Headquarters:
ZHUZHOU CEMENTED CARBIDE GROUP CORP. LTD.

Diamond Building, Diamond Road, Hetang District, Zhuzhou, Hunan, China.
Tel: +86 – 731 – 22968649/28264008
Fax: +86 – 731 – 28222044
Post Code: 412000
Website http://www.chinacarbide.com E-mail zccc@chinacarbide.com

2020 VERSION

ZCC

ZHUZHOU CEMENTED CARBIDE GROUP CORP.LTD

RODS & BARS PRODUCTS

ABOUT US

1954

FOUNDATION

One of the 156 major projects that China constructed in 1954 in its “First Five-Year Plan”.

1958

THE FIRST ROD

China’s 1st piece of ROD was born in ZCC.

2001

THE FIRST ROD WITH COOLANT HOLES

China’s 1st piece of ROD WITH COOLANT HOLES was born in ZCC.

2009

RODS & BARS DIVISION BUILT

Isolated division for rods only in order to avoid cross contamination!

2018

NEW DRILL BLANKS!

New production line and have sold one million pieces !

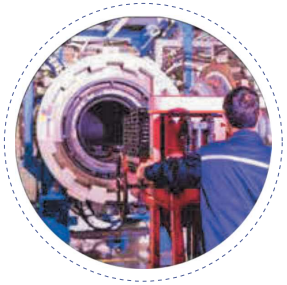
Zhuzhou Cemented Carbide Group Corporation Ltd(ZCC) was one of the 156 major projects that China constructed in 1954 in its “First Five-Year Plan”. It is China’s professional base in the production, scientific research, sales and export of cemented carbide. Its main products fall into 3 major categories- “cemented carbide, tungsten and molybdenum products, and tantalum and niobium products. They are widely used in industries of metallurgy, machinery, mining, petroleum-chemistry, electronics, etc,.

OUR PROCESS

ZCC' s rod & bar division is a specialized carbide rod & bar manufacturer under ZCC. In 1958, China' s first piece of cemented carbide rod was born here. Currently, with 300 professional employees and three specialized workshops, ZCC' s rod & bar division is producing about 2000 tons of rods annually and more than one-third are exported to worldwide-famous cutting tool manufacturers.

POWDER

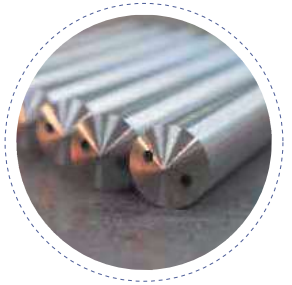
FORMING



SINTERING

MACHINING

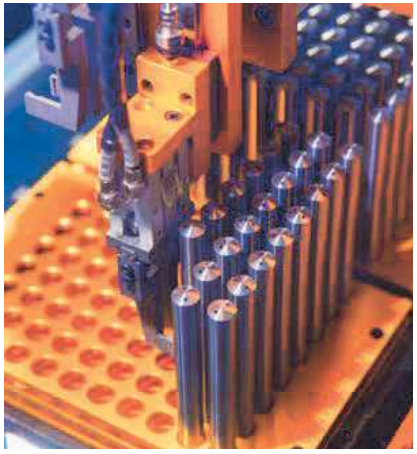
INSPECTION



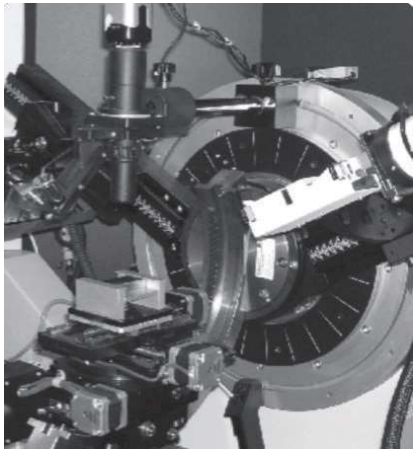
PACKAGING

OUR QUALITY

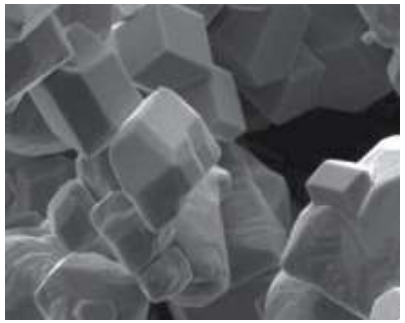
THE ONLY "STATE KEY LABORATORY" OF CEMENTED CARBIDE



GEOMETRICALLY



METALLURGICALLY



ENGINEERING

AUTOMOTIVE

APPLICATION

3C

AEROSPACE

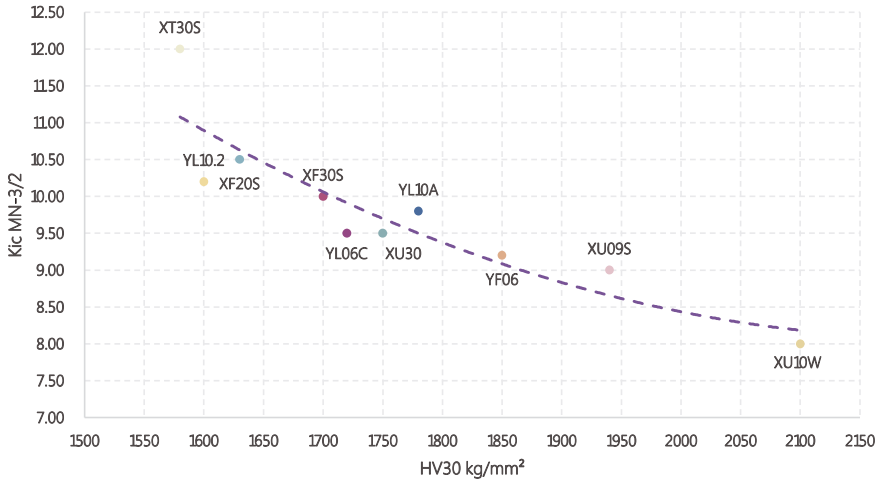
WE HAVE THE RIGHT PRODUCTION!

RODS

GRADE OVERVIEW

For Cutting Tools

GRADE		YL06C	YL10.2	YL10A	YF06	XF20S	XF30S	XT30S	XU30	XU09S	XU10W
Grain size	μm	1.0	0.8	0.8	0.6	0.6	0.6	0.6	0.4	0.4	0.4
WC+Others	%	94	90	92	94	90	88	88	88	91	97
Co	%	6	10	8	6	10	12	12	12	9	3
Density	g/cm^2	14.96	14.42	14.65	14.9	14.37	14.14	14.12	14.1	14.40	15.25
HV30	kg/mm^2	1720	1600	1780	1850	1630	1700	1580	1750	1940	2100
HRA	ISO3738	92.5	91.5	92.8	93.1	91.9	92.3	91.8	92.5	93.4	94.4
TRS (sample C*)	N/mm^2	3800	4000	3800	3600	4200	4800	4500	4000	4200	2400
KIC	MN$^{-3/2}$	9.50	10.20	9.80	9.20	10.50	10.00	12.00	9.50	9.00	8.00
Porosity	A	<02	<02	<02	<02	<02	<02	<02	<02	<02	<02
	B	00	00	00	00	00	00	00	00	00	00
	C	00	00	00	00	00	00	00	00	00	00



*) Ground cylindrical test specimen 3.25 mm dia. × 38 mm long.
Testing conditions according to ISO3327.

APPLICATION

GRADE	YL06C	YL10.2	YL10A	YF06	XF20S	XF30S	XT30S	XU30	XU09S	XU10W
Drilling	✔	✔	✔	✔	✔					
Milling	✔	✔	✔		✔	✔	✔	✔	✔	✔
Reaming				✔						
General carbon steel		★		●	★	★		●		
Stainless steel			●		●		★			
Cast Iron		★	●		★	★		●		
Ti					●		★			
HRSA						●				
Al-Mg		★	●	★	★	★		●		
Hard steel									★	
Plastic		●			●					
CFRP	★(coated)									
Wood				●	★	●				★
Ceramic	★(coated)									

★Best choice
●Good choice

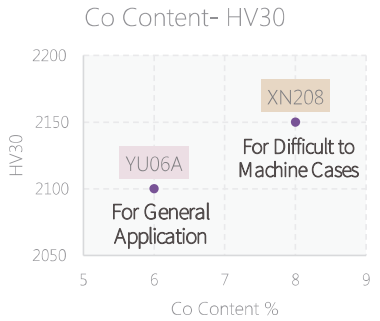
PCB RODS

For PCB Tools

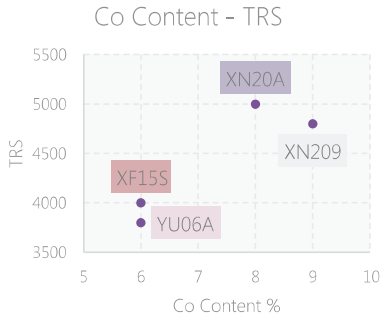
GRADE		XF15S	YU06A	XN20A	XN208	XN209
Grain size	μm	0.8	0.4	0.3	0.2	0.2
WC+Others	%	94	94	92	92	91
Co	%	6	6	8	8	9
Density(G/cm^3)	g/cm^2	14.94	14.75	14.58	14.5	14.36
HV30	kg/mm^2	1880	2100	2020	2150	2050
HRA	ISO3738	93.1	94.7	93.6	95	94.2
TRS(N/mm^2) (sample C)	N/mm^2	4000	3800	5000	4700	4800
KIC	MN$^{-3/2}$	9.20	8.31	9.80	8.50	8.80
Porosity	A	<02	<02	<02	<02	<02
	B	00	00	00	00	00
	C	00	00	00	00	00

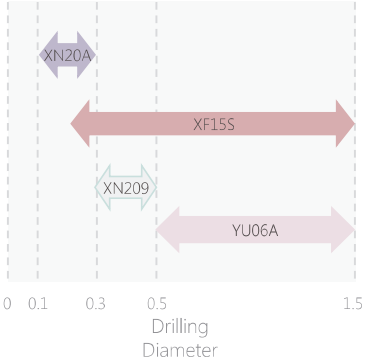
APPLICATIONS

For Router



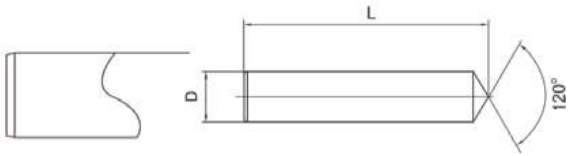
For Drill





DRILL BLANKS

Ground Drill Blanks with Point

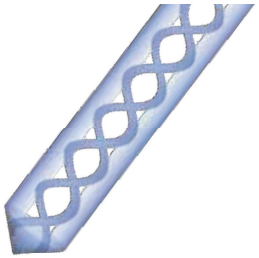


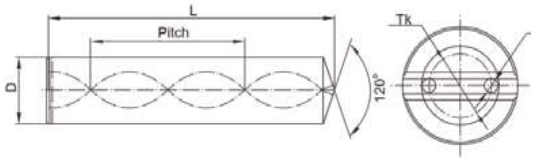
TYPE	D mm	L mm
ZY05063GD	5	63
ZY06067GD	6	67
ZY07075GD	7	157
ZY08080GD	8	163
ZY09085GD	9	163
ZY10090GD	10	75
ZY11096GD	11	80
ZY12103GD	12	85
ZY13103GD	13	90
ZY14108GD	14	96
ZY15112GD	15	103
ZY16116GD	16	103
ZY17120GD	19	108

TYPE	D mm	L mm
ZY18124GD	18	124
ZY19128GD	17	128
ZY20132GD	26	132
ZY21137GD	27	137
ZY22142GD	28	112
ZY23147GD	29	116
ZY24152GD	30	120
ZY25152GD	30	120
ZY26157GD	21	169
ZY27163GD	22	142
ZY28163GD	23	147
ZY29169GD	24	152
ZY30169GD	25	152

