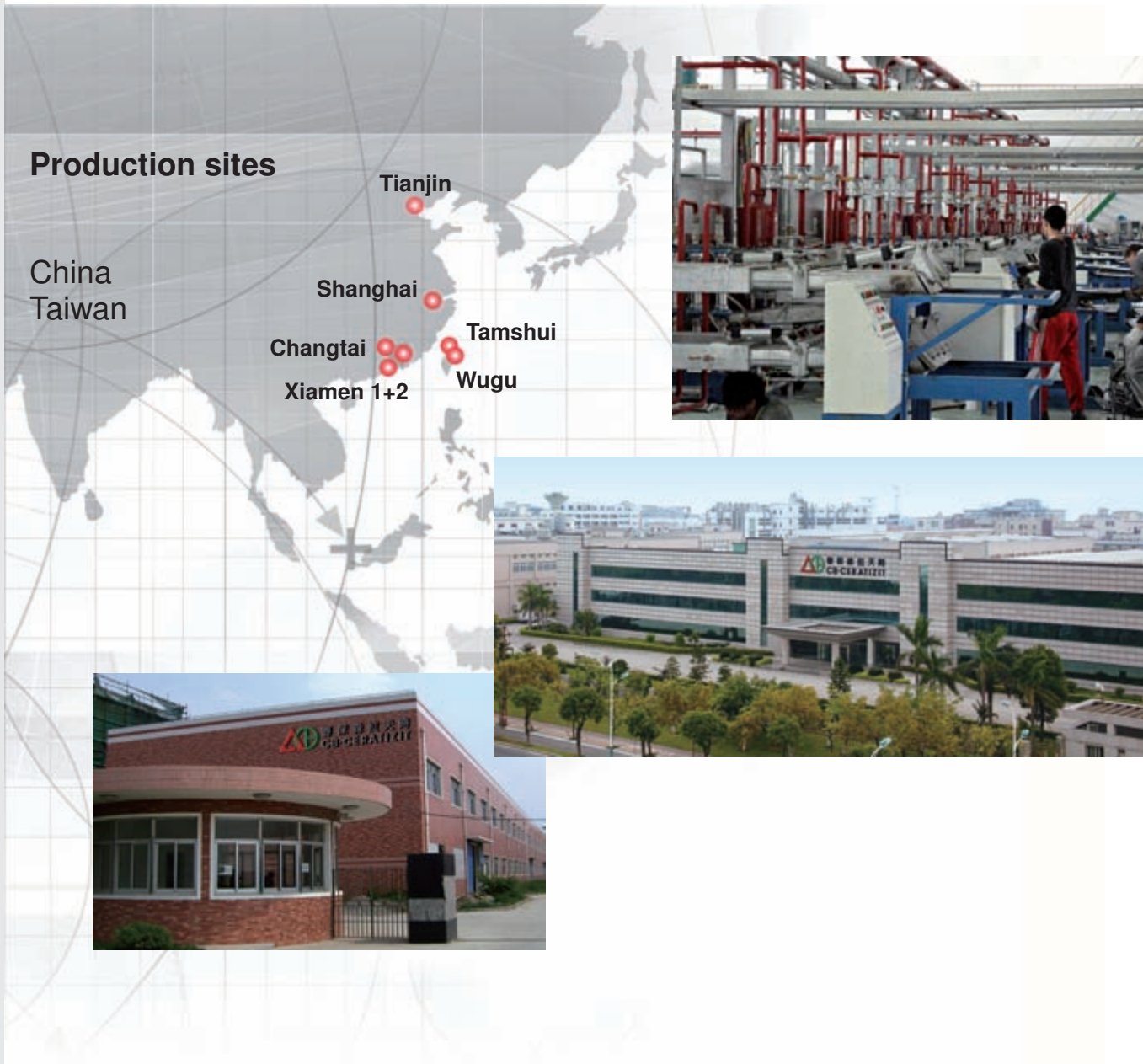




EN

Hard metals for precision tools

e-line



Dispatching centre
Logistics centre Kempen, Germany



e-line *product line*

Carbide products from the CB-CERATIZIT plants

The joint venture which was created between CB Carbide and CERATIZIT in October 2010 now enables us to offer you products from our CB-CERATIZIT plants.

