



RODS & BARS PRODUCTS

GRADE OVERVIEW FOR CUTTING TOOLS

GRADE		E60C	E10C	E80C	E60F	E10F	E12C	E12F	E12X	E09X	E03X
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 ³	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

APPLICATION

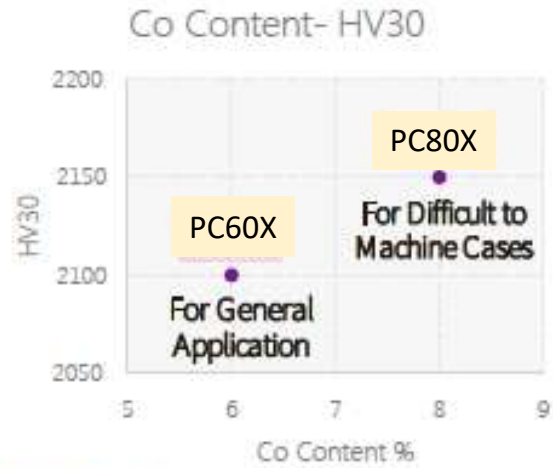
GRADE	E60C	E10C	E80C	E60F	E10F	E12C	E12F	E12X	E09X	E03X
Drilling	✓	✓	✓	✓	✓					
Milling	✓	✓	✓		✓	✓	✓	✓	✓	✓
Reaming				✓						
General carbon steel		★		●	★	★		●		
Stainless steel			●		●		★			
Cast Iron		★	●		★	★		●		
Ti					●		★			
HRSA						●				
Al-Mg		★	●	★	★	★		●		
Hard steel									★	
Plastic		●			●					
CFRP	★(coated)									
Wood				●	★	●				★
Ceramic	★(coated)									

★ Best choice
● Good choice

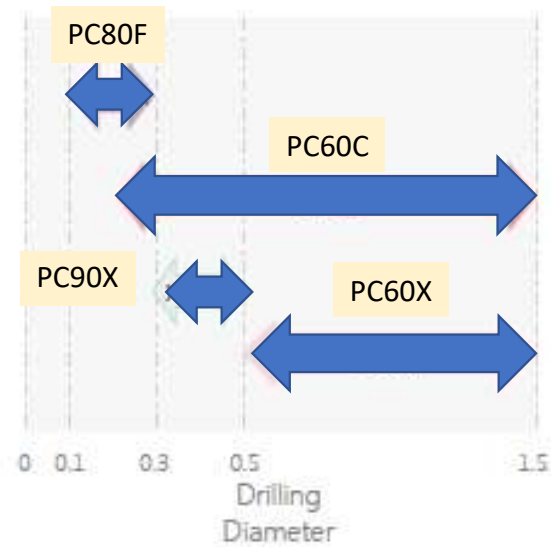
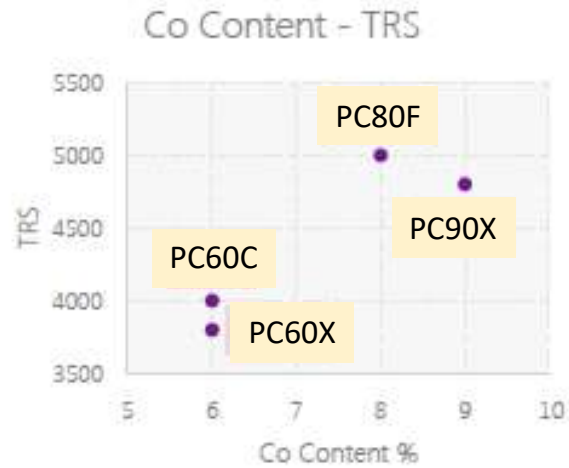
FOR PCB TOOLS
PCB RODS

GRADE		PC60C	PC60X	PC80F	PC80X	PC90X
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 ³	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

APPLICATION



For Drill



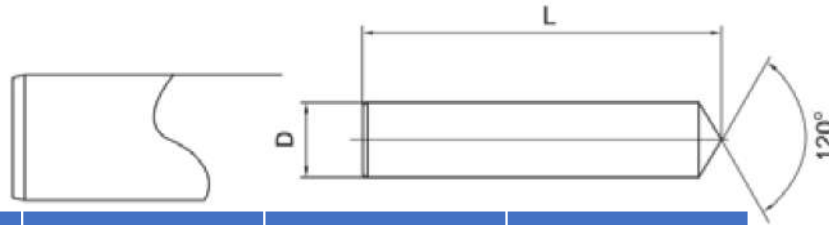
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DRILL BLANKS



