



## **Ganzhou Rely Cutting Tools Co., Ltd.**

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# Metalworking Catalogue

# Manufacturing Process

## 01 Grade Design



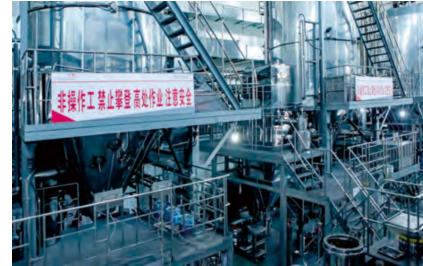
RELY grades are designed upon application. Our process start with powder mixing. Raw materials includes WC, Co and other elements.

## 02 RTP Ball milling



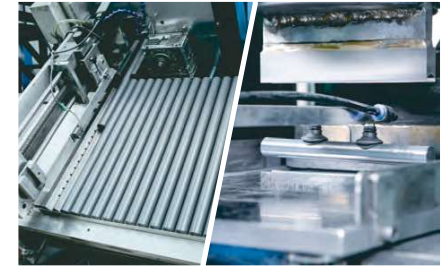
Wide variety of RELY designed grades from superfine to coarse grain size are available. Grades with different grain size are ball-milled, sieved, granulated in separated systems to avoid grain contamination.

## 03 Spray Drying



Spray drying process makes the powder into superior homogeneous particle sizes with good flowability and as a result, the dimension variation on sintered blank is much smaller.

## 04 Extrusion / Direct Pressing



The rods with or without axial holes, including helical types, are formed by extrusion pressing. Our automatic extrusion systems and technical know-how helps to achieve consistent geometries. For standard fixed length solid rods, it can also be formed by automatic direct pressing, which is with high efficiency.

## 05.1 Preforming



Turning, milling, drilling, cutting can be applied on green blanks in order to pre-form the part to net shape according to customer's drawing, which can greatly enhance customer's productivity for special and complicated tools.

## 05.2 Drying Process



This process removes the plasticizer in the rod blanks using a vacuum drying furnace.

## 06 Sintering



Green blanks are sintered at temperature around 1400 °C (cobalt melting) to become super hard and tough. RELY utilizes HIP (hot isostatic pressure) sintering furnace which gives carbide maximum toughness to meet the most critical working applications.

## 07 Machining



Most of the rod blanks need to be centerless ground, to achieve precision tolerances h6/h5. In addition, length cutting, chamfer, slot, cylindrical grinding service can be offered upon customer request.

## 08 Inspection

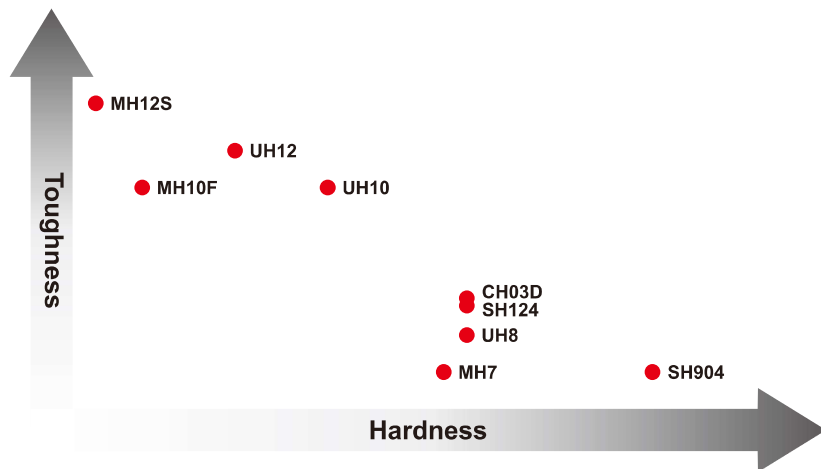


The key properties are monitored from raw material, RTP and raw sintered parts in our laboratory for quality and performance guarantee. Diameter, roundness, run-out, roughness, pitch, TK, concentricity, inspection will be done before the parts are shipped to the customer.

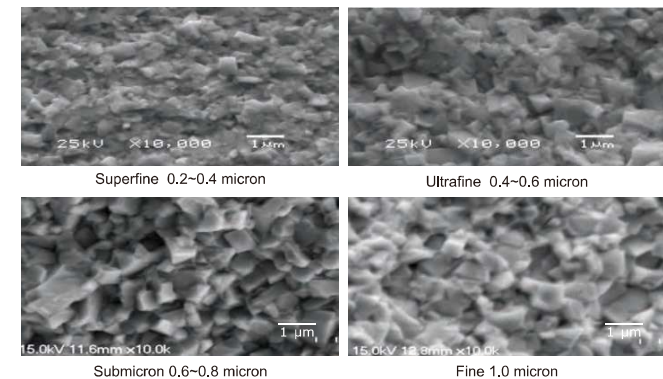
# Grade Chart Of Carbide Rods

Grades	Binder %	Hardness		T.R.S	Density	K <sub>IC</sub>	Grain Size	ISO Code	Application
		HRA	HV10	≥N/mm <sup>2</sup>	g/cm <sup>3</sup>	MPa·m <sup>1/2</sup>			
SH904	9.0	94.0	2040	4000	14.45	8.5	Superfine	K30	Made of superfine grain size 0.2~0.4 um, high wear resistance and impact strength for meeting the most critical cutting challenges in composite materials including CFRP, graphite and hardened steels > 60 HRC.
SH124	12.0	93.2	1860	4000	14.05	9.4	Superfine	K40	Superfine grade with high hardness and T.R.S for machining of tempered steels and titanium alloys, suitable for finishing tools.
UH8	8.0	93.2	1860	3300	14.60	9.0	Ultrafine	K20	Ultrafine carbide grade with high hardness suitable for machining hardened materials (50-60HRC) and high performance machining of non-ferrous metals such as aluminum.
UH10	10.0	92.6	1740	3800	14.35	11.0	Ultrafine	K30	Good wear resistance and toughness gives high performance for cutting stainless steel, heat resistant alloy, cast iron.
UH12	12.0	92.2	1660	4000	14.15	11.5	Ultrafine	K40	Gives high impact strength while maintaining excellent wear resistance. A universal grade for cutting Stainless Steel, Titanium Alloys, Nickel base alloy and other difficult-to-machine materials.
MH7	6.0	93.1	1850	3600	14.85	8.5	Submicron	K10	A grade with high wear resistance for machining aluminum alloys, graphite, composite materials. Suitable for diamond coating.
MH10F	10.0	91.8	1600	3800	14.45	11.0	Submicron	K30	An excellent general purpose grade to cover most of the cutting applications for materials of ISO P, M, K, N.
MH12S	12.0	91.6	1580	4100	14.15	12.5	Submicron	K40	Designed with high fracture toughness while remaining good hardness which assures excellent edge toughness that extends tool life. Suitable for roughing and semi-finishing of stainless steel and titanium alloy.
CH03D	3.0	93.2	1860	1800	15.25	9.5	Fine	K05	High performance grade for diamond coated tools, which is used for machining graphite, composite materials, CFRP.

● Above data are typical parameters.



Microstructure SEM 10,000 X



# Application Recommendation

Cutting Style		UH12	MH10F	SH904
Drilling		✓	✓	✓
Milling	Roughing		✓	
	Finishing	✓	✓	✓
Reaming			✓	
Hobbing		✓	✓	

ISO Workpiece Material	Typical Materials	UH12	MH10F	SH904
P	Carbon Steel	☆	★	
	Common Alloy Steel	☆	★	
	High Alloy Steel HRC < 45	★	★	
M	Stainless Steel	★	★	
K	Cast Iron	☆	★	
S	Titanium Alloy	★	☆	
	Nickel Base Alloy	★	☆	
H	Tempered steel			
	Hardened Steel			★
N	Aluminum Alloys		★	
Others	Graphite			★
	Composite Material			★
Diamond Coating				

● Grade application recommendation data is for reference only .  
 ★ First Choice ☆ Second Choice

D: Diamond coating needed

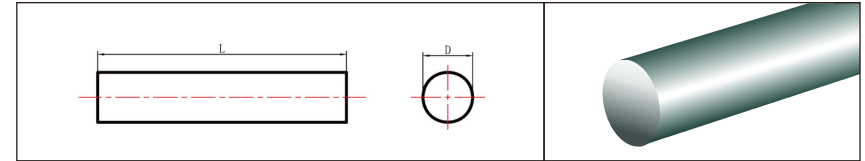
SH124	UH8	UH10	MH7	MH12S	CH03D
		✓	✓		✓ <sub>D</sub>
	✓			✓	
✓	✓	✓			✓ <sub>D</sub>
			✓		
	✓				

SH124	UH8	UH10	MH7	MH12S	CH03D
		☆		★	
		☆			
★		☆		★	
★				★	
★					
	☆				
	★		☆		
	★		★		✓ <sub>D</sub>
	★		★		✓ <sub>D</sub>
			★		★

● Cutting Tool geometries, Tool coatings, and Machining factors, will also influence Tool performance.  
 ★ First Choice ☆ Second Choice



## Precision Ground Rod, Random Lengths



Type: RSI      Grade: MH10F  
 Inch Sizes 1/8" to 1-1/4" Diameter  
 h6 tolerance

Item No.	OD		Tol. h6	L	Tol.
	(inch)		(inch)	(inch)	(inch)
RSI-01250-1300DG	0.125	1/8	0/-0.00031	13	0/+0.25
RSI-01406-1300DG	0.140625	9/64	0/-0.00031	13	0/+0.25
RSI-01563-1300DG	0.15625	5/32	0/-0.00031	13	0/+0.25
RSI-01719-1300DG	0.171875	11/64	0/-0.00031	13	0/+0.25
RSI-01875-1300DG	0.1875	3/16	0/-0.00031	13	0/+0.25
RSI-02031-1300DG	0.203125	13/64	0/-0.00031	13	0/+0.25
RSI-02188-1300DG	0.21875	7/32	0/-0.00031	13	0/+0.25
RSI-02500-1300DG	0.25	1/4	0/-0.00035	13	0/+0.25
RSI-03125-1300DG	0.3125	5/16	0/-0.00035	13	0/+0.25
RSI-03750-1300DG	0.375	3/8	0/-0.00035	13	0/+0.25
RSI-04375-1300DG	0.4375	7/16	0/-0.00043	13	0/+0.25
RSI-04688-1300DG	0.46875	15/32	0/-0.00043	13	0/+0.25
RSI-05000-1300DG	0.5	1/2	0/-0.00043	13	0/+0.25
RSI-05625-1300DG	0.5625	9/16	0/-0.00043	13	0/+0.25
RSI-06250-1300DG	0.625	5/8	0/-0.00043	13	0/+0.25
RSI-07500-1300DG	0.75	3/4	0/-0.00051	13	0/+0.25
RSI-08750-1300DG	0.875	7/8	0/-0.00051	13	0/+0.25
RSI-10000-1300DG	1	1	0/-0.00051	13	0/+0.25
RSI-11250-1300DG	1.125	1 1/8	0/-0.00051	13	0/+0.25
RSI-12500-1300DG	1.25	1 1/4	0/-0.00063	13	0/+0.25

● Above data are typical parameters.

### Available Grade

MH10F	MH12S	UH12	UH10	UH8	MH7	SH904
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

● Please contact with us for more specifications.

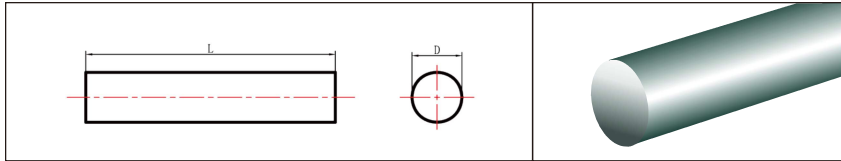
■ In Stock      □ Check inventory



## Engineered Solutions for Demanding Applications



## Unground Rod, Random Lengths



Type: RSI Grade: MH10F  
Inch Sizes 1/16" to 11/32" Diameter

Item No.	OD		Tol.	L	Tol.
	(inch)	(inch)			
RSI-00625-1300UG	0.0625	1/16	+0.012/+0.02	13	0/+0.25
RSI-00781-1300UG	0.078125	5/64	+0.012/+0.02	13	0/+0.25
RSI-00938-1300UG	0.09375	3/32	+0.012/+0.02	13	0/+0.25
RSI-01094-1300UG	0.109375	7/64	+0.012/+0.02	13	0/+0.25
RSI-01250-1300UG	0.125	1/8	+0.012/+0.02	13	0/+0.25
RSI-01406-1300UG	0.140625	9/64	+0.012/+0.02	13	0/+0.25
RSI-01563-1300UG	0.15625	5/32	+0.012/+0.02	13	0/+0.25
RSI-01719-1300UG	0.171875	11/64	+0.012/+0.02	13	0/+0.25
RSI-01875-1300UG	0.1875	3/16	+0.012/+0.02	13	0/+0.25
RSI-02031-1300UG	0.203125	13/64	+0.012/+0.02	13	0/+0.25
RSI-02188-1300UG	0.21875	7/32	+0.012/+0.02	13	0/+0.25
RSI-02344-1300UG	0.234375	15/64	+0.012/+0.02	13	0/+0.25
RSI-02500-1300UG	0.25	1/4	+0.012/+0.02	13	0/+0.25
RSI-02656-1300UG	0.265625	17/64	+0.012/+0.02	13	0/+0.25
RSI-02813-1300UG	0.28125	9/32	+0.012/+0.02	13	0/+0.25
RSI-02969-1300UG	0.296875	19/64	+0.012/+0.02	13	0/+0.25
RSI-03125-1300UG	0.3125	5/16	+0.012/+0.02	13	0/+0.25
RSI-03281-1300UG	0.328125	21/64	+0.012/+0.02	13	0/+0.25
RSI-03438-1300UG	0.34375	11/32	+0.012/+0.02	13	0/+0.25

● Above data are typical parameters.