These carbide products are distributed under the name e-line.

Acknowledged industrial quality

With over 30 years' experience in carbide production and a quality management system certified according to ISO 9001, e-line stands for carbide products of a worldwide acknowledged industrial quality with a good price-performance ratio.

The e-line products are continuously being further developed and thus always meet the most recent market standards.

Order online through the E-TECHSTORE and enjoy rapid availability

The e-line products can easily be ordered online through the tried and tested E-TECHSTORE from CERATIZIT.

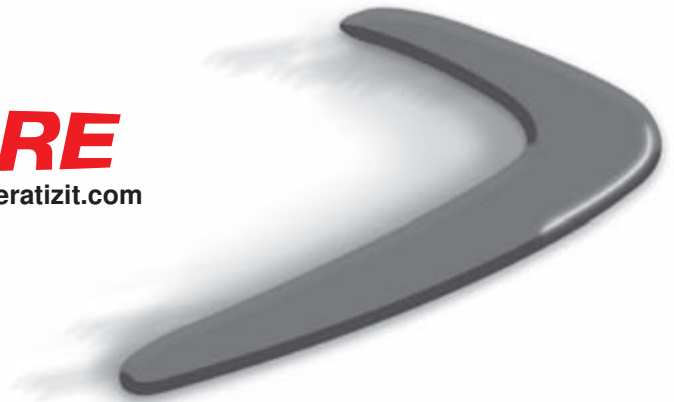
All e-line products are stored and dispatched from our central warehouse in Kempten, Germany, which guarantees rapid availability for our customers.

Please note that the e-line products are only available in full packaged units (see program).

Our e-line products can be recognized by this label.



e-line tool label



SPEED

- > Configure over 900 products online and order immediately
- > Immediate order confirmation
- > Online check regarding delivery status of product
- > Extended product search especially for rods
- > Orders placed by 6 p.m. (C.E.T.) will be dispatched on the same day

INFORMATION

- > On-line availability check for all standard items
- > Up-to-the-minute high-performing CERATIZIT product catalogue including all technical and graphical details
- > Well-structured navigation, easy user guidance

SERVICES

- > Access 24 hours a day
- > Direct link to your personal contact person
- > Online solution - no software installation necessary
- > Optimum safety by means of SSL-encoding and personal access authorization

BUSINESS

- > Order online at individual net prices and conditions
- > Check invoices, consignments and payments
- > 'Last-minute' changes of open orders possible
- > Usage of personal order templates possible
- > Shipment tracking via Internet (Track & Trace)



Designation system

6-7



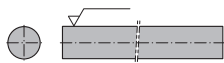
Grade guide

8



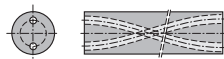
RR - sintered rods

9



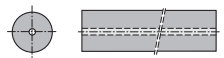
RG - ground rods

10



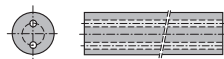
RRK2 - sintered rods with two helical coolant holes

11



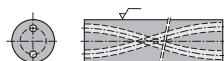
RRG1 - sintered rods with central coolant hole

11



RRG2 - sintered rods with two straight coolant holes

12



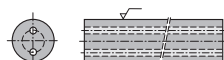
RGK2 - ground rods with two helical coolant holes

12



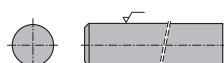
RGG1 - ground rods with straight coolant hole