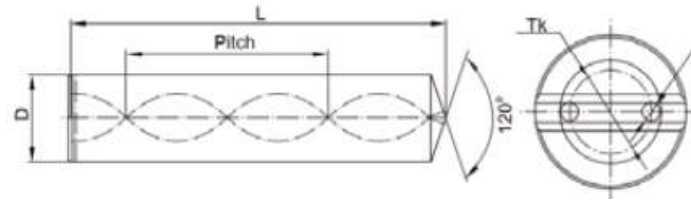
Ground Drill Blanks with Point



TYPE	D (mm)	L (mm)	TYPE	D (mm)	L (mm)
EC05063	5	63	EC18124	18	124
EC06067	6	67	EC17128	17	128
EC07157	7	157	EC26132	26	132
EC08163	8	163	EC27137	27	137
EC09163	9	163	EC28112	28	112
EC10075	10	75	EC29116	29	116
EC11080	11	80	EC30120	30	120
EC12085	12	85	EC21169	21	169
EC13090	13	90	EC22142	22	142
EC14096	14	96	EC23147	23	147
EC15103	15	103	EC24152	24	152
EC16108	16	103	EC25152	25	152
EC19108	19	108			

Ground D (mm) Range	0.5≤D≤30
Ground D (mm) Tol.	h5/h6
L (mm) Tol.	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.
EC03053040017	3	53	0.40	1.70	15.89	16.32	16.77	±0.23
EC04059060022	4	59	0.60	2.20	21,19	21.77	22.36	±0.31
EC05063070026	5	63	0.70	2.60	26.49	27.21	27.95	±0.38
EC06067070026	6	67	0.70	2.60	31.79	32.65	33.54	±0.46
EC07075100037	7	75	1.00	3.70	37.09	38.09	39.13	±0.54
EC08080100040	8	80.5	1.00	4.00	42,38	43.53	44.73	±0.62
EC09085140048	9	85	1.40	4.80	47.68	48.97	50.32	±0.69
EC10090140048	10	90.5	1.40	4.80	52.98	54.41	55.91	±0.77
EC11098110053	11	98	1.10	5.30	56.28	59.86	61.50	±0.85
EC12104140062	12	104	1.40	6.25	63.58	65.30	67.09	±0.92
EC13106175065	13	106.5	1.75	6.50	68.87	70.74	72.68	±1.00
EC14109175071	14	109	1.75	7.10	74.17	76.18	78.27	±1.08
EC15113175077	15	113	1.75	7.70	79.47	81.62	83.86	±1.15
EC16117175017	16	117.5	1.75	8.30	84.77	87.06	89.45	±1.23
EC17121195089	17	121	1.75	8.90	90.07	92.50	95.04	±1.31
EC18125200095	18	125.5	2.00	9.55	95.36	97.95	100.63	±1.38
EC19130200101	19	130	2.00	10.10	100.66	103.39	106,22	±1.46
EC20134200104	20	134	2.00	10.40	105.96	108.83	111.81	±1.54

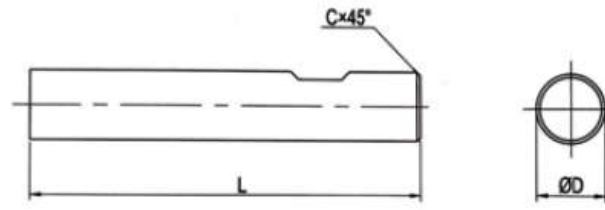
GROUND D (mm)	Range	Tol.	L (mm)	Range	Tol.
		3≤D≤20		h5/h6	
d (mm)	Range	Tol.	TK (mm)	L ≤ 100	0/+1.50
	d≤0.4	±0.10		Range	Tol.
	0.4<d≤1.4	±0.15		d≤4.3	0/-0.3
	0.4<d≤1.75	±0.20		4.3<d≤8.3	0/-0.4
	1.75<d≤2.0	±0.25		8.3<d≤10.3	0/-0.6
				10.3<d≤19.3	0/-0.8
				D=20.3	0/-1.0

