

CATALOG OF TUNGSTEN CARBIDE RODS

Tungsten Carbide Rod

Anvils and Pressure Cylinders

Date of Preparation: 08/19/2011

Revision 2011

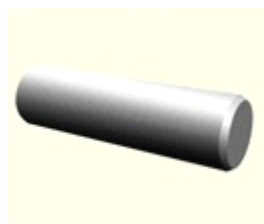
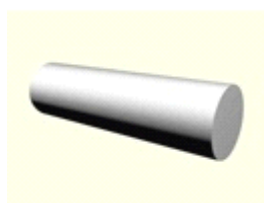
Reason for Issue: Updated Format

Chemical Name: Tungsten Carbide

Chemical Family: Refractory Metal (non-ferrous metal)

Chemical Formula: WC

Manufacturer: E-Biz Center of China Tungsten Industry Association



MORE INFORMATION

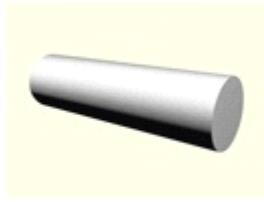
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1. SINTERED TUNGSTEN CARBIDE RODS

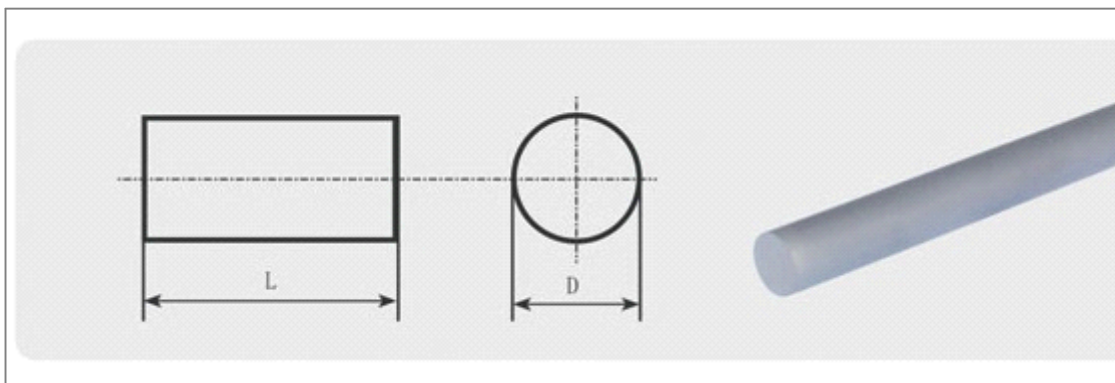


- 1, Diameter: 0.5-50.0mm
- 2, Length: 10-500mm
- 3, Density: 11.3-16.5 g/cm³
- 4, Composition: WC+Co, WC+TiC+Co, WC+TiC+TaC+Co
- 5, Surface: Sintering surface
- 6, Can be designed according to customer's requirements.

We supply premium grade tungsten carbide rod from stock in unground, centerless ground and polished form.

Recommended Grade for tungsten carbide rod: YG6, YG8, YG6X, YG012, YG013, YG8A etc.

Tungsten Carbide Rods are manufactured as standards with one, two, or three holes, straight or twisted to a 30 or 40 degree helix, or solid with no holes. All rods are available in standard lengths of 310 and 330 mm. Custom lengths available by request.

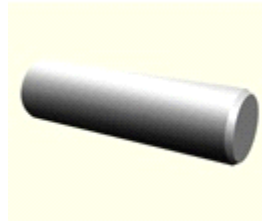


Specification	Tolerance of diamete(mm)	Tolerance of length(mm)
dia0.5x330	-/+0.30	-/+5.0
dia1.0x330	-/+0.30	-/+5.0
dia1.6x330	-/+0.30	-/+5.0
dia1.8x330	-/+0.30	-/+5.0
dia2.3x330	-/+0.30	-/+5.0
dia2.5x330	-/+0.30	-/+5.0
dia3.0x330	-/+0.30	-/+5.0
dia3.5x330	-/+0.30	-/+5.0
dia4.0x330	-/+0.30	-/+5.0

dia4.5x330	-/+0.30	-/+5.0
dia5.0x330	-/+0.30	-/+5.0

Note: Tungsten carbide rod applications include drill bits, end mills, and reamers. Custom diameters and length are also available in these grades as well as metric sizes.

