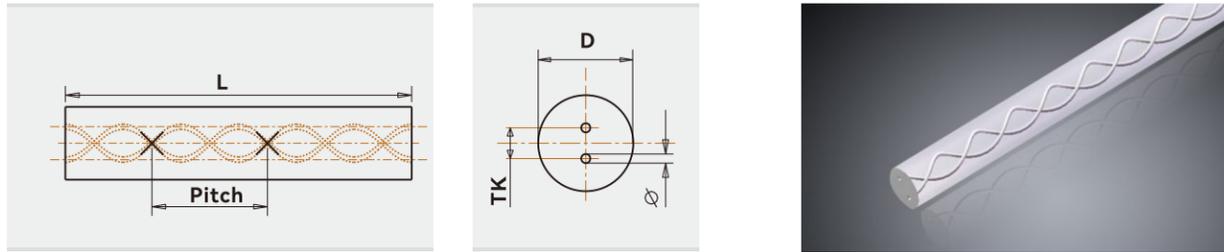
Services Available

h5/h6 Fixed Length

Grades Available

XR10SD+

COOLANT RODS WITH 2 HOLES AND 40° HELIX



SN	DIAMETER(mm)		LENGTH (mm) (Tol.+2~+5)	HOLE DIAMETER (mm)		HOLE DISTANCE (mm)		PITCH(±0.5°)		ECCENTRICITY (mm)		INVENTORY
	SINTERED	Tol.		d	Tol.	TK	Tol.	P	Tol.	e≤	α	
RH0443300***402040016	4.4	+0.4~+1.0	330	0.40	±0.10	1.60	±0.10	14.98	-0.26	+0.27	0.10	★
RH0643300***402050020	6.4	+0.4~+1.0	330	0.50	±0.10	2.00	±0.20	22.46	-0.39	+0.40	0.15	★
RH0843300***402065024	8.4	+0.4~+1.0	330	0.65	±0.10	2.40	±0.20	29.95	-0.53	+0.54	0.15	★
RH1043300***402080032	10.4	+0.4~+1.0	330	0.80	±0.15	3.20	±0.30	37.44	-0.66	+0.67	0.20	★
RH1243300***402090038	12.4	+0.4~+1.0	330	0.90	±0.15	3.80	±0.40	44.93	-0.79	+0.80	0.30	★
RH1443300***402100043	14.4	+0.5~+1.1	330	1.00	±0.15	4.30	±0.40	52.42	-0.92	+0.94	0.37	★
RH1643300***402120051	16.4	+0.5~+1.1	330	1.20	±0.15	5.10	±0.40	59.90	-1.05	+1.07	0.40	★
RH1843300***402140059	18.4	+0.5~+1.1	330	1.40	±0.15	5.90	±0.40	67.39	-1.18	+1.21	0.50	★
RH2043300***402150066	20.4	+0.5~+1.1	330	1.50	±0.15	6.60	±0.50	74.88	-1.31	+1.34	0.50	★
RH2243300***402170072	22.4	+0.6~+1.2	330	1.70	±0.20	7.20	±0.50	82.37	-1.44	+1.48	0.50	★
RH2543300***402175076	25.4	+0.6~+1.2	330	1.75	±0.20	7.60	±0.50	93.60	-1.64	+1.68	0.50	★
RH2643300***402175077	26.4	+0.7~+1.3	330	1.75	±0.20	7.70	±0.50	97.34	-1.71	+1.74	0.50	●
RH2843300***402200084	28.4	+0.7~+1.3	330	2.00	±0.20	8.40	±0.60	104.83	-1.84	+1.88	0.50	●
RH3043300***402200094	30.4	+0.7~+1.3	330	2.00	±0.20	9.40	±0.60	112.32	-1.97	+2.01	0.50	●
RH3243300***402200104	32.4	+0.7~+1.3	330	2.00	±0.20	10.40	±0.60	119.81	-2.10	+2.15	0.50	●