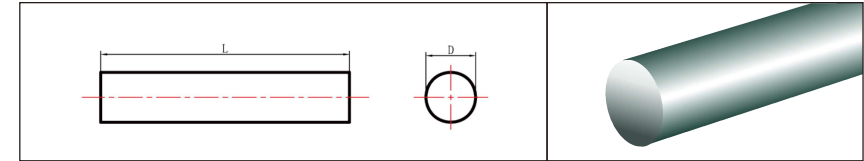
### Available Grade

MH10F	MH12S	UH12	UH10	UH8	MH7	SH904
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

● Please contact with us for more specifications.

■ In Stock  Check inventory

## Unground Rod, Random Lengths



Type: RSI Grade: MH10F  
Inch Sizes 23/64" to 1" Diameter

Item No.	OD		Tol.	L	Tol.
	(inch)	(inch)			
RSI-03594-1300UG	0.359375	23/64	+0.012/+0.02	13	0/+0.25
RSI-03750-1300UG	0.375	3/8	+0.012/+0.02	13	0/+0.25
RSI-03906-1300UG	0.390625	25/64	+0.012/+0.02	13	0/+0.25
RSI-04063-1300UG	0.40625	13/32	+0.012/+0.02	13	0/+0.25
RSI-04219-1300UG	0.421875	27/64	+0.012/+0.02	13	0/+0.25
RSI-04375-1300UG	0.4375	7/16	+0.012/+0.02	13	0/+0.25
RSI-04531-1300UG	0.453125	29/64	+0.012/+0.02	13	0/+0.25
RSI-04688-1300UG	0.46875	15/32	+0.012/+0.02	13	0/+0.25
RSI-04844-1300UG	0.484375	31/64	+0.012/+0.02	13	0/+0.25
RSI-05000-1300UG	0.5	1/2	+0.012/+0.02	13	0/+0.25
RSI-05313-1300UG	0.53125	17/32	+0.012/+0.02	13	0/+0.25
RSI-05625-1300UG	0.5625	9/16	+0.012/+0.02	13	0/+0.25
RSI-06250-1300UG	0.625	5/8	+0.012/+0.02	13	0/+0.25
RSI-06875-1300UG	0.6875	11/16	+0.012/+0.02	13	0/+0.25
RSI-07500-1300UG	0.75	3/4	+0.012/+0.02	13	0/+0.25
RSI-08125-1300UG	0.8125	13/16	+0.012/+0.02	13	0/+0.25
RSI-08750-1300UG	0.875	7/8	+0.012/+0.02	13	0/+0.25
RSI-10000-1300UG	1	1	+0.012/+0.02	13	0/+0.25

● Above data are typical parameters.

### Available Grade

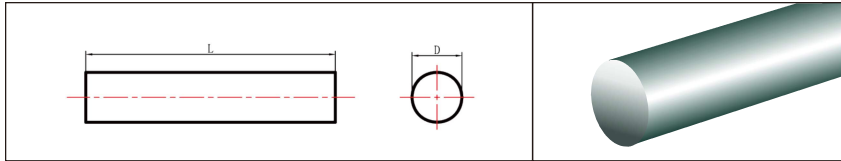
MH10F	MH12S	UH12	UH10	UH8	MH7	SH904
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

● Please contact with us for more specifications.

■ In Stock  Check inventory



## Precision Ground Rod, Random Lengths



Type: RSM      Grade: MH10F  
Metric Sizes 1mm to 16mm Diameter  
h6 tolerance

Item No.	OD (mm)	Tol. h6 (mm)	L (mm)	Tol. (mm)
RSM-0100-3300PG	1	0/-0.006	330	0/+5
RSM-0150-3300PG	1.5	0/-0.006	330	0/+5
RSM-0200-3300PG	2	0/-0.006	330	0/+5
RSM-0300-3300PG	3	0/-0.006	330	0/+5
RSM-0400-3300PG	4	0/-0.008	330	0/+5
RSM-0500-3300PG	5	0/-0.008	330	0/+5
RSM-0600-3300PG	6	0/-0.008	330	0/+5
RSM-0700-3300PG	7	0/-0.009	330	0/+5
RSM-0800-3300PG	8	0/-0.009	330	0/+5
RSM-0900-3300PG	9	0/-0.009	330	0/+5
RSM-1000-3300PG	10	0/-0.009	330	0/+5
RSM-1100-3300PG	11	0/-0.011	330	0/+5
RSM-1200-3300PG	12	0/-0.011	330	0/+5
RSM-1300-3300PG	13	0/-0.011	330	0/+5
RSM-1400-3300PG	14	0/-0.011	330	0/+5
RSM-1500-3300PG	15	0/-0.011	330	0/+5
RSM-1600-3300PG	16	0/-0.011	330	0/+5

● Above data are typical parameters.

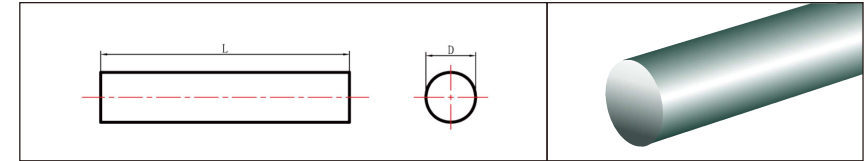
### Available Grade

MH10F	UH12	MH12S	UH10	UH8	MH7	SH904
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

● Please contact with us for more specifications.

■ In Stock    □ Check inventory

## Precision Ground Rod, Random Lengths



Type: RSM      Grade: MH10F  
Metric Sizes 17mm to 40mm Diameter  
h6 tolerance

Item No.	OD (mm)	Tol. h6 (mm)	L (mm)	Tol. (mm)
RSM-1700-3300PG	17	0/-0.011	330	0/+5
RSM-1800-3300PG	18	0/-0.011	330	0/+5
RSM-1900-3300PG	19	0/-0.013	330	0/+5
RSM-2000-3300PG	20	0/-0.013	330	0/+5
RSM-2100-3300PG	21	0/-0.013	330	0/+5
RSM-2200-3300PG	22	0/-0.013	330	0/+5
RSM-2300-3300PG	23	0/-0.013	330	0/+5
RSM-2400-3300PG	24	0/-0.013	330	0/+5
RSM-2500-3300PG	25	0/-0.013	330	0/+5
RSM-2600-3300PG	26	0/-0.013	330	0/+5
RSM-2700-3300PG	27	0/-0.013	330	0/+5
RSM-2800-3300PG	28	0/-0.013	330	0/+5
RSM-2900-3300PG	29	0/-0.013	330	0/+5
RSM-3000-3300PG	30	0/-0.013	330	0/+5
RSM-3200-3300PG	32	0/-0.016	330	0/+5
RSM-3400-3300PG	34	0/-0.016	330	0/+5
RSM-3600-3300PG	36	0/-0.016	330	0/+5
RSM-3800-3300PG	38	0/-0.016	330	0/+5
RSM-4000-3300PG	40	0/-0.016	330	0/+5

● Above data are typical parameters.

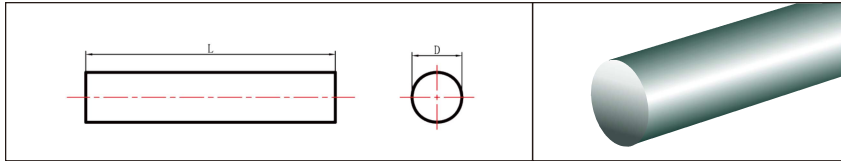
### Available Grade

MH10F	UH12	MH12S	UH10	UH8	MH7	SH904
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

● Please contact with us for more specifications.

■ In Stock    □ Check inventory

## Unground Rod, Random Lengths



Type: RSM      Grade: MH10F  
Metric Sizes 1mm to 16mm Diameter

Item No.	OD	Tol.	L	Tol.
	(mm)	(mm)	(mm)	(mm)
RSM-0120-3300UG	1.2	+0.05/+0.3	330	0/+5
RSM-0170-3300UG	1.7	+0.05/+0.3	330	0/+5
RSM-0220-3300UG	2.2	+0.05/+0.3	330	0/+5
RSM-0320-3300UG	3.2	+0.05/+0.3	330	0/+5
RSM-0420-3300UG	4.2	+0.05/+0.3	330	0/+5
RSM-0520-3300UG	5.2	+0.05/+0.3	330	0/+5
RSM-0620-3300UG	6.2	+0.05/+0.3	330	0/+5
RSM-0720-3300UG	7.2	+0.05/+0.3	330	0/+5
RSM-0820-3300UG	8.2	+0.05/+0.3	330	0/+5
RSM-0920-3300UG	9.2	+0.05/+0.3	330	0/+5
RSM-1020-3300UG	10.2	+0.05/+0.3	330	0/+5
RSM-1120-3300UG	11.2	+0.05/+0.3	330	0/+5
RSM-1220-3300UG	12.2	+0.05/+0.3	330	0/+5
RSM-1320-3300UG	13.2	+0.05/+0.3	330	0/+5
RSM-1420-3300UG	14.2	+0.05/+0.3	330	0/+5
RSM-1520-3300UG	15.2	+0.05/+0.3	330	0/+5
RSM-1620-3300UG	16.2	+0.05/+0.3	330	0/+5

● Above data are typical parameters.

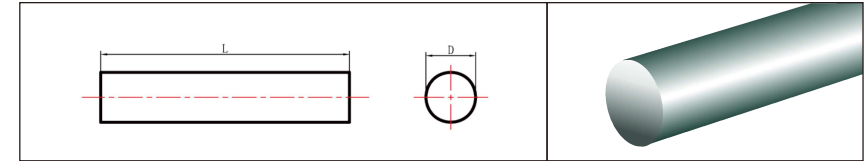
### Available Grade

MH10F	UH12	MH12S	UH10	UH8	MH7	SH904
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

● Please contact with us for more specifications.

■ In Stock    □ Check inventory

## Unground Rod, Random Lengths



Type: RSM      Grade: MH10F  
Metric Sizes 17mm to 40mm Diameter

Item No.	OD	Tol.	L	Tol.
	(mm)	(mm)	(mm)	(mm)
RSM-1720-3300UG	17.2	+0.05/+0.4	330	0/+5
RSM-1820-3300UG	18.2	+0.05/+0.4	330	0/+5
RSM-1920-3300UG	19.2	+0.05/+0.4	330	0/+5
RSM-2020-3300UG	20.2	+0.05/+0.4	330	0/+5
RSM-2120-3300UG	21.2	+0.05/+0.5	330	0/+5
RSM-2220-3300UG	22.2	+0.05/+0.5	330	0/+5
RSM-2320-3300UG	23.2	+0.05/+0.5	330	0/+5
RSM-2420-3300UG	24.2	+0.05/+0.5	330	0/+5
RSM-2520-3300UG	25.2	+0.05/+0.5	330	0/+5
RSM-2620-3300UG	26.2	+0.05/+0.5	330	0/+5
RSM-2720-3300UG	27.2	+0.05/+0.5	330	0/+5
RSM-2820-3300UG	28.2	+0.05/+0.5	330	0/+5
RSM-2920-3300UG	29.2	+0.05/+0.5	330	0/+5
RSM-3020-3300UG	30.2	+0.05/+0.5	330	0/+5
RSM-3220-3300UG	32.2	+0.05/+0.6	330	0/+5
RSM-3420-3300UG	34.2	+0.05/+0.6	330	0/+5
RSM-3620-3300UG	36.2	+0.05/+0.6	330	0/+5
RSM-3820-3300UG	38.2	+0.05/+0.6	330	0/+5
RSM-4020-3300UG	40.2	+0.05/+0.7	330	0/+5

● Above data are typical parameters.

### Available Grade

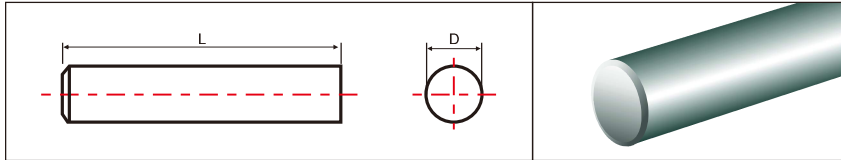
MH10F	UH12	MH12S	UH10	UH8	MH7	SH904
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

● Please contact with us for more specifications.

■ In Stock    □ Check inventory



## Precision Ground Rod, Cut to Length, With Chamfer



Type: RSFM Grade: MH10F  
Metric Sizes 3mm to 10mm Diameter  
h6 tolerance

Item No.	OD (mm)	Tol. h6 (mm)	L (mm)	Tol. (mm)	c (mm)
RSFM-0300-0390PG	3	0/-0.006	39	0/+0.5	0.3
RSFM-0300-0400PG	3	0/-0.006	40	0/+0.5	0.3
RSFM-0300-0500PG	3	0/-0.006	50	0/+0.5	0.3
RSFM-0400-0500PG	4	0/-0.008	50	0/+0.5	0.4
RSFM-0400-0510PG	4	0/-0.008	51	0/+0.5	0.4
RSFM-0400-0750PG	4	0/-0.008	75	0/+0.8	0.4
RSFM-0500-0510PG	5	0/-0.008	51	0/+0.5	0.4
RSFM-0500-0550PG	5	0/-0.008	55	0/+0.6	0.4
RSFM-0600-0500PG	6	0/-0.008	50	0/+0.5	0.6
RSFM-0600-0510PG	6	0/-0.008	51	0/+0.5	0.6
RSFM-0600-0550PG	6	0/-0.008	55	0/+0.6	0.6
RSFM-0600-0570PG	6	0/-0.008	57	0/+0.6	0.6
RSFM-0600-0580PG	6	0/-0.008	58	0/+0.6	0.6
RSFM-0600-0600PG	6	0/-0.008	60	0/+0.6	0.6
RSFM-0600-0630PG	6	0/-0.008	63	0/+0.6	0.6
RSFM-0600-0700PG	6	0/-0.008	70	0/+0.7	0.6
RSFM-0600-0750PG	6	0/-0.008	75	0/+0.8	0.6
RSFM-0600-0800PG	6	0/-0.008	80	0/+0.8	0.6
RSFM-0600-1000PG	6	0/-0.008	100	0/+1.0	0.6
RSFM-0600-0640PG	6	0/-0.008	64	0/+0.6	0.6
RSFM-0800-0590PG	8	0/-0.009	59	0/+0.6	0.6
RSFM-0800-0630PG	8	0/-0.009	63	0/+0.6	0.6
RSFM-0800-0640PG	8	0/-0.009	64	0/+0.6	0.6
RSFM-0800-0750PG	8	0/-0.009	75	0/+0.8	0.6
RSFM-0800-0800PG	8	0/-0.009	80	0/+0.8	0.6
RSFM-0800-0900PG	8	0/-0.009	90	0/+0.9	0.6
RSFM-0800-1000PG	8	0/-0.009	100	0/+1.0	0.6
RSFM-1000-0670PG	10	0/-0.009	67	0/+0.7	0.6
RSFM-1000-0700PG	10	0/-0.009	70	0/+0.7	0.6

● Above data are typical parameters.