ENDMILL BLANKS



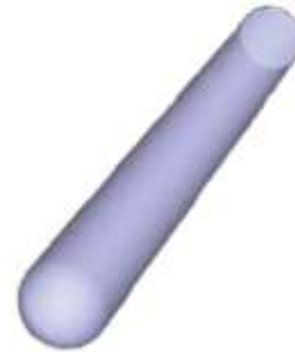
Endmill Blanks With Weldon Shank

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

Ball Nose Rods



D Inch	D h6 Inch	L Inch	Probe-radius	
			H	Tol.
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

SOLIDS



Solid

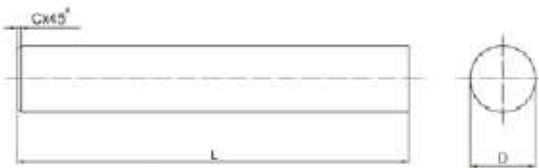
Length: 330/310mm (0/+10.0)



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

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	10.0	70	0/+0.5
3.0	32	0/+0.5	10.0	72	0/+0.5
3.0	39	0/+0.5	11.0	70	0/+0.5
4.0	38	0/+0.5	11.0	72	0/+0.5
4.0	40	0/+0.5	12.0	70	0/+0.5
4.0	51	0/+0.5	12.0	73	0/+0.5
5.0	38	0/+0.5	12.0	84	0/+0.5
5.0	51	0/+0.5	12.0	100	0/+0.5
5.0	57	0/+0.5	13.0	75	0/+0.5
6.0	39	0/+0.5	14.0	75	0/+0.5
6.0	45	0/+0.5	14.0	84	0/+0.5
6.0	51	0/+0.5	15.0	75	0/+0.5
6.0	55	0/+0.5	16.0	75	0/+0.5
6.0	57	0/+0.5	16.0	82	0/+0.5
7.0	60	0/+0.5	16.0	92	0/+0.5
8.0	58	0/+0.5	18.0	84	0/+0.5
8.0	60	0/+0.5	18.0	93	0/+0.5
8.0	64	0/+0.5	18.0	100	0/+0.5
9.0	60	0/+0.5	20.0	92	0/+0.5
9.0	63	0/+0.5	20.0	100	0/+0.5
10.0	66	0/+0.5	20.0	104	0/+0.5

Solid

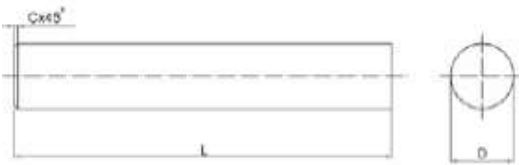
Inch sizes, polished, with 45° Chamfer, fix length



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

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		

Solid

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



D h6 mm	L mm	Chamfer mm
.1935	2-3/4	0/+0.02
13/64	3	0/+0.02
7/32	3	0/+0.02
.2188	2.5	0/+0.02
1/4	1-1/2	0/+0.02
1/4	2	0/+0.02
1/4	2-1/2	0/+0.02
1/4	3	0/+0.02
1/4	3-1/2	0/+0.02
1/4	4	0/+0.02
1/4	4-1/2	0/+0.02
1/4	5	0/+0.02
1/4	6	0/+0.02
1/4	6-1/2	0/+0.02
1/4	7	0/+0.02
1/4	8	0/+0.02
1/4	12	0/+0.4
9/32	1-1/2	0/+0.02
9/32	2-13/16	0/+0.02
5/16	1-1/4	0/+0.02
5/16	2-1/2	0/+0.02
5/16	3	0/+0.02
5/16	3-1/2	0/+0.02
5/16	3-3/4	0/+0.02
5/16	4	0/+0.02
5/16	6	0/+0.02
5/16	12	0/+0.4
11/32	4	0/+0.02

Solid

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



D h6 mm	L mm	Chamfer mm
1/2	6	0/+0.02
1/2	7	0/+0.02
1/2	8	0/+0.02
1/2	8-1/2	0/+0.02
1/2	12	0/+0.4
9/16	3	0/+0.02
9/16	3-1/2	0/+0.02
9/16	4	0/+0.02
9/16	5	0/+0.02
9/16	6	0/+0.02
5/8	3	0/+0.02
5/8	3-1/8	0/+0.02
5/8	3-1/4	0/+0.02
5/8	3-1/2	0/+0.02
5/8	4	0/+0.02
5/8	4-1/2	0/+0.02
5/8	5	0/+0.02
5/8	6	0/+0.02
5/8	7	0/+0.02
5/8	8	0/+0.02
5/8	10	0/+0.02
5/8	12	0/+0.4
3/4	3	0/+0.02
3/4	4	0/+0.02
3/4	5	0/+0.02
3/4	6	0/+0.02
3/4	7	0/+0.02
3/4	8	0/+0.02