● Customizable ★ In stock

COOLANT RODS WITH 2 CONSTRICTED HOLES AND 40° HELIX

SN	DIAMETER(mm)		LENGTH (mm) (Tol.+2~+5)	HOLE DIAMETER (mm)		HOLE DISTANCE (mm)		PITCH(±0.5°)		ECCENTRICITY (mm)		INVENTORY
	SINTERED	Tol.		d	Tol.	TK	Tol.	P	Tol.	e≤	α	
RH0643300***402040014	6.4	+0.4~+1.0	330	0.40	±0.10	1.40	±0.10	22.46	-0.39	+0.40	0.15	★
RH0843300***402040017	8.4	+0.4~+1.0	330	0.40	±0.10	1.70	±0.10	29.95	-0.53	+0.54	0.15	★
RH1043300***402050020	10.4	+0.4~+1.0	330	0.50	±0.15	2.00	±0.20	37.44	-0.66	+0.67	0.20	★
RH1243300***402060023	12.4	+0.4~+1.0	330	0.60	±0.15	2.30	±0.20	44.93	-0.79	+0.80	0.30	★
RH1443300***402070027	14.4	+0.5~+1.1	330	0.70	±0.15	2.70	±0.20	52.42	-0.92	+0.94	0.37	★
RH1643300***402080031	16.4	+0.5~+1.1	330	0.80	±0.15	3.10	±0.20	59.90	-1.05	+1.07	0.40	★
RH1843300***402090035	18.4	+0.5~+1.1	330	0.90	±0.15	3.50	±0.30	67.39	-1.18	+1.21	0.50	★
RH2043300***402100039	20.4	+0.5~+1.1	330	1.00	±0.15	3.90	±0.30	74.88	-1.31	+1.34	0.50	★

● Customizable ★ In stock

LENGTH(mm)	TOL.(mm)
< 150	+0.5/+1.0
150≤L≤300	+1.0/+2.0
> 300	+2.0/+5.0

Services Available
h5/h6 Fixed Length

Grades Available
XR10SD+

COOLANT RODS WITH 3 HOLES AND 40° HELIX

SN	DIAMETER(mm)		LENGTH (mm) (Tol.+2~+5)	HOLE DIAMETER (mm)		HOLE DISTANCE (mm)		PITCH(±0.5°)		ECCENTRICITY (mm)		INVENTORY	
	SINTERED	Tol.		d	Tol.	TK	Tol.	P	Tol.	e≤	α		
RH0643300***403050022	6.4	+0.4~+1.0	330	0.50	±0.10	2.20	±0.10	22.46	-0.39	+0.40	0.15	±4°	★
RH0843300***403065026	8.4	+0.4~+1.0	330	0.65	±0.10	2.60	±0.15	29.95	-0.53	+0.54	0.15	±4°	★
RH1043300***403080033	10.4	+0.4~+1.0	330	0.80	±0.15	3.35	±0.15	37.44	-0.66	+0.67	0.20	±4°	★
RH1243300***403090040	12.4	+0.4~+1.0	330	0.90	±0.15	4.00	±0.20	44.93	-0.79	+0.80	0.30	±4°	★
RH1443300***403100045	14.4	+0.5~+1.1	330	1.00	±0.15	4.50	±0.20	52.42	-0.92	+0.94	0.37	±4°	★
RH1643300***403120053	16.4	+0.5~+1.1	330	1.20	±0.15	5.30	±0.20	59.90	-1.05	+1.07	0.40	±4°	★
RH1843300***403140059	18.4	+0.5~+1.1	330	1.40	±0.15	5.90	±0.30	67.39	-1.18	+1.21	0.50	±4°	★
RH2043300***403150066	20.4	+0.5~+1.1	330	1.50	±0.15	6.60	±0.30	74.88	-1.31	+1.34	0.50	±4°	★
RH2243300***403170073	22.4	+0.6~+1.2	330	1.70	±0.20	7.35	±0.35	82.37	-1.44	+1.48	0.50	±4°	●
RH2543300***403175076	25.4	+0.6~+1.2	330	1.75	±0.20	7.65	±0.45	93.60	-1.64	+1.68	0.50	±4°	●
RH2643300***403175077	26.4	+0.7~+1.3	330	1.75	±0.20	7.75	±0.45	97.34	-1.71	+1.74	0.50	±4°	●
RH2843300***403200085	28.4	+0.7~+1.3	330	2.00	±0.20	8.55	±0.45	104.83	-1.84	+1.88	0.50	±4°	●
RH3043300***403200094	30.4	+0.7~+1.3	330	2.00	±0.20	9.45	±0.55	112.32	-1.97	+2.01	0.50	±4°	●
RH3243300***403200104	32.4	+0.7~+1.3	330	2.00	±0.20	10.45	±0.55	119.81	-2.10	+2.15	0.50	±4°	●