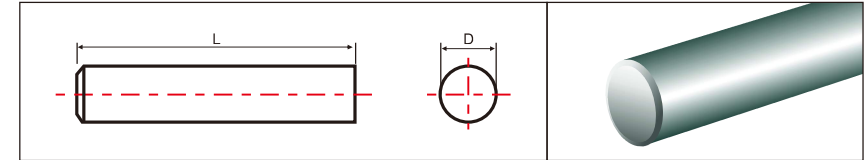
Available Grade

MH10F	MH12S	UH12	UH8	UH10	CH03D	MH7	SH904	SH124
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

● Please contact with us for more specifications.

■ In Stock    □ Check inventory

## Precision Ground Rod, Cut to Length, With Chamfer



Type: RSFM Grade: MH10F  
Metric Sizes 10mm to 25mm Diameter  
h6 tolerance

Item No.	OD (mm)	Tol. h6 (mm)	L (mm)	Tol. (mm)	c (mm)
RSFM-1000-0720PG	10	0/-0.009	72	0/+0.7	0.6
RSFM-1000-0730PG	10	0/-0.009	73	0/+0.7	0.6
RSFM-1000-0750PG	10	0/-0.009	75	0/+0.8	0.6
RSFM-1000-0900PG	10	0/-0.009	90	0/+0.9	0.6
RSFM-1000-1000PG	10	0/-0.009	100	0/+1.0	0.6
RSFM-1200-0740PG	12	0/-0.011	74	0/+0.7	0.8
RSFM-1200-0750PG	12	0/-0.011	75	0/+0.8	0.8
RSFM-1200-0830PG	12	0/-0.011	83	0/+0.8	0.8
RSFM-1200-0840PG	12	0/-0.011	84	0/+0.8	0.8
RSFM-1200-1000PG	12	0/-0.011	100	0/+1.0	0.8
RSFM-1200-1200PG	12	0/-0.011	120	0/+1.2	0.8
RSFM-1400-0760PG	14	0/-0.011	76	0/+0.8	0.8
RSFM-1400-0830PG	14	0/-0.011	83	0/+0.8	0.8
RSFM-1400-0840PG	14	0/-0.011	84	0/+0.8	0.8
RSFM-1400-0890PG	14	0/-0.011	89	0/+0.9	0.8
RSFM-1600-0830PG	16	0/-0.011	83	0/+0.8	0.8
RSFM-1600-0920PG	16	0/-0.011	92	0/+0.9	0.8
RSFM-1600-0930PG	16	0/-0.011	93	0/+0.9	0.8
RSFM-1600-1000PG	16	0/-0.011	100	0/+1.0	0.8
RSFM-1600-1300PG	16	0/-0.011	130	0/+1.3	0.8
RSFM-1800-0850PG	18	0/-0.011	85	0/+0.9	1
RSFM-1800-0930PG	18	0/-0.011	93	0/+0.9	1
RSFM-2000-0930PG	20	0/-0.013	93	0/+0.9	1
RSFM-2000-1000PG	20	0/-0.013	100	0/+1.0	1
RSFM-2000-1050PG	20	0/-0.013	105	0/+1.0	1
RSFM-2000-1250PG	20	0/-0.013	125	0/+1.3	1
RSFM-2000-1500PG	20	0/-0.013	150	0/+1.5	1
RSFM-2500-1030PG	25	0/-0.013	103	0/+1.0	1.5
RSFM-2500-1500PG	25	0/-0.013	150	0/+1.5	1.5

● Above data are typical parameters.

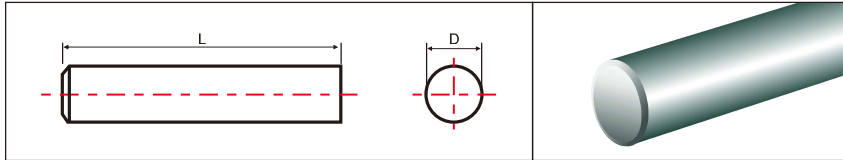
Available Grade

MH10F	MH12S	UH12	UH8	UH10	CH03D	MH7	SH904	SH124
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● Please contact with us for more specifications.

■ In Stock    □ Check inventory

## Precision Ground Rod, Cut to Length, With Chamfer



Type: RSFI Grade: MH10F  
Inch Sizes 1/8" to 5/16" Diameter  
h6 tolerance

Item No.	OD		Tol. h6	L	Tol.	c
	(inch)	(inch)	(inch)	(inch)	(inch)	(inch)
RSFI-01250-0150DG	0.125	1/8	0/-0.00031	1 1/2	0/+0.02	0.015
RSFI-01250-0200DG	0.125	1/8	0/-0.00031	2	0/+0.02	0.015
RSFI-01250-0225DG	0.125	1/8	0/-0.00031	2 1/4	0/+0.023	0.015
RSFI-01250-0250DG	0.125	1/8	0/-0.00031	2 1/2	0/+0.025	0.015
RSFI-01250-0300DG	0.125	1/8	0/-0.00031	3	0/+0.03	0.015
RSFI-01250-0400DG	0.125	1/8	0/-0.00031	4	0/+0.04	0.015
RSFI-01875-0150DG	0.1875	3/16	0/-0.00031	1 1/2	0/+0.02	0.015
RSFI-01875-0200DG	0.1875	3/16	0/-0.00031	2	0/+0.02	0.015
RSFI-01875-0250DG	0.1875	3/16	0/-0.00031	2 1/2	0/+0.025	0.015
RSFI-01875-0275DG	0.1875	3/16	0/-0.00031	2 3/4	0/+0.028	0.015
RSFI-01875-0300DG	0.1875	3/16	0/-0.00031	3	0/+0.03	0.015
RSFI-01875-0400DG	0.1875	3/16	0/-0.00031	4	0/+0.04	0.015
RSFI-02500-0150DG	0.25	1/4	0/-0.00035	1 1/2	0/+0.02	0.015
RSFI-02500-0200DG	0.25	1/4	0/-0.00035	2	0/+0.02	0.015
RSFI-02500-0250DG	0.25	1/4	0/-0.00035	2 1/2	0/+0.025	0.015
RSFI-02500-0300DG	0.25	1/4	0/-0.00035	3	0/+0.03	0.015
RSFI-02500-0325DG	0.25	1/4	0/-0.00035	3 1/4	0/+0.033	0.015
RSFI-02500-0350DG	0.25	1/4	0/-0.00035	3 1/2	0/+0.035	0.015
RSFI-02500-0400DG	0.25	1/4	0/-0.00035	4	0/+0.04	0.015
RSFI-02500-0600DG	0.25	1/4	0/-0.00035	6	0/+0.06	0.015
RSFI-03125-0250DG	0.3125	5/16	0/-0.00035	2 1/2	0/+0.025	0.015
RSFI-03125-0200DG	0.3125	5/16	0/-0.00035	2	0/+0.02	0.015
RSFI-03125-0300DG	0.3125	5/16	0/-0.00035	3	0/+0.03	0.015

● Above data are typical parameters.

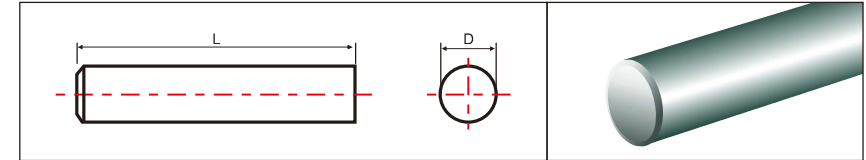
### Available Grade

MH10F	MH12S	UH12	UH8	UH10	CH03D	MH7	SH904	SH124
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● Please contact with us for more specifications.

■ In Stock  Check inventory

## Precision Ground Rod, Cut to Length, With Chamfer



Type: RSFI Grade: MH10F  
Inch Sizes 5/16" to 1/2" Diameter  
h6 tolerance

Item No.	OD		Tol. h6	L	Tol.	c
	(inch)	(inch)	(inch)	(inch)	(inch)	(inch)
RSFI-03125-0350DG	0.3125	5/16	0/-0.00035	3 1/2	0/+0.035	0.015
RSFI-03125-0400DG	0.3125	5/16	0/-0.00035	4	0/+0.04	0.015
RSFI-03125-0600DG	0.3125	5/16	0/-0.00035	6	0/+0.06	0.015
RSFI-03750-0200DG	0.375	3/8	0/-0.00035	2	0/+0.02	0.015
RSFI-03750-0250DG	0.375	3/8	0/-0.00035	2 1/2	0/+0.025	0.015
RSFI-03750-0300DG	0.375	3/8	0/-0.00035	3	0/+0.03	0.015
RSFI-03750-0350DG	0.375	3/8	0/-0.00035	3 1/2	0/+0.035	0.015
RSFI-03750-0400DG	0.375	3/8	0/-0.00035	4	0/+0.04	0.015
RSFI-03750-0450DG	0.375	3/8	0/-0.00035	4 1/2	0/+0.045	0.015
RSFI-03750-0500DG	0.375	3/8	0/-0.00035	5	0/+0.05	0.015
RSFI-03750-0600DG	0.375	3/8	0/-0.00035	6	0/+0.06	0.015
RSFI-04375-0250DG	0.4375	7/16	0/-0.00043	2 1/2	0/+0.025	0.031
RSFI-04375-0275DG	0.4375	7/16	0/-0.00043	2 3/4	0/+0.028	0.031
RSFI-04375-0300DG	0.4375	7/16	0/-0.00043	3	0/+0.03	0.031
RSFI-04375-0400DG	0.4375	7/16	0/-0.00043	4	0/+0.04	0.031
RSFI-04375-0450DG	0.4375	7/16	0/-0.00043	4 1/2	0/+0.045	0.031
RSFI-04375-0600DG	0.4375	7/16	0/-0.00043	6	0/+0.06	0.031
RSFI-05000-0250DG	0.5	1/2	0/-0.00043	2 1/2	0/+0.025	0.031
RSFI-05000-0300DG	0.5	1/2	0/-0.00043	3	0/+0.03	0.031
RSFI-05000-0350DG	0.5	1/2	0/-0.00043	3 1/2	0/+0.035	0.031
RSFI-05000-0400DG	0.5	1/2	0/-0.00043	4	0/+0.04	0.031
RSFI-05000-0450DG	0.5	1/2	0/-0.00043	4 1/2	0/+0.045	0.031
RSFI-05000-0500DG	0.5	1/2	0/-0.00043	5	0/+0.05	0.031

● Above data are typical parameters.

### Available Grade

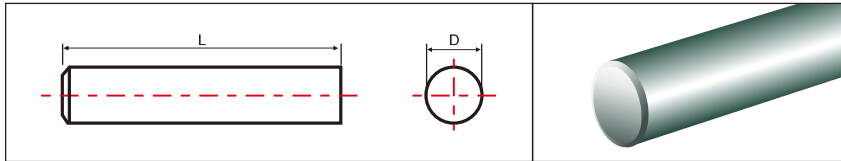
MH10F	MH12S	UH12	UH8	UH10	CH03D	MH7	SH904	SH124
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● Please contact with us for more specifications.

■ In Stock  Check inventory



## Precision Ground Rod, Cut to Length, With Chamfer



Type: RSFI      Grade: MH10F  
Inch Sizes 1/2" to 1-1/4" Diameter  
h6 tolerance

Item No.	OD	Tol. h6	L	Tol.	c	
	(inch)	(inch)	(inch)	(inch)	(inch)	
RSFI-05000-0600DG	0.5	1/2	0/-0.00043	6	0/+0.06	0.031
RSFI-05625-0350DG	0.5625	9/16	0/-0.00043	3 1/2	0/+0.035	0.031
RSFI-05625-0400DG	0.5625	9/16	0/-0.00043	4	0/+0.04	0.031
RSFI-05625-0600DG	0.5625	9/16	0/-0.00043	6	0/+0.06	0.031
RSFI-06250-0300DG	0.625	5/8	0/-0.00043	3	0/+0.03	0.031
RSFI-06250-0350DG	0.625	5/8	0/-0.00043	3 1/2	0/+0.035	0.031
RSFI-06250-0400DG	0.625	5/8	0/-0.00043	4	0/+0.04	0.031
RSFI-06250-0500DG	0.625	5/8	0/-0.00043	5	0/+0.05	0.031
RSFI-06250-0600DG	0.625	5/8	0/-0.00043	6	0/+0.06	0.031
RSFI-07500-0300DG	0.75	3/4	0/-0.00051	3	0/+0.03	0.031
RSFI-07500-0400DG	0.75	3/4	0/-0.00051	4	0/+0.04	0.031
RSFI-07500-0500DG	0.75	3/4	0/-0.00051	5	0/+0.05	0.031
RSFI-07500-0600DG	0.75	3/4	0/-0.00051	6	0/+0.06	0.031
RSFI-08750-0400DG	0.875	7/8	0/-0.00051	4	0/+0.04	0.031
RSFI-10000-0300DG	1	1	0/-0.00051	3	0/+0.03	0.031
RSFI-10000-0400DG	1	1	0/-0.00051	4	0/+0.04	0.031
RSFI-10000-0450DG	1	1	0/-0.00051	4 1/2	0/+0.045	0.031
RSFI-10000-0500DG	1	1	0/-0.00051	5	0/+0.05	0.031
RSFI-10000-0600DG	1	1	0/-0.00051	6	0/+0.06	0.031
RSFI-12500-0450DG	1.25	1 1/4	0/-0.00063	4 1/2	0/+0.045	0.031
RSFI-12500-0600DG	1.25	1 1/4	0/-0.00063	6	0/+0.06	0.031

● Above data are typical parameters.