Solid

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



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

Solid

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

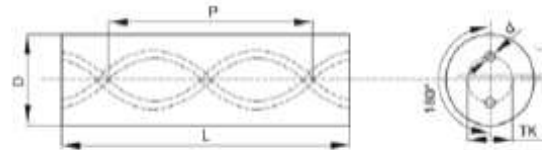
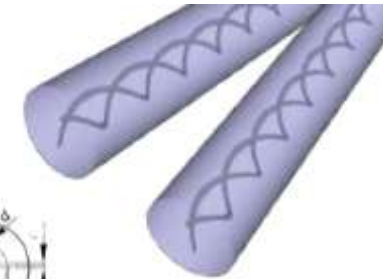


D h6 mm	L mm		Chamfer mm
3/4	10	0/+0.02	0.8
3/4	12	0/+0.4	NO
7/8	4	0/+0.02	1.0
7/8	5	0/+0.02	1.0
7/8	6	0/+0.02	1.0
1	3	0/+0.02	1.0
1	4	0/+0.02	1.0
1	5	0/+0.02	1.0
1	6	0/+0.02	1.0
1	7	0/+0.02	1.0
1	8	0/+0.02	1.0
1	9	0/+0.02	1.0
1	10	0/+0.02	1.0
1	12	0/+0.4	NO
1	12-1/2	0/+0.4	NO
1	13	0/+0.4	NO
1-1/8	4-1/2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

RODS WITH COOLANT HOLES

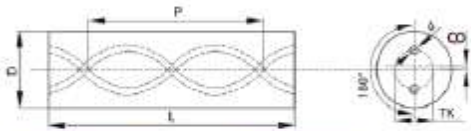
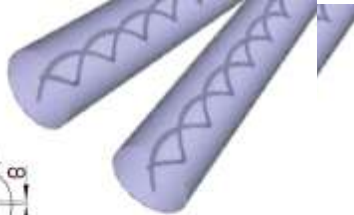
2 coolant holes, 30° helix

Length: 330/310mm and fix lengths



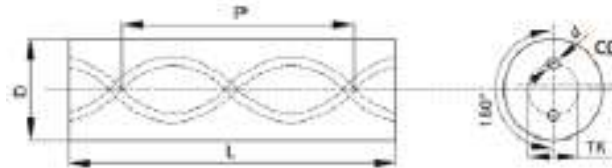
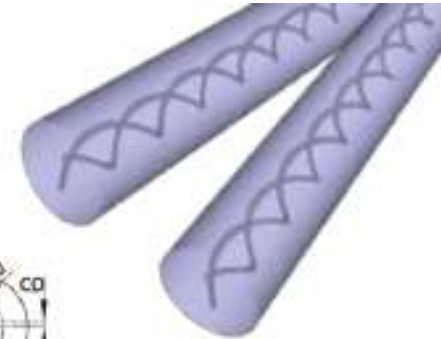
D mm	D h5/h6 mm	d mm	TK mm	CO* mm	Pitch			Tol.	
					P1	P2	P3		
3.3	+0.7/+0.3	3.0	0.4 ±0.10	1.7 0/-0.3	≤0.04	15.89	16.32	16.77	±0.23
4.3	+0.7/+0.3	4.0	0.6 ±0.15	2.2 0/-0.3	≤0.05	21.19	21.77	22.36	±0.31
5.3	+0.8/+0.3	5.0	0.7 ±0.15	2.6 0/-0.4	≤0.10	26.49	27.21	27.95	±0.38
6.3	+1.0/+0.4	6.0	0.7 ±0.15	2.6 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

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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	2.00