13



RGG2 - ground rods with two straight coolant holes

13

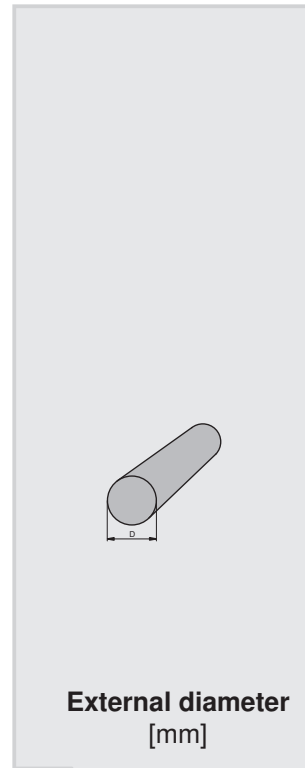


RGMC - ground rods cut to length

14

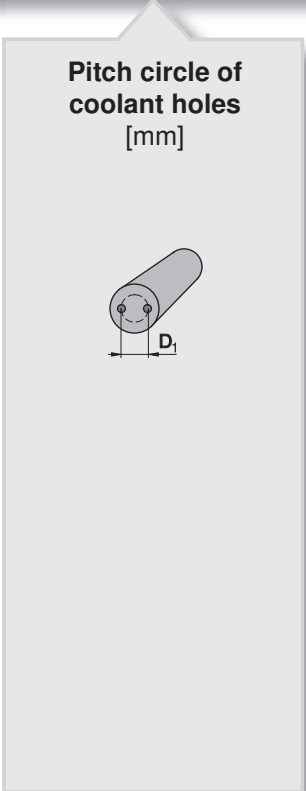
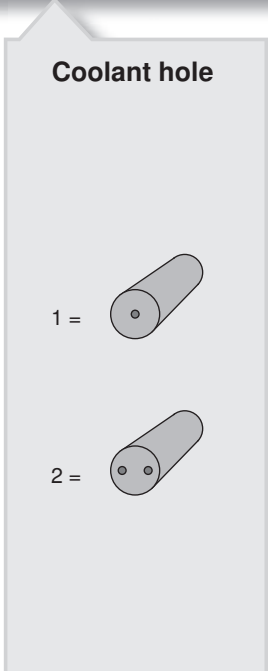
RR	Sintered rods
RG	Ground rods
RGMC	Ground rods cut to length
RRK	Sintered rods with helical coolant hole(s)
RGK	Ground rods with helical coolant hole(s)
RRG	Sintered rods with straight coolant hole(s)
RRG	Ground rods with straight coolant hole(s)

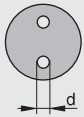
Type of rod



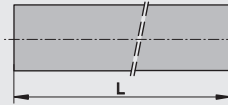
CB-RRK 2 | 1030 / 4,5 /

E-Line





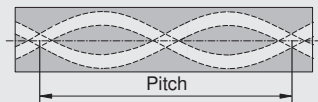
Diameter of coolant holes
[mm]



Rod length
[mm]

1,3 / 43,5 - 330 WF15

Nominal pitch of coolant hole
[mm]



Grade



WF15

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Composition and properties

Grade	ISO code	U.S. code	Grain size	TiC/ Ta(Nb)C	Binder ± 0,5%	Density	Hardness			Transverse rupture strength TRS		K _{IC} [*] SEVNB
							HV10	HV30	HRA	MPa	P.S.I.	
TUNGSTEN CARBIDE COBALT GRADE												
WF05	K10-K20	C-2	Submicron	–	7	14,65	1820	1790	93,0	3500	506.975	7,6
WF15	K20-K40	C-3	Submicron	–	10	14,40	1600	1580	91,8	3700	535.945	9,1
WF25	K10-K30	C-2	Ultrafine	–	12	14,15	1700	1690	92,4	4000	579.400	7,8

WF05 Submicron grain grade for rotating solid carbide tools. For the machining of aluminium alloys, non ferrous metals and cast iron. Suitable for the machining of plastic materials and graphite.

WF15 Submicron grade with a wide application range in metal cutting. Suitable for drilling and milling most steel and cast iron grades.

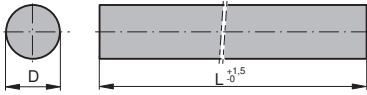
WF25 Ultrafine carbide grade with high transverse rupture strength and good wear resistance for finishing of hardened steels.

Classification of tungsten carbide grain size	
Tungsten carbide grain size [µm]	Classification
< 0,2	nano
0,2 - 0,5	ultrafine
0,5 - 0,8	submicron
0,8 - 1,3	fine
1,3 - 2,5	medium
2,5 - 6,0	coarse
> 6,0	extra-coarse

Comments:

1. The data in this table represents typical material parameters. We reserve the right to modify the data due to technical progress or due to further development within our company.
2. K_{IC}^{*}: the measured critical tension intensity factors (K_{IC}) depend to a high degree on the sample geometry and sample preparation. A direct comparison with parameters which have been determined by means of a different method is therefore not admissible.