GROUND D (mm)		L (mm)
Range	Tol.	Tol.
0.5≤D≤30	h5/h6	0/+2.00

Ground Drill Blanks with Point, Slot and Helical Coolant Holes





TYPE	D mm	L mm	d mm	TK mm	PITCH(mm) P1	P2	P3	Tol.
ZY305030530400170GD	3	53	0.40	1.70	15.89	16.32	16.77	±0.23
ZY305040590600220GD	4	59	0.60	2.20	21.19	21.77	22.36	±0.31
ZY305050630700260GD	5	63	0.70	2.60	26.49	27.21	27.95	±0.38
ZY305060670700260GD	6	67	0.70	2.60	31.79	32.65	33.54	±0.46
ZY305070751000370GD	7	75	1.00	3.70	37.09	38.09	39.13	±0.54
ZY305080801000400GD	8	80.5	1.00	4.00	42.38	43.53	44.73	±0.62
ZY305090851400480GD	9	85	1.40	4.80	47.68	48.97	50.32	±0.69
ZY305100901400480GD	10	90.5	1.40	4.80	52.98	54.41	55.91	±0.77
ZY305110981100530GD	11	98	1.10	5.30	58.28	59.86	61.50	±0.85
ZY305121041400625GD	12	104	1.40	6.25	63.58	65.30	67.09	±0.92
ZY305131061750650GD	13	106.5	1.75	6.50	68.87	70.74	72.68	±1.00
ZY305141091750710GD	14	109	1.75	7.10	74.17	76.18	78.27	±1.08
ZY305151131750770GD	15	113	1.75	7.70	79.47	81.62	83.86	±1.15
ZY305161171750830GD	16	117.5	1.75	8.30	84.77	87.06	89.45	±1.23
ZY305171211750890GD	17	121	1.75	8.90	90.07	92.50	95.04	±1.31
ZY305181252000955GD	18	125.5	2.00	9.55	95.36	97.95	100.63	±1.38
ZY305191302001010GD	19	130	2.00	10.10	100.66	103.39	106.22	±1.46
ZY305201342001040GD	20	134	2.00	10.40	105.96	108.83	111.81	±1.54

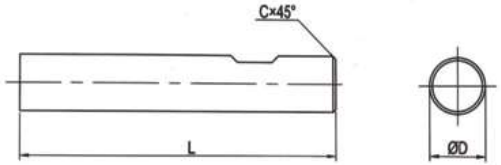
GROUND D (mm)		L (mm)	
Range	Tol.	Range	Tol.
3≤D≤20	h5/h6	L > 100	0/+2.00
		L ≤ 100	0/+1.50

d (mm)		TK (mm)	
Range	Tol.	Range	Tol.
d≤0.4	±0.10	d≤4.3	0/-0.3
0.4 < d≤1.4	±0.15	4.3 < d≤8.3	0/-0.4
0.4 < d≤1.75	±0.20	8.3 < d≤10.3	0/-0.6
1.75 < d≤2.0	±0.25	10.3 < d≤19.3	0/-0.8
		d=20.3	0/-1.0

ENDMILL BLANKS

Endmill Blanks With Weldon Shank

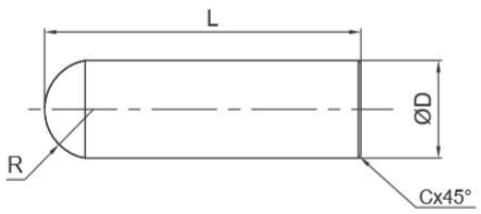
DIN6535HB

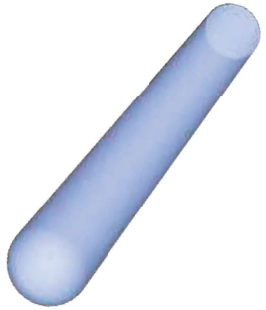


D h6 mm	L mm		Chamfer mm	
6	57	+1/0	0.5	±0.1
8	63	+1/0	0.6	±0.1
10	72	+1/0	0.6	±0.1
12	83	+1/0	0.8	±0.1
14	83	+1/0	0.8	±0.1
16	92	+1/0	0.8	±0.1
18	92	+1/0	0.8	±0.1
20	104	+1/0	1.0	±0.1

MORE TYPES ARE AVAILABLE ON REQUEST!

Ball Nose Rods





D inch	D h6 inch	L inch		Probe-radius R	Tol.
1/4	1/4	2.0	0/+0.063	0.265	±0.005
1/4	1/4	2.5	0/+0.063	0.265	±0.005
5/16	5/16	2.5	0/+0.063	0.325	±0.005
3/8	3/8	2.5	0/+0.063	0.390	+0.010/-0.005
7/16	7/16	2.75	0/+0.063	0.453	+0.010/-0.005
1/2	1/2	3.0	0/+0.063	0.515	+0.010/-0.005
5/8	5/8	3.5	0/+0.063	0.64	+0.012/-0.006
3/4	3/4	4.0	0/+0.08	0.77	+0.015/-0.008
1	1	4.0	0/+0.08	1.020	+0.015/-0.008

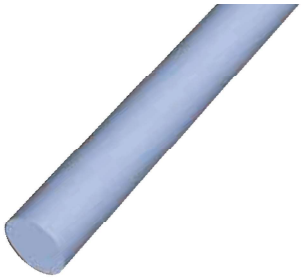
D mm	D h6 mm	L mm	
6	6	58	0/+0.5
8	8	64	0/+0.5
10	10	73	0/+0.5
12	12	84	0/+0.5
14	14	84	0/+0.5
16	16	93	0/+0.5
18	18	93	0/+0.5
20	20	105	0/+0.5

MORE TYPES ARE AVAILABLE ON REQUEST!

SOLID

Solid

Length:330/310mm (0/+10.0)



D mm		D h5/h6 mm	D mm		D h5/h6 mm
0.5	+0.10/0.20	0.5	13.5	+0.20/0.60	13.5
1.0	+0.10/0.20	1.0	14.0	+0.20/0.60	14.0
1.2	+0.10/0.20	1.2	14.5	+0.20/0.60	14.5
1.6	+0.10/0.20	1.5	15.0	+0.20/0.60	15.0
1.8	+0.10/0.20	1.8	15.5	+0.20/0.60	15.5
2.0	+0.10/0.20	2.0	16.0	+0.20/0.60	16.0
2.3	+0.10/0.30	2.3	16.5	+0.20/0.60	16.5
2.5	+0.10/0.30	2.5	17.0	+0.20/0.60	17.0
3.0	+0.10/0.30	3.0	17.5	+0.20/0.60	17.5
3.5	+0.10/0.30	3.5	18.0	+0.20/0.60	18.0
4.0	+0.20/0.50	4.0	18.5	+0.20/0.60	18.5
4.5	+0.20/0.50	4.5	19.0	+0.20/0.60	19.0
5.0	+0.20/0.50	5.0	19.5	+0.20/0.60	19.5
5.5	+0.20/0.50	5.5	20.0	+0.20/0.60	20.0
6.0	+0.20/0.50	6.0	21.0	+0.20/0.65	21.0
6.5	+0.20/0.50	6.5	22.0	+0.20/0.65	22.0
7.0	+0.20/0.50	7.0	23.0	+0.20/0.65	23.0
7.5	+0.20/0.50	7.5	24.0	+0.20/0.65	24.0
8.0	+0.20/0.50	8.0	25.0	+0.20/0.65	25.0
8.5	+0.20/0.50	8.5	26.0	+0.20/0.65	26.0
9.0	+0.20/0.50	9.0	27.0	+0.20/0.65	27.0
9.5	+0.20/0.50	9.5	28.0	+0.20/0.65	28.0
10.0	+0.20/0.50	10.0	29.0	+0.20/0.65	29.0
10.5	+0.20/0.50	10.5	30.0	+0.20/0.65	30.0
11.0	+0.20/0.50	11.0	31.0	+0.20/0.65	31.0
11.5	+0.20/0.50	11.5	32.0	+0.20/0.65	32.0
12.0	+0.20/0.60	12.0	33.0	+0.20/0.65	33.0
12.5	+0.20/0.60	12.5	34.0	+0.20/0.65	34.0
13.0	+0.20/0.60	13.0	35.0	+0.20/0.65	35.0

MORE TYPES ARE AVAILABLE ON REQUEST!

Solid

With 45° Chamfer, fix length

D h5/h6 mm	L mm		Chamfer mm	D h5/h6 mm	L mm		Chamfer mm
2.0	32	0/+0.5	0.3	10.0	70	0/+0.5	0.8
3.0	32	0/+0.5	0.3	10.0	72	0/+0.5	0.8
3.0	39	0/+0.5	0.3	11.0	70	0/+0.5	0.8
4.0	38	0/+0.5	0.4	11.0	72	0/+0.5	0.8
4.0	40	0/+0.5	0.4	12.0	70	0/+0.5	0.8
4.0	51	0/+0.5	0.4	12.0	73	0/+0.5	0.8
5.0	38	0/+0.5	0.4	12.0	84	0/+0.5	0.8
5.0	51	0/+0.5	0.4	12.0	100	0/+0.5	0.8
5.0	57	0/+0.5	0.4	13.0	75	0/+0.5	0.8
6.0	39	0/+0.5	0.4	14.0	75	0/+0.5	0.8
6.0	45	0/+0.5	0.4	14.0	84	0/+0.5	0.8
6.0	51	0/+0.5	0.4	15.0	75	0/+0.5	0.8
6.0	55	0/+0.5	0.4	16.0	75	0/+0.5	0.8
6.0	57	0/+0.5	0.4	16.0	82	0/+0.5	0.8
7.0	60	0/+0.5	0.6	16.0	92	0/+0.5	0.8
8.0	58	0/+0.5	0.6	18.0	84	0/+0.5	1.0
8.0	60	0/+0.5	0.6	18.0	93	0/+0.5	1.0
8.0	64	0/+0.5	0.6	18.0	100	0/+0.5	1.0
9.0	60	0/+0.5	0.6	20.0	92	0/+0.5	1.0
9.0	63	0/+0.5	0.6	20.0	100	0/+0.5	1.0
10.0	66	0/+0.5	0.6	20.0	104	0/+0.5	1.0

MORE TYPES ARE AVAILABLE ON REQUEST!

Solid

With 45° Chamfer,
length : 100mm(0/+0.5)

D h5/h6 mm	Chamfer mm	D h5/h6 mm	Chamfer mm
1.0	0.3	13.0	0.7
1.5	0.3	14.0	0.7
2.0	0.3	15.0	0.7
2.5	0.3	16.0	0.7
3.0	0.3	18.0	1.0
3.5	0.3	19.0	1.0
4.0	0.3	20.0	1.0
4.5	0.3	21.0	1.0
5.0	0.3	22.0	1.0
5.5	0.3	23.0	1.0
6.0	0.5	24.0	1.0
6.5	0.5	25.0	1.5
7.0	0.5	26.0	1.5
7.5	0.5	28.0	1.5
8.0	0.5	30.0	1.5
8.5	0.5	32.0	1.5
9.0	0.5	33.0	1.5
9.5	0.5	34.0	1.5
10.0	0.5	35.0	1.5
10.5	0.5	36.0	1.5
11.0	0.5	38.0	1.5
11.5	0.5	40.0	1.5
12.0	0.7		

MORE TYPES ARE AVAILABLE ON REQUEST!

Solid

Inch sizes, polished, with 45° Chamfer,
fix length

D h6 mm	L mm		Chamfer mm
1/16	1-1/2	0/+0.02	0.2
3/32	1.04	0/+0.02	0.2
3/32	1-3/4	0/+0.02	0.2
3/32	2	0/+0.02	0.2
1/8	1	0/+0.02	0.3
1/8	1-1/2	0/+0.02	0.3
1/8	2	0/+0.02	0.3
1/8	2-1/4	0/+0.02	0.3
1/8	2-1/2	0/+0.02	0.3
1/8	3	0/+0.02	0.3
1/8	4	0/+0.02	0.3
1/8	4-1/2	0/+0.02	0.3
1/8	12	0/+0.4	0.3
5/32	2	0/+0.02	0.3
5/32	2-1/2	0/+0.02	0.3
5/32	3	0/+0.02	0.3
5/32	12	0/+0.4	0.3
0.1610	2-1/2	0/+0.02	0.3
11/64	2-3/4	0/+0.02	0.3
11/64	6-1/2	0/+0.02	0.3
11/64	7	0/+0.02	0.3
3/16	1-1/2	0/+0.02	0.4
3/16	2	0/+0.02	0.4
3/16	2-3/16	0/+0.02	0.4
3/16	2-1/4	0/+0.02	0.4
3/16	2-1/2	0/+0.02	0.4
3/16	3	0/+0.02	0.4
3/16	4	0/+0.02	0.4
3/16	6	0/+0.02	0.4

MORE TYPES ARE AVAILABLE ON REQUEST!