● Customizable ★ In stock

COOLANT RODS WITH 2 HOLES AND NON-STANDARD HELIX

SN	DIAMETER(mm)		LENGTH (mm) (Tol.+2~+5)	HOLE DIAMETER (mm)		HOLE DISTANCE (mm)		HELIX ANGLE	PITCH(±0.5°)		ECCENTRICITY (mm)		INVENTORY
	SINTERED	Tol.		d	Tol.	TK	Tol.		P	Tol.	e≤	α	
RH0633300***152070026	6.3	+0.4~+1.0	330	0.70	±0.15	2.60	±0.20	15	70.35	-2.38	+2.54	0.15	★
RH1433300***152190067	14.3	+0.7~+1.3	330	1.90	±0.20	6.70	±0.40	15	164.14	-5.55	+5.92	0.37	★
RH1633300***152210080	16.3	+0.7~+1.3	330	2.10	±0.25	8.00	±0.40	15	187.59	-6.34	+6.77	0.40	★
RH1833300***152230090	18.3	+0.7~+1.3	330	2.30	±0.25	9.00	±0.40	15	211.04	-7.13	+7.61	0.50	★
RH2033300***152250100	20.3	+0.7~+1.3	330	2.50	±0.25	10.00	±0.50	15	234.49	-7.93	+8.46	0.50	★
RH0433300***352040017	4.3	+0.7~+1.3	330	0.40	±0.10	1.75	±0.10	35	17.95	-0.33	+0.34	0.10	★
RH0433300***462030010	4.3	+0.7~+1.3	330	0.30	±0.10	1.00	±0.10	46.3	12.01	-0.21	+0.21	0.10	★
RH0433300***602016007	4.3	+0.7~+1.3	330	0.16	±0.05	0.75	±0.05	60	7.26	-0.15	+0.15	0.10	★
RH0433300***602023008	4.3	+0.7~+1.3	330	0.23	±0.05	0.80	±0.10	60	7.26	-0.15	+0.15	0.10	★
RH0633300***432060016	6.3	+0.7~+1.3	330	0.60	±0.10	1.60	±0.10	43	20.21	-0.35	+0.36	0.15	★
RH0633300***462050017	6.3	+0.7~+1.3	330	0.50	±0.10	1.70	±0.10	46	18.20	-0.32	+0.32	0.15	★
RH0833300***362100034	8.3	+0.7~+1.3	330	1.00	±0.15	3.40	±0.20	36	34.59	-0.63	+0.64	0.20	★
RH1033300***342115044	10.3	+0.7~+1.3	330	1.15	±0.15	4.40	±0.20	34.3	46.05	-0.85	+0.87	0.20	★