Sintered rods



Ø D 3.20 – 32.20 mm

D [mm]	Type, description	VE [piece]	L [mm]	Dia. tol. [mm]	WF05	WF15	WF25
3.20	CB-RR 0320-330	100	330	-0/+0.20	○	○	○
3.70	CB-RR 0370-330	50	330	-0/+0.20		○	
4.20	CB-RR 0420-330	50	330	-0/+0.20	○	○	○
4.70	CB-RR 0470-330	50	330	-0/+0.20		○	
5.20	CB-RR 0520-330	30	330	-0/+0.25	○	○	○
5.70	CB-RR 0570-330	30	330	-0/+0.25		○	
6.20	CB-RR 0620-330	30	330	-0/+0.25	○	○	○
6.70	CB-RR 0670-330	30	330	-0/+0.25		○	
7.20	CB-RR 0720-330	20	330	-0/+0.30		○	
7.70	CB-RR 0770-330	20	330	-0/+0.30		○	
8.20	CB-RR 0820-330	20	330	-0/+0.30	○	○	○
8.70	CB-RR 0870-330	20	330	-0/+0.30		○	
9.20	CB-RR 0920-330	10	330	-0/+0.30		○	
9.70	CB-RR 0970-330	10	330	-0/+0.30		○	
10.20	CB-RR 1020-330	10	330	-0/+0.30	○	○	○
10.70	CB-RR 1070-330	7	330	-0/+0.30		○	
11.20	CB-RR 1120-330	7	330	-0/+0.30		○	
11.70	CB-RR 1170-330	7	330	-0/+0.30		○	
12.20	CB-RR 1220-330	7	330	-0/+0.30	○	○	○
12.70	CB-RR 1270-330	7	330	-0/+0.30		○	
13.20	CB-RR 1320-330	5	330	-0/+0.30		○	
13.70	CB-RR 1370-330	5	330	-0/+0.30		○	
14.20	CB-RR 1420-330	5	330	-0/+0.30	○	○	○
14.70	CB-RR 1470-330	5	330	-0/+0.30		○	
15.20	CB-RR 1520-330	4	330	-0/+0.30		○	
15.70	CB-RR 1570-330	4	330	-0/+0.30		○	
16.20	CB-RR 1620-330	4	330	-0/+0.45	○	○	○
17.20	CB-RR 1720-330	4	330	-0/+0.45		○	
18.20	CB-RR 1820-330	4	330	-0/+0.45	○	○	○
19.20	CB-RR 1920-330	2	330	-0/+0.45		○	
20.20	CB-RR 2020-330	2	330	-0/+0.45	○	○	○
21.20	CB-RR 2120-330	2	330	-0/+0.55		○	
22.20	CB-RR 2220-330	2	330	-0/+0.55		○	
23.20	CB-RR 2320-330	2	330	-0/+0.55		○	
24.20	CB-RR 2420-330	1	330	-0/+0.55		○	
25.20	CB-RR 2520-330	1	330	-0/+0.65	○	○	○
26.20	CB-RR 2620-330	1	330	-0/+0.65		○	
27.20	CB-RR 2720-330	1	330	-0/+0.65		○	
28.20	CB-RR 2820-330	1	330	-0/+0.65		○	
30.20	CB-RR 3020-330	1	330	-0/+0.65		○	
32.20	CB-RR 3220-330	1	330	-0/+0.65		○	○