### Available Grade

MH10F	MH12S	UH12	UH8	UH10	CH03D	MH7	SH904	SH124
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

● Please contact with us for more specifications.

■ In Stock    □ Check inventory

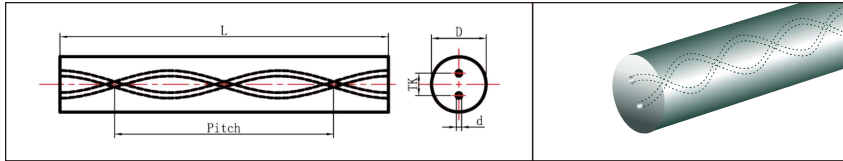


## Rods with Helical Coolant Holes



- RELY offers full range of carbide rods with helical coolant holes that are used for making carbide drills with internal coolant supply.
- Thanks to the expertise in extrusion forming process and strict control of Pitch classification, RELY drill blanks can also meet the demand of drills for deep hole drilling.
- In addition to OAL 330MM, OAL 415MM rods are also available for giving flexibility on your material utilization.

## Precision Ground Rod 2 Helical Coolant Holes 30 degree



Type: R2H30 Grade: MH10F  
Metric Sizes 3mm to 25mm Diameter  
h6 tolerance

Item No.	OD	Tol. h6	L	Tol.	TK	Tol.	d	Tol.	Pitch
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
R2H30-0300-3300PG	3	0/-0.006	330	0/+5	1.6	±0.1	0.4	±0.10	16.32
R2H30-0400-3300PG	4	0/-0.008	330	0/+5	2.1	±0.1	0.6	±0.10	21.77
R2H30-0500-3300PG	5	0/-0.008	330	0/+5	2.1	±0.2	0.7	±0.10	27.21
R2H30-0600-3300PG	6	0/-0.008	330	0/+5	2.4	±0.2	0.7	±0.10	32.65
R2H30-0700-3300PG	7	0/-0.009	330	0/+5	3.5	±0.2	1.0	±0.15	38.09
R2H30-0800-3300PG	8	0/-0.009	330	0/+5	3.8	±0.2	1.0	±0.15	43.53
R2H30-0900-3300PG	9	0/-0.009	330	0/+5	4.5	±0.3	1.4	±0.15	48.97
R2H30-1000-3300PG	10	0/-0.009	330	0/+5	4.5	±0.3	1.4	±0.15	54.41
R2H30-1100-3300PG	11	0/-0.011	330	0/+5	4.9	±0.4	1.4	±0.15	59.86
R2H30-1200-3300PG	12	0/-0.011	330	0/+5	5.85	±0.4	1.4	±0.15	65.30
R2H30-1300-3300PG	13	0/-0.011	330	0/+5	6.1	±0.4	1.75	±0.2	70.74
R2H30-1400-3300PG	14	0/-0.011	330	0/+5	6.7	±0.4	1.75	±0.2	76.18
R2H30-1500-3300PG	15	0/-0.011	330	0/+5	7.3	±0.4	1.75	±0.2	81.62
R2H30-1600-3300PG	16	0/-0.011	330	0/+5	7.9	±0.4	1.75	±0.2	87.06
R2H30-1700-3300PG	17	0/-0.011	330	0/+5	8.5	±0.4	1.75	±0.2	92.50
R2H30-1800-3300PG	18	0/-0.011	330	0/+5	9.15	±0.4	2.0	±0.25	97.95
R2H30-2000-3300PG	20	0/-0.013	330	0/+5	9.9	±0.5	2.0	±0.25	108.83
R2H30-2200-3300PG	22	0/-0.013	330	0/+5	11.1	±0.5	2.0	±0.25	119.71
R2H30-2500-3300PG	25	0/-0.013	330	0/+5	12.8	±0.5	2.0	±0.25	136.03

● Above data are typical parameters.

Available Grade

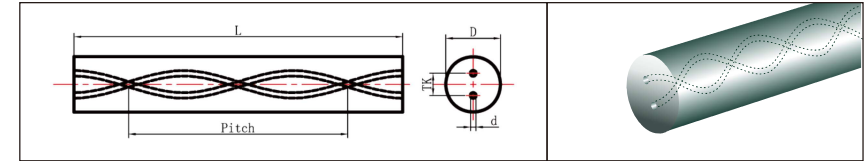
MH10F

Kind Reminder

- If special helix rods are required, please contact RELY sales for availability.
- Please specify when your drills are longer than 12XD.

In Stock  Check inventory

## Unground Rod 2 Helical Coolant Holes 30 degree



Type: R2H30 Grade: MH10F  
Metric Sizes 3mm to 25mm Diameter

Item No.	OD	Tol.	L	Tol.	TK	Tol.	d	Tol.	Pitch
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
R2H30-0330-3300UG	3.3	+0.3/+0.7	330	0/+5	1.6	±0.1	0.4	±0.10	16.32
R2H30-0430-3300UG	4.3	+0.3/+0.7	330	0/+5	2.1	±0.1	0.6	±0.10	21.77
R2H30-0530-3300UG	5.3	+0.3/+0.7	330	0/+5	2.1	±0.2	0.7	±0.10	27.21
R2H30-0630-3300UG	6.3	+0.3/+0.7	330	0/+5	2.4	±0.2	0.7	±0.10	32.65
R2H30-0730-3300UG	7.3	+0.3/+0.7	330	0/+5	3.5	±0.2	1.0	±0.15	38.09
R2H30-0830-3300UG	8.3	+0.3/+0.7	330	0/+5	3.8	±0.2	1.0	±0.15	43.53
R2H30-0930-3300UG	9.3	+0.3/+0.7	330	0/+5	4.5	±0.3	1.4	±0.15	48.97
R2H30-1030-3300UG	10.3	+0.3/+0.7	330	0/+5	4.5	±0.3	1.4	±0.15	54.41
R2H30-1130-3300UG	11.3	+0.4/+0.9	330	0/+5	4.9	±0.4	1.4	±0.15	59.86
R2H30-1230-3300UG	12.3	+0.4/+0.9	330	0/+5	5.85	±0.4	1.4	±0.15	65.30
R2H30-1330-3300UG	13.3	+0.4/+0.9	330	0/+5	6.1	±0.4	1.75	±0.2	70.74
R2H30-1430-3300UG	14.3	+0.4/+0.9	330	0/+5	6.7	±0.4	1.75	±0.2	76.18
R2H30-1530-3300UG	15.3	+0.4/+0.9	330	0/+5	7.3	±0.4	1.75	±0.2	81.62
R2H30-1630-3300UG	16.3	+0.4/+0.9	330	0/+5	7.9	±0.4	1.75	±0.2	87.06
R2H30-1730-3300UG	17.3	+0.4/+1.0	330	0/+5	8.5	±0.4	1.75	±0.2	92.50
R2H30-1830-3300UG	18.3	+0.4/+1.0	330	0/+5	9.15	±0.4	2.0	±0.25	97.95
R2H30-2030-3300UG	20.3	+0.4/+1.0	330	0/+5	9.9	±0.5	2.0	±0.25	108.83
R2H30-2230-3300UG	22.3	+0.4/+1.0	330	0/+5	11.1	±0.5	2.0	±0.25	119.71
R2H30-2530-3300UG	25.3	+0.4/+1.0	330	0/+5	12.8	±0.5	2.0	±0.25	136.03

● Above data are typical parameters.

Available Grade

MH10F

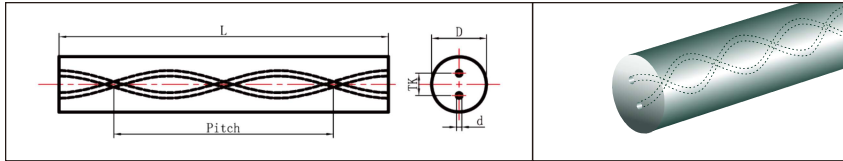
Kind Reminder

- If special helix rods are required, please contact RELY sales for availability.
- Please specify when your drills are longer than 12XD.

In Stock  Check inventory



## Precision Ground Rod 2 Helical Coolant Holes 40 degree



Type: R2H40      Grade: MH10F  
Metric Sizes 6mm to 25mm Diameter  
h6 tolerance

Item No.	OD (mm)	Tol. h6 (mm)	L (mm)	Tol. (mm)	TK (mm)	Tol. (mm)	d (mm)	Tol. (mm)	Pitch (mm)
R2H40-0600-3300PG	6	0/-0.008	330	0/+5	2.0	±0.15	0.50	±0.10	22.46
R2H40-0800-3300PG	8	0/-0.009	330	0/+5	2.4	±0.30	0.65	±0.15	29.95
R2H40-1000-3300PG	10	0/-0.009	330	0/+5	3.1	±0.40	0.80	±0.15	37.44
R2H40-1200-3300PG	12	0/-0.011	330	0/+5	3.8	±0.40	0.90	±0.15	44.93
R2H40-1400-3300PG	14	0/-0.011	330	0/+5	4.3	±0.40	1.00	±0.20	52.42
R2H40-1600-3300PG	16	0/-0.011	330	0/+5	5.1	±0.40	1.20	±0.20	59.90
R2H40-1800-3300PG	18	0/-0.011	330	0/+5	5.9	±0.40	1.40	±0.25	67.39
R2H40-2000-3300PG	20	0/-0.013	330	0/+5	6.6	±0.50	1.50	±0.25	74.88
R2H40-2200-3300PG	22	0/-0.013	330	0/+5	7.2	±0.50	1.70	±0.25	82.35
R2H40-2500-3300PG	25	0/-0.013	330	0/+5	7.6	±0.50	1.75	±0.25	93.58

● Above data are typical parameters.

### Available Grade

MH10F

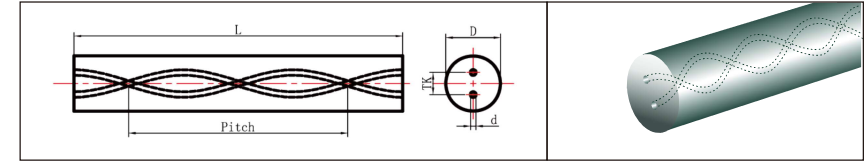


#### Kind Reminder

- If special helix rods are required, please contact RELY sales for availability.
- Please specify when your drills are longer than 12XD.

In Stock       Check inventory

## Unground Rod 2 Helical Coolant Holes 40 degree



Type: R2H40      Grade: MH10F  
Metric Sizes 6mm to 25mm Diameter

Item No.	OD (mm)	Tol. (mm)	L (mm)	Tol. (mm)	TK (mm)	Tol. (mm)	d (mm)	Tol. (mm)	Pitch (mm)
R2H40-0630-3300UG	6.3	+0.3/+0.7	330	0/+5	2.0	±0.15	0.50	±0.10	22.46
R2H40-0830-3300UG	8.3	+0.3/+0.7	330	0/+5	2.4	±0.30	0.65	±0.15	29.95
R2H40-1030-3300UG	10.3	+0.3/+0.7	330	0/+5	3.1	±0.40	0.8	±0.15	37.44
R2H40-1230-3300UG	12.3	+0.4/+0.9	330	0/+5	3.8	±0.40	0.9	±0.15	44.93
R2H40-1430-3300UG	14.3	+0.4/+0.9	330	0/+5	4.3	±0.40	1.00	±0.2	52.42
R2H40-1630-3300UG	16.3	+0.4/+0.9	330	0/+5	5.1	±0.40	1.20	±0.2	59.90
R2H40-1830-3300UG	18.3	+0.4/+1.0	330	0/+5	5.9	±0.40	1.40	±0.25	67.39
R2H40-2030-3300UG	20.3	+0.4/+1.0	330	0/+5	6.6	±0.50	1.50	±0.25	74.88
R2H40-2230-3300UG	22.3	+0.4/+1.0	330	0/+5	7.2	±0.50	1.70	±0.25	82.35
R2H40-2530-3300UG	25.3	+0.4/+1.0	330	0/+5	7.6	±0.50	1.75	±0.25	93.58

● Above data are typical parameters.

### Available Grade

MH10F



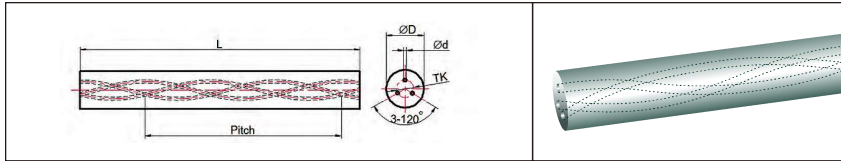
#### Kind Reminder

- If special helix rods are required, please contact RELY sales for availability.
- Please specify when your drills are longer than 12XD.