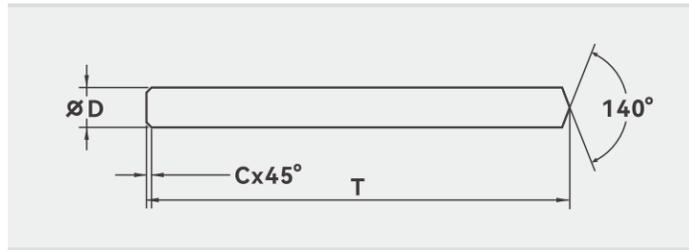
● Customizable ★ In stock

LENGTH(mm)	TOL.(mm)
< 150	+0.5/+1.0
150≤L≤300	+1.0/+2.0
> 300	+2.0/+5.0

Services Available
h5/h6 Fixed Length

Grades Available
XR10SD+

● DRILL BLANKS WITH CHAMFERED ONE END



● WITHOUT COOLING CHANNELS

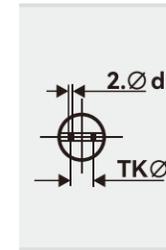
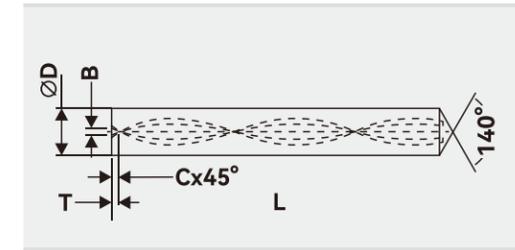
DIAMETER (mm)		LENGTH		CHAMFER ANGLE	CHAMFER DIMENSION (mm)	TIP ANGLE	INVENTORY
GROUND	Tol.	L (mm)	Tol. (mm)				
6.0	h5	66	+0~+0.5	45°±3°	0.6±0.1	140°(0°~+2°)	★
6.0	h5	82	+0~+0.5	45°±3°	0.6±0.1	140°(0°~+2°)	★
8.0	h5	80	+0~+0.5	45°±3°	0.6±0.1	140°(0°~+2°)	★
8.0	h5	92	+0~+0.5	45°±3°	0.6±0.1	140°(0°~+2°)	★
10.0	h5	90	+0~+0.5	45°±3°	0.6±0.1	140°(0°~+2°)	★
10.0	h5	104	+0~+0.5	45°±3°	0.6±0.1	140°(0°~+2°)	★
12.0	h5	103	+0~+0.5	45°±3°	0.8±0.1	140°(0°~+2°)	★
12.0	h5	119	+0~+0.5	45°±3°	0.8±0.1	140°(0°~+2°)	★
14.0	h5	108	+0~+0.5	45°±3°	0.8±0.1	140°(0°~+2°)	★
14.0	h5	125	+0~+0.5	45°±3°	0.8±0.1	140°(0°~+2°)	★
16.0	h5	115	+0~+0.5	45°±3°	0.8±0.1	140°(0°~+2°)	★
16.0	h5	133	+0~+0.5	45°±3°	0.8±0.1	140°(0°~+2°)	★
18.0	h5	124.5	+0~+0.5	45°±3°	0.8±0.1	140°(0°~+2°)	★
18.0	h5	144.5	+0~+0.5	45°±3°	0.8±0.1	140°(0°~+2°)	★
20.0	h5	133	+0~+0.5	45°±3°	1.0±0.1	140°(0°~+2°)	★
20.0	h5	155	+0~+0.5	45°±3°	1.0±0.1	140°(0°~+2°)	★

● Customizable ★ In stock

Services Available **Grades Available**

h5/h6 XR10ST XR10SD+

Customization of Tip Angle from 120° to 150°



● WITH HELICAL COOLING CHANNELS AND CONNECTION SLOT

DIAMETER (mm)		LENGTH		SLOT WIDTH (mm)	SLOT DEPTH (mm)	CHAMFER ANGLE	CHAMFER DIMENSION (mm)	TIP ANGLE	HOLE DIAMETER (mm)	HOLE DISTANCE (mm)	PITCH (±0.5°)		ECCENTRICITY (mm)
GROUND	Tol.	L (mm)	Tol. (mm)						d	TK	P	Tol.	e≤
6.0	h5	66	+0~+0.5	1.5±0.2	0.9(0.0~+0.4)	45°±3°	0.5±0.1	140°(0°~+2°)	0.70	2.40	32.65	-0.65 +0.67	0.15
6.0	h5	82	+0~+0.5	1.5±0.2	0.9(0.0~+0.4)	45°±3°	0.5±0.1	140°(0°~+2°)	0.70	2.40	32.65	-0.65 +0.67	0.15
8.0	h5	80	+0~+0.5	2.0±0.2	1.4(0.0~+0.4)	45°±3°	0.6±0.1	140°(0°~+2°)	1.00	3.80	43.53	-0.86 +0.89	0.15
8.0	h5	92	+0~+0.5	2.0±0.2	1.4(0.0~+0.4)	45°±3°	0.6±0.1	140°(0°~+2°)	1.00	3.80	43.53	-0.86 +0.89	0.15
10.0	h5	90	+0~+0.5	2.5±0.2	1.65(0.0~+0.4)	45°±3°	0.6±0.1	140°(0°~+2°)	1.40	4.50	54.41	-1.08 +1.11	0.20
10.0	h5	104	+0~+0.5	2.5±0.2	1.65(0.0~+0.4)	45°±3°	0.6±0.1	140°(0°~+2°)	1.40	4.50	54.41	-1.08 +1.11	0.20
12.0	h5	103	+0~+0.5	2.5±0.2	1.75(0.0~+0.4)	45°±3°	0.8±0.1	140°(0°~+2°)	1.40	5.85	65.30	-1.30 +1.34	0.30
12.0	h5	108	+0~+0.5	2.5±0.2	1.75(0.0~+0.4)	45°±3°	0.8±0.1	140°(0°~+2°)	1.40	5.85	65.30	-1.30 +1.34	0.30
14.0	h5	108	+0~+0.5	3.0±0.2	2.15(0.0~+0.4)	45°±3°	0.8±0.1	140°(0°~+2°)	1.75	6.70	76.18	-1.51 +1.56	0.37
14.0	h5	125	+0~+0.5	3.0±0.2	2.15(0.0~+0.4)	45°±3°	0.8±0.1	140°(0°~+2°)	1.75	6.70	76.18	-1.51 +1.56	0.37
16.0	h5	115	+0~+0.5	3.0±0.2	2.3(0.0~+0.4)	45°±3°	0.8±0.1	140°(0°~+2°)	1.75	7.90	87.06	-1.73 +1.78	0.40
16.0	h5	133	+0~+0.5	3.0±0.2	2.3(0.0~+0.4)	45°±3°	0.8±0.1	140°(0°~+2°)	1.75	7.90	87.06	-1.73 +1.78	0.40
18.0	h5	124.5	+0~+0.5	3.5±0.2	2.5(0.0~+0.4)	45°±3°	0.8±0.1	140°(0°~+2°)	2.00	9.15	97.95	-1.94 +2.00	0.50
18.0	h5	144.5	+0~+0.5	3.5±0.2	2.5(0.0~+0.4)	45°±3°	0.8±0.1	140°(0°~+2°)	2.00	9.15	97.95	-1.94 +2.00	0.50
20.0	h5	133	+0~+0.5	3.5±0.2	2.7(0.0~+0.4)	45°±3°	1.0±0.1	140°(0°~+2°)	2.00	9.90	108.83	-2.16 +2.23	0.50
20.0	h5	155	+0~+0.5	3.5±0.2	2.7(0.0~+0.4)	45°±3°	1.0±0.1	140°(0°~+2°)	2.00	9.90	108.83	-2.16 +2.23	0.50