Solid

Inch sizes, polished, with 45 ° Chamfer, fix length

D h6 mm	L mm		Chamfer mm
.1935	2-3/4	0/+0.02	0.4
13/64	3	0/+0.02	0.4
7/32	3	0/+0.02	0.4
.2188	2.5	0/+0.02	0.4
1/4	1-1/2	0/+0.02	0.4
1/4	2	0/+0.02	0.4
1/4	2-1/2	0/+0.02	0.4
1/4	3	0/+0.02	0.4
1/4	3-1/2	0/+0.02	0.4
1/4	4	0/+0.02	0.4
1/4	4-1/2	0/+0.02	0.4
1/4	5	0/+0.02	0.4
1/4	6	0/+0.02	0.4
1/4	6-1/2	0/+0.02	0.4
1/4	7	0/+0.02	0.4
1/4	8	0/+0.02	0.4
1/4	12	0/+0.4	NO
9/32	1-1/2	0/+0.02	0.6
9/32	2-13/16	0/+0.02	0.6
5/16	1-1/4	0/+0.02	0.6
5/16	2-1/2	0/+0.02	0.6
5/16	3	0/+0.02	0.6
5/16	3-1/2	0/+0.02	0.6
5/16	3-3/4	0/+0.02	0.6
5/16	4	0/+0.02	0.6
5/16	6	0/+0.02	0.6
5/16	12	0/+0.4	NO
11/32	4	0/+0.02	0.6

MORE TYPES ARE AVAILABLE ON REQUEST!

Solid

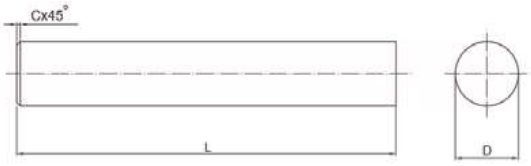
Inch sizes, polished, with 45 ° Chamfer, fix length

D h6 mm	L mm		Chamfer mm
23/64	8	0/+0.02	0.6
3/8	2	0/+0.02	0.6
3/8	2-1/2	0/+0.02	0.6
3/8	3	0/+0.02	0.6
3/8	3-1/4	0/+0.02	0.6
3/8	4	0/+0.02	0.6
3/8	4-1/2	0/+0.02	0.6
3/8	5	0/+0.02	0.6
3/8	6	0/+0.02	0.6
3/8	8	0/+0.02	0.6
3/8	6-1/2	0/+0.02	0.6
3/8	12	0/+0.4	0.6
27/64	4	0/+0.02	0.6
27/64	4-1/2	0/+0.02	0.6
7/16	2-1/2	0/+0.02	0.6
7/16	3	0/+0.02	0.6
7/16	3-1/2	0/+0.02	0.6
7/16	4	0/+0.02	0.6
7/16	4-1/2	0/+0.02	0.6
7/16	6	0/+0.02	0.6
7/16	12	0/+0.4	0.6
1/2	2-1/2	0/+0.02	0.6
1/2	3	0/+0.02	0.6
1/2	3-1/4	0/+0.02	0.6
1/2	3-1/2	0/+0.02	0.6
1/2	4	0/+0.02	0.6
1/2	4-1/2	0/+0.02	0.6
1/2	5	0/+0.02	0.6

MORE TYPES ARE AVAILABLE ON REQUEST!

Solid

Inch sizes, polished, with 45 ° Chamfer, fix length



D h6 mm	L mm		Chamfer mm
1/2	6	0/+0.02	0.6
1/2	7	0/+0.02	0.6
1/2	8	0/+0.02	0.6
1/2	8-1/2	0/+0.02	0.6
1/2	12	0/+0.4	NO
9/16	3	0/+0.02	0.8
9/16	3-1/2	0/+0.02	0.8
9/16	4	0/+0.02	0.8
9/16	5	0/+0.02	0.8
9/16	6	0/+0.02	0.8
5/8	3	0/+0.02	0.8
5/8	3-1/8	0/+0.02	0.8
5/8	3-1/4	0/+0.02	0.8
5/8	3-1/2	0/+0.02	0.8
5/8	4	0/+0.02	0.8
5/8	4-1/2	0/+0.02	0.8
5/8	5	0/+0.02	0.8
5/8	6	0/+0.02	0.8
5/8	7	0/+0.02	0.8
5/8	8	0/+0.02	0.8
5/8	10	0/+0.02	0.8
5/8	12	0/+0.4	0.8
3/4	3	0/+0.02	0.8
3/4	4	0/+0.02	0.8
3/4	5	0/+0.02	0.8
3/4	6	0/+0.02	0.8
3/4	7	0/+0.02	0.8
3/4	8	0/+0.02	0.8

MORE TYPES ARE AVAILABLE ON REQUEST!

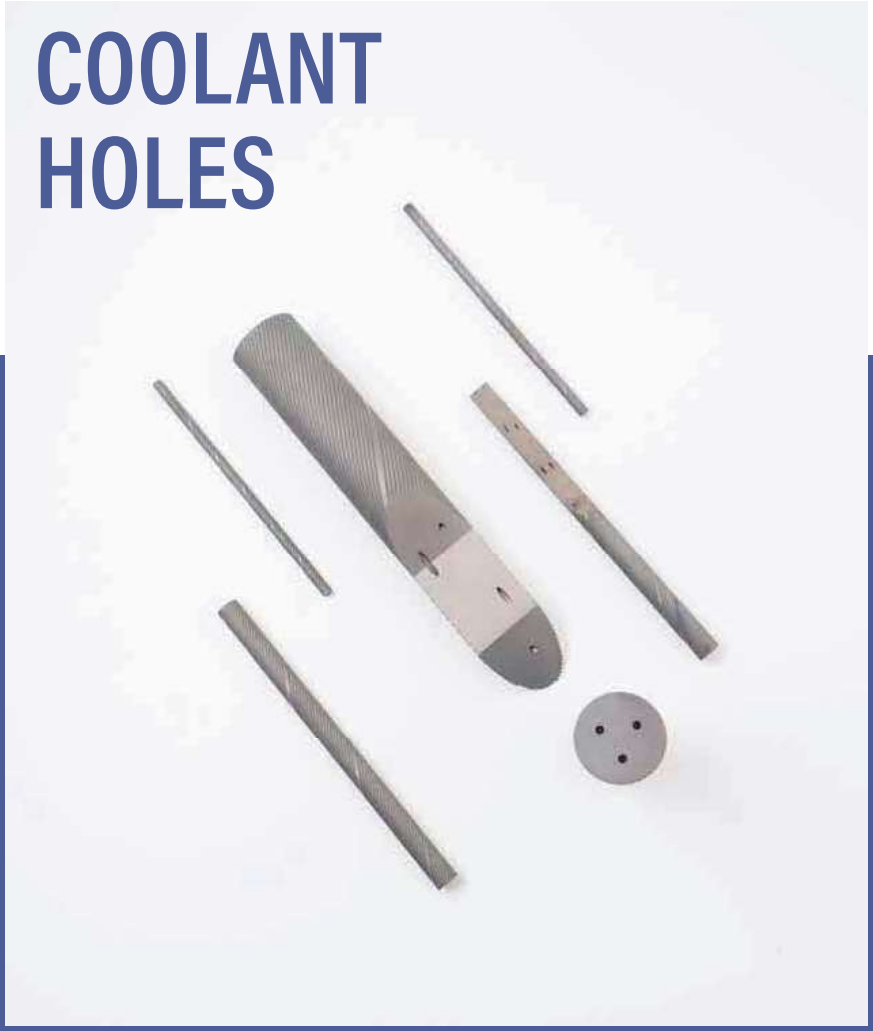
Solid

Inch sizes, polished, with 45 ° Chamfer, fix length

D h6 mm	L mm		Chamfer mm
3/4	10	0/+0.02	0.8
3/4	12	0/+0.4	NO
7/8	4	0/+0.02	1.0
7/8	5	0/+0.02	1.0
7/8	6	0/+0.02	1.0
1	3	0/+0.02	1.0
1	4	0/+0.02	1.0
1	5	0/+0.02	1.0
1	6	0/+0.02	1.0
1	7	0/+0.02	1.0
1	8	0/+0.02	1.0
1	9	0/+0.02	1.0
1	10	0/+0.02	1.0
1	12	0/+0.4	NO
1	12-1/2	0/+0.4	NO
1	13	0/+0.4	NO
1-1/8	4-1/2	0/+0.02	1.0
1-1/4	4	0/+0.02	1.0
1-1/4	5	0/+0.02	1.0
1-1/4	5-1/2	0/+0.02	1.0
1-1/4	6	0/+0.02	1.0
1-1/4	6-1/2	0/+0.02	1.0
1-1/4	7	0/+0.02	1.0
1-1/4	7-1/2	0/+0.02	1.0
1-1/4	8	0/+0.02	1.0
1-1/4	9	0/+0.02	1.0
1-1/4	12-1/2	0/+0.4	NO
1-1/2	7-1/2	0/+0.02	1.0

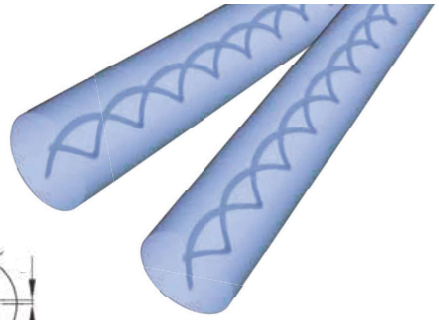
MORE TYPES ARE AVAILABLE ON REQUEST!