2. FINISHED TUNGSTEN CARBIDE RODS

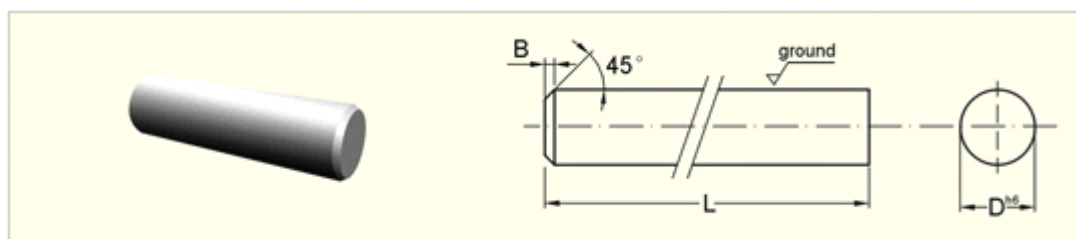


- 1, Diameter: 0.5-50.0mm
- 2, Length: 10-500mm
- 3, Density: 11.3-16.5 g/cm³
- 4, Composition: WC+Co, WC+TiC+Co, WC+TiC+TaC+Co
- 5, Surface: Ground surface
- 6, Can be designed according to customer's requirements.

We supply premium grade tungsten carbide rod from stock in unground, centerless ground and polished form.

Recommended Grade for tungsten carbide rod: YG6, YG8, YG6X, YG012, YG013, YG8A etc.

Tungsten Carbide Rods are manufactured as standards with one, two, or three holes, straight or twisted to a 30 or 40 degree helix, or solid with no holes. All rods are available in standard lengths of 310 and 330 mm. Custom lengths available by request.



mm

Dia.	Dia. Tol.	Length	L Tol.	Chamfer B
3.00	+0/-0.006	39	+0.50	0.3
4.00	+0/-0.008	51		0.4
5.00				
6.00				

MORE INFORMATION

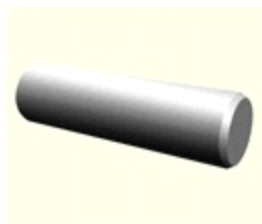
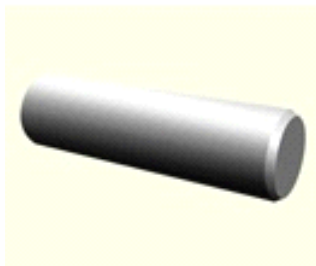
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6.00	+0/0.008	55	+0.50	0.4
6.00		58		
8.00	+0/0.009	59		0.6
8.00		64		
10.00	+0/-0.009	67	+0.50	0.6
10.00		73		0.8
12.00	+0/-0.011			
12.00		84	+0.60	
14.00	+0/-0.011	76	+0.50	0.8
14.00		84	+0.60	
16.00		83		
16.00		93		
18.00	+0/-0.011	85	+0.60	1.0
18.00		93		
20.00	+0/-0.013			
20.00		105		

Note: Tungsten carbide rod applications include drill bits, end mills, and reamers. Custom diameters and length are also available in these grades as well as metric sizes.

3. FINISHED END MILL BLANKS



Finished end mill blanks introduce

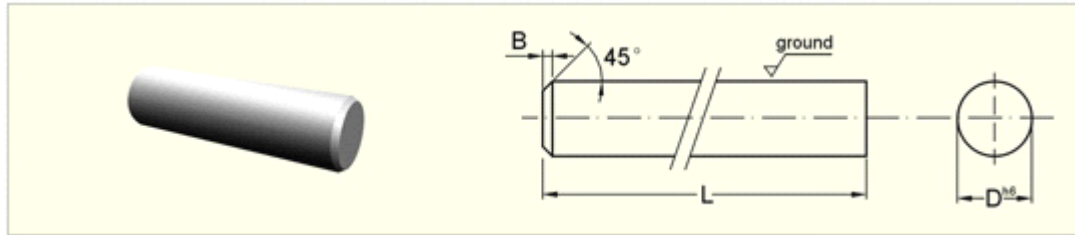
Suitable for machining common steel, cast iron, stainless steel, heat-resistant steel, nickel based alloys and titanium alloys, etc. It is recommended for making conventional tools, such as twist drills, end mills, screw taps, gun drills, etc.