● Customizable ★ In stock

Services Available **Grades Available**

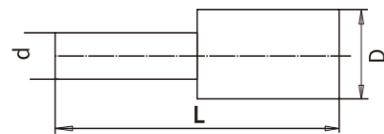
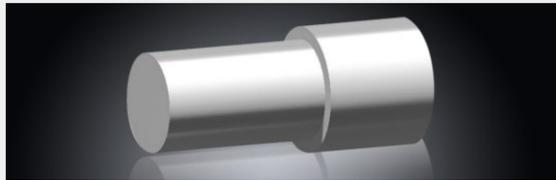
h5/h6 XR10ST XR10SD+

Customization of Tip Angle from 120° to 150°

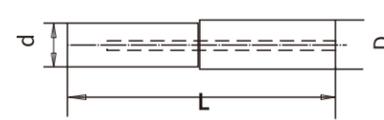
● PREFORMS

- Customization of Length from 20-130mm
- Back diameter below 40mm and thickness above 3mm Front diameter above 10mm
- Any customized products can be produced within 7-10 days (both internal and external point ends are customizable)

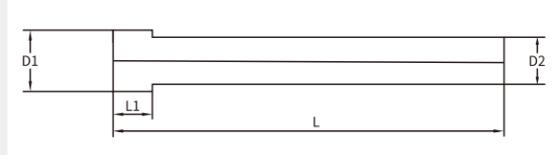
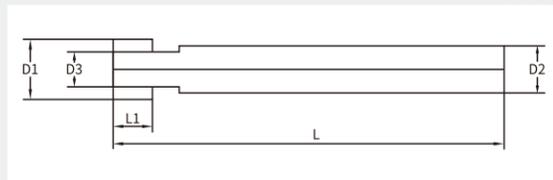
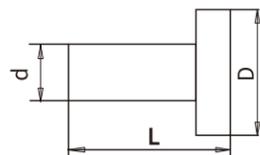
● STEP ROD



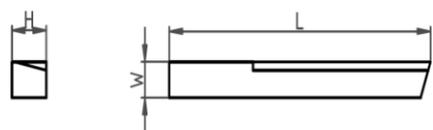
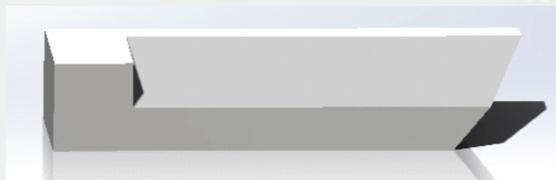
● BLIND HOLE STEP ROD