● = stock item

○ = limited stock or upon request

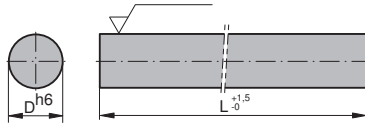
▲ = new products

- = no longer in production, available as long as stocks last

VE = packaging unit

Other grades and dimensions upon request

Ground rods • h6

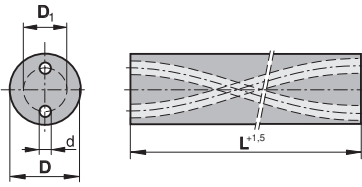


Ø D 3.00 – 32.00 mm

D [mm]	Type, description	VE [piece]	L [mm]	Dia. tol. [mm]	WF05	WF15	WF25
3.00	CB-RG 0300-330	100	330	+0/-0.006	○	●	○
3.50	CB-RG 0350-330	100	330	+0/-0.008		○	
4.00	CB-RG 0400-330	50	330	+0/-0.008	○	●	○
4.50	CB-RG 0450-330	50	330	+0/-0.008		○	
5.00	CB-RG 0500-330	30	330	+0/-0.008	○	●	○
5.50	CB-RG 0550-330	30	330	+0/-0.008		○	
6.00	CB-RG 0600-330	30	330	+0/-0.008	○	●	○
6.50	CB-RG 0650-330	30	330	+0/-0.009		○	
7.00	CB-RG 0700-330	20	330	+0/-0.009		○	
7.50	CB-RG 0750-330	20	330	+0/-0.009		○	
8.00	CB-RG 0800-330	20	330	+0/-0.009	○	●	○
8.50	CB-RG 0850-330	20	330	+0/-0.009		○	
9.00	CB-RG 0900-330	10	330	+0/-0.009		○	
9.50	CB-RG 0950-330	10	330	+0/-0.009		○	
10.00	CB-RG 1000-330	10	330	+0/-0.009	○	●	○
11.00	CB-RG 1100-330	7	330	+0/-0.011		○	
12.00	CB-RG 1200-330	7	330	+0/-0.011	○	●	○
13.00	CB-RG 1300-330	5	330	+0/-0.011		○	
14.00	CB-RG 1400-330	5	330	+0/-0.011	○	●	○
15.00	CB-RG 1500-330	4	330	+0/-0.011		○	
16.00	CB-RG 1600-330	4	330	+0/-0.011	○	●	○
17.00	CB-RG 1700-330	4	330	+0/-0.011		○	
18.00	CB-RG 1800-330	4	330	+0/-0.011		●	
20.00	CB-RG 2000-330	2	330	+0/-0.013	○	●	○
22.00	CB-RG 2200-330	2	330	+0/-0.013		○	
24.00	CB-RG 2400-330	1	330	+0/-0.013		○	
25.00	CB-RG 2500-330	1	330	+0/-0.013	○	●	○
30.00	CB-RG 3000-330	1	330	+0/-0.013		○	
32.00	CB-RG 3200-330	1	330	+0/-0.016		●	○

● = stock item
 ○ = limited stock or upon request
 ▲ = new products
 – = no longer in production, available as long as stocks last
 VE = packaging unit
 Other grades and dimensions upon request

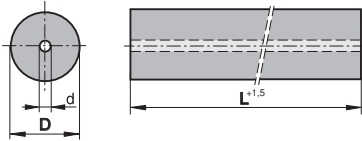
Sintered rods



with two helical coolant holes
 \varnothing D 6.30 – 25.30 mm

D [mm]	Type, description	VE [piece]	L [mm]	D ₁ [mm]	d [mm]	Nominal pitch		WF15
						[mm]	[°]	
6.30	CB-RRK2 0630/2.4/0.7/32.7-330	30	330	2.40	0.70	32.70	30.0	○
8.30	CB-RRK2 0830/4.00/1.00/43.53-330	20	330	4.00	1.00	43.53	30.0	○
10.30	CB-RRK2 1030/4.50/1.40/54.41-330	10	330	4.50	1.40	54.41	30.0	○
12.30	CB-RRK2 1230/6.25/1.40/65.30-330	7	330	6.25	1.40	65.30	30.0	○
14.30	CB-RRK2 1430/7.10/1.75/76.18-330	5	330	7.10	1.75	76.18	30.0	○
16.30	CB-RRK2 1630/8.3/1.8/87-330	4	330	8.30	1.80	87.00	30.0	○
18.30	CB-RRK2 1830/9.2/2.0/98-330	4	330	9.20	2.00	98.00	30.0	○
20.30	CB-RRK2 2030/10.4/2.0/108.8-330	2	330	10.40	2.00	108.80	30.0	○
25.30	CB-RRK2 2530/12.8/2.5/139.3-330	1	330	12.80	2.50	139.30	29.4	○

