



CARBIDE RODS MATERIALS

CARBIDE RODS

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MAC200 Carbide Rod Series

Grade	ISO Code	Grain Size (µm)	Co (%)	Hardness		Density (g/cm³)	TRS (N/mm²)
				(HRA)	(HV30)		
MAC216	K05-K10	0,4-0,5	6,0	94	2050	14,7	3800
MAC215	K10-K20	1,0-1,2	6,0	92,5	1730	14,9	3000
MAC211	K05-K10	0,2	8,0	94,2	2080	14,5	3800
MAC210	K10-K20	0,4-0,5	8,5	93,2	1930	14,5	3800
MAC209	K05-K10	0,2	9,0	94	2050	14,45	4200
MAC208	K20-K40	0,6	10	91,8	1630	14,40	4000
MAC205	K20-K40	0,4-0,5	12,0	92,6	1750	14,1	4200
MAC204	K30-K40	0,6-0,8	12,0	91,5	1580	14,1	4000

Product User Guide

Iso Materials		Machining		MAC216 MAC211	MAC215	MAC210	MAC209	MAC208	MAC205	MAC204
P	Steel	Drilling						✓ ✓		
		Milling	Roughing					✓ ✓	✓	
			Finishing					✓	✓ ✓	
M	Stainless Steel	Drilling						✓ ✓		✓ ✓
		Milling	Roughing					✓	✓	✓ ✓
			Finishing				✓	✓	✓ ✓	
K	Cast Iron	Drilling						✓ ✓		
		Milling	Roughing					✓ ✓	✓	
			Finishing					✓	✓ ✓	
N	Non Ferrous Metals	Drilling							✓ ✓	
		Milling	Roughing		★			✓ ✓	✓	
			Finishing			✓		✓	✓ ✓	
S	Heat Resistant Material	Drilling						✓ ✓	✓	✓ ✓
		Milling	Roughing			✓		✓		✓ ✓
			Finishing					✓	✓ ✓	✓
H	Hardened Material	Drilling				✓	✓	✓ ✓		
		Milling	Roughing			✓ ✓	✓			
			Finishing			✓				
Others	Composite Material Graphite PCB	Drilling			★	✓				
		Milling	Roughing	✓ ✓	★					
			Finishing	✓ ✓	★	✓ ✓	✓			

✓ ✓ 1st Choice

✓ 2nd Choice

★ Diamond Coating

Product Dimensions Full Length

Grounded (h6)



Diameter (Ø) (mm)	Length (L) (mm)
2	330
3	330
4	330
5	330
6	330
7	330
8	330
9	330
10	330
11	330
12	330
13	330
14	330
15	330

Diameter (Ø) (mm)	Length (L) (mm)
16	330
17	330
18	330
19	330
20	330
21	330
22	330
23	330
24	330
25	330
26	330
27	330
28	330
29	330

Diameter (Ø) (mm)	Length (L) (mm)
30	330
31	330
32	330
33	330
34	330
35	330
36	330
37	330
38	330
39	330
40	330
41	330
42	330

**Please contact us for dimensions not specified in the table.*

Grounded ØD (mm)		Length (L) (mm)
Diameter Range	Tolerance	Tolerance
$2 \leq \text{Ø D} \leq 60$	h6	0,+5

Product Dimensions Cut Length

Diameter (Ø) (mm)	Length (L) (mm)
3	40
3	50
3	60
3	75
3	100
4	40
4	50
4	55
4	60
4	75
4	100
4	150
5	50
5	55
5	60
5	75
5	100
5	150

Diameter (Ø) (mm)	Length (L) (mm)
6	50
6	57
6	60
6	70
6	75
6	80
6	100
6	150
7	60
7	100
7	150
8	60
8	63
8	75
8	80
8	90
8	100
8	150

Diameter (Ø) (mm)	Length (L) (mm)
10	70
10	75
10	90
10	100
10	150
12	60
12	75
12	83
12	100
12	120
12	150
13	100
13	150
14	75
14	83
14	100
14	120
14	150

Diameter (Ø) (mm)	Length (L) (mm)
16	92
16	100
16	120
16	125
16	150
18	92
18	100
18	125
18	150
20	100
20	120
20	150
22	100
22	120
22	150
25	100
25	120
25	150

**Please contact us for dimensions not specified in the table.*

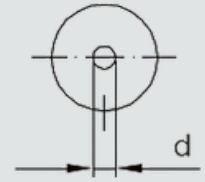
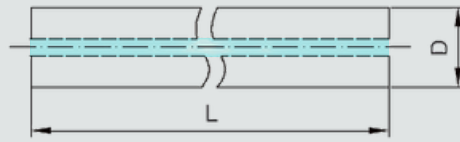
The best for your business

MACROD

In the cutting tool industry, carbide rods one of the most fundamental production cost components play a critical role in performance and efficiency. With our MACROD rod series, developed specifically for this field with variable compositions for different applications, we offer both performance and productivity for your business. You can achieve up to 30% savings in your annual raw material costs.