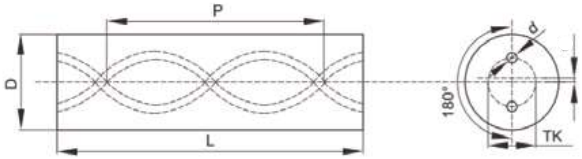
RODS WITH COOLANT HOLES



2 coolant holes, 30° helix

Length:330/310mm and fix lengths



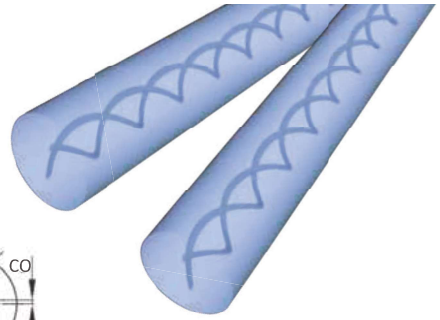


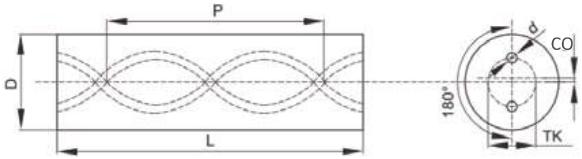
D mm		D h5/h6 mm	d mm		TK mm		CO* mm	Pitch P1	P2	P3	Tol.
3.3	+0.7/+0.3	3.0	0.4	±0.10	1.7	0/-0.3	≤0.04	15.89	16.32	16.77	±0.23
4.3	+0.7/+0.3	4.0	0.6	±0.15	2.2	0/-0.3	≤0.05	21.19	21.77	22.36	±0.31
5.3	+0.8/+0.3	5.0	0.7	±0.15	2.6	0/-0.4	≤0.10	26.49	27.21	27.95	±0.38
6.3	+1.0/+0.4	6.0	0.7	±0.15	2.6	0/-0.4	≤0.10	31.79	32.65	33.54	±0.46
6.8	+1.0/+0.4	6.5	1.0	±0.15	3.5	0/-0.4	≤0.10	34.44	35.37	36.34	±0.50
7.3	+1.0/+0.4	7.0	1.0	±0.15	3.7	0/-0.4	≤0.10	37.09	38.09	39.13	±0.54
7.8	+1.0/+0.4	7.5	1.0	±0.15	4.0	0/-0.4	≤0.10	39.73	40.81	41.93	±0.58
8.3	+1.0/+0.4	8.0	1.0	±0.15	4.0	0/-0.4	≤0.10	42.38	43.53	44.73	±0.62
9.3	+1.0/+0.4	9.0	1.4	±0.15	4.8	0/-0.6	≤0.15	47.68	48.97	50.32	±0.69
9.8	+1.0/+0.4	9.5	1.4	±0.15	4.8	0/-0.6	≤0.15	50.33	51.69	53.11	±0.73
10.3	+1.1/+0.4	10.0	1.4	±0.15	4.8	0/-0.6	≤0.15	52.98	54.41	55.91	±0.77
11.3	+1.1/+0.4	10.0	1.4	±0.15	5.3	0/-0.8	≤0.18	58.28	59.86	61.5	±0.85
12.3	+1.1/+0.4	12.0	1.4	±0.15	6.25	0/-0.8	≤0.18	63.58	65.3	67.09	±0.92
13.3	+1.2/+0.4	13.0	1.75	±0.20	6.5	0/-0.8	≤0.18	68.87	70.74	72.68	±1.00
14.3	+1.4/+0.4	14.0	1.75	±0.20	7.1	0/-0.8	≤0.18	74.17	76.18	78.27	±1.08
15.3	+1.4/+0.4	15.0	1.75	±0.20	7.7	0/-0.8	≤0.20	79.47	81.62	83.86	±1.15
16.3	+1.4/+0.4	16.0	1.75	±0.20	8.3	0/-0.8	≤0.20	84.77	87.06	89.45	±1.23
17.3	+1.4/+0.4	17.0	1.75	±0.20	8.9	0/-0.8	≤0.20	90.07	92.5	95.04	±1.31
18.3	+1.4/+0.4	18.0	2.0	±0.20	9.55	0/-0.8	≤0.20	95.36	97.95	100.63	±1.38
19.3	+1.4/+0.4	19.0	2.0	±0.25	10.1	0/-0.8	≤0.20	100.66	103.39	106.22	±1.46
20.3	+1.4/+0.4	20.0	2.0	±0.25	10.4	0/-1.0	≤0.20	105.96	108.83	111.81	±1.54
21.3	+1.4/+0.4	21.0	2.0	±0.25	11.15	0/-1.0	≤0.20	111.26	114.27	117.4	±1.60
22.3	+1.4/+0.4	22.0	2.0	±0.25	11.6	0/-1.0	≤0.20	116.56	119.71	123.00	±1.69
23.3	+1.4/+0.4	22.0	2.0	±0.25	12.2	0/-1.0	≤0.20	121.85	125.15	128.59	±1.77
24.3	+1.4/+0.4	24.0	2.0	±0.25	12.8	0/-1.0	≤0.20	127.15	130.59	134.18	±1.85
25.3	+1.4/+0.4	25.0	2.0	±0.25	13.3	0/-1.0	≤0.20	132.45	136.03	139.77	±1.92
26.3	+1.4/+0.4	26.0	2.0	±0.25	13.8	0/-1.0	≤0.20	137.75	141.48	145.36	±2.00
27.3	+1.4/+0.4	24.0	2.5	±0.30	14.3	0/-1.2	≤0.20	143.05	146.92	150.95	±2.08
28.3	+1.4/+0.4	28.0	2.5	±0.30	14.8	0/-1.2	≤0.20	148.34	152.36	156.54	±2.15
30.3	+1.4/+0.4	30.0	2.5	±0.30	16.0	0/-1.2	≤0.20	158.94	163.24	167.72	±2.31

*CO=centre offset
MORE TYPES ARE AVAILABLE ON REQUEST!

2 coolant holes, 30° helix

Length:330/310mm and fix lengths



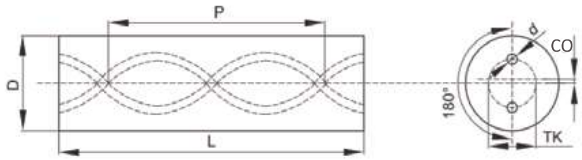


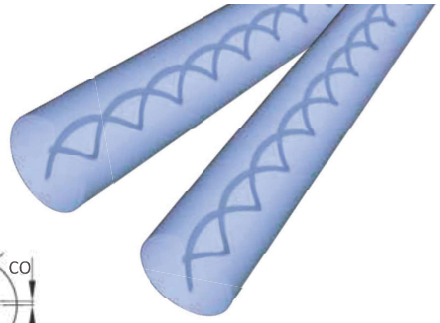
D mm		D h5/h6 mm	d mm		TK mm		CO* mm	Pitch P1	P2	P3	Tol.
6.3	+1.0/+0.4	6.0	0.3	±0.10	1.4	0.15/-0.15	≤0.10	31.79	32.65	33.54	±0.46
6.3	+1.0/+0.4	6.0	0.4	±0.10	1.4	0.15/-0.15	≤0.10	31.79	32.65	33.54	±0.46
6.3	+1.0/+0.4	6.0	0.5	±0.15	1.5	0.15/-0.15	≤0.10	31.79	32.65	33.54	±0.46
6.3	+1.0/+0.4	6.0	0.5	±0.15	1.7	0/-0.3	≤0.10	31.79	32.65	33.54	±0.46
6.3	+1.0/+0.4	6.0	0.7	±0.15	1.9	0/-0.4	≤0.10	31.79	32.65	33.54	±0.46
6.3	+1.0/+0.4	6.0	1.0	±0.15	2.6	0/-0.4	≤0.10	31.79	32.65	33.54	±0.46
8.3	+1.0/+0.4	8.0	0.5	±0.15	1.7	0/-0.3	≤0.10	42.38	43.53	44.73	±0.62
8.3	+1.0/+0.4	8.0	0.6	±0.15	2.8	0/-0.4	≤0.10	42.38	43.53	44.73	±0.62
8.3	+1.0/+0.4	8.0	1.0	±0.15	3.5	0/-0.4	≤0.10	42.38	43.53	44.73	±0.62
9.3	+1.0/+0.4	9.0	1.0	±0.15	4.0	0/-0.4	≤0.15	47.68	48.97	50.32	±0.69
10.3	+1.1/+0.4	10.0	0.7	±0.15	2.6	0/-0.4	≤0.15	52.98	54.41	55.91	±0.77
10.3	+1.1/+0.4	10.0	1.0	±0.15	3.0	0/-0.4	≤0.15	52.98	54.41	55.91	±0.77
10.3	+1.1/+0.4	10.0	1.0	±0.15	3.8	0/-0.4	≤0.15	52.98	54.41	55.91	±0.77
10.3	+1.1/+0.4	10.0	1.4	±0.15	5.0	0/-0.4	≤0.15	52.98	54.41	55.91	±0.77
10.3	+1.1/+0.4	10.0	1.4	±0.15	4.5	0/-0.6	≤0.15	52.98	54.41	55.91	±0.77
11.3	+1.1/+0.4	11.0	0.9	±0.15	3.0	0/-0.4	≤0.18	58.28	59.86	61.5	±0.85
12.3	+1.1/+0.4	12.0	1.75	±0.20	6.0	0/-0.8	≤0.18	63.58	65.3	67.09	±0.92
12.3	+1.1/+0.4	12.0	0.9	±0.15	4.2	0/-0.6	≤0.18	63.58	65.3	67.09	±0.92
12.3	+1.1/+0.4	12.0	1.4	±0.15	3.8	+0.2/-0.2	≤0.18	63.58	65.3	67.09	±0.92
12.3	+1.1/+0.4	12.0	1.75	±0.20	4.5	+0.3/-0.3	≤0.18	63.58	65.3	67.09	±0.92
13.3	+1.2/+0.4	13.0	1.0	±0.15	4.4	0/-0.6	≤0.18	68.87	70.74	72.68	±1.00
14.3	+1.4/+0.4	14.0	0.8	±0.15	3.5	0/-0.4	≤0.18	74.17	76.18	78.27	±1.08
14.3	+1.4/+0.4	14.0	1.0	±0.15	4.3	0/-0.6	≤0.18	74.17	76.18	78.27	±1.08
14.3	+1.4/+0.4	14.0	1.0	±0.15	4.7	0/-0.6	≤0.18	74.17	76.18	78.27	±1.08
14.3	+1.4/+0.4	14.0	1.4	±0.15	4.5	0/-0.6	≤0.18	74.17	76.18	78.27	±1.08
16.3	+1.4/+0.4	16.0	2.0	±0.20	8.0	0/-0.6	≤0.20	84.77	87.06	89.45	±1.23
16.3	+1.4/+0.4	16.0	2.2	±0.20	8.2	0/-0.8	≤0.20	84.77	87.06	89.45	±1.23
16.3	+1.4/+0.4	16.0	1.2	±0.15	5.5	0/-0.8	≤0.20	84.77	87.06	89.45	±1.23
18.3	+1.4/+0.4	18.0	1.75	±0.20	9.15	0/-0.8	≤0.20	95.36	97.95	100.63	±1.38
18.3	+1.4/+0.4	18.0	1.4	±0.15	6.3	0/-0.8	≤0.20	95.36	97.95	100.63	±1.38
20.3	+1.4/+0.4	20.0	1.5	±0.15	7.1	0/-0.8	≤0.20	105.96	108.83	111.81	±1.54
20.3	+1.4/+0.4	20.0	2.0	±0.25	9.9	0/-1.0	≤0.20	105.96	108.83	111.81	±1.54
20.3	+1.4/+0.4	20.0	2.5	±0.30	9.8	0/-1.0	≤0.20	105.96	108.83	111.81	±1.54
21.3	+1.4/+0.4	21.0	1.4	±0.15	7.1	0/-0.8	≤0.20	111.26	114.27	117.4	±1.60
22.3	+1.4/+0.4	22.0	2.0	±0.25	10.7	0/-1.0	≤0.20	116.56	119.71	123.00	±1.69
25.3	+1.4/+0.4	25.0	3.0	±0.30	11.75	0/-1.0	≤0.20	132.45	136.03	139.77	±1.92
26.3	+1.4/+0.4	26.0	2.0	±0.25	11.0	0/-1.0	≤0.20	137.75	141.48	145.36	±2.00

*CO=centre offset
MORE TYPES ARE AVAILABLE ON REQUEST!