Sintered rods



with one straight coolant hole
 \varnothing D 4.20 – 32.20 mm

D [mm]	Type, description	VE [piece]	L [mm]	d [mm]	WF15
4.20	CB-RRG1 0420/0.6-330	50	330	0.60	○
5.20	CB-RRG1 0520/0.8-330	30	330	0.80	○
6.20	CB-RRG1 0620/1.00-330	30	330	1.00	○
8.20	CB-RRG1 0820/1.0-330	20	330	1.00	○
10.20	CB-RRG1 1020/1.3-330	10	330	1.30	○
12.20	CB-RRG1 1220/2.5-330	7	330	2.50	○
14.20	CB-RRG1 1420/2.0-330	5	330	2.00	○
15.20	CB-RRG1 1520/3.0-330	4	330	3.00	○
16.20	CB-RRG1 1620/2.0-330	4	330	2.00	○
18.20	CB-RRG1 1820/2.5-330	4	330	2.50	○
20.20	CB-RRG1 2020/2.5-330	2	330	2.50	○
25.20	CB-RRG1 2520/4.0-330	1	330	4.00	○
30.20	CB-RRG1 3020/5.0-330	1	330	5.00	○
32.20	CB-RRG1 3220/5.0-330	1	330	5.00	○

● = stock item

○ = limited stock or upon request

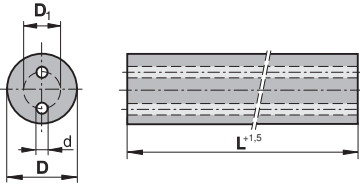
▲ = new products

– = no longer in production, available as long as stocks last

VE = packaging unit

Other grades and dimensions upon request

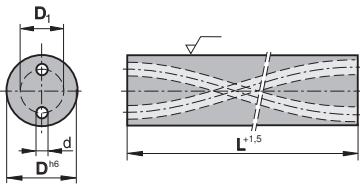
Sintered rods



with two straight coolant holes
 $\varnothing D 6.20 - 20.20 \text{ mm}$

D [mm]	Type, description	VE [piece]	L [mm]	D ₁ [mm]	d [mm]	WF05
6.20	CB-RRG2 0620/1.1/0.5-330	30	330	1.10	0.50	○
	CB-RRG2 0620/2.2/1.0-330	30	330	2.20	1.00	○
8.20	CB-RRG2 0820/1.1/0.5-330	20	330	1.10	0.50	○
	CB-RRG2 0820/2.2/1.0-330	20	330	2.20	1.00	○
10.20	CB-RRG2 1020/2.6/1-330	10	330	2.60	1.00	○
	CB-RRG2 1020/4.3/1.6-330	10	330	4.30	1.60	○
12.20	CB-RRG2 1220/3.5/1.2-330	7	330	3.50	1.20	○
	CB-RRG2 1220/5.0/1.5-330	7	330	5.00	1.50	○
14.20	CB-RRG2 1420/5.5/1.8-330	5	330	5.50	1.80	○
	CB-RRG2 1420/6.5/2.0-330	5	330	6.50	2.00	○
16.20	CB-RRG2 1620/5.5/1.8-330	4	330	5.50	1.80	○
	CB-RRG2 1620/7.0/2.0-330	4	330	7.00	2.00	○
18.20	CB-RRG2 1820/6.0/2.0-330	4	330	6.00	2.00	○
20.20	CB-RRG2 2020/3.5/1.5-330	2	330	3.50	1.50	○
	CB-RRG2 2020/6.0/2.0-330	2	330	6.00	2.00	○