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Finished end mill blanks



mm

Dia.		Length		Chamfer		Code
D inch	D mm	L inch	L mm	B inch	B mm	code
1/8	3.175	1 1/2	38.1	0.015	0.381	S
		2	50.8			T
		3	76.2			
3/16	4.763	1 1/2	38.1	0.015	0.381	S
		2	50.8			U
		2 1/2	63.5			T
		3	76.2			
1/4	6.350	1 1/2	38.1	0.025	0.635	S
		2	50.8			U
		2 1/2	63.5			T
		3	76.2			
		3 1/4	82.6			
		3 1/2	88.9			
		4	101.6			
5/16	7.938	2	50.8	0.025	0.635	S
		2 1/2	63.5			U
		3	76.2			T
		3 1/2	88.9			
		4	101.6			
3/8	9.525	2	50.8	0.030	0.762	S
		2 1/2	63.5			U
		3	76.2			T
		3 1/4	82.6			
		3 1/2	88.0			
		4	101.6			
		6	152.4			
7/16	11.113	2 1/2	63.5	0.030	0.762	U
		2 3/4	69.9			

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		4	101.6			T
		4 1/2	114.3			
		5	127.0			
1/2	12.700	2 1/2	63.5	0.030	0.762	U
		3	76.2			T
		3 1/8	79.4			
		4	101.6			
		4 1/2	114.3			
		5	127			
		6	152.4			
9/16	14.288	3	76.2	0.030	0.762	T
		3 1/2	88.9			
5/8	15.875	3	76.2	0.030	0.762	T
		3 1/2	88.9			
		3 3/4	95.3			
		4 1/8	104.8			
		5	127			
		8	203.2			
3/4	19.050	3	76.2	0.040	1.016	T
		3 1/2	88.9			
		4	101.6			
		4 1/2	114.3			
		5	127			
		6	152.4			
		6 1/2	165.1			
7/8	22.225	4	101.6	0.040	1.016	T
1	25.400	3	76.2	0.040	1.016	T
		3 1/2	88.9			
		4	101.6			
		5	127			
		6	152.4			
		7	177.8			
1 1/4	31.750	4 1/2	114.3	0.040	1.016	T
		6	152.4			
		7 1/2	190.5			

Note: Tungsten carbide rod applications include drill bits, end mills, and reamers. Custom diameters and length are also available in these grades as well as metric sizes.

4. ROD FOR PCB TOOL

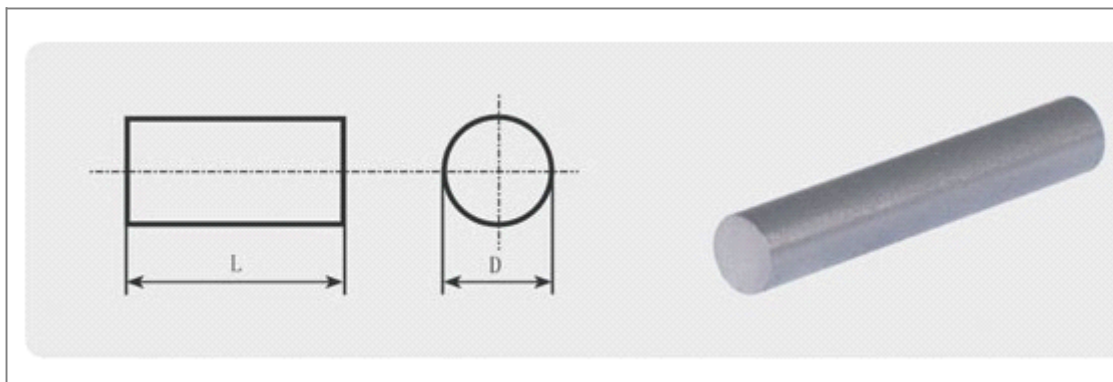


- 1, Density: 14.0-14.9 g/cm³
- 2, Composition: WC+Co, WC+TiC+TaC+Co
- 3, Surface: Sintering surface, Ground surface.
- 4, can be designed according to customer's requirements.

Various types and dimensions of Drill & Milling Cutter & PCB.