In Stock       Check inventory



## Precision Ground Rod 3 Helical Coolant Holes 30 degree

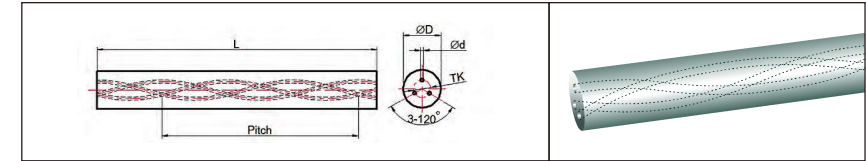


Type: R3H30 Grade: MH10F  
Metric Sizes 6mm to 20mm Diameter  
h6 tolerance

Item No.	OD (mm)	Tol. h6 (mm)	L (mm)	Tol. (mm)	TK (mm)	Tol. (mm)	d (mm)	Tol. (mm)	Pitch (mm)
R3H30-0600-3300PG	6	0/-0.008	330	0/+5	2.75	±0.20	0.5	±0.15	32.65
R3H30-0800-3300PG	8	0/-0.009	330	0/+5	3.85	±0.20	0.7	±0.15	43.53
R3H30-1000-3300PG	10	0/-0.009	330	0/+5	4.95	±0.30	0.85	±0.20	54.41
R3H30-1200-3300PG	12	0/-0.011	330	0/+5	6.05	±0.40	1.1	±0.20	65.30
R3H30-1400-3300PG	14	0/-0.011	330	0/+5	7.05	±0.40	1.4	±0.20	76.18
R3H30-1600-3300PG	16	0/-0.011	330	0/+5	8.05	±0.40	1.6	±0.20	87.06
R3H30-1800-3300PG	18	0/-0.011	330	0/+5	9.25	±0.50	1.7	±0.25	97.95
R3H30-2000-3300PG	20	0/-0.013	330	0/+5	9.85	±0.50	1.9	±0.25	108.83

● Above data are typical parameters.

## Unground Rod 3 Helical Coolant Holes 30 degree



Type: R3H30 Grade: MH10F  
Metric Sizes 6mm to 25mm Diameter

Item No.	OD (mm)	Tol. (mm)	L (mm)	Tol. (mm)	TK (mm)	Tol. (mm)	d (mm)	Tol. (mm)	Pitch (mm)
R3H30-0630-3300UG	6.3	+0.3/+0.7	330	0/+5	2.75	±0.20	0.5	±0.15	32.65
R3H30-0830-3300UG	8.3	+0.3/+0.7	330	0/+5	3.85	±0.20	0.7	±0.15	43.53
R3H30-1030-3300UG	10.3	+0.3/+0.7	330	0/+5	4.95	±0.30	0.85	±0.20	54.41
R3H30-1230-3300UG	12.3	+0.4/+0.9	330	0/+5	6.05	±0.40	1.1	±0.20	65.30
R3H30-1430-3300UG	14.3	+0.4/+0.9	330	0/+5	7.05	±0.40	1.4	±0.20	76.18
R3H30-1630-3300UG	16.3	+0.4/+0.9	330	0/+5	8.05	±0.40	1.6	±0.20	87.06
R3H30-1830-3300UG	18.3	+0.4/+1.0	330	0/+5	9.25	±0.50	1.7	±0.25	97.95
R3H30-2030-3300UG	20.3	+0.4/+1.0	330	0/+5	9.85	±0.50	1.9	±0.25	108.83

● Above data are typical parameters.

### Available Grade

**MH10F**



Kind Reminder

● Please specify when your drills are longer than 12XD.

In Stock  Check inventory



### Available Grade

**MH10F**



Kind Reminder

● Please specify when your drills are longer than 12XD.

In Stock  Check inventory

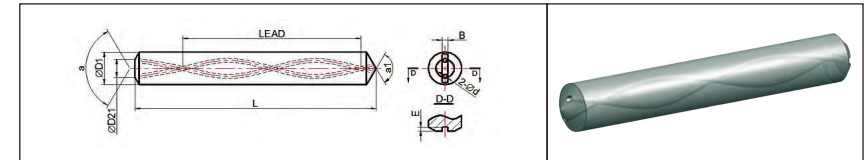


## Precision Ground Drill Blanks



- Precision ground drill blanks are available with chamfer, Point and connection slot, saving your process time and increasing your throughput.
- Well equipped grinding center allow us to offer multiple post-process such as step and taper grinding to meet the demand of high precision cutting tools.

## Precision Ground Rod, 3XDiameter Drill, 2 Helical Holes, With Point, Chamfer and Connection Slot



Type: R2H03D3(30°) Grade: MH10F  
Metric Sizes 6mm to 20mm Diameter  
h6 tolerance

Item No.	OD	Tol. h6	L	Tol.	TK	Tol.	d	Tol.	Pitch
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
R2H03D3-0600-0670PG	6	0/-0.008	67	0/+1.5	2.40	±0.2	0.70	±0.05	32.7
R2H03D3-0800-0805PG	8	0/-0.009	80.5	0/+1.5	3.80	±0.2	1.00	±0.05	43.5
R2H03D3-1000-0905PG	10	0/-0.009	90.5	0/+1.5	4.50	±0.2	1.40	±0.05	54.4
R2H03D3-1200-1040PG	12	0/-0.011	104	0/+1.5	5.85	±0.2	1.40	±0.075	65.0
R2H03D3-1400-1090PG	14	0/-0.011	109	0/+1.5	6.70	±0.26	1.75	±0.075	76.2
R2H03D3-1600-1175PG	16	0/-0.011	117.5	0/+1.5	7.90	±0.4	1.75	±0.075	87.1
R2H03D3-1800-1255PG	18	0/-0.011	125.5	0/+1.5	9.15	±0.4	2.00	±0.075	98.0
R2H03D3-2000-1340PG	20	0/-0.013	134	0/+1.5	9.90	±0.50	2.00	±0.075	108.8

• Above data are typical parameters.

### Available Grade

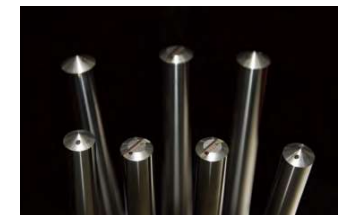
MH10F



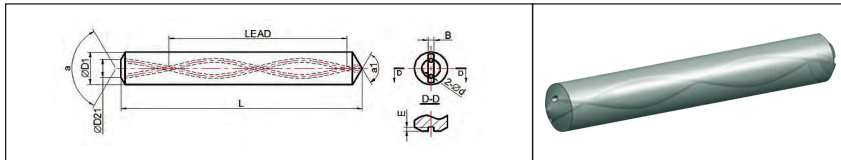
Kind Reminder

- If special helix rods are required, please contact RELYsales for availability.
- Please specify when your drills are longer than 12XD.

In Stock  Check inventory



## Precision Ground Rod, 5XDiameter Drill, 2 Helical Holes, With Point, Chamfer and Connection Slot



Type: R2H05D3(30°) Grade: MH10F  
Metric Sizes 6mm to 20mm Diameter  
h6 tolerance

Item No.	OD	Tol. h6	L	Tol.	TK	Tol.	d	Tol.	Pitch
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
R2H05D3-0600-0830PG	6	0/-0.008	83	0/+1.5	2.40	±0.2	0.70	±0.05	32.7
R2H05D3-0800-0925PG	8	0/-0.009	92.5	0/+1.5	3.80	±0.2	1.00	±0.05	43.5
R2H05D3-1000-1045PG	10	0/-0.009	104.5	0/+1.5	4.50	±0.2	1.40	±0.05	54.4
R2H05D3-1200-1200PG	12	0/-0.011	120	0/+1.5	5.85	±0.2	1.40	±0.075	65.0
R2H05D3-1400-1265PG	14	0/-0.011	126.5	0/+1.5	6.70	±0.26	1.75	±0.075	76.2
R2H05D3-1600-1355PG	16	0/-0.011	135.5	0/+1.5	7.90	±0.4	1.75	±0.075	87.1
R2H05D3-1800-1455PG	18	0/-0.011	145.5	0/+1.5	9.15	±0.4	2.00	±0.075	98.0
R2H05D3-2000-1560PG	20	0/-0.013	156	0/+1.5	9.90	±0.50	2.00	±0.075	108.8

● Above data are typical parameters.

### Available Grade

MH10F

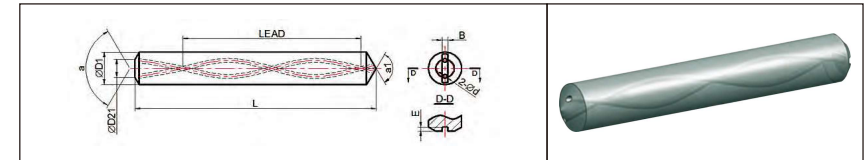


### Kind Reminder

- If special helix rods are required, please contact RELY sales for availability.
- Please specify when your drills are longer than 12XD.

In Stock  Check inventory

## Precision Ground Rod, 8XDiameter Drill, 2 Helical Holes, With Point, Chamfer and Connection Slot



Type: R2H08D3(30°) Grade: MH10F  
Metric Sizes 6mm to 20mm Diameter  
h6 tolerance

Item No.	OD	Tol. h6	L	Tol.	TK	Tol.	d	Tol.	Pitch
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
R2H08D3-0600-0980PG	6	0/-0.008	98	0/+1.5	2.40	±0.2	0.70	±0.05	32.7
R2H08D3-0800-1075PG	8	0/-0.009	107.5	0/+1.5	3.80	±0.2	1.00	±0.05	43.5
R2H08D3-0800-1175PG	8	0/-0.009	117.5	0/+1.5	3.80	±0.2	1.00	±0.05	43.5
R2H08D3-1000-1355PG	10	0/-0.009	135.5	0/+1.5	4.50	±0.2	1.40	±0.05	54.4
R2H08D3-1200-1570PG	12	0/-0.011	157	0/+1.5	5.85	±0.2	1.40	±0.075	65.0
R2H08D3-1400-1845PG	14	0/-0.011	184.5	0/+1.5	6.70	±0.26	1.75	±0.075	76.2
R2H08D3-1600-2065PG	16	0/-0.011	206.5	0/+1.5	7.90	±0.4	1.75	±0.075	87.1
R2H08D3-1800-2255PG	18	0/-0.011	225.5	0/+1.5	9.15	±0.4	2.00	±0.075	98.0
R2H08D3-2000-2470PG	20	0/-0.013	247	0/+1.5	9.90	±0.50	2.00	±0.075	108.8

● Above data are typical parameters.

### Available Grade

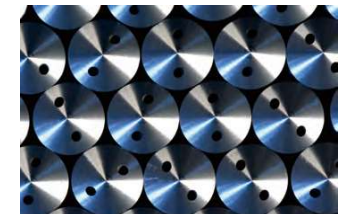
MH10F



### Kind Reminder

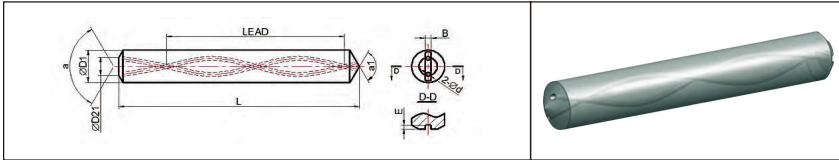
- If special helix rods are required, please contact RELY sales for availability.
- Please specify when your drills are longer than 12XD.

In Stock  Check inventory





## Precision Ground Rod, 12XDiameter Drill, 2 Helical Holes, With Point, Chamfer and Connection Slot



Type: R2H12D3(30°)      Grade: MH10F  
Metric Sizes 6mm to 20mm Diameter  
h6 tolerance

Item No.	OD	Tol. h6	L	Tol.	TK	Tol.	d	Tol.	Pitch
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
R2H12D3-0600-1225PG	6	0/-0.008	122.5	0/+1.5	2.40	±0.2	0.70	±0.05	32.7
R2H12D3-0800-1500PG	8	0/-0.009	150	0/+1.5	3.80	±0.2	1.00	±0.05	43.5
R2H12D3-1000-1830PG	10	0/-0.009	183	0/+1.5	4.50	±0.2	1.40	±0.05	54.4
R2H12D3-1200-2080PG	12	0/-0.011	208	0/+1.5	5.85	±0.2	1.40	±0.075	65.0
R2H12D3-1400-2330PG	14	0/-0.011	233	0/+1.5	6.70	±0.26	1.75	±0.075	76.2
R2H12D3-1600-2630PG	16	0/-0.011	263	0/+1.5	7.90	±0.4	1.75	±0.075	87.1
R2H12D3-1800-2880PG	18	0/-0.011	288	0/+1.5	9.15	±0.4	2.00	±0.075	98.0
R2H12D3-2000-3135PG	20	0/-0.013	313.5	0/+1.5	9.90	±0.50	2.00	±0.075	108.8

● Above data are typical parameters.

### Available Grade

MH10F



### Kind Reminder

- If special helix rods are required, please contact RELY sales for availability.
- Please specify when your drills are longer than 12XD.

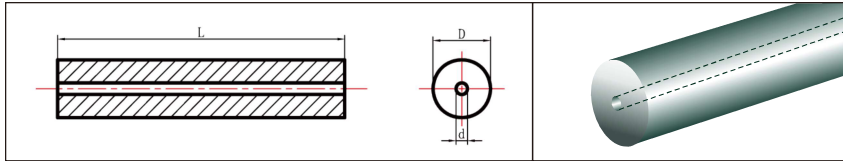
In Stock       Check inventory

## Rods with Straight Coolant Holes



- Rods with straight Coolant Holes are made to meet the demand of drilling, reaming and threading tools with internal coolant supply.
- Rods with 1 straight hole and 2 straight holes that made in grade MH10F are listed on page 37-42 of our RELY Standard offering catalogue. For designs with more than 2 straight holes, please contact RELY sales for availability.

## Precision Ground Rod, 1 Straight Hole Centered



Type: R1SH Grade: MH10F  
Metric Sizes 4mm to 25mm Diameter  
h6 tolerance

Item No.	OD (mm)	Tol. h6 (mm)	L (mm)	Tol. (mm)	d (mm)	Tol. (mm)
R1SH-0400-3300PG	4	0/-0.008	330	0/+5	0.6	±0.15
R1SH-0600-3300PG	6	0/-0.008	330	0/+5	1	±0.15
R1SH-0800-3300PG	8	0/-0.009	330	0/+5	1.3	±0.15
R1SH-1000-3300PG	10	0/-0.009	330	0/+5	2	±0.20
R1SH-1200-3300PG	12	0/-0.011	330	0/+5	2	±0.20
R1SH-1400-3300PG	14	0/-0.011	330	0/+5	2	±0.20
R1SH-1600-3300PG	16	0/-0.011	330	0/+5	2	±0.20
R1SH-1800-3300PG	18	0/-0.011	330	0/+5	3	±0.20
R1SH-2000-3300PG	20	0/-0.013	330	0/+5	3	±0.20
R1SH-2200-3300PG	22	0/-0.013	330	0/+5	3	±0.20
R1SH-2400-3300PG	24	0/-0.013	330	0/+5	4	±0.30
R1SH-2500-3300PG	25	0/-0.013	330	0/+5	4	±0.30

● Above data are typical parameters.