Ground rods • h6

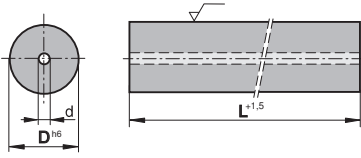


with two helical coolant holes
 $\varnothing D 6.00 - 25.00 \text{ mm}$

D [mm]	Type, description	VE [piece]	L [mm]	D ₁ [mm]	d [mm]	Nominal pitch		WF15
						[mm]	[°]	
6.00	CB-RGK2 0600/2.40/0.70/32.65-330	30	330	2.40	0.70	32.65	30.0	○
8.00	CB-RGK2 0800/3.80/1.00/43.53-330	20	330	3.80	1.00	43.53	30.0	○
10.00	CB-RGK2 1000/4.50/1.40/54.41-330	10	330	4.50	1.40	54.41	30.0	○
12.00	CB-RGK2 1200/6.3/1.4/65.3-330	7	330	6.30	1.40	65.30	30.0	○
14.00	CB-RGK2 1400/7.1/1.75/76.2-330	5	330	7.10	1.75	76.20	30.0	○
16.00	CB-RGK2 1600/8.3/1.8/87-330	4	330	8.30	1.80	87.00	30.0	○
18.00	CB-RGK2 1800/9.15/2.00/97.95-330	4	330	9.15	2.00	97.95	30.0	○
20.00	CB-RGK2 2000/10.4/2.0/108.8-330	2	330	10.40	2.00	108.80	30.0	○
25.00	CB-RGK2 2500/12.8/2.5/139.3-330	1	330	12.80	2.50	139.30	29.4	○

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- ▲ = new products
- = no longer in production, available as long as stocks last
- VE = packaging unit
- Other grades and dimensions upon request

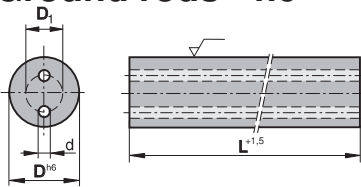
Ground rods • h6



with one straight coolant hole
 $\varnothing D$ 4.00 – 32.00 mm

D [mm]	Type, description	VE [piece]	L [mm]	d [mm]	Dia. tol. [mm]	WF15
4.00	CB-RGG1 0400/0.6-330	50	330	0.60	+0/-0.008	○
5.00	CB-RGG1 0500/0.8-330	30	330	0.80	+0/-0.008	○
6.00	CB-RGG1 0600/1.0-330	30	330	1.00	+0/-0.008	○
8.00	CB-RGG1 0800/1.0-330	20	330	1.00	+0/-0.009	○
10.00	CB-RGG1 1000/1.3-330	10	330	1.30	+0/-0.009	○
12.00	CB-RGG1 1200/2.5-330	7	330	2.50	+0/-0.011	○
14.00	CB-RGG1 1400/2.0-330	5	330	2.00	+0/-0.011	○
15.00	CB-RGG1 1500/3.0-330	4	330	3.00	+0/-0.011	○
16.00	CB-RGG1 1600/2.0-330	4	330	2.00	+0/-0.011	○
18.00	CB-RGG1 1800/2.5-330	4	330	2.50	+0/-0.011	○
20.00	CB-RGG1 2000/2.5-330	2	330	2.50	+0/-0.013	○
25.00	CB-RGG1 2500/4.0-330	1	330	4.00	+0/-0.013	○
30.00	CB-RGG1 3000/5.0-330	1	330	5.00	+0/-0.013	○
32.00	CB-RGG1 3200/5.0-330	1	330	5.00	+0/-0.016	○

Ground rods • h6



with two straight coolant holes
 $\varnothing D$ 6.00 – 20.00 mm

D [mm]	Type, description	VE [piece]	L [mm]	D ₁ [mm]	d [mm]	WF05
6.00	CB-RGG2 0600/1.1/0.5-330	30	330	1.10	0.50	○
	CB-RGG2 0600/2.2/1-330	30	330	2.20	1.00	○
8.00	CB-RGG2 0800/1.1/0.5-330	20	330	1.10	0.50	○
	CB-RGG2 0800/2.2/1-330	20	330	2.20	1.00	○
10.00	CB-RGG2 1000/2.6/1-330	10	330	2.60	1.00	○
	CB-RGG2 1000/4.3/1.2-330	10	330	4.30	1.20	○
12.00	CB-RGG2 1200/3.5/1.2-330	7	330	3.50	1.20	○
	CB-RGG2 1200/5.0/1.5-330	7	330	5.00	1.50	○
14.00	CB-RGG2 1400/5.5/1.8-330	5	330	5.50	1.80	○
	CB-RGG2 1400/6.5/2.0-330	5	330	6.50	2.00	○
16.00	CB-RGG2 1600/5.5/1.8-330	4	330	5.50	1.80	○
	CB-RGG2 1600/7.0/2.0-330	4	330	7.00	2.00	○
18.00	CB-RGG2 1800/6/2-330	4	330	6.00	2.00	○
20.00	CB-RGG2 2000/3.5/1.5-330	2	330	3.50	1.50	○
	CB-RGG2 2000/6/2-330	2	330	6.00	2.00	○