Grade	Co (±0.5%)	Grain Size (µm)	Hardness (HRA)	Density (g/cm ³)	Toughness (kgf/mm ²)
YG06CF	6	0.8-1	92.2	14.80	290
YG07X	7	1-2	91.2	14.75	310
YG10UF	10	0.6-0.8	91.7	14.40	400
YG05UF	5	<0.6	94.0	14.80	350
YG06UF	6	<0.6	94.5	14.65	360
YG07UF	7	<0.6	93.0	14.65	380
YG10UF	10	<0.6	92.3	14.35	350
YG06CF	6	0.8-1	92.2	14.85	350
YG10UF	10	0.6-0.8	91.8	14.40	350
YG12UF	12	0.6-0.8	91.3	14.08	370
YG12UF	12	<0.6	92.4	14.15	400

Tungsten carbide rods for PCB tools



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Specification	Tolerance of diamete(mm)	Tolerance of length(mm)
dia3.25x38.5	-/+0.05	-/+0.2
dia4.0x38.5	-/+0.05	-/+0.2
dia4.5x38.5	-/+0.05	-/+0.2
dia5.0x38.5	-/+0.05	-/+0.2
dia5.5x38.5	-/+0.05	-/+0.2
dia6.5x38.5	-/+0.05	-/+0.2
dia3.5x12.8	-/+0.1	-/+0.2
dia4.0x12.8	-/+0.1	-/+0.2
dia4.5x12.8	-/+0.1	-/+0.2
dia5.0x12.8	-/+0.1	-/+0.2
dia5.5x12.8	-/+0.1	-/+0.2
dia6.0x12.8	-/+0.1	-/+0.2
dia6.5x12.8	-/+0.1	-/+0.2
dia6.85x12.8	-/+0.1	-/+0.2
dia7.0x12.8	-/+0.1	-/+0.2
dia3.26x14.0	-/+0.05	-/+0.2
dia3.05x12.7	-/+0.05	-/+0.2
dia3.05x13.1	-/+0.05	-/+0.2
dia3.05x38.6	-/+0.05	-/+0.2
dia3.05x14.1	-/+0.05	-/+0.2
dia3.05x14.6	-/+0.05	-/+0.2
dia3.05x15.1	-/+0.05	-/+0.2
dia3.05x15.6	-/+0.05	-/+0.2

Note

1. The magnetic saturation of all the grades of cemented carbide is: 135-160 emu/g.
2. WC grain size: Fine=1.4µm~2.5µm, Medium=2.5µm~5.0µm, Coarse≥5.0µm.
3. Any specific grades can be designed according to customer's requirements.

7. RODS WITH ONE HOLE



MORE INFORMATION

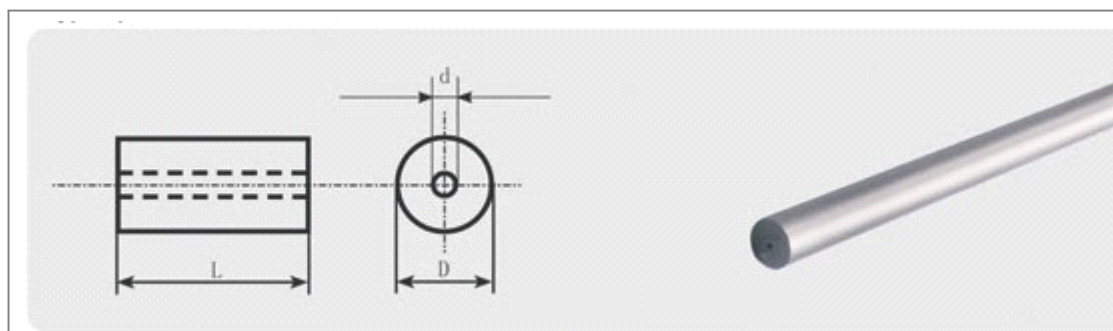
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- 1, Outside Diameter: 2.0-50.0mm, inside diameter: 0.3-10mm
- 2, standard length: 310mm, 330mm
- 3, Density: 14.0-14.9 g/cm³
- 4, Composition: WC+Co, WC+TiC+TaC+Co
- 5, Surface: Sintering surface, Forged surface, Ground surface
- 6, Can be designed according to customer's requirements.