2 coolant holes, 40° helix

Length:330/310mm and fix lengths



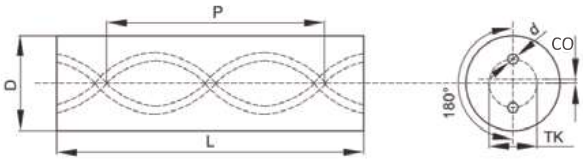


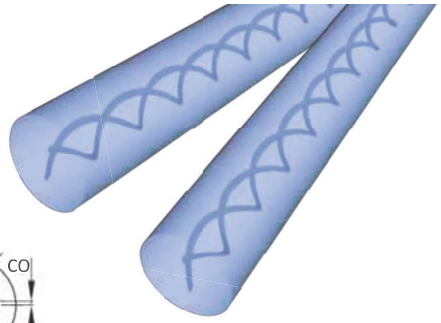
D mm		D h5/h6 mm	d mm		TK mm		CO* mm	Pitch P1	P2	P3	Tol.
6.3	+1.0/+0.4	6.0	0.3	±0.10	1.0	±0.15	≤0.10	21.68	22.46	23.28	±0.42
6.3	+1.0/+0.4	6.0	0.5	±0.15	2.2	0/-0.4	≤0.10	21.68	22.46	23.28	±0.42
6.3	+1.0/+0.4	6.0	0.7	+0.1/-0.15	1.3	±0.15	≤0.15	21.68	22.46	23.28	±0.42
6.3	+1.0/+0.4	6.0	0.4	±0.10	1.5	±0.20	≤0.10	21.68	22.46	23.28	±0.42
6.3	+1.0/+0.4	6.0	0.7	+0.1/-0.15	1.9	0/-0.4	≤0.15	21.68	22.46	23.28	±0.42
8.3	+1.0/+0.4	8.0	0.4	±0.10	1.7	0/-0.4	≤0.10	28.91	29.95	31.04	±0.56
8.3	+1.0/+0.4	8.0	0.65	±0.15	2.7	0/-0.6	≤0.10	28.91	29.95	31.04	±0.56
10.3	+1.0/+0.4	10.0	0.8	±0.15	3.5	0/-0.8	≤0.15	36.14	37.44	38.8	±0.70
12.3	+1.0/+0.4	12.0	0.9	±0.15	4.2	0/-0.8	≤0.18	43.37	44.93	46.55	±0.84
14.3	+1.4/+0.4	14.0	0.7	±0.15	2.9	0/-0.4	≤0.18	50.6	52.42	54.31	±0.98
14.3	+1.4/+0.4	14.0	1.0	±0.20	4.7	0/-0.8	≤0.18	50.6	52.42	54.31	±0.98
16.3	+1.4/+0.4	16.0	1.2	±0.20	5.5	0/-0.8	≤0.20	57.82	59.9	62.07	±1.12
18.3	+1.4/+0.4	18.0	1.3	±0.20	4.2	0/-0.8	≤0.20	65.05	67.39	69.83	±1.26
18.3	+1.4/+0.4	18.0	1.4	±0.20	6.3	0/-0.8	≤0.20	65.05	67.39	69.83	±1.26
20.3	+1.4/+0.4	20.0	1.5	±0.20	7.1	0/-1.0	≤0.20	72.28	74.88	77.59	±1.40

*CO=centre offset
MORE TYPES ARE AVAILABLE ON REQUEST!

2 coolant holes, 45° helix

Length:330/310mm and fix lengths



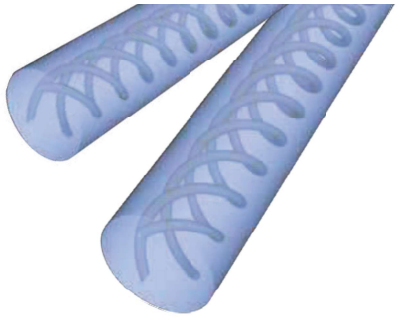


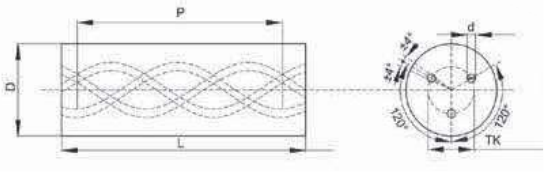
D mm		D h5/h6 mm	d mm		TK mm		CO* mm	Pitch P1	P2	P3	Tol.
6.3	+1.0/+0.4	6.0	0.6	±0.15	1.9	0/-0.4	≤0.10	18.2	18.85	19.52	±0.34

*CO=centre offset
MORE TYPES ARE AVAILABLE ON REQUEST!

3 coolant holes, 30° helix

Length:330/310mm and fix lengths



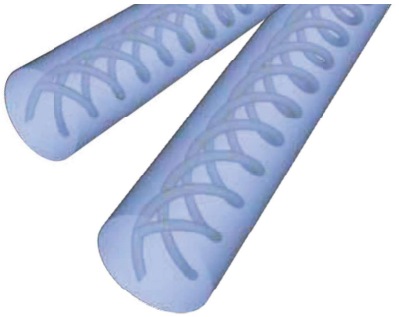


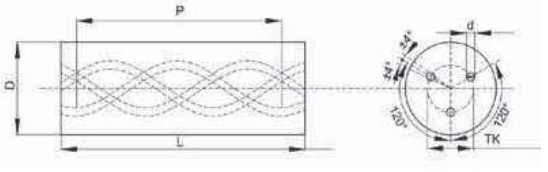
D mm		D h5/h6 mm	d mm		TK mm		CO* mm	Pitch P1	P2	P3	Tol.
6.3	+1.0/+0.4	6.0	0.5	±0.15	2.9	0/-0.4	±4°	31.79	32.65	33.54	±0.46
8.3	+1.0/+0.4	8.0	0.7	±0.15	4	0/-0.4	±4°	42.38	43.53	44.73	±0.62
9.3	+1.0/+0.4	9.0	0.85	±0.15	5.1	0/-0.5	±4°	47.68	48.97	50.32	±0.69
10.3	+1.1/+0.4	10.0	0.85	±0.15	5.1	0/-0.4	±4°	52.98	54.41	55.91	±0.77
10.3	+1.1/+0.4	10.0	0.8	±0.15	3.5	0/-0.4	±4°	52.98	54.41	55.91	±0.77
12.3	+1.1/+0.4	12.0	1.1	±0.15	6.3	0/-0.6	±4°	63.58	65.3	67.09	±0.92
14.3	+1.4/+0.4	14.0	1.4	±0.20	7.3	0/-0.8	±4°	74.17	76.18	78.27	±1.08
15.3	+1.4/+0.4	15.0	1.4	±0.20	7.8	0/-0.8	±4°	79.47	81.62	83.86	±1.15
16.3	+1.4/+0.4	16.0	1.6	±0.20	8.3	0/-0.8	±4°	84.77	87.06	89.45	±1.23
18.3	+1.4/+0.4	18.0	1.7	±0.20	9.5	0/-0.8	±4°	95.36	97.95	100.63	±1.38
20.3	+1.4/+0.4	20.0	1.9	±0.25	10.2	0/-0.8	±4°	105.96	108.83	111.81	±1.54
22.3	+1.4/+0.4	22.0	2.0	±0.25	10.7	0/-1.0	±4°	116.56	119.71	123.00	±1.69
22.3	+1.4/+0.4	22.0	2.0	±0.25	11.5	0/-0.8	±4°	116.56	119.71	123.00	±1.69
24.3	+1.4/+0.4	24.0	2.0	±0.25	12.5	0/-0.8	±4°	127.15	130.59	134.18	±1.85
24.3	+1.4/+0.4	24.0	2.0	±0.25	12.1	0/-0.8	±4°	127.15	130.59	134.18	±1.85
25.3	+1.4/+0.4	25.0	2.0	±0.25	12.5	0/-0.8	±4°	132.45	136.03	139.77	±1.92

*CO=centre offset
MORE TYPES ARE AVAILABLE ON REQUEST!

3 coolant holes, 40° helix

Length:330/310mm and fix lengths



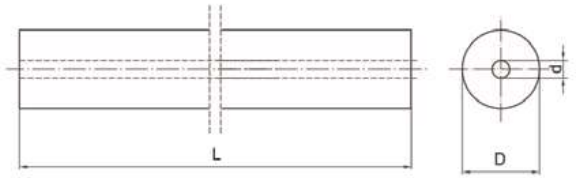


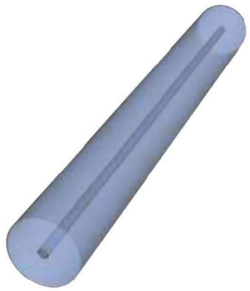
D mm		D h5/h6 mm	d mm		TK mm		CO* mm	Pitch P1	P2	P3	Tol.
6.3	+1.0/+0.4	6.0	0.5	±0.15	2.2	0/-0.4	±4°	21.68	22.46	23.28	±0.42
8.3	+1.0/+0.4	8.0	0.65	±0.15	2.7	0/-0.4	±4°	28.91	29.95	31.04	±0.56
10.3	+1.1/+0.4	10.0	0.8	±0.15	3.5	0/-0.4	±4°	36.14	37.44	38.8	±0.70
12.3	+1.1/+0.4	12.0	0.9	±0.15	4.2	0/-0.6	±4°	43.37	44.93	46.55	±0.84
14.3	+1.4/+0.4	14.0	1.0	±0.20	4.7	0/-0.6	±4°	50.6	52.42	54.31	±0.98
16.3	+1.4/+0.4	16.0	1.2	±0.20	5.5	0/-0.8	±4°	57.82	59.9	62.07	±1.12
18.3	+1.4/+0.4	18.0	1.4	±0.20	6.3	0/-0.8	±4°	65.05	67.39	69.83	±1.26
20.3	+1.4/+0.4	20.0	1.5	±0.25	7.1	0/-0.8	±4°	72.28	74.88	77.59	± 1.4

*CO=centre offset
MORE TYPES ARE AVAILABLE ON REQUEST!

Central coolant hole

Length:330/310mm and fix lengths



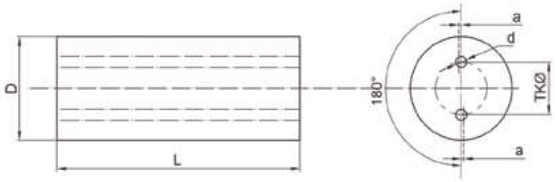


D mm		D h5/h6 mm	d mm		CO* mm
4.0	+0.2/+0.6	4.0	1.0	±0.15	≤0.2
5.0	+0.2/+0.6	5.0	1.0	±0.15	≤0.2
5.0	+0.2/+0.6	5.0	1.5	±0.15	≤0.2
6.0	+0.2/+0.6	6.0	1.0	±0.15	≤0.2
6.0	+0.2/+0.6	6.0	1.5	±0.15	≤0.2
7.0	+0.2/+0.6	7.0	1.0	±0.15	≤0.2
8.0	+0.2/+0.6	8.0	1.0	±0.15	≤0.25
8.0	+0.3/+0.7	8.0	1.5	±0.15	≤0.25
9.0	+0.3/+0.7	9.0	1.0	±0.15	≤0.25
10.0	+0.3/+0.7	10.0	1.0	±0.15	≤0.25
10.0	+0.3/+0.7	10.0	2.0	±0.2	≤0.25
11.0	+0.3/+0.7	11.0	1.0	±0.15	≤0.25
12.0	+0.3/+0.7	12.0	1.0	±0.15	≤0.25
12.0	+0.3/+0.7	12.0	2.0	±0.2	≤0.25
14.0	+0.3/+0.7	14.0	2.0	±0.2	≤0.25
16.0	+0.4/+0.8	16.0	2.0	±0.2	≤0.25
16.0	+0.4/+0.8	16.0	3.0	±0.25	≤0.25
18.0	+0.4/+0.8	18.0	3.0	±0.25	≤0.3
20.0	+0.4/+0.8	20.0	3.0	±0.25	≤0.3

*CO=centre offset
MORE TYPES ARE AVAILABLE ON REQUEST!

2 Parallel holes

Length:330/310mm and fix lengths



D mm		d h5/h6 mm	d mm		TK mm		CO* mm
4.3	0/+0.6	4.0	0.8	±0.10	1.8	0/-0.4	≤0.15
5.3	0/+0.6	5.0	0.8	±0.10	2.0	0/-0.4	≤0.20
6.3	0/+0.6	6.0	1.0	±0.15	3.0	0/-0.5	≤0.20
7.3	0/+0.6	7.0	1.0	±0.15	3.5	0/-0.5	≤0.20
8.3	0/+0.6	8.0	1.0	±0.15	4.0	0/-0.6	≤0.20
9.3	0/+0.6	9.0	1.4	±0.15	4.0	0/-0.6	≤0.20
10.3	0/+0.6	10.0	1.4	±0.15	5.0	0/-0.6	≤0.20
11.3	0/+0.6	11.0	1.4	±0.15	5.0	0/-0.6	≤0.28
12.3	0/+0.6	12.0	1.75	±0.15	6.0	0/-0.6	≤0.30
13.3	0/+0.6	13.0	1.75	±0.15	6.0	0/-0.6	≤0.34
14.3	0/+0.6	14.0	1.75	±0.15	7.0	0/-0.6	≤0.37
15.3	0/+0.6	15.0	2.0	±0.20	7.0	0/-0.6	≤0.37
16.3	0/+0.6	16.0	2.0	±0.20	8.0	0/-0.6	≤0.40
17.3	0/+0.8	17.0	2.0	±0.20	8.0	0/-0.6	≤0.47
18.3	0/+0.8	18.0	2.0	±0.20	9.0	0/-0.6	≤0.50
19.3	0/+0.8	19.0	2.0	±0.20	9.0	0/-0.6	≤0.50
20.3	0/+0.8	20.0	2.5	±0.25	10.0	0/-0.8	≤0.50

*CO=centre offset
MORE TYPES ARE AVAILABLE ON REQUEST!