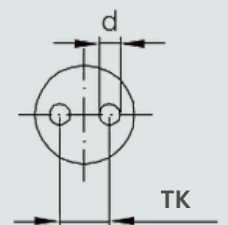
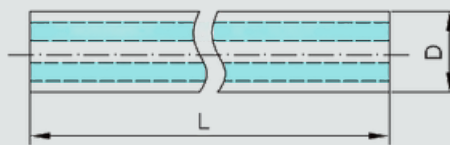
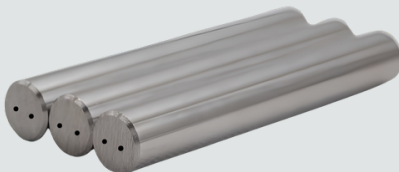
Coolant Hole Rods

Single Straight Hole Coolant Rod



$\varnothing D$ (mm)	L (mm)	d (mm)
6 +0,3/0,6	330 +1,0/5,0	1,0 ±0,15
6 +0,3/0,6	330 +1,0/5,0	1,5 ±0,15
8 +0,3/0,6	330 +1,0/5,0	1,0 ±0,15
8 +0,3/0,6	330 +1,0/5,0	1,5 ±0,15
10 +0,3/0,6	330 +1,0/5,0	1,4 ±0,15
10 +0,3/0,6	330 +1,0/5,0	2,0 ±0,20
12 +0,3/0,7	330 +1,0/5,0	1,75 ±0,15
12 +0,3/0,7	330 +1,0/5,0	2,0 ±0,20
14 +0,3/0,7	330 +1,0/5,0	1,75 ±0,15
14 +0,3/0,7	330 +1,0/5,0	2,0 ±0,20

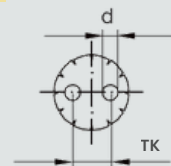
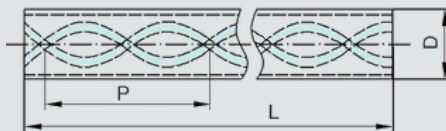
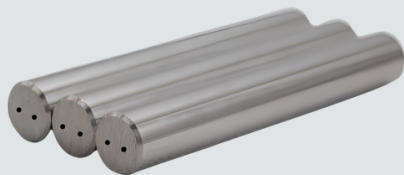
Two Straight Holes Coolant Hole Rod



$\varnothing D$ (mm)	L (mm)	d (mm)	TK (mm)
6 +0,3/0,6	330 +1,0/5,0	1,0 ±0,15	3,0 +0/-0,2
8 +0,3/0,6	330 +1,0/5,0	1,0 ±0,15	2,6 +0/-0,3
10 +0,3/0,6	330 +1,0/5,0	1,0 ±0,15	2,6 +0/-0,3
12 +0,3/0,6	330 +1,0/5,0	1,75 ±0,15	6,0 +0/-0,3
12 +0,3/0,6	330 +1,0/5,0	1,75 ±0,15	3,5 +0/-0,3
14 +0,3/0,6	330 +1,0/5,0	1,75 ±0,20	7,0 +0/-0,3
14 +0,3/0,7	330 +1,0/5,0	1,75 ±0,15	5,0 +0/-0,3

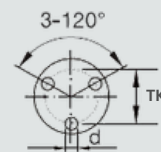
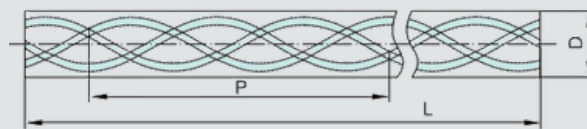
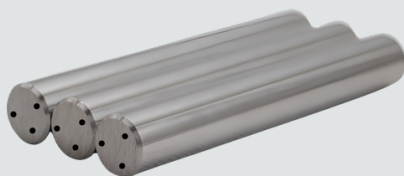
Coolant Hole Rods