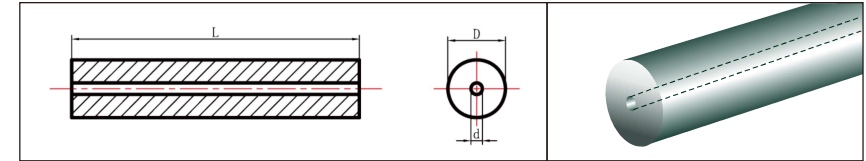
Available Grade

MH10F
  MH7
  UH12

● Please contact with us for more specifications.

In Stock
  Check inventory

## Unground Rod, 1 Straight Hole Centered



Type: R1SH Grade: MH10F  
Metric Sizes 4mm to 25mm Diameter

Item No.	OD (mm)	Tol. (mm)	L (mm)	Tol. (mm)	d (mm)	Tol. (mm)
R1SH-0430-3300UG	4.3	0/+0.3	330	0/+5	0.6	±0.15
R1SH-0630-3300UG	6.3	0/+0.3	330	0/+5	1	±0.15
R1SH-0830-3300UG	8.3	0/+0.3	330	0/+5	1.3	±0.15
R1SH-1030-3300UG	10.3	0/+0.3	330	0/+5	2	±0.20
R1SH-1230-3300UG	12.3	0/+0.4	330	0/+5	2	±0.20
R1SH-1430-3300UG	14.3	0/+0.4	330	0/+5	2	±0.20
R1SH-1630-3300UG	16.3	0/+0.4	330	0/+5	2	±0.20
R1SH-1830-3300UG	18.3	0/+0.5	330	0/+5	3	±0.20
R1SH-2030-3300UG	20.3	0/+0.5	330	0/+5	3	±0.20
R1SH-2230-3300UG	22.3	0/+0.5	330	0/+5	3	±0.20
R1SH-2430-3300UG	24.3	0/+0.5	330	0/+5	4	±0.30
R1SH-2530-3300UG	25.3	0/+0.5	330	0/+5	4	±0.30

● Above data are typical parameters.

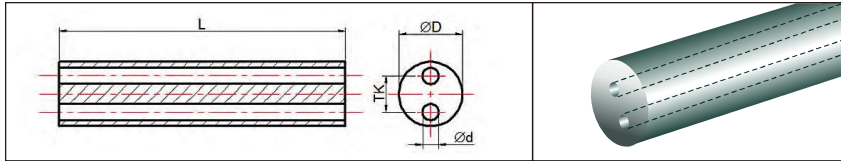
Available Grade

MH10F
  MH7
  UH12

● Please contact with us for more specifications.

In Stock
  Check inventory

## Precision Ground Rod, 2 Straight Holes Reduced BC



Type: R2SHR Grade: MH10F  
Metric Sizes 6mm to 20mm Diameter  
h6 tolerance

Item No.	OD	Tol. h6	L	Tol.	TK	Tol.	d	Tol.
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
R2SHR-0600-3300PG	6	0/-0.008	330	0/+5	1.5	0/-0.2	0.8	±0.15
R2SHR-0700-3300PG	7	0/-0.009	330	0/+5	1.5	0/-0.2	0.8	±0.15
R2SHR-0800-3300PG	8	0/-0.009	330	0/+5	2.6	0/-0.3	1.0	±0.15
R2SHR-0900-3300PG	9	0/-0.009	330	0/+5	2.6	0/-0.3	1.0	±0.15
R2SHR-1000-3300PG	10	0/-0.009	330	0/+5	2.6	0/-0.3	1.0	±0.15
R2SHR-1100-3300PG	11	0/-0.011	330	0/+5	3.5	0/-0.3	1.2	±0.15
R2SHR-1200-3300PG	12	0/-0.011	330	0/+5	3.5	0/-0.3	1.2	±0.15
R2SHR-1300-3300PG	13	0/-0.011	330	0/+5	3.5	0/-0.3	1.2	±0.15
R2SHR-1400-3300PG	14	0/-0.011	330	0/+5	5.0	0/-0.3	1.5	±0.15
R2SHR-1500-3300PG	15	0/-0.011	330	0/+5	5.0	0/-0.3	1.5	±0.15
R2SHR-1600-3300PG	16	0/-0.011	330	0/+5	5.0	0/-0.3	1.5	±0.20
R2SHR-1700-3300PG	17	0/-0.011	330	0/+5	6.2	0/-0.3	2.0	±0.20
R2SHR-1800-3300PG	18	0/-0.011	330	0/+5	6.2	0/-0.3	2.0	±0.20
R2SHR-1900-3300PG	19	0/-0.013	330	0/+5	6.2	0/-0.3	2.0	±0.20
R2SHR-2000-3300PG	20	0/-0.013	330	0/+5	6.2	0/-0.4	2.0	±0.30

● Above data are typical parameters.

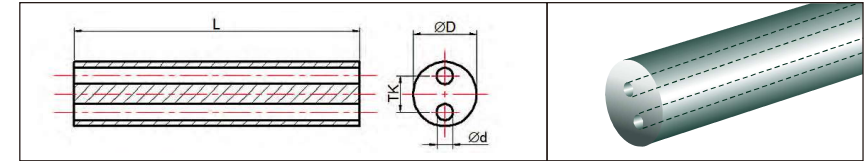
### Available Grade

MH10F
  MH7
  UH12

● Please contact with us for more specifications.

In Stock
  Check inventory

## Unground Rod, 2 Straight Holes Reduced BC



Type: R2SHR Grade: MH10F  
Metric Sizes 6mm to 20mm Diameter

Item No.	OD	Tol.	L	Tol.	TK	Tol.	d	Tol.
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
R2SHR-0630-3300UG	6.3	0/+0.3	330	0/+5	1.5	0/-0.2	0.8	±0.15
R2SHR-0730-3300UG	7.3	0/+0.3	330	0/+5	1.5	0/-0.2	0.8	±0.15
R2SHR-0830-3300UG	8.3	0/+0.3	330	0/+5	2.6	0/-0.3	1.0	±0.15
R2SHR-0930-3300UG	9.3	0/+0.3	330	0/+5	2.6	0/-0.3	1.0	±0.15
R2SHR-1030-3300UG	10.3	0/+0.3	330	0/+5	2.6	0/-0.3	1.0	±0.15
R2SHR-1130-3300UG	11.3	0/+0.4	330	0/+5	3.5	0/-0.3	1.2	±0.15
R2SHR-1230-3300UG	12.3	0/+0.4	330	0/+5	3.5	0/-0.3	1.2	±0.15
R2SHR-1330-3300UG	13.3	0/+0.4	330	0/+5	3.5	0/-0.3	1.2	±0.15
R2SHR-1430-3300UG	14.3	0/+0.4	330	0/+5	5.0	0/-0.3	1.5	±0.15
R2SHR-1530-3300UG	15.3	0/+0.4	330	0/+5	5.0	0/-0.3	1.5	±0.15
R2SHR-1630-3300UG	16.3	0/+0.4	330	0/+5	5.0	0/-0.3	1.5	±0.20
R2SHR-1730-3300UG	17.3	0/+0.5	330	0/+5	6.2	0/-0.3	2.0	±0.20
R2SHR-1830-3300UG	18.3	0/+0.5	330	0/+5	6.2	0/-0.3	2.0	±0.20
R2SHR-1930-3300UG	19.3	0/+0.5	330	0/+5	6.2	0/-0.3	2.0	±0.20
R2SHR-2030-3300UG	20.3	0/+0.5	330	0/+5	6.2	0/-0.4	2.0	±0.30

● Above data are typical parameters.

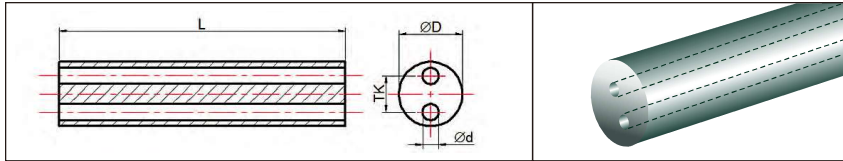
### Available Grade

MH10F
  MH7
  UH12

● Please contact with us for more specifications.

In Stock
  Check inventory

## Precision Ground Rod, 2 Straight Holes Standard BC



Type: R2SHS Grade: MH10F  
Metric Sizes 6mm to 20mm Diameter  
h6 tolerance

Item No.	OD	Tol. h6	L	Tol.	TK	Tol.	d	Tol.
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
R2SHS-0600-3300PG	6	0/-0.008	330	0/+5	3.0	0/-0.2	1.0	±0.15
R2SHS-0700-3300PG	7	0/-0.009	330	0/+5	3.5	0/-0.2	1.0	±0.15
R2SHS-0800-3300PG	8	0/-0.009	330	0/+5	4.0	0/-0.3	1.0	±0.15
R2SHS-0900-3300PG	9	0/-0.009	330	0/+5	4.0	0/-0.3	1.4	±0.15
R2SHS-1000-3300PG	10	0/-0.009	330	0/+5	5.0	0/-0.3	1.4	±0.15
R2SHS-1100-3300PG	11	0/-0.011	330	0/+5	5.0	0/-0.3	1.4	±0.15
R2SHS-1200-3300PG	12	0/-0.011	330	0/+5	6.0	0/-0.3	1.75	±0.15
R2SHS-1300-3300PG	13	0/-0.011	330	0/+5	6.0	0/-0.3	1.75	±0.15
R2SHS-1400-3300PG	14	0/-0.011	330	0/+5	7.0	0/-0.3	1.75	±0.15
R2SHS-1500-3300PG	15	0/-0.011	330	0/+5	7.0	0/-0.3	2.0	±0.20
R2SHS-1600-3300PG	16	0/-0.011	330	0/+5	8.0	0/-0.3	2.0	±0.20
R2SHS-1700-3300PG	17	0/-0.011	330	0/+5	8.0	0/-0.3	2.0	±0.20
R2SHS-1800-3300PG	18	0/-0.011	330	0/+5	9.0	0/-0.3	2.0	±0.20
R2SHS-1900-3300PG	19	0/-0.013	330	0/+5	9.0	0/-0.3	2.0	±0.20
R2SHS-2000-3300PG	20	0/-0.013	330	0/+5	10.0	0/-0.4	2.5	±0.30

● Above data are typical parameters.

### Available Grade

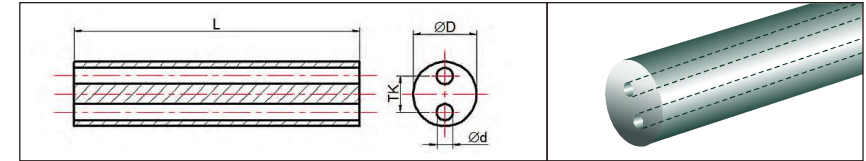
MH10F
  MH7
  UH12

● Please contact with us for more specifications.

In Stock
  Check inventory



## Unground Rod, 2 Straight Holes Standard BC



Type: R2SHS Grade: MH10F  
Metric Sizes 6mm to 20mm Diameter

Item No.	OD	Tol.	L	Tol.	TK	Tol.	d	Tol.
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
R2SHS-0630-3300UG	6.3	0/+0.3	330	0/+5	3.0	0/-0.2	1.0	±0.15
R2SHS-0730-3300UG	7.3	0/+0.3	330	0/+5	3.5	0/-0.2	1.0	±0.15
R2SHS-0830-3300UG	8.3	0/+0.3	330	0/+5	4.0	0/-0.3	1.0	±0.15
R2SHS-0930-3300UG	9.3	0/+0.3	330	0/+5	4.0	0/-0.3	1.4	±0.15
R2SHS-1030-3300UG	10.3	0/+0.3	330	0/+5	5.0	0/-0.3	1.4	±0.15
R2SHS-1130-3300UG	11.3	0/+0.4	330	0/+5	5.0	0/-0.3	1.4	±0.15
R2SHS-1230-3300UG	12.3	0/+0.4	330	0/+5	6.0	0/-0.3	1.75	±0.15
R2SHS-1330-3300UG	13.3	0/+0.4	330	0/+5	6.0	0/-0.3	1.75	±0.15
R2SHS-1430-3300UG	14.3	0/+0.4	330	0/+5	7.0	0/-0.3	1.75	±0.15
R2SHS-1530-3300UG	15.3	0/+0.4	330	0/+5	7.0	0/-0.3	2.0	±0.20
R2SHS-1630-3300UG	16.3	0/+0.4	330	0/+5	8.0	0/-0.3	2.0	±0.20
R2SHS-1730-3300UG	17.3	0/+0.5	330	0/+5	8.0	0/-0.3	2.0	±0.20
R2SHS-1830-3300UG	18.3	0/+0.5	330	0/+5	9.0	0/-0.3	2.0	±0.20
R2SHS-1930-3300UG	19.3	0/+0.5	330	0/+5	9.0	0/-0.3	2.0	±0.20
R2SHS-2030-3300UG	20.3	0/+0.5	330	0/+5	10.0	0/-0.4	2.5	±0.30

● Above data are typical parameters.

### Available Grade

MH10F
  MH7
  UH12

● Please contact with us for more specifications.

In Stock
  Check inventory

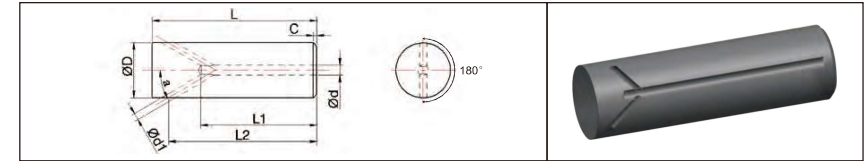
## Special Milling Cutter Blanks



- Milling cutter blanks with axial coolant duct and lateral exits/Y exits allows excellent performance on chip removal and cooling of the cutting edge.