Tungsten carbide is a class of materials widely used in machinery because of its superior strength, toughness, and wear resistance. The physical properties (hardness, TRS) of tungsten carbide are at least 3 times high than steel .it can take high pressure.

These are the specifications of our tungsten carbide rods with a straight coolant hole.



OD(m m)	Tolerance of OD(mm)	ID(m m)	Tolerance of OD(mm)	Max. Concentricity	Lengt h	Tolerance of Length(mm)
dia2.5	-/+0.20	0.3	-/+0.10	0.20	330	-/+5.0
dia4.0	-/+0.20	1.0	-/+0.15	0.20	330	-/+5.0
dia6.0	-/+0.20	1.0	-/+0.15	0.20	330	-/+5.0
dia8.0	-/+0.20	1.5	-/+0.15	0.20	330	-/+5.0
dia10.0	-/+0.40	2.0	-/+0.20	0.25	330	-/+5.0
dia12.0	-/+0.40	2.0	-/+0.20	0.25	330	-/+5.0
dia14.0	-/+0.40	2.0	-/+0.20	0.25	330	-/+5.0
dia16.0	-/+0.40	2.0	-/+0.20	0.25	330	-/+5.0
dia18.0	-/+0.40	3.0	-/+0.25	0.30	330	-/+5.0
dia20.0	-/+0.50	3.0	-/+0.25	0.30	330	-/+5.0
dia22.0	-/+0.50	3.0	-/+0.25	0.30	330	-/+5.0
dia24.0	-/+0.50	4.0	-/+0.30	0.30	330	-/+5.0
dia26.0	-/+0.50	5.0	-/+0.35	0.30	330	-/+5.0
dia28.0	-/+0.50	5.0	-/+0.35	0.30	330	-/+5.0
dia30.0	-/+0.50	5.0	-/+0.35	0.30	330	-/+5.0

Note: Rods of various diameter and hole size combinations can be supplied at customer' requests.

MORE INFORMATION

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8. RODS WITH TWO HOLES



Features of tungsten carbide rods with two straight coolant holes

- 1, Outside Diameter: 4.0-50.0mm, inside diameter: 0.3-10mm
- 2, standard length: 310mm, 330mm
- 3, Density: 14.0-14.9 g/cm³
- 4, Composition: WC+Co, WC+TiC+TaC+Co
- 5, Surface: Sintering surface, Forged surface, Ground surface
- 6, Can be designed according to customer's requirements.

Tungsten carbide is a class of materials widely used in machinery because of its superior strength, toughness, and wear resistance. The physical properties (hardness, TRS) of tungsten carbide are at least 3 times high than steel .it can take high pressure.

These are the specifications of our tungsten carbide rods with two straight coolant holes.

Tungsten carbide rods with two straight coolant holes

OD(m m)	Tolerance of OD(mm)	ID(mm)	Tolerance of ID(mm)	TKΦ(m m)	Tolerance of TKΦ(mm)	Deviationa(m m)
dia4.0	-/+0.50	0.8	-/+0.10	1.8	-/+0.2	-/+0.1
dia5.0	-/+0.50	0.8	-/+0.10	2.0	-/+0.2	-/+0.13
dia6.0	-/+0.50	1.0	-/+0.10	3.0	-/+0.2	-/+0.15

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dia7.0	-/+0.50	1.0	-/+0.15	3.5	-/+0.3	-/+0.15
dia8.0	-/+0.50	1.0	-/+0.15	4.0	-/+0.3	-/+0.15
dia9.0	-/+0.50	1.4	-/+0.15	4.0	-/+0.3	-/+0.2
dia10.0	-/+0.50	1.4	-/+0.15	5.0	-/+0.3	-/+0.2
dia11.0	-/+0.60	1.4	-/+0.15	5.0	-/+0.5	-/+0.28
dia12.0	-/+0.60	1.75	-/+0.15	6.0	-/+0.5	-/+0.3
dia13.0	-/+0.60	1.75	-/+0.15	6.0	-/+0.5	-/+0.34
dia14.0	-/+0.60	1.75	-/+0.15	7.0	-/+0.5	-/+0.37
dia15.0	-/+0.60	2.0	-/+0.20	7.0	-/+0.5	-/+0.4
dia16.0	-/+0.60	2.0	-/+0.20	8.0	-/+0.5	-/+0.4
dia17.0	-/+0.60	2.0	-/+0.20	8.0	-/+0.8	-/+0.47
dia18.0	-/+0.60	2.0	-/+0.20	9.0	-/+0.8	-/+0.5
dia19.0	-/+0.60	2.0	-/+0.20	9.0	-/+0.8	-/+0.5
dia20.0	-/+0.60	2.5	-/+0.25	10.0	-/+0.8	-/+0.5

Note: Rods of various diameter and hole size combinations can be supplied at customer' requests.