Two Coolant Holes 30° Helical Rod



ØD (mm)	L (mm)	d (mm)	TK (mm)	P (mm)	Hole Deviation
4 +0,6/1,0	330 +1,0/5,0	0,6 ±0,10	2,1 ±0,15	21,77 -0,69/+0,72	0,15
6 +0,6/1,0	330 +1,0/5,0	0,7 ±0,10	2,4 ±0,20	32,65 -1,0/+1,07	0,15
8 +0,6/1,0	330 +1,0/5,0	1,0 ±0,15	3,8 ±0,25	43,53 -1,38/+1,42	0,15
10 +0,6/1,0	330 +1,0/5,0	1,4 ±0,15	4,5 ±0,35	54,41 -1,73/+1,78	0,20
12 +0,7/1,1	330 +1,0/5,0	1,4 ±0,15	5,85 ±0,45	65,30 -2,08/+2,14	0,30
14 +0,7/1,1	330 +1,0/5,0	1,75 ±0,20	6,7 ±0,45	76,18 -2,42/+2,50	0,40
16 +0,7/1,1	330 +1,0/5,0	1,75 ±0,20	7,9 ±0,45	87,06 -2,77/+2,85	0,40
18 +0,7/1,1	330 +1,0/5,0	2,0 ±0,25	9,15 ±0,45	97,95 -3,10/+3,20	0,50
20 +0,7/1,1	330 +1,0/5,0	2,0 ±0,25	9,9 ±0,55	108,83 -3,63/+3,74	0,50
22 +0,7/1,1	330 +1,0/5,0	2,0 ±0,25	11,1 ±0,55	119,71 -4,32/+4,45	0,50
25 +0,8/1,2	330 +1,0/5,0	2,0 ±0,25	12,8 ±0,55	136,03 -4,32/+4,45	0,50

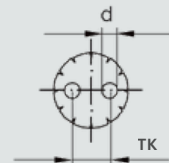
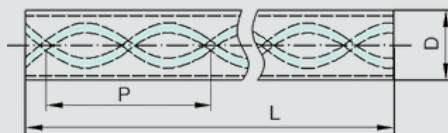
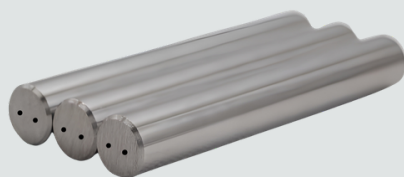
Three Coolant Holes 30° Helical Rod



ØD (mm)	L (mm)	d (mm)	TK (mm)	P (mm)
12 +0,7/1,1	330 +1,0/5,0	1,1 ±0,15	6,05 ±0,45	65,30 -2,08/+2,14
14 +0,7/1,1	330 +1,0/5,0	1,4 ±0,15	7,05 ±0,45	76,18 -2,42/+2,50
16 +0,7/1,1	330 +1,0/5,0	1,6 ±0,15	8,05 ±0,45	87,06 -2,77/+2,85
18 +0,7/1,1	330 +1,0/5,0	1,7 ±0,15	9,25 ±0,55	97,95 -3,10/+3,20
20 +0,7/1,1	330 +1,0/5,0	1,9 ±0,25	9,85 ±0,55	108,83 -3,63/+3,74

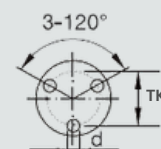
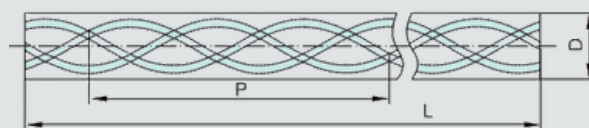
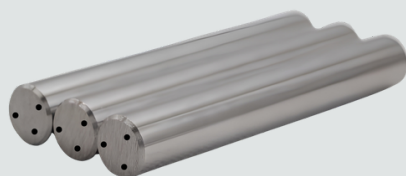
Coolant Hole Rods

Two Coolant Holes 40° Helical Rod



$\varnothing D$ (mm)	L (mm)	d (mm)	TK (mm)	P (mm)
6 +0,6/1,0	330 +1,0/5,0	0,7 ±0,10	1,9 ±0,20	22,46 -0,63/+0,66
8 +0,6/1,0	330 +1,0/5,0	0,7 ±0,10	2,4 ±0,35	29,95 -0,83/+0,86
10 +0,6/1,0	330 +1,0/5,0	0,8 ±0,15	3,1 ±0,45	37,44 -1,06/+1,07
12 +0,7/1,1	330 +1,0/5,0	0,9 ±0,15	3,8 ±0,45	44,93 -1,27/+1,28
14 +0,7/1,1	330 +1,0/5,0	1,0 ±0,15	4,3 ±0,45	52,42 -1,47/+1,50
16 +0,7/1,1	330 +1,0/5,0	1,2 ±0,20	5,1 ±0,45	59,90 -1,68/+1,73
18 +0,7/1,1	330 +1,0/5,0	1,4 ±0,20	5,9 ±0,45	67,39 -1,89/+1,94
25 +0,8/1,2	330 +1,0/5,0	1,75 ±0,25	7,6 ±0,55	93,58 -2,59/+2,74