Precision ground rods with ballnose and weldon shank are available.

## Rods with Axial Coolant Duct and Exit



Type: RFM02 Grade: MH10F  
Metric Sizes 6mm to 25mm Diameter  
h6 tolerance

Item No.	D h6	L	d	L2	d1	C	L1
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
RFM02-0600-0582-PG-A1.20-E0.80	6.0	58.2	1.20	55.0	0.80	0.6	54.6
RFM02-0800-0642-PG-A1.60-E1.10	8.0	64.2	1.60	60.0	1.10	0.6	59.1
RFM02-1000-0732-PG-A2.00-E1.40	10.0	73.2	2.00	68.0	1.40	0.6	66.6
RFM02-1200-0842-PG-A2.20-E1.60	12.0	84.2	2.20	78.0	1.60	0.8	76.1
RFM02-1400-0842-PG-A2.40-E1.70	14.0	84.2	2.40	77.0	1.70	0.8	74.7
RFM02-1600-0932-PG-A2.60-E1.90	16.0	93.2	2.60	85.0	1.90	0.8	82.2
RFM02-1800-0932-PG-A2.80-E2.00	18.0	93.2	2.80	84.0	2.00	1.0	80.7
RFM02-2000-1052-PG-A3.00-E2.10	20.0	105.2	3.00	95.0	2.10	1.0	91.2
RFM02-2500-1252-PG-A3.20-E2.30	25.0	125.2	3.20	112.5	2.30	1.5	107.5

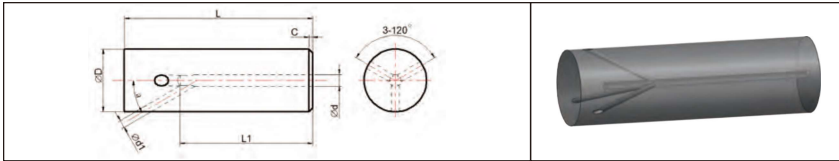
- Above data are typical parameters.

### Available Grade

MH10F	MH7	UH12
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Please contact with us for more specifications.
- Please ask for drawing confirmation or provide your customized drawing at time of inquiry.

## Rods with Axial Coolant Duct and Exit



Type: RFM03 Grade: MH10F  
Metric Sizes 6mm to 25mm Diameter  
h6 tolerance

Item No.	D h6	L	d	L2	d1	C	L1
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
RFM03-0600-0582-PG-A1.20-E0.70	6.0	58.2	1.20	55.0	0.70	0.6	54.6
RFM03-0800-0642-PG-A1.60-E0.90	8.0	64.2	1.60	60.0	0.90	0.6	59.1
RFM03-1000-0732-PG-A2.00-E1.20	10.0	73.2	2.00	68.0	1.20	0.6	66.6
RFM03-1200-0842-PG-A2.20-E1.30	12.0	84.2	2.20	78.0	1.30	0.8	76.1
RFM03-1400-0842-PG-A2.40-E1.40	14.0	84.2	2.40	77.0	1.40	0.8	74.7
RFM03-1600-0932-PG-A2.60-E1.50	16.0	93.2	2.60	85.0	1.50	0.8	82.2
RFM03-1800-0932-PG-A2.80-E1.60	18.0	93.2	2.80	84.0	1.60	1.0	80.7
RFM03-2000-1052-PG-A3.00-E1.70	20.0	105.2	3.00	95.0	1.70	1.0	91.2
RFM03-2500-1252-PG-A3.20-E1.80	25.0	125.2	3.20	112.5	1.80	1.5	107.5

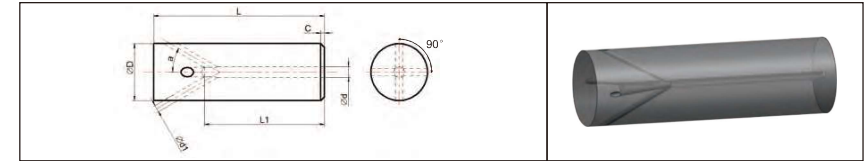
● Above data are typical parameters.

### Available Grade

MH10F
  MH7
  UH12

- Please contact with us for more specifications.
- Please ask for drawing confirmation or provide your customized drawing at time of inquiry.

## Rods with Axial Coolant Duct and Exit



Type: RFM04 Grade: MH10F  
Metric Sizes 6mm to 25mm Diameter  
h6 tolerance

Item No.	D h6	L	d	L2	d1	C	L1
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
RFM04-0600-0582-PG-A1.20-E0.60	6.0	58.2	1.20	55.0	0.60	0.6	54.6
RFM04-0800-0642-PG-A1.60-E0.80	8.0	64.2	1.60	60.0	0.80	0.6	59.1
RFM04-1000-0732-PG-A2.00-E1.00	10.0	73.2	2.00	68.0	1.00	0.6	66.6
RFM04-1200-0842-PG-A2.20-E1.10	12.0	84.2	2.20	78.0	1.10	0.8	76.1
RFM04-1400-0842-PG-A2.40-E1.20	14.0	84.2	2.40	77.0	1.20	0.8	74.7
RFM04-1600-0932-PG-A2.60-E1.30	16.0	93.2	2.60	85.0	1.30	0.8	82.2
RFM04-1800-0932-PG-A2.80-E1.40	18.0	93.2	2.80	84.0	1.40	1.0	80.7
RFM04-2000-1052-PG-A3.00-E1.50	20.0	105.2	3.00	95.0	1.50	1.0	91.2
RFM04-2500-1252-PG-A3.20-E1.60	25.0	125.2	3.20	112.5	1.60	1.5	107.5

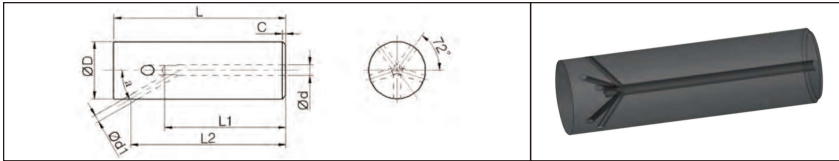
● Above data are typical parameters.

### Available Grade

MH10F
  MH7
  UH12

- Please contact with us for more specifications.
- Please ask for drawing confirmation or provide your customized drawing at time of inquiry.

## Rods with Axial Coolant Duct and Exit



Type: RFM05 Grade: MH10F  
Metric Sizes 6mm to 25mm Diameter  
h6 tolerance

Item No.	D h6 (mm)	L (mm)	d (mm)	L2 (mm)	d1 (mm)	C (mm)	L1 (mm)
RFM05-0600-0582-PG-A1.20-E0.50	6.0	58.2	1.20	55.0	0.50	0.6	54.6
RFM05-0800-0642-PG-A1.60-E0.70	8.0	64.2	1.60	60.0	0.70	0.6	59.1
RFM05-1000-0732-PG-A2.00-E0.90	10.0	73.2	2.00	68.0	0.90	0.6	66.6
RFM05-1200-0842-PG-A2.20-E1.00	12.0	84.2	2.20	78.0	1.00	0.8	76.1
RFM05-1400-0842-PG-A2.40-E1.10	14.0	84.2	2.40	77.0	1.10	0.8	74.7
RFM05-1600-0932-PG-A2.60-E1.20	16.0	93.2	2.60	85.0	1.20	0.8	82.2
RFM05-1800-0932-PG-A2.80-E1.30	18.0	93.2	2.80	84.0	1.30	1.0	80.7
RFM05-2000-1052-PG-A3.00-E1.40	20.0	105.2	3.00	95.0	1.40	1.0	91.2
RFM05-2500-1252-PG-A3.20-E1.50	25.0	125.2	3.20	112.5	1.50	1.5	107.5

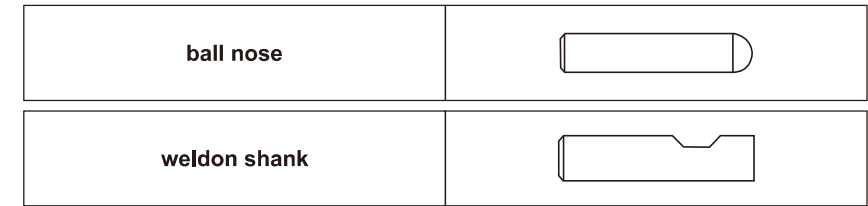
● Above data are typical parameters.

### Available Grade

MH10F
  MH7
  UH12

- Please contact with us for more specifications.
- Please ask for drawing confirmation or provide your customized drawing at time of inquiry.

## Special Milling Cutter Blanks (Metric)



Unit: mm

D	Tol.	L	Tol.	Cx45° Tol.±0.004	Ball Nose	Weldon Shank
6.0	h6/h5	51	0/+1% of length, minimum +0.5mm	0.4		
6.0		55		0.4		
6.0		58		0.4	●	●
8.0		59		0.6		
8.0		64		0.6	●	●
10.0		67		0.6		
10.0		73		0.6	●	●
12.0		74		0.8	●	●
12.0		84		0.8	●	●
14.0		76		0.8		
14.0		84		0.8	●	●
16.0		83		0.8		
16.0		93		0.8	●	●
18.0		93		1.0	●	●
20.0		93		1.0		
20.0		105		1.0	●	●
25.0	123	2.0				

● Above data are typical parameters.

### Available Grade

MH10F
  UH12

- Please contact with us for more specifications.
- Please ask for drawing confirmation or provide your customized drawing at time of inquiry.

## Special Milling Cutter Blanks (Inch)

ball nose	
axial coolant duct and Y-exit	
axial coolant duct and lateral exits	

Unit: mm

D	Tol.	L	Tol.	Cx45° Tol.±0.004	Ball Nose	axial coolant duct and Y-exit/lateral exits
1/4		2		0.024	●	●
1/4		2.5		0.024	●	●
5/16		2		0.024	●	●
5/16		2.5		0.024	●	●
3/8		2.5		0.024	●	●
3/8	h6/h5	3	0/+1% of length, minimum +0.02"	0.024	●	●
3/8		4		0.024	●	●
7/16		2.75		0.031	●	●
1/2		3		0.031	●	●
1/2		4		0.031	●	●
5/8		3.5		0.031	●	●
3/4		4		0.039	●	●
1		4		0.039	●	●

● Above data are typical parameters.

### Available Grade

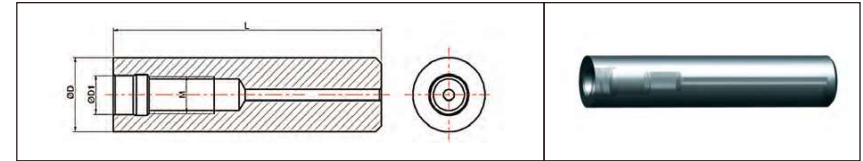
MH10F UH12



● Please contact with us for more specifications.

□ Please ask for drawing confirmation or provide your customized drawing at time of inquiry.

## High Precision Modular Shanks



Item No.		D h6	L	D1 h6	M
		(mm)	(mm)	(mm)	
HMS 10L100-M6	CMS 10L100-M6	10	100	6.5	M6
HMS 10L150-M6	CMS 10L150-M6	10	150	6.5	M6
HMS 12L100-M6	CMS 12L100-M6	12	100	6.5	M6
HMS 12L150-M6	CMS 12L150-M6	12	150	6.5	M6
HMS 16L100-M8	CMS 16L100-M8	16	100	8.5	M8
HMS 16L150-M8	CMS 16L150-M8	16	150	8.5	M8
HMS 16L200-M8	CMS 16L200-M8	16	200	8.5	M8
HMS 16L250-M8	CMS 16L250-M8	16	250	8.5	M8
HMS 20L100-M10	CMS 20L100-M10	20	100	10.5	M10
HMS 20L150-M10	CMS 20L150-M10	20	150	10.5	M10
HMS 20L200-M10	CMS 20L200-M10	20	200	10.5	M10
HMS 20L250-M10	CMS 20L250-M10	20	250	10.5	M10
HMS 20L300-M10	CMS 20L300-M10	20	300	10.5	M10
HMS 25L150-M12	CMS 25L150-M12	25	150	12.5	M12
HMS 25L200-M12	CMS 25L200-M12	25	200	12.5	M12
HMS 25L250-M12	CMS 25L250-M12	25	250	12.5	M12
HMS 25L300-M12	CMS 25L300-M12	25	300	12.5	M12
HMS 32L150-M16	CMS 32L150-M16	32	150	16.5	M16
HMS 32L200-M16	CMS 32L200-M16	32	200	16.5	M16
HMS 32L250-M16	CMS 32L250-M16	32	250	16.5	M16
HMS 32L300-M16	CMS 32L300-M16	32	300	16.5	M16
HMS 32L400-M16	CMS 32L400-M16	32	400	16.5	M16

● Above data are typical parameters.

### HMS : Heavy Alloy Modular Shanks

**Features:**  
Screw-in, through coolant, Excellent toughness, more fogging with reduced fracture rates. Anti-vibration

**Applications:**  
Ideal for Roughing and Semi-finishing applications, and for use in lower speed machining. Adopted to ISO modular heads.

### CMS : Carbide Modular Shanks

**Features:**  
Screw-in, through coolant, Excellent rigidity, and anti-vibration.

**Applications:**  
Ideal for semi-finishing and finishing applications, and High Speed machining. Adopted to ISO modular heads.

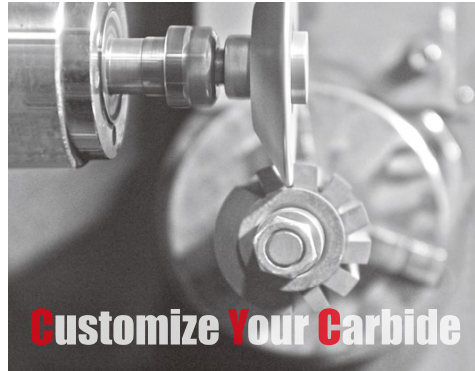
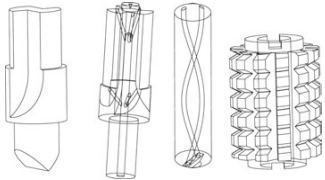




# Carbide Preforms

- 1-2 weeks leading time
- No MOQ limit
- Raw sintered or Semi-finished products both are available
- RFQ processed within 24 hours
- Custom solutions to meet your specific requirements

Please allow RELY to help you achieve cost savings by customizing your carbide.