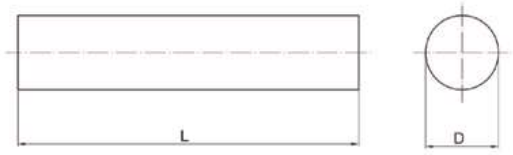
Length Tolerance of coolant rods

D mm Range	L mm Range	L Tol. mm
＜18.3	＞100	0/+0.7
	＜100	0/+0.5
≥18.3		+3.0/+10.0

PCB RODS

Carbide rods for PCB tools

For Router



D mm		L* mm		YU06A	XN208	XF15S	XN20A
3.21	0/+0.02	38.5	-0.10/+0.20	★	★	★	★
3.21	0/+0.02	38.7	-0.20/+0.30	★	★	★	★

D mm		L mm		XN209	YU06A
0.8	0/+0.1	330	0/+5	★	★
1.15	0/+0.1	330	0/+5	★	★
1.35	0/+0.1	330	0/+5	★	★
1.5	0/+0.1	330	0/+5	★	★
1.8	0/+0.1	330	0/+5	★	★
2.0	0/+0.1	330	0/+5	★	★
2.25	0/+0.1	330	0/+10	★	★
2.5	0/+0.1	330	0/+5	★	★

★Recommended Grade
*Available as any fix length

MORE TYPES ARE AVAILABLE ON REQUEST!

Carbide rods for PCB tools

For Step Drill

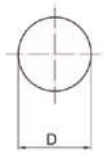
D mm		L mm		YU06A	XN208
3.5	+0.05/+0.25	38.5	±0.20	★	★
4.0	+0.05/+0.25	38.5	±0.20	★	★
4.5	+0.05/+0.25	38.5	±0.20	★	★
5.0	+0.05/+0.25	38.5	±0.20	★	★
5.5	+0.05/+0.25	38.5	±0.20	★	★
6.0	+0.05/+0.25	38.5	±0.20	★	★
6.5	+0.05/+0.25	38.5	±0.20	★	★

★Recommended Grade

MORE TYPES ARE AVAILABLE ON REQUEST!

Carbide rods for PCB tools

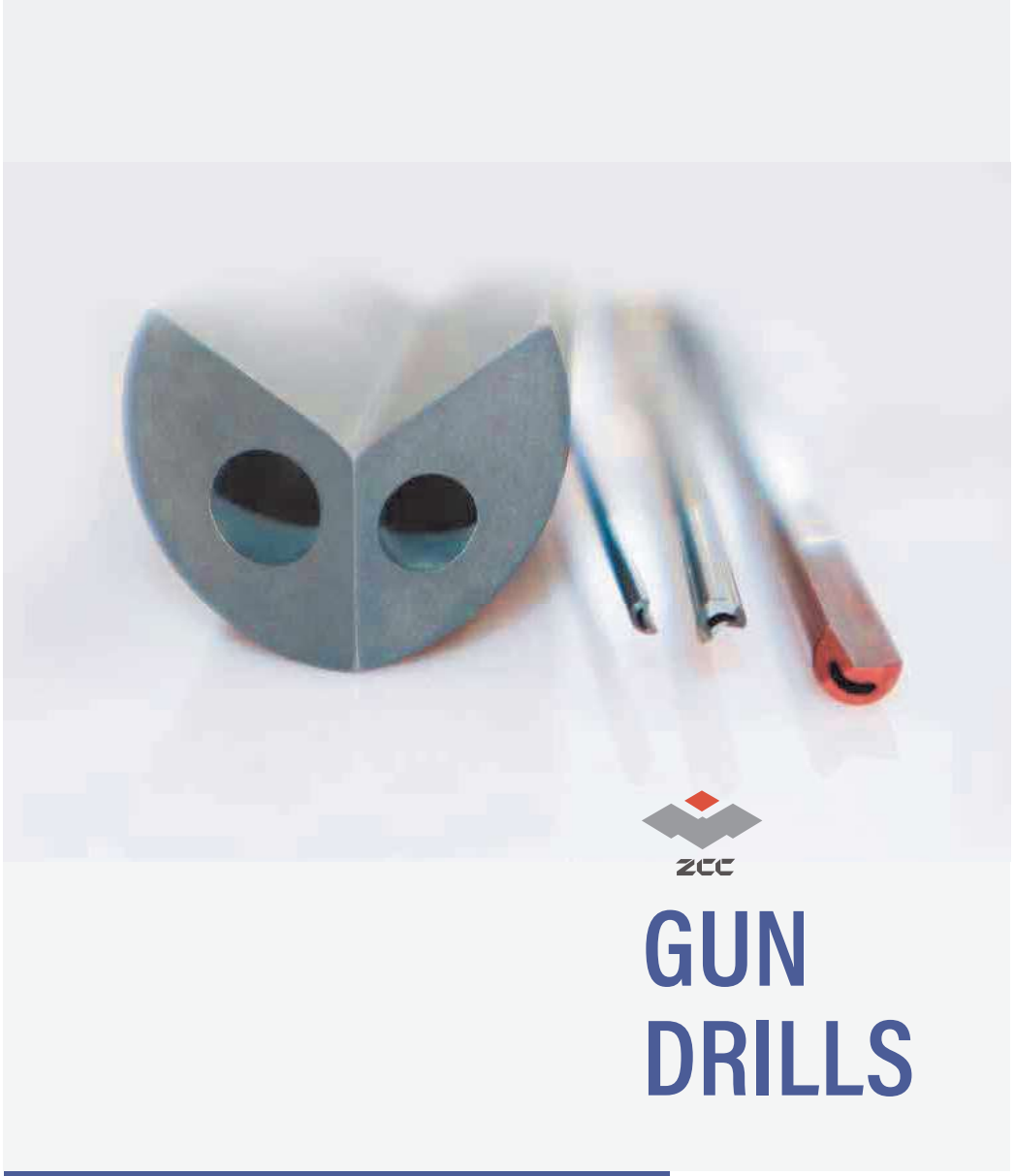
For Brazed Rods



D mm		L* mm		YU06A
3.5	-0.05/+0.05	12.2	0~0.4	★
3.75	-0.05/+0.05	12.2	0~0.4	★
4.0	-0.05/+0.05	12.2	0~0.4	★
4.25	-0.05/+0.05	12.2	0~0.4	★
4.5	-0.05/+0.05	12.2	0~0.4	★
4.75	-0.05/+0.05	12.2	0~0.4	★
5.0	-0.05/+0.05	12.2	0~0.4	★
5.25	-0.05/+0.05	12.2	0~0.4	★
5.5	-0.05/+0.05	12.2	0~0.4	★
5.75	-0.05/+0.05	12.2	0~0.4	★
6.0	-0.05/+0.05	12.2	0~0.4	★

★ Recommended Grade
* Available as any fix length

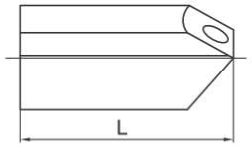
MORE TYPES ARE AVAILABLE ON REQUEST!

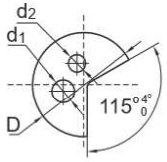


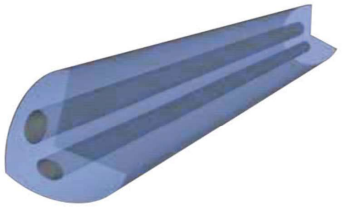
ZCC

GUN DRILLS

Gun Drill blank



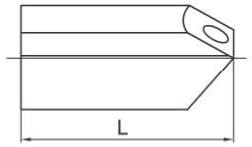


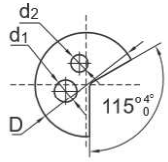


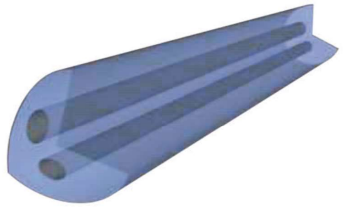
D mm		d1 mm		d2 mm		L mm	
8.0	+0.2/+0.5	1.75	±0.15	1.45	±0.15	35	0/+3.0
8.5	0/+0.4	1.9	±0.15	1.5	±0.15	35	0/+3.0
9.0	+0.2/+0.5	2.1	±0.15	1.65	±0.15	35	0/+3.0
9.5	0/+0.4	2.1	±0.15	1.65	±0.15	35	0/+3.0
10.0	+0.2/+0.5	2.5	±0.2	1.95	±0.2	40	0/+3.0
10.5	0/+0.4	2.5	±0.2	1.95	±0.2	40	0/+3.0
11.0	+0.2/+0.5	2.7	±0.2	2.1	±0.2	40	0/+3.0
11.5	0/+0.4	2.7	±0.2	2.1	±0.2	40	0/+3.0
12.0	+0.2/+0.5	2.9	±0.2	2.3	±0.2	40	0/+3.0
12.5	0/+0.5	2.9	±0.2	2.3	±0.2	40	0/+3.0
13.0	+0.2/+0.5	3.2	±0.2	2.6	±0.2	40	0/+3.0
13.5	0/+0.5	3.2	±0.2	2.6	±0.2	40	0/+3.0
14.0	+0.2/+0.5	3.5	±0.25	2.8	±0.25	40	0/+3.0
14.5	0/+0.5	3.5	±0.25	2.8	±0.25	40	0/+3.0
15.0	+0.2/+0.5	3.8	±0.25	3.0	±0.25	40	0/+3.0
15.5	0/+0.5	3.8	±0.25	3.0	±0.25	40	0/+3.0
16.0	+0.2/+0.5	4.0	±0.25	3.2	±0.25	42	0/+3.0
16.5	0/+0.5	4.0	±0.25	3.2	±0.25	42	0/+3.0
17.0	+0.2/+0.5	4.2	±0.25	3.4	±0.25	42	0/+3.0
17.5	0/+0.5	4.2	±0.25	3.4	±0.25	42	0/+3.0
18.0	+0.2/+0.5	4.5	±0.25	3.6	±0.25	48	0/+3.0
18.5	+0.1/+0.6	4.5	±0.25	3.6	±0.25	48	0/+3.0
19.0	+0.2/+0.5	4.8	±0.25	3.8	±0.25	48	0/+3.0
19.5	+0.1/+0.6	4.8	±0.25	3.8	±0.25	48	0/+3.0
20.0	+0.2/+0.5	5.0	±0.25	4.0	±0.25	50	0/+3.0
20.5	+0.1/+0.6	5.0	±0.3	4.0	±0.3	50	0/+3.0
21.0	+0.2/+0.5	5.3	±0.25	4.2	±0.25	50	0/+3.0
21.5	+0.1/+0.6	5.3	±0.3	4.2	±0.3	50	0/+3.0
22.0	+0.2/+0.5	5.1	±0.3	4.0	±0.3	55	0/+3.0

MORE TYPES ARE AVAILABLE ON REQUEST!