Three Coolant Holes 40° Helical Rod



$\varnothing D$ (mm)	L (mm)	d (mm)	TK (mm)	P (mm)
6 +0,6/1,0	330 +1,0/5,0	0,5 ±0,15	2,05 ±0,25	22,46 -0,63/+0,66
8 +0,7/1,1	330 +1,0/5,0	0,65 ±0,15	2,55 ±0,25	29,95 -0,83/+0,86
10 +0,7/1,1	330 +1,0/5,0	0,8 ±0,15	3,35 ±0,35	37,44 -1,06/+1,07
12 +0,7/1,1	330 +1,0/5,0	0,9 ±0,20	3,95 ±0,45	44,93 -1,27/+1,28

Tolerances

Diameter Range	ISO h5	ISO h6
$0 < \varnothing \leq 3 \text{ mm}$	+ / -0,004 mm	+ / -0,006 mm
$3 < \varnothing \leq 6 \text{ mm}$	+ / -0,005 mm	+ / -0,008 mm
$6 < \varnothing \leq 10 \text{ mm}$	+ / -0,006 mm	+ / -0,009 mm
$10 < \varnothing \leq 18 \text{ mm}$	+ / -0,008 mm	+ / -0,011 mm
$18 < \varnothing \leq 30 \text{ mm}$	+ / -0,009 mm	+ / -0,013 mm
$30 < \varnothing \leq 50 \text{ mm}$	+ / -0,011 mm	+ / -0,016 mm

Roundness Tolerance

$\leq 0,003 \text{ mm}$

Surface Roughness
Tolerance

0,05 - 0,13 μm

*Custom rod orders can be placed within
the diameter and length ranges specified
below.*

Special Diameter Range

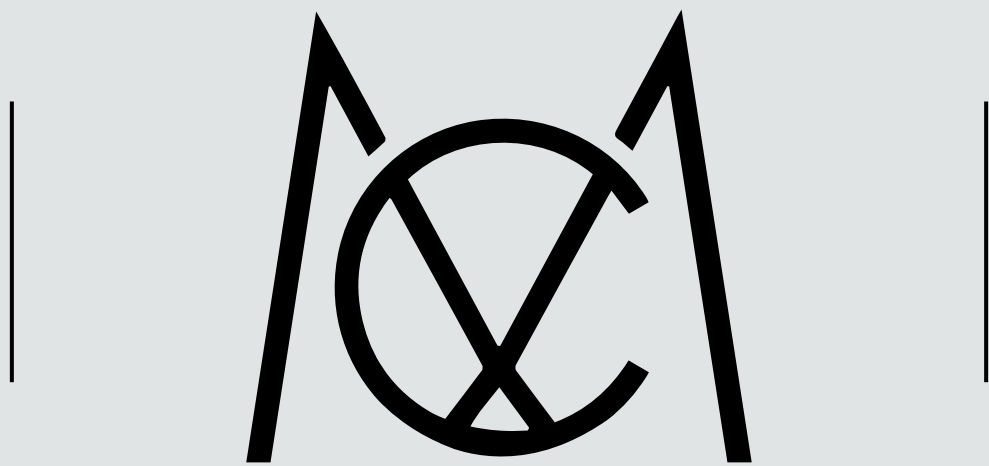
$\varnothing 1 - 60 \text{ mm}$

Special Length Range

14mm - 800 mm



As Mackap Industrial Technologies Co., we provide services to the industry in the field of industrial technologies, specializing in the production partnership and sales of cutting tools. According to our customers' needs, we source our raw materials from suppliers operating across different continents on a global scale. While continuing our operations with a win-win principle, we see our customers as long-term business partners. Being aware that customer satisfaction is our top priority, we work to ensure uninterrupted production planning for our customers and maintain the continuity of our quality standards. As Mackap Industrial Technologies Co., we continuously improve ourselves in order to better shape the future.



M A C K A P

Industrial Technologies Co.

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