Grade	Binder	Hardness		T.R.S	Density	Grain Size	ISO Code
	%	HRA	HV10	≥N/mm <sup>2</sup>	g/cm <sup>3</sup>		
MH10F	10.0	91.8	1600	3800	14.45	Submicron	K30
	An excellent general purpose grade to cover most cutting applications. For materials of ISO P, M, K, N. Suitable for drilling, milling and reaming.						
UH12	12.0	92.2	1660	4000	14.15	Ultrafine	K40
	Gives high impact strength while maintaining excellent wear resistance. A universal grade for cutting Stainless Steel, Titanium Alloys, Nickel base alloy and other difficult machine materials. Suitable for milling, drilling.						
EH12	12.0	90.7	1450	3500	14.20	Submicron	K40
	Suitable for tool shank and PCD tool body .						

● Above data are typical parameters.

## Standard Tolerance For Preforms

### Diameter Tolerance

OD (mm)	Basic allowance (mm)	Sintering Tol. (mm)
>Φ5—Φ14	0.8	±0.2
>Φ14.1—Φ25	1.0	±0.3
>Φ25.1—Φ48	1.2	±0.4
>Φ48.1	1.6	±0.5

● Above data are typical parameters.

### Center and Exit hole tolerance

Hole dia (mm)	Tolerance (mm)
>Φ0.8—Φ1.5	±0.1
>Φ1.6—Φ3.0	±0.2
>Φ3.1—Φ8.0	±0.3

● Above data are typical parameters.

### Length & Concentricity

Basic allowance (mm)	Sintering Tol. (mm)	Concentricity (mm)
+(0.4+0.5%L)	±0.5%L	≤0.3
For example, if L=100mm, then it's basic allowance is +0.4+0.5%*100=0.9mm Sintering tolerance is ±0.5%*100=100.9±0.5mm.		

● Above data are typical parameters.

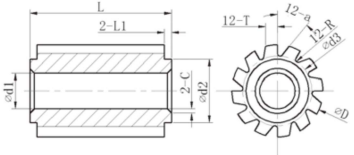

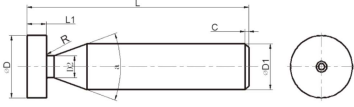

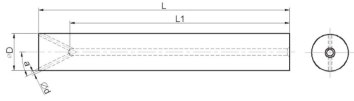

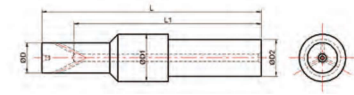



## Preform Blanks for Cutting Tools

### Our Competence

MOQ starts at 1 piece

- As soon as 5 days
- Fully customized according to your drawings
- Provide OD precision grinding service

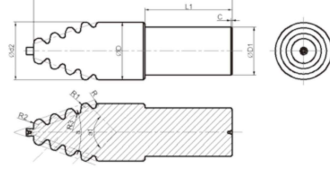

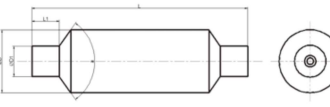



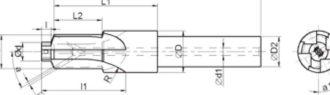

	<p>Gear hob blanks, raw sintered</p> 
	<p>T Type milling Blanks, raw sintered or h5/h6 ground</p> 
	<p>Milling cutter blanks, with 2/3/4 radial coolant holes h5/h6 ground</p> 
	<p>Step Drill Blanks Unground or OD h6 ground</p> 

## Preform Blanks for Cutting Tools

### Our Competence

MOQ starts at 1 piece

- As soon as 5 days
- Fully customized according to your drawings
- Provide OD precision grinding service

	<p>X'mas tree blanks, Raw sintered or h6 shank ground</p> 
	<p>Center drill blanks, raw sintered or h6 ground</p> 
	<p>Boring bar shanks, raw sintered or h6 ground</p> 
	<p>PCD shanks, raw sintered or h6 ground</p> 

## Other Metal Cutting Tool Blanks

Due to our comprehensive and variable forming solutions, we are able to produce the various type of rods by extrusion pressing, and also the direct pressing of blanks such as rotary burr blanks, disc cutters etc.

Special developed grades upon application, high precision press tools designed built in house, offer tighter tolerance control, which ensures higher performance of products delivered to you.

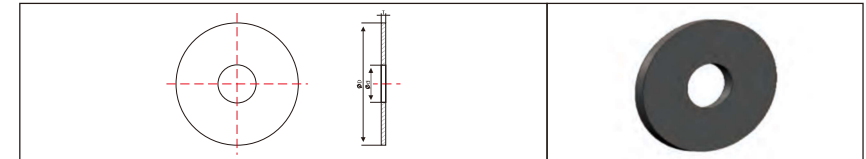


### Grade Chart

Grade	Binder	Hardness		T.R.S	Density	Grain Size	ISO Code
	%	HRA	HV10	≥N/mm <sup>2</sup>	g/cm <sup>3</sup>		
CK10H	6	91.3	1530	2500	14.90	Medium	K10
	Ideal grade for rotary burr blanks.						
MH7	6	93.1	1850	3600	14.85	Submicron	K10-K20
	Standard grade for carbide strips. For cutting non-ferrous metals like Cu, Al.						
MH10F	10	91.8	1600	3800	14.45	Submicron	K30
	Standard grade for carbide strips, disc cutters, for machining most kinds of steel.						
UH12	12	92.2	1660	4000	14.15	Ultrafine	K40
	Standard grade for carbide strips, disc cutters, For machining stainless steel.						

● Above data are typical parameters.

## Disc Cutter Blanks



Unit: mm

D	Tol.	d	Tol.	T	ToL.+0.2~0.3
11.0		4.0		0.6~2.5	
17.2		4.5			
19.0		7.3			
19.0		5.3			
20.0		7.3	-0.3/0	0.6~3.5	
21.5		5.3			
30.2		5.5		0.6~4.2	
31.2		9.5			
41.2		7.3			
41.2	0/+0.5	12.2			
41.2		14.8		0.7~4.5	
46.0		15.0			
51.5		11.5	-0.4/0		
51.5		15.0			
51.5		20.8			
51.5		24.5			
54.5		15.0			
61.5		15.0			
61.5		21.4			
61.5		24.5			

● Above data are typical parameters.

D	Tol.	d	Tol.	T	ToL.+0.2~0.3
62.5		16.0		0.7~4.5	
62.5		14.7			
62.5		15.8			
64.5		14.8			
66.5		14.5	-0.4/0	0.7~5.0	
66.5		15.0			
66.5		21.0			
71.5	0/+0.8	14.5			
71.5		15.3			
71.5		24.5			
71.5		20.5			
75.5		20.5			
75.5		15.0			
81.5		20.5			
81.5		24.5			
102.0		20.5	-0.7/0		
102.0	0/+1.0	65.0			
109.0		60.0			
152.0		30.5			

● Above data are typical parameters.

### Available Grades

MH10F
  UH12

● Please contact with us for more specifications.

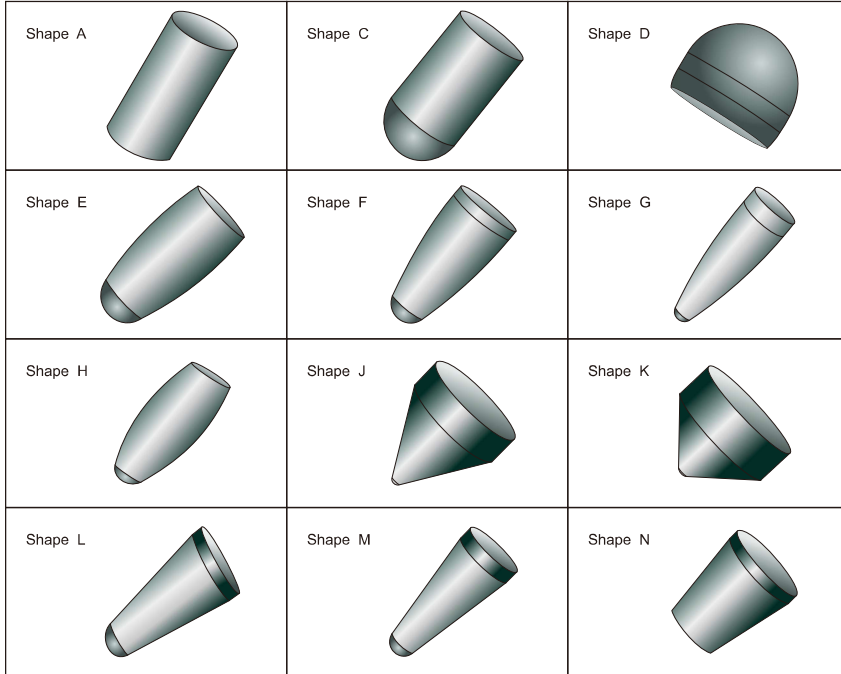
■ In Stock  Check inventory



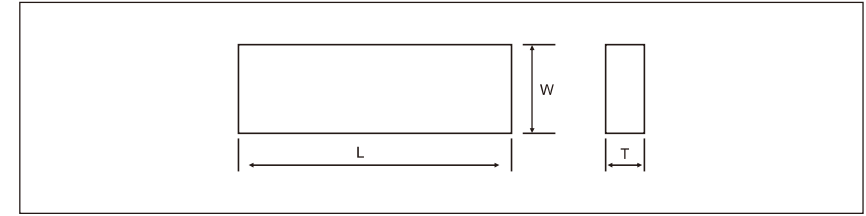
# Rotary Bur Head Blanks

- Inch styles - BSA, BSC, BSD, BSE, BSF, BSG, BSH, BSM and BSL
- Metric styles - ZYA, WRD, KUD, TRE, RBF SPG and KSJ

Features: Good wear resistance and longer tool life. Brazing fixture holes available.  
 Applications: DIN and INCH standards of tungsten carbide rotary bur blanks for fabrication of finished rotary burs.



# Carbide Flat Bars / Strips



T (mm)	Tol.	W (mm)	Tol.	L (mm)	Tol.
1.5-4.0	+0.2/+0.5	4.0	+0.2/+0.7	330	+1.0/+6.0
1.5-5.0		5.0			
1.5-6.0		6.0			
1.5-7.0		7.0			
1.5-8.0		8.0			
1.5-10.0		10.0			
1.5-12.0		12.0			
2.0-8.0		14.0			
2.0-8.0		15.0			
2.0-8.0		16.0			
2.0-8.0		18.0			
2.0-8.0		20.0			
2.0-8.0		22.0			
2.0-8.0		25.0			
2.0-8.0		26.0			
2.0-8.0		30.0			
2.0-8.0		32.0			
2.0-8.0		35.0			
2.0-8.0		40.0			
2.0-8.0		45.0			

● Above data are typical parameters.

## Available Grades

- CK10H
- 

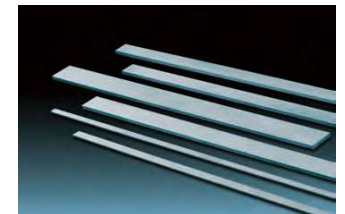
● Please contact with us for more specifications.  
 In Stock    Check inventory



## Available Grades

- MH7
- MH10F
- UH12
- 
- 

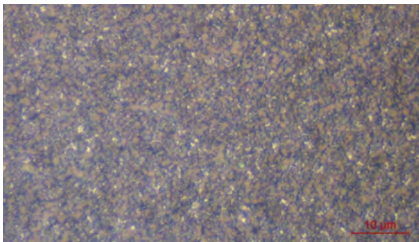
● Please contact with us for more specifications.  
 In Stock    Check inventory



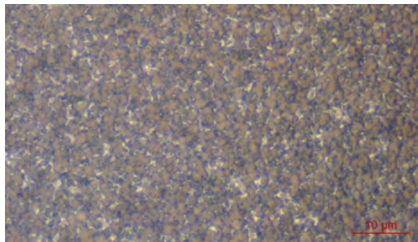
# Cermets

Grade	Density g/cm <sup>3</sup>	T.R.S >N/mm <sup>2</sup>	Hardness HRA	Applications	
				Cutting Model	ISO Code
CMT55	6.80	2250	92.2	Finishing, Semi-Finishing	P10-P20
CMT70	7.30	2100	92.0	finishing, semi-finishing	P05-P20, M05-M20 K10-K15
CMT80	7.25	2250	91.0	semi-finishing, medium-rough	P10-P25, M10-M25

● Above data are typical parameters.



CMT55



CMT80

## Specifications on cermet

- 1.R&D of cermet grades done in house by our experienced technical team. Tic+TiCN as the major contents.
- 2.With features of excellent wear resistance, high red hardness,chemical durability and lower friction coefficient, makes the lifetime of Cermet 3-10 times that of normal carbide.

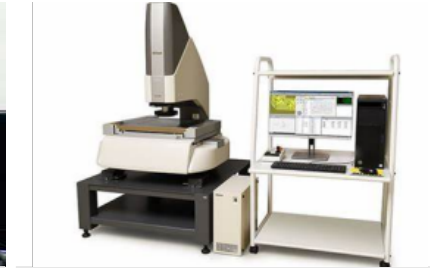
Cermet is a good choice for metalworking tools when the application requires high speed, high precision, high efficiency and a fine surface finish.



## CONSISTENT QUALITY GUARANTEED



Metallographic Microscope (Leica-Germany)



Video Measuring System



Roundness measuring instrument (Mitutoyo-Japan)



SEM tester (JEOL-Japan)



Hardness tester (Future tech-Japan)



Magnetometer