9. RODS WITH TWO HELICAL HOLES



Features of tungsten carbide rods with two helical holes

- 1, Outside Diameter: 5.0-50.0mm, inside diameter: 0.5-10mm
- 2, standard length: 310mm, 330mm
- 3, Composition: WC+Co, WC+TiC+TaC+Co
- 4, Surface: Sintering surface, Forged surface, Ground surface
- 5, Can be designed according to customer's requirements.

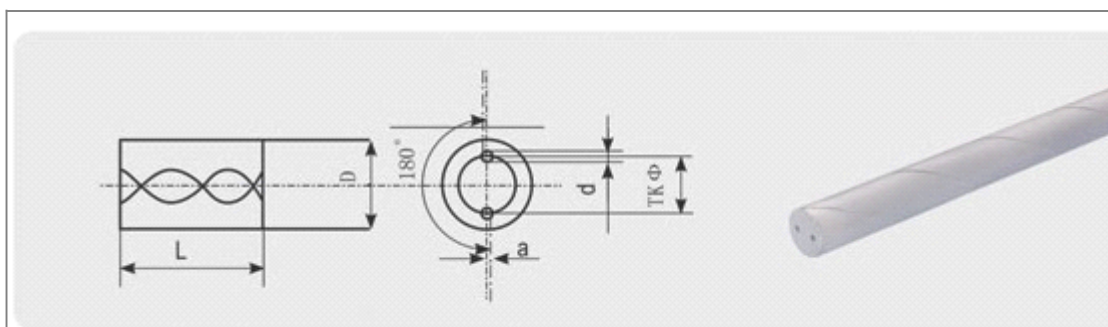
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Specifications of rods available with two helical holes



OD(m m)	Tolerance of OD(mm)	ID(m m)	Tolerance of ID(mm)	TKΦ(m m)	Tolerance of TKΦ(mm)	Deviation n a(mm)	Pitch(mm)(B:30°- /+5°)	
dia6.3	-/+0.3	0.70	-/+0.10	2.60	-/+0.40	0.15	32.65	-/+3.0
dia6.8	-/+0.3	1.00	-/+0.15	3.50	-/+0.40	0.15	35.37	-/+3.0
dia7.3	-/+0.3	1.00	-/+0.15	3.70	-/+0.40	0.15	38.09	-/+3.0
dia7.8	-/+0.3	1.00	-/+0.15	4.00	-/+0.40	0.15	40.81	-/+3.0
dia8.3	-/+0.3	1.00	-/+0.15	4.00	-/+0.40	0.15	43.53	-/+3.0
dia8.8	-/+0.3	1.00	-/+0.15	4.50	-/+0.60	0.20	46.25	-/+4.5
dia9.3	-/+0.3	1.40	-/+0.15	4.80	-/+0.60	0.20	48.97	-/+4.5
dia9.8	-/+0.3	1.40	-/+0.15	4.80	-/+0.60	0.20	81.96	-/+4.5
dia10.3	-/+0.3	1.40	-/+0.15	4.80	-/+0.60	0.20	54.41	-/+4.5
dia10.8	-/+0.4	1.40	-/+0.15	4.80	-/+0.80	0.28	57.13	-/+4.5
dia11.3	-/+0.4	1.40	-/+0.15	5.30	-/+0.80	0.28	59.86	-/+4.5
dia11.8	-/+0.4	1.40	-/+0.20	5.90	-/+0.80	0.30	62.58	-/+6.0
dia12.3	-/+0.4	1.40	-/+0.20	6.25	-/+0.80	0.30	65.30	-/+6.0

Note: Rods of various diameter and hole size combinations can be supplied at customer' requests.

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