2 coolant holes, 40° helix
Length: 330/310mm and fix lengths

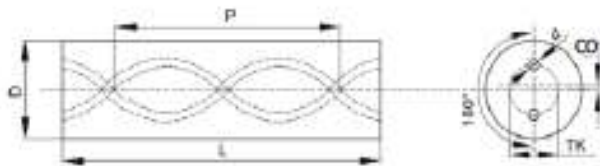


D mm	D h5/h6 mm	d mm	TK mm	CO* mm	Pitch			
					P1	P2	P3	ToL
6.3	+1.0/+0.4	6.0	0.3	±0.10	21.68	22.46	23.28	±0.42
6.3	+1.0/+0.4	6.0	0.5	±0.15	21.68	22.46	23.28	±0.42
6.3	+1.0/+0.4	6.0	0.7	+0.1/-0.15	21.68	22.46	23.28	±0.42
6.3	+1.0/+0.4	6.0	0.4	±0.10	21.68	22.46	23.28	±0.42
6.3	+1.0/+0.4	6.0	0.7	+0.1/-0.15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

*CO = centre offset

2 coolant holes, 45° helix

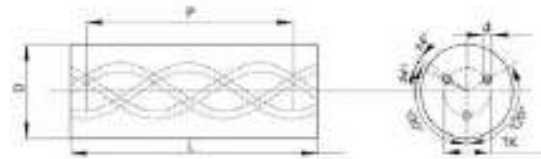
Length: 330/310mm and fix lengths



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

3 coolant holes, 30° helix

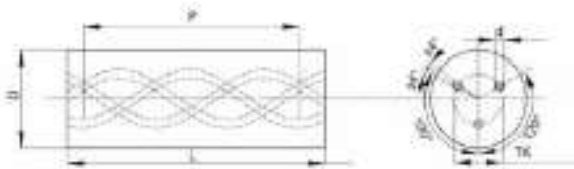
Length: 330/310mm and fix lengths



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

3 coolant holes, 40° helix

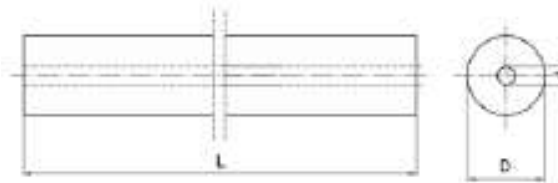
Length: 330/310mm and fix lengths



D mm	D h5/h6 mm	d mm	TX 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

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
5.0	+0.2/+0.6	5.0	1.0 ±0.15
5.0	+0.2/+0.6	5.0	1.5 ±0.15
6.0	+0.2/+0.6	6.0	1.0 ±0.15
6.0	+0.2/+0.6	6.0	1.5 ±0.15
7.0	+0.2/+0.6	7.0	1.0 ±0.15
8.0	+0.2/+0.6	8.0	1.0 ±0.15
8.0	+0.3/+0.7	8.0	1.5 ±0.15
9.0	+0.3/+0.7	9.0	1.0 ±0.15
10.0	+0.3/+0.7	10.0	1.0 ±0.15
10.0	+0.3/+0.7	10.0	2.0 ±0.2
11.0	+0.3/+0.7	11.0	1.0 ±0.15
12.0	+0.3/+0.7	12.0	1.0 ±0.15
12.0	+0.3/+0.7	12.0	2.0 ±0.2
14.0	+0.3/+0.7	14.0	2.0 ±0.2
16.0	+0.4/+0.8	16.0	2.0 ±0.2
16.0	+0.4/+0.8	16.0	3.0 ±0.25
18.0	+0.4/+0.8	18.0	3.0 ±0.25
20.0	+0.4/+0.8	20.0	3.0 ±0.25

2 Parallel holes

Length: 330/310mm and fix lengths



Length Tolerance of coolant rods

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

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

*CO = centre offset

PCB RODS



Carbide rods for PCB tools

For Router



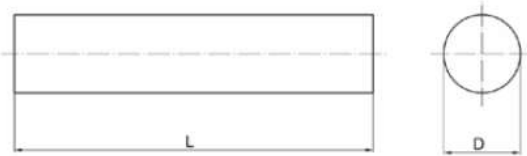
D mm		L* mm		YU06A	XN208	XF15S	XN20A
3.21	0/+0.02	38.5	-0.10/+0.20	★	★	★	★
3.21	0/+0.02	38.7	-0.20/+0.30	★	★	★	★

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

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

Carbide rods for PCB tools

For Brazed Rods

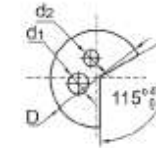
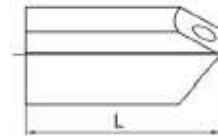