Gun Drill blank



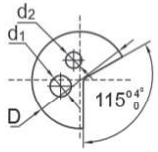


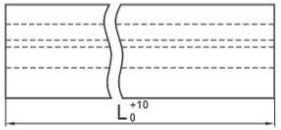


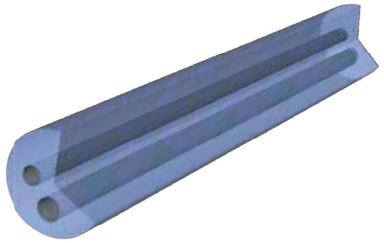
D mm		d1 mm		d2 mm		L mm	
22.5	+0.1/+0.6	5.1	±0.3	4.0	±0.3	55	0/+3.0
23.0	+0.2/+0.6	5.8	±0.3	4.5	±0.3	55	0/+3.0
23.5	+0.1/+0.6	5.3	±0.3	4.2	±0.3	55	0/+3.0
24.0	+0.2/+0.6	6.0	±0.3	4.8	±0.3	55	0/+3.0
24.5	+0.1/+0.6	5.5	±0.3	4.4	±0.3	55	0/+3.0
25.0	+0.2/+0.6	6.3	±0.3	5.0	±0.3	60	0/+3.0
25.5	+0.1/+0.6	5.8	±0.35	4.6	±0.35	60	0/+3.0
26.0	+0.2/+0.6	6.6	±0.3	5.3	±0.3	60	0/+3.0
26.5	+0.1/+0.7	6.1	±0.35	4.8	±0.35	60	0/+3.0
27.0	+0.2/+0.6	6.5	±0.35	5.0	±0.35	60	0/+3.0
27.5	+0.1/+0.7	5.3	±0.35	4.5	±0.35	60	0/+3.0
28.0	+0.2/+0.6	7.0	±0.35	5.6	±0.35	65	0/+3.0
28.5	+0.1/+0.7	7.0	±0.35	5.6	±0.35	65	0/+3.0
29.0	+0.2/+0.6	7.2	±0.35	5.8	±0.35	65	0/+3.0
29.5	+0.1/+0.7	6.2	±0.35	5.2	±0.35	65	0/+3.0
30.0	+0.2/+0.6	7.4	±0.35	6.0	±0.35	65	0/+3.0
30.5	+0.1/+0.8	7.4	±0.35	6.0	±0.35	65	0/+3.0
31.0	+0.2/+0.6	7.0	±0.35	6.0	±0.35	65	0/+3.0
31.5	+0.1/+0.8	7.0	±0.35	6.0	±0.35	65	0/+3.0
32.0	+0.2/+0.6	7.5	±0.35	6.3	±0.35	65	0/+3.0
32.5	+0.2/+0.9	7.6	±0.35	6.5	±0.35	65	0/+3.0
33.0	+0.2/+0.6	7.6	±0.35	6.5	±0.35	65	0/+3.0
33.5	+0.2/+0.9	6.5	±0.35	5.5	±0.35	65	0/+3.0
34.0	+0.2/+0.6	6.5	±0.35	5.5	±0.35	65	0/+3.0
34.5	+0.2/+0.9	7.0	±0.35	6.0	±0.35	65	0/+3.0
35.0	+0.2/+0.6	7.0	±0.35	6.0	±0.35	65	0/+3.0
35.5	+0.2/+0.9	7.5	±0.35	6.5	±0.35	65	0/+3.0
36.0	+0.2/+0.6	7.5	±0.35	6.5	±0.35	65	0/+3.0
36.5	+0.2/+0.9	7.6	±0.35	6.5	±0.35	65	0/+3.0

MORE TYPES ARE AVAILABLE ON REQUEST!

Gun Drill blank



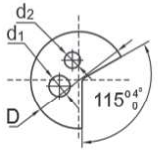


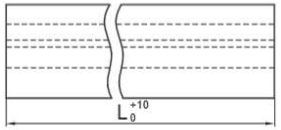


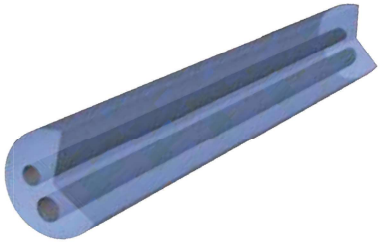
D mm		d1 mm		d2 mm	
8.0	+0.2/+0.5	1.75	±0.15	1.45	±0.15
8.5	0/+0.4	1.9	±0.15	1.5	±0.15
9.0	+0.2/+0.5	2.1	±0.15	1.65	±0.15
9.5	0/+0.4	2.1	±0.15	1.65	±0.15
10.0	+0.2/+0.5	2.5	±0.2	1.95	±0.2
10.5	0/+0.4	2.5	±0.2	1.95	±0.2
11.0	+0.2/+0.5	2.7	±0.2	2.1	±0.2
11.5	0/+0.4	2.7	±0.2	2.1	±0.2
12.0	+0.2/+0.5	2.9	±0.2	2.3	±0.2
12.5	0/+0.5	2.9	±0.2	2.3	±0.2
13.0	+0.2/+0.5	3.2	±0.2	2.6	±0.2
13.5	0/+0.5	3.2	±0.2	2.6	±0.2
14.0	+0.2/+0.5	3.5	±0.25	2.8	±0.25
14.5	0/+0.5	3.5	±0.25	2.8	±0.25
15.0	+0.2/+0.5	3.8	±0.25	3.0	±0.25
15.5	0/+0.5	3.8	±0.25	3.0	±0.25
16.0	+0.2/+0.5	4.0	±0.25	3.2	±0.25
16.5	0/+0.5	4.0	±0.25	3.2	±0.25
17.0	+0.2/+0.5	4.2	±0.25	3.4	±0.25
17.5	0/+0.5	4.2	±0.25	3.4	±0.25
18.0	+0.2/+0.5	4.5	±0.25	3.6	±0.25
18.5	+0.1/+0.6	4.5	±0.25	3.6	±0.25
19.0	+0.2/+0.5	4.8	±0.25	3.8	±0.25
19.5	+0.1/+0.6	4.8	±0.25	3.8	±0.25
20.0	+0.2/+0.5	5.0	±0.25	4.0	±0.25
20.5	+0.1/+0.6	5.0	±0.3	4.0	±0.3
21.0	+0.2/+0.5	5.3	±0.25	4.2	±0.25
21.5	+0.1/+0.6	5.3	±0.3	4.2	±0.3
22.0	+0.2/+0.5	5.1	±0.3	4.0	±0.3

MORE TYPES ARE AVAILABLE ON REQUEST!

Gun Drill blank





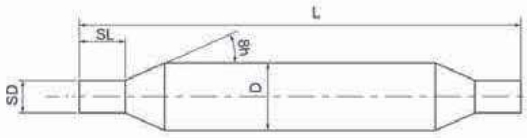


D mm		d1 mm		d2 mm	
22.5	+0.1/+0.6	5.1	±0.3	4.0	±0.3
23.0	+0.2/+0.6	5.8	±0.3	4.5	±0.3
23.5	+0.1/+0.6	5.3	±0.3	4.2	±0.3
24.0	+0.2/+0.6	6.0	±0.3	4.8	±0.3
24.5	+0.1/+0.6	5.5	±0.3	4.4	±0.3
25.0	+0.2/+0.6	6.3	±0.3	5.0	±0.3
25.5	+0.1/+0.6	5.8	±0.35	4.6	±0.35
26.0	+0.2/+0.6	6.6	±0.3	5.3	±0.3
26.5	+0.1/+0.7	6.1	±0.35	4.8	±0.35
27.0	+0.2/+0.6	6.5	±0.35	5.0	±0.35
27.5	+0.1/+0.7	5.3	±0.35	4.5	±0.35
28.0	+0.2/+0.6	7.0	±0.35	5.6	±0.35
28.5	+0.1/+0.7	7.0	±0.35	5.6	±0.35
29.0	+0.2/+0.6	7.2	±0.35	5.8	±0.35
29.5	+0.1/+0.7	6.2	±0.35	5.2	±0.35
30.0	+0.2/+0.6	7.4	±0.35	6.0	±0.35
30.5	+0.1/+0.8	7.4	±0.35	6.0	±0.35
31.0	+0.2/+0.6	7.0	±0.35	6.0	±0.35
31.5	+0.1/+0.8	7.0	±0.35	6.0	±0.35
32.0	+0.2/+0.6	7.5	±0.35	6.3	±0.35
32.5	+0.2/+0.9	7.6	±0.35	6.5	±0.35
33.0	+0.2/+0.6	7.6	±0.35	6.5	±0.35
33.5	+0.2/+0.9	6.5	±0.35	5.5	±0.35
34.0	+0.2/+0.6	6.5	±0.35	5.5	±0.35
34.5	+0.2/+0.9	7.0	±0.35	6.0	±0.35
35.0	+0.2/+0.6	7.0	±0.35	6.0	±0.35
35.5	+0.2/+0.9	7.5	±0.35	6.5	±0.35
36.0	+0.2/+0.6	7.5	±0.35	6.5	±0.35
36.5	+0.2/+0.9	7.6	±0.35	6.5	±0.35

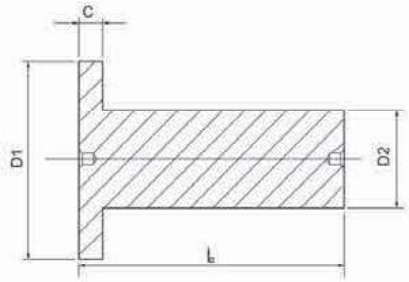
MORE TYPES ARE AVAILABLE ON REQUEST!

PREFORMS

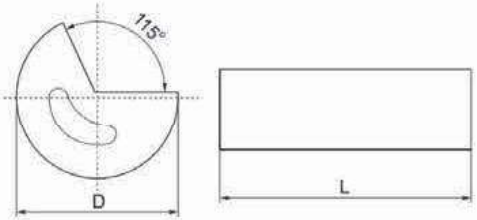
Step rods



Cemented carbide blank for T-slot cutters

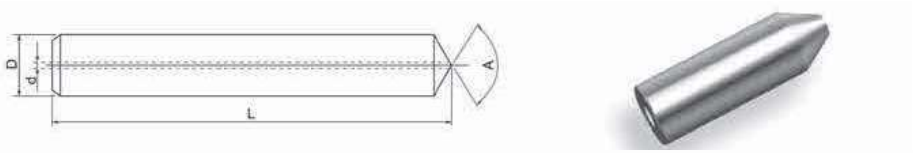


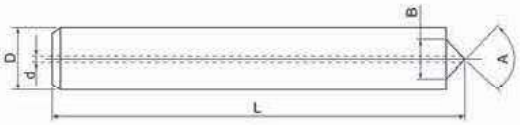
Rods with Kidney-Shaped coolant hole

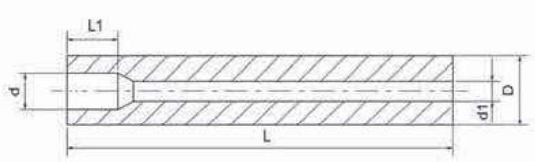


MORE TYPES ARE AVAILABLE ON REQUEST!