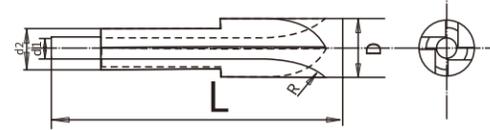
● T-SHAPED ROD



● CUTTING BLADE



● PRE-FORMED TOOL BLANKS



GEAR HOBS ●

HOLE TYPE HOB	<ul style="list-style-type: none"> The number and angle of the grooves can be customized. (also unslotted) The chamfer of bore can be customized. (single 45°, double 45°, sinking chamfer, etc.) 		SHANK TYPE HOB	<ul style="list-style-type: none"> Various shank type hobs with or without grooves The center holes at both ends can be customized, including the standard (A, B, partial C) and non-standard. Various shank tapers can be machined. Locking groove and keyway can be machined. 	
	<ul style="list-style-type: none"> Positive or negative front angles of hobs can be customized. (Negative front angle as shown) 			<ul style="list-style-type: none"> Outer diameter, length, number of teeth and angle can be customized. 	
	<ul style="list-style-type: none"> Helix grooves can be customized. 			<ul style="list-style-type: none"> The shank type hob with BT handle as shown, handle threads and US threads can be machined. M6 or higher can meet 6H go-no go fixed gauges inspection. 	
MILLING INSERT	<ul style="list-style-type: none"> Worm and worm milling cutter. Foil products with multiple grooves. Both side steps can be customized. 		BOWL-SHAPED PINION CUTTER	<ul style="list-style-type: none"> Front and rear angles can be machined. Chamfer protection for non-working surface. The yield groove can be machined on the inner support surface. 	
	KEY BROACH	<ul style="list-style-type: none"> Periodic grooves can be machined to minimize accumulated tolerance. 			TAPER SHAFTED CUTTER
<ul style="list-style-type: none"> Spot facer can be machined. 			<ul style="list-style-type: none"> The internal threads machined in tail, and M6 or higher can meet 6H go-no go fixed gauges inspection. US threads can be machined. 		

Production can be customized according to the customer drawings.

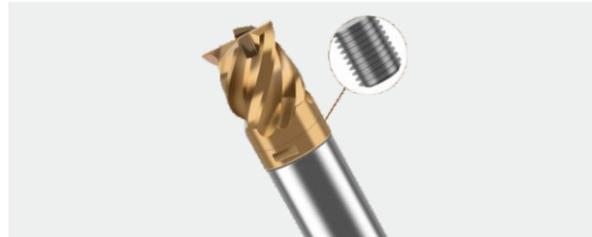
CUSTOMIZED PRODUCTS

Customizable according to customer drawing

Replaceable Carbide Drill Heads



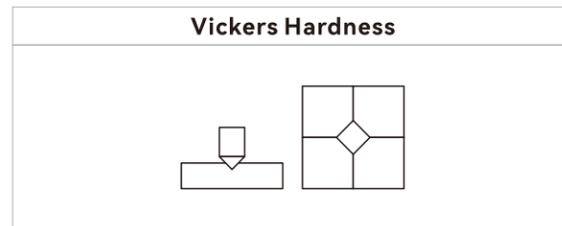
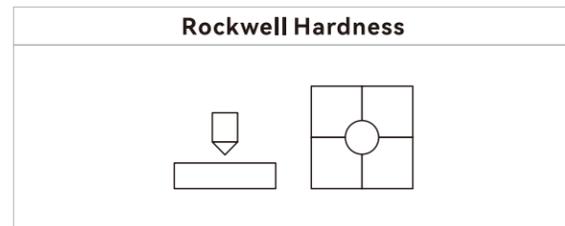
Replaceable Carbide Endmill Heads



PERFORMANCE CHARACTERIZATION OF CARBIDE MATERIALS

1. Hardness (ISO3738 and IOS3878)

Hardness refers to the ability of the material to resist local deformation. The common method of hardness determination for cemented carbide is Rockwell hardness and Vickers hardness testing, with units of HRA (60kg load) and HV30 (30kg load), respectively. Due to the different measurement techniques, the two hardness values shall be converted according to the reference table for the measured materials.



2. Fracture Toughness

Fracture toughness (KIC) refers to the material's ability to resist the unstable propagation of internal cracks. Its magnitude depends on intrinsic factors such as the material composition and structure, and it characterizes the overall performance of the material.

3. Transverse Rupture Strength (ISO3327)

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

INTRODUCTION TO POST-PROCESSING

Shareate has consistently been providing high-quality carbide products that meet your high expectations. In addition to carbide products, we offer a range of post-processing services, including rods with various geometries and dimensions, fully catering to the needs of customers and the tool market. Simply provide the drawings, and Shareate's advanced manufacturing capabilities and versatile shape processing technology will allow us to respond to your needs promptly.