● = stock item

○ = limited stock or upon request

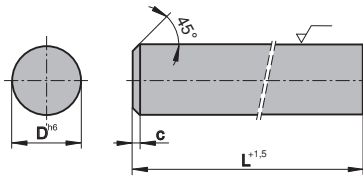
▲ = new products

- = no longer in production, available as long as stocks last

VE = packaging unit

Other grades and dimensions upon request

Ground rods • h6



Semi-finished products for solid carbide milling cutters
 Ø D 3.00 – 25.00 mm

D [mm]	Type, description	VE [piece]	L [mm]	c [mm]	Dia. tol. [mm]	WF15
3.00	CB-RGMC 0300-0395	400	39.5	0.30	+0/-0.006	●
4.00	CB-RGMC 0400-050	300	50	0.40	+0/-0.008	○
5.00	CB-RGMC 0500-050	300	50	0.40	+0/-0.008	○
6.00	CB-RGMC 0600-051	300	51	0.60	+0/-0.008	●
	CB-RGMC 0600-055	200	55	0.60	+0/-0.008	●
	CB-RGMC 0600-057	200	57	0.60	+0/-0.008	●
	CB-RGMC 0600-100	100	100	0.60	+0/-0.008	○
8.00	CB-RGMC 0800-058	100	58	0.60	+0/-0.009	○
	CB-RGMC 0800-063	100	63	0.60	+0/-0.009	●
	CB-RGMC 0800-100	50	100	0.60	+0/-0.009	○
10.00	CB-RGMC 1000-066	60	66	0.60	+0/-0.009	○
	CB-RGMC 1000-072	60	72	0.60	+0/-0.009	●
	CB-RGMC 1000-100	30	100	0.60	+0/-0.009	○
12.00	CB-RGMC 1200-073	30	73	0.80	+0/-0.011	○
	CB-RGMC 1200-083	30	83	0.80	+0/-0.011	●
	CB-RGMC 1200-100	15	100	0.80	+0/-0.011	○
14.00	CB-RGMC 1400-074	20	74	0.80	+0/-0.011	○
	CB-RGMC 1400-083	20	83	0.80	+0/-0.011	●
16.00	CB-RGMC 1600-082	12	82	0.80	+0/-0.011	○
	CB-RGMC 1600-092	12	92	0.80	+0/-0.011	●
	CB-RGMC 1600-100	8	100	0.80	+0/-0.011	○
	CB-RGMC 1600-120	8	120	0.80	+0/-0.011	○
18.00	CB-RGMC 1800-084	6	84	1.00	+0/-0.011	○
	CB-RGMC 1800-092	6	92	1.00	+0/-0.011	○
20.00	CB-RGMC 2000-092	6	92	1.00	+0/-0.013	○
	CB-RGMC 2000-104	6	104	1.00	+0/-0.013	●
	CB-RGMC 2000-125	6	125	1.00	+0/-0.013	○
	CB-RGMC 2000-150	6	150	1.00	+0/-0.013	○
25.00	CB-RGMC 2500-150	6	150	1.00	+0/-0.013	○

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- = limited stock or upon request
- ▲ = new products
- = no longer in production, available as long as stocks last
- VE = packaging unit
- Other grades and dimensions upon request

Distribution areas

e-line

Europe

(sales companies)

- Belgium
- Bulgaria
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- United Kingdom
- Italy
- Luxembourg
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- Slovak Republic
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- Czech Republic
- Hungary

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(sales companies)

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- Brazil
- Mexico

India
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We reserve the right to make technical changes
for improvement of the product.