Rod with taper end (with hole)

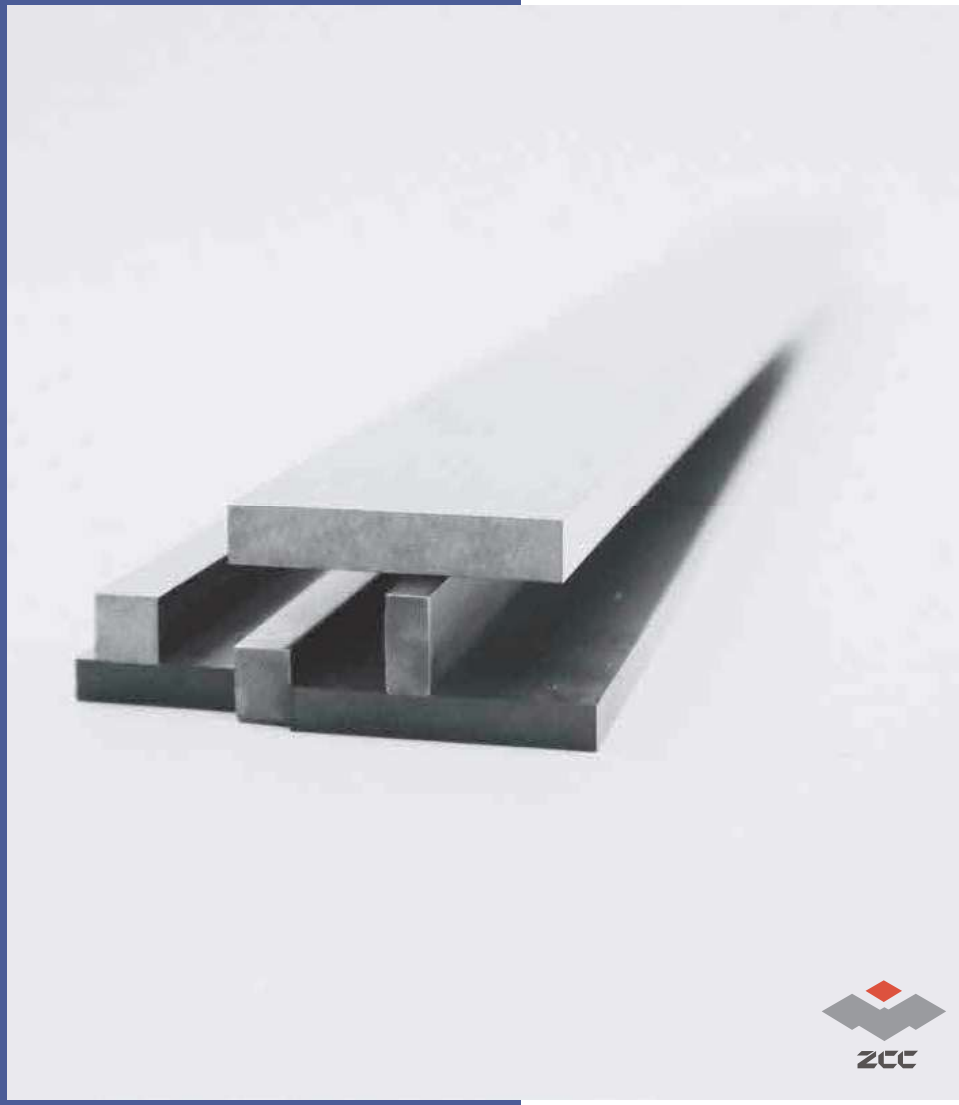




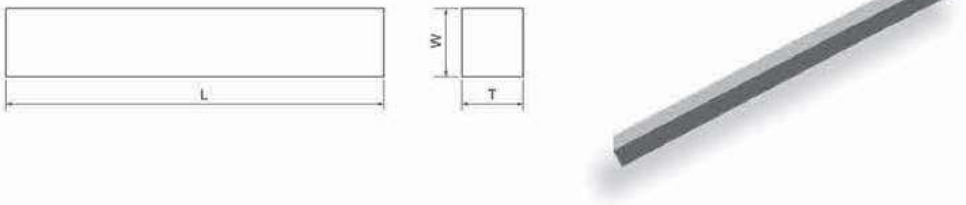


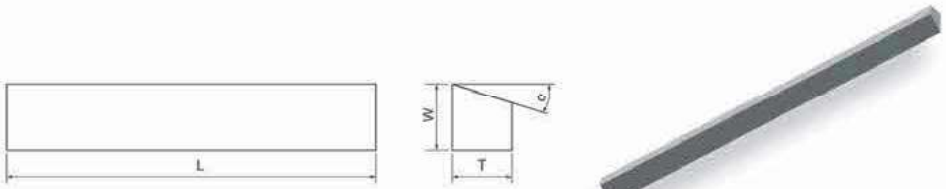
MORE TYPES ARE AVAILABLE ON REQUEST!

STRIPS



Strips





TYPE	Size range	Tol.
T(mm)	1.0 < T≤16.0	+0.20/+0.80
W(mm)	1.0≤W≤32.0	+0.20/+1.0
L(mm)	260≤L≤700	0/+10.0
α(°)	0~35°	±1°

MORE TYPES ARE AVAILABLE ON REQUEST!

ISO Certificate


ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATE
Certificate No. 00119E32915RSL/4300
We hereby certify that
Zhuzhou Cemented Carbide Group Co.,Ltd.
Diamond Road, Hetang District, Zhuzhou City, Hunan Province, P.R.China
by reason of its
Environmental Management System
has been awarded this certificate for compliance with the standard
GB/T 24001-2016 / ISO 14001:2015
The Environmental Management System Applies in the following area:
Design and Development, Production, Sales Service of "Diamond Brand" Cemented Carbide and Tools (shield machine tools, rock drill tools) , Tungsten and Molybdenum, Tantalum and Niobium Series of Products and Related Management Activities
Certified since: June 16, 2004 Valid from: October 9, 2019 Valid until: September 11, 2022
CHINA QUALITY CERTIFICATION CENTRE
A 0037564

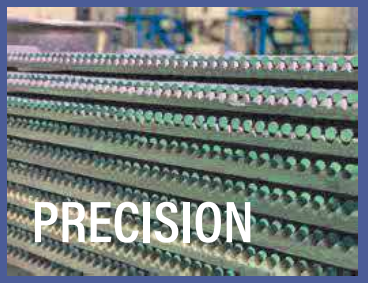

OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM CERTIFICATE
Certificate No. 00119S32019RSL/4300
We hereby certify that
Zhuzhou Cemented Carbide Group Co.,Ltd.
Diamond Road, Hetang District, Zhuzhou City, Hunan Province, P.R.China
has been awarded this certificate for compliance with the standard
ISO 45001:2018
The Occupational Health and Safety Management applies in the following area:
Design and Development, Production, Sales Service of "Diamond Brand" Cemented Carbide and Tools (shield machine tools, rock drill tools) , Tungsten and Molybdenum, Tantalum and Niobium Series of Products and Related Management Activities
Certified since: June 16, 2004 Valid from: October 9, 2019 Valid until: September 11, 2022
CHINA QUALITY CERTIFICATION CENTRE
R 0008519


QUALITY MANAGEMENT SYSTEM CERTIFICATE
Certificate No. 00117Q3817RRTL/4300
We hereby certify that
Zhuzhou Cemented Carbide Group Corp.,Ltd.
Diamond Road, Hetang District, Zhuzhou City, Hunan Province, P.R.China
by reason of its
Quality Management System
has been awarded this certificate for compliance with the standard
GB/T 19001-2016 / ISO 9001:2015
The Quality Management System Applies in the following area:
Design and Development, Production, Sales Service of "Diamond Brand" Cemented Carbide and Tools (shield machine tools, rock drill tools) series products of Tungsten, Molybdenum, Tantalum, Niobium and Cobalt
Certified since: November 1, 1996 Valid from: September 26, 2017 Valid until: September 9, 2020
CHINA QUALITY CERTIFICATION CENTRE
Q 0061632


EXCELSIOR

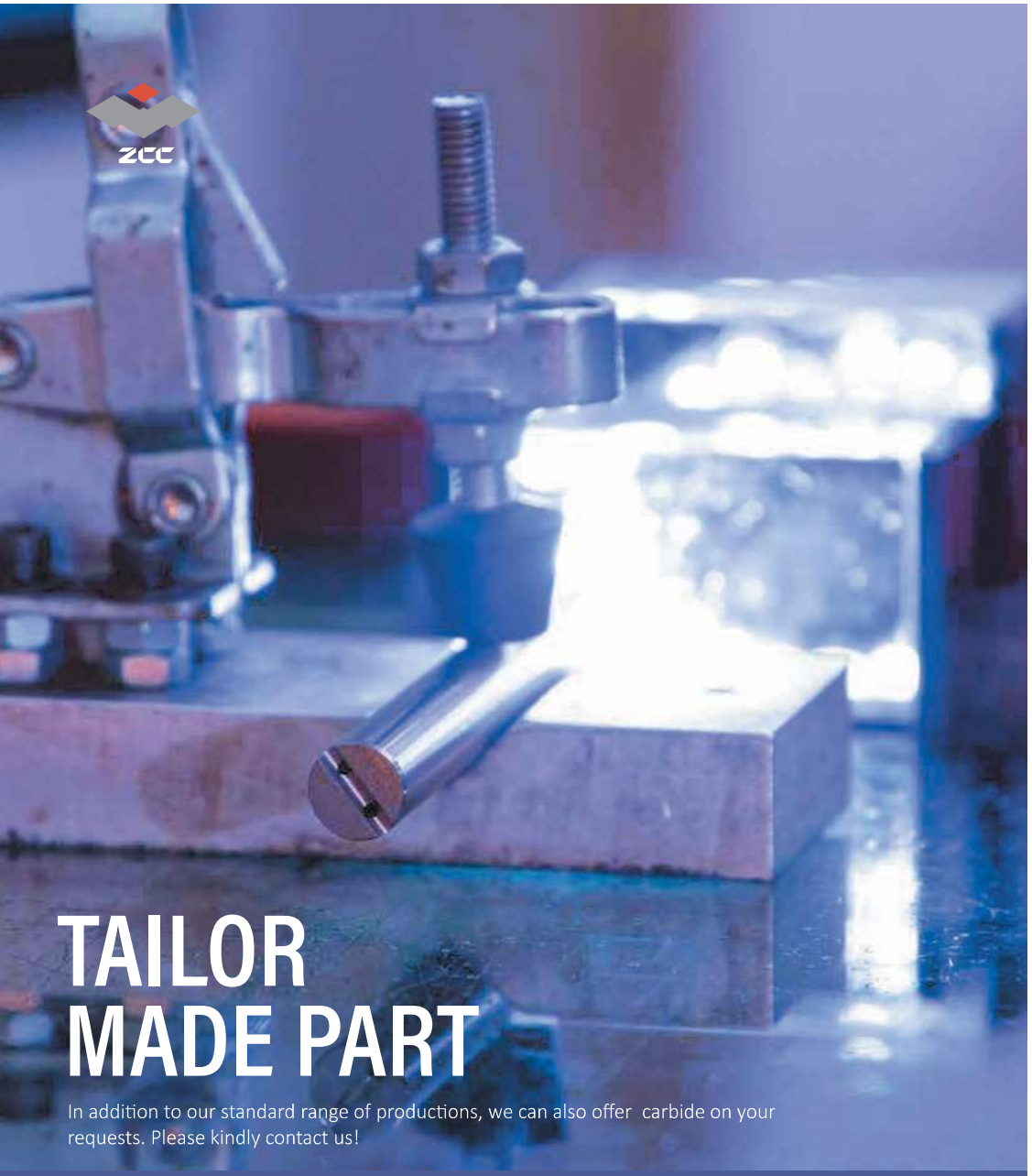

DEDICATION


PASSION


PRECISION


FOCUS


INNOVATION



TAILOR MADE PART

In addition to our standard range of productions, we can also offer carbide on your requests. Please kindly contact us!

Memo

SALES NETWORK WORLDWIDE

Zhuzhou Cemented Carbide Works Imp.&Exp. Co. (ZCCC) is the international trade organization under ZCC group. ZCCC has six overseas branches in USA, Europe, Hongkong, India, Japan and South Korea. In order to shorten delivery and facilitate customers at closer range, large volume of standardized rods are stocked in Ann Arbor, USA and Dusseldorf, Germany, enabling prompt order response and deliveries of most popular rods within 48 hours to our customers in North America and European countries.

Europe
ZCC Europe GmbH
Wanheimer Str. 59, 40472 Düsseldorf, Germany.

Tel: 0049 211 230 39 150
Fax: 0049 211 230 39 139
E-mail: xuyu.tang@zcc-europe.com

U.S.A
Zhuzhou Cemented Carbide Works USA Inc.
4651 Platt Lane Ann Arbor, MI 48108, USA.
Tel: +1-734-302-0125
Fax: +1-734-302-0126
E-mail: jianbo.qi@zccamerica.com

HongKong
Zhuzhou Cemented Carbide Group HongKong Co. Ltd.
Flat E, 19/F, Block 4, Nam Fung Sun Chuen, 38 Greig Road, Quarry Bay, Hong Kong, China.
Tel: +852-28151831
Fax: +852-28151821
E-mail: huxiang@hkcarbide.com.hk

India
2503, Glen Croft CHS, Hiranadani Garden, Powai, Mumbai, India.
Tel: +86 13607339639
Fax: +91 9599305625
E-mail: zhujj@chinacarbide.com

Memo