D mm		L* mm		YU06A
3.5	-0.05/+0.05	12.2	0~0.4	★
3.75	-0.05/+0.05	12.2	0~0.4	★
4.0	-0.05/+0.05	12.2	0~0.4	★
4.25	-0.05/+0.05	12.2	0~0.4	★
4.5	-0.05/+0.05	12.2	0~0.4	★
4.75	-0.05/+0.05	12.2	0~0.4	★
5.0	-0.05/+0.05	12.2	0~0.4	★
5.25	-0.05/+0.05	12.2	0~0.4	★
5.5	-0.05/+0.05	12.2	0~0.4	★
5.75	-0.05/+0.05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

★ Recommended Grade

*Available as any fix length

Gun Drill blank

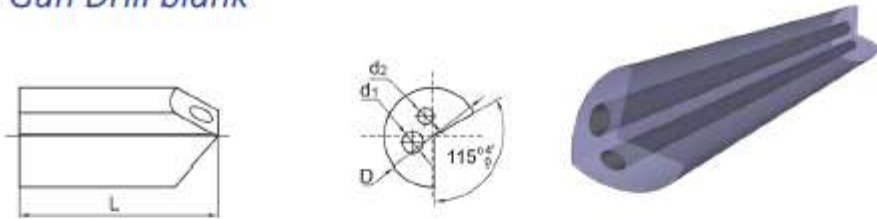


GUN DRILLS



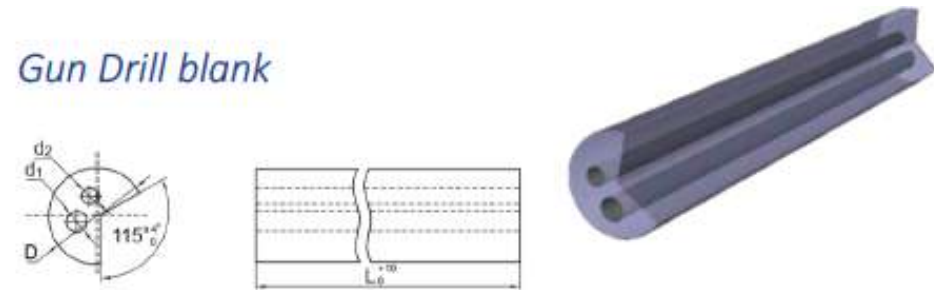
D mm	d1 mm	d2 mm	L mm
8.0	+0.2/+0.5	1.75 ±0.15	35 0/+3.0
8.5	0/+0.4	1.9 ±0.15	35 0/+3.0
9.0	+0.2/+0.5	2.1 ±0.15	35 0/+3.0
9.5	0/+0.4	2.1 ±0.15	35 0/+3.0
10.0	+0.2/+0.5	2.5 ±0.2	40 0/+3.0
10.5	0/+0.4	2.5 ±0.2	40 0/+3.0
11.0	+0.2/+0.5	2.7 ±0.2	40 0/+3.0
11.5	0/+0.4	2.7 ±0.2	40 0/+3.0
12.0	+0.2/+0.5	2.9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

Gun Drill blank



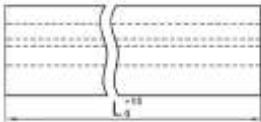
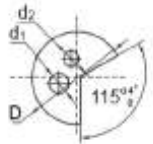
D mm	d1 mm	d2 mm	L mm		
22.5	+0.1/+0.6	5.1 ±0.3	4.0 ±0.3	55	0/+3.0
23.0	+0.2/+0.6	5.8 ±0.3	4.5 ±0.3	55	0/+3.0
23.5	+0.1/+0.6	5.3 ±0.3	4.2 ±0.3	55	0/+3.0
24.0	+0.2/+0.6	6.0 ±0.3	4.8 ±0.3	55	0/+3.0
24.5	+0.1/+0.6	5.5 ±0.3	4.4 ±0.3	55	0/+3.0
25.0	+0.2/+0.6	6.3 ±0.3	5.0 ±0.3	60	0/+3.0
25.5	+0.1/+0.6	5.8 ±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