ICON	SERVICE	DESCRIPTION
	Cut to size	Provide rod cutting service of any length.
h5/h6	Ground to h5/h6	Ground to h5/h6 or other tolerance according to the drawing.
	Chamfering	Offer the service of chamfering to improve your processing efficiency.
	Step Making	Provide service of shape modification for large outside diameter or high segment difference to reduce grinding time.
	Groove Making	Make various of standard grooves.
Fixed Length	Customized Length	Provide rods with any customized lengths.

TECHNICAL DOCUMENTATION

TECHNICAL INFORMATION

	Outer Diameter Outer diameter of the measured rod.		Ovality Ovality is the radial distance between two concentric circles, including the circumference of the section of rod.
	Length Length of the measured rod.		Hole Diameter Diameter of cooling hole.
	Surface Finish Surface quality of rod is usually expressed in terms of the maximum average finish Ra.		Eccentricity The eccentricity refers to the deviation between the rod center and the center of the pitch circle formed by inner holes. For coolant rods with central hole, the eccentricity refers to the deviation between the rod center and the center of the inner hole.
	Straightness Maximum curvature of a rotating rod which placed on two support points.		Helix Angle Helix angle refers to the angle between the longitudinal center line and helix line of the rod.
	Concentricity Maximum curvature of rod.		Cylindricity The deviation between the surface of the rod and an ideal standard cylinder.
	Hole Distance TK The hole distance refers to the diameter of a circle formed by passing through the centers of two or three internal cooling holes.		Pitch Deviation The half-section surface of the coolant rods with 3 holes will be divided into three sectors by inner cooling hole, and the boundary of each sector just passes through the center of the inner hole. The pitch error is the deviation between the angles of these three sectors.

● TOLERANCE GRADE

● OUTER DIAMETER TOLERANCE AFTER GRINDING

OUTER DIAMETER	h3	h4	h5	h6
0~3.0mm	0.002mm	0.003mm	0.004mm	0.006mm
3.001~6.0mm	0.0025mm	0.004mm	0.005mm	0.008mm
6.001~10.0mm	0.0025mm	0.004mm	0.006mm	0.009mm
10.001~18.0mm	0.003mm	0.005mm	0.008mm	0.011mm
18.001~30.0mm	0.004mm	0.006mm	0.009mm	0.013mm
30.001~50.0mm	0.004mm	0.007mm	0.011mm	0.016mm

* All tolerance of "h" is +0.0/-.

● SURFACE ROUGHNESS OF ROD

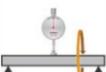
TYPE	ACCURACY
High Polished Ground Rod	0.00~0.02 μ m
Mirror Polished Ground Rod	0.00~0.05 μ m
Standard Ground Rod	0.00~0.12 μ m
Matte Ground Rod	0.10~0.20 μ m

● OVALITY TOLERANCE

OUTER DIAMETER	OVALITY
0~16.0mm	0.00~0.0015mm
16.001~30.0mm	0.00~0.0020mm

● RUNOUT STANDARDS

LENGTH DIAMETER	RUNOUT TOLERANCE OF SHORT GROUND ROD						RUNOUT TOLERANCE OF LONG GROUND ROD	
	0 < L \leq 50	50 < L \leq 80	80 < L \leq 100	100 < L \leq 120	120 < L \leq 150	150 < L \leq 200	200 < L \leq 260	260 < L \leq 330
3 \leq D < 4	0.005	0.007	0.010	/	/	/	/	/
4 \leq D < 6	0.003	0.003	0.005	0.008	0.015	0.020	0.050	0.100
6 \leq D < 8	0.003	0.003	0.005	0.008	0.010	0.015	0.040	0.080
8 \leq D < 10	0.003	0.003	0.005	0.008	0.010	0.015	0.030	0.060
10 \leq D < 16	0.003	0.003	0.005	0.005	0.008	0.010	0.020	0.050
16 \leq D < 25	0.003	0.003	0.005	0.005	0.008	0.010	0.020	0.040
25 \leq D < 32	0.003	0.003	0.005	0.005	0.008	0.010	0.020	0.030

Measurement Method	Measure the runout of one end	Measure the runout of midsection
		

QUALITY WINS RESPECT

SHAREATE