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

Gun Drill blank

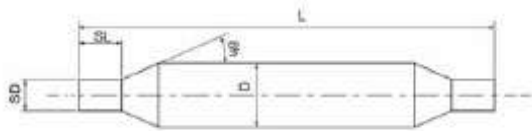


PREFORMS

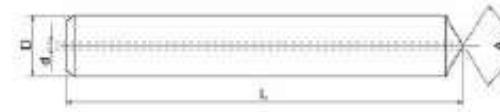


D mm		d1 mm		d2 mm	
22.5	+0.1/+0.6	5.1	±0.3	4.0	±0.3
23.0	+0.2/+0.6	5.8	±0.3	4.5	±0.3
23.5	+0.1/+0.6	5.3	±0.3	4.2	±0.3
24.0	+0.2/+0.6	6.0	±0.3	4.8	±0.3
24.5	+0.1/+0.6	5.5	±0.3	4.4	±0.3
25.0	+0.2/+0.6	6.3	±0.3	5.0	±0.3
25.5	+0.1/+0.6	5.8	±0.35	4.6	±0.35
26.0	+0.2/+0.6	6.6	±0.3	5.3	±0.3
26.5	+0.1/+0.7	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

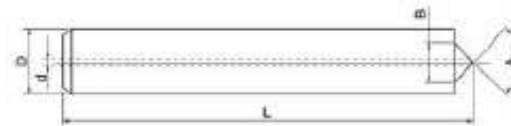
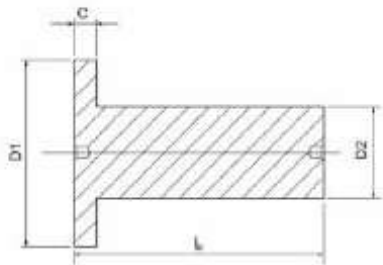
Step rods



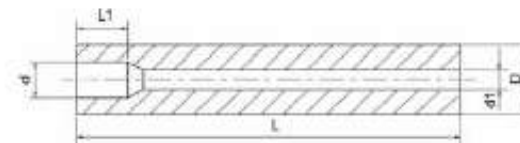
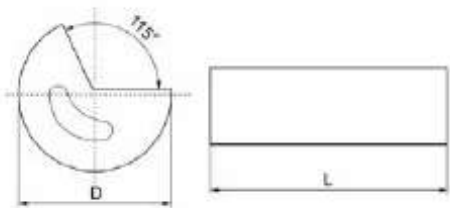
Rod with taper end (with hole)



Cemented carbide blank for T-slot cutters

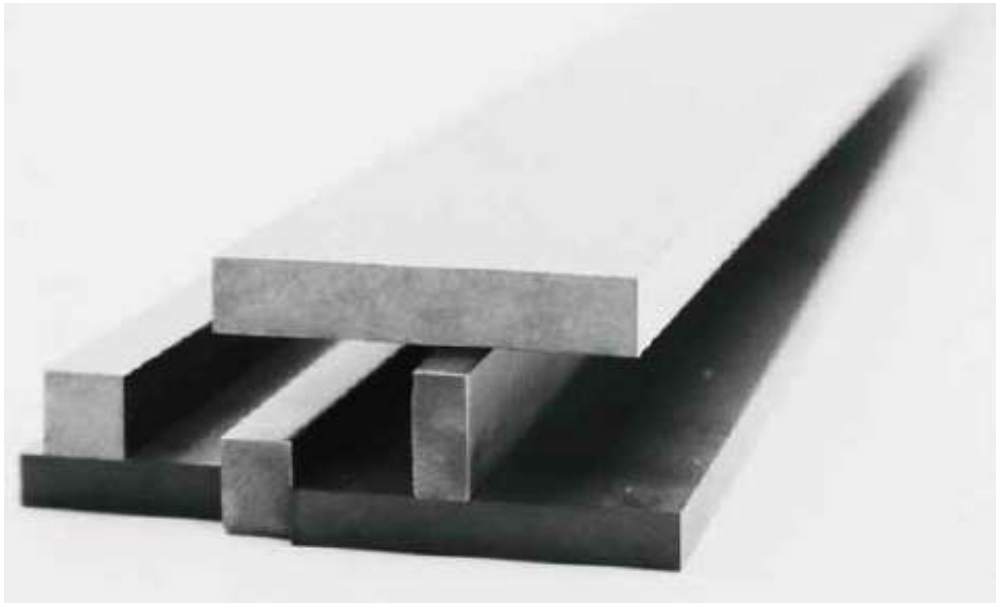


Rods with Kidney-Shaped coolant hole



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°

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