Round Tool Materials

2019 EN

e-line

programme

CERATIZIT is a high-tech engineering group specialised in tooling and hard material technologies.

TOOLMAKER SOLUTIONS BY CERATIZIT

Tooling the Future

www.ceratizit.com

Contents

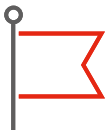
The CERATIZIT Group

For over **95 years**, CERATIZIT has been a **pioneer** developing exceptional hard material products for cutting tools and wear protection.

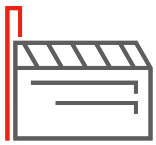
The privately owned company, based in Mamer, Luxembourg, develops and manufactures highly specialised carbide cutting tools, inserts and rods made of hard materials as well as wear parts.

The CERATIZIT Group is the **global market leader** in several wear part application areas, and successfully develops new types of carbide, cermet and ceramic grades which are used for instance in the wood, metal and stone working industries.

Facts & figures



1 headquarters
Mamer, Luxembourg



34
production sites

> 70
sales subsidiaries

> 9,000
employees

> 100,000
different products

> 1,000
patents and utility models

> 200
employees in R&D

> 10
innovation awards

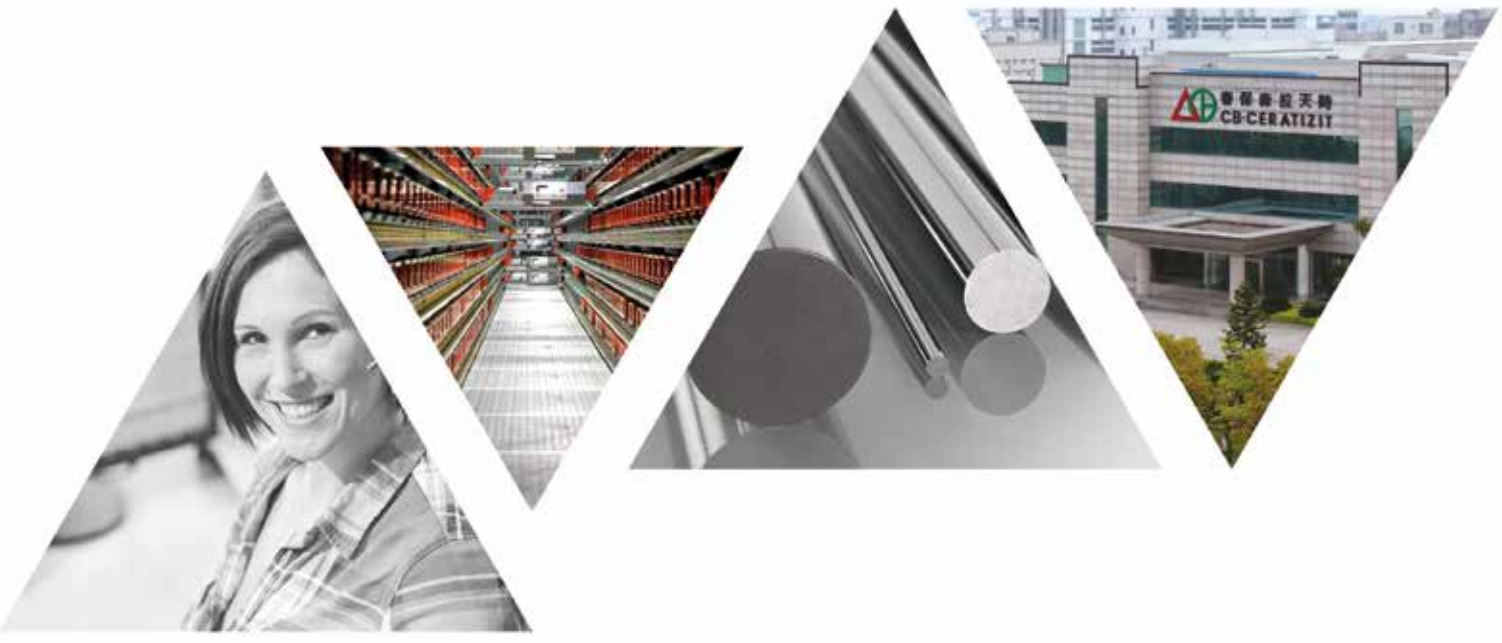
30 %
of products developed in the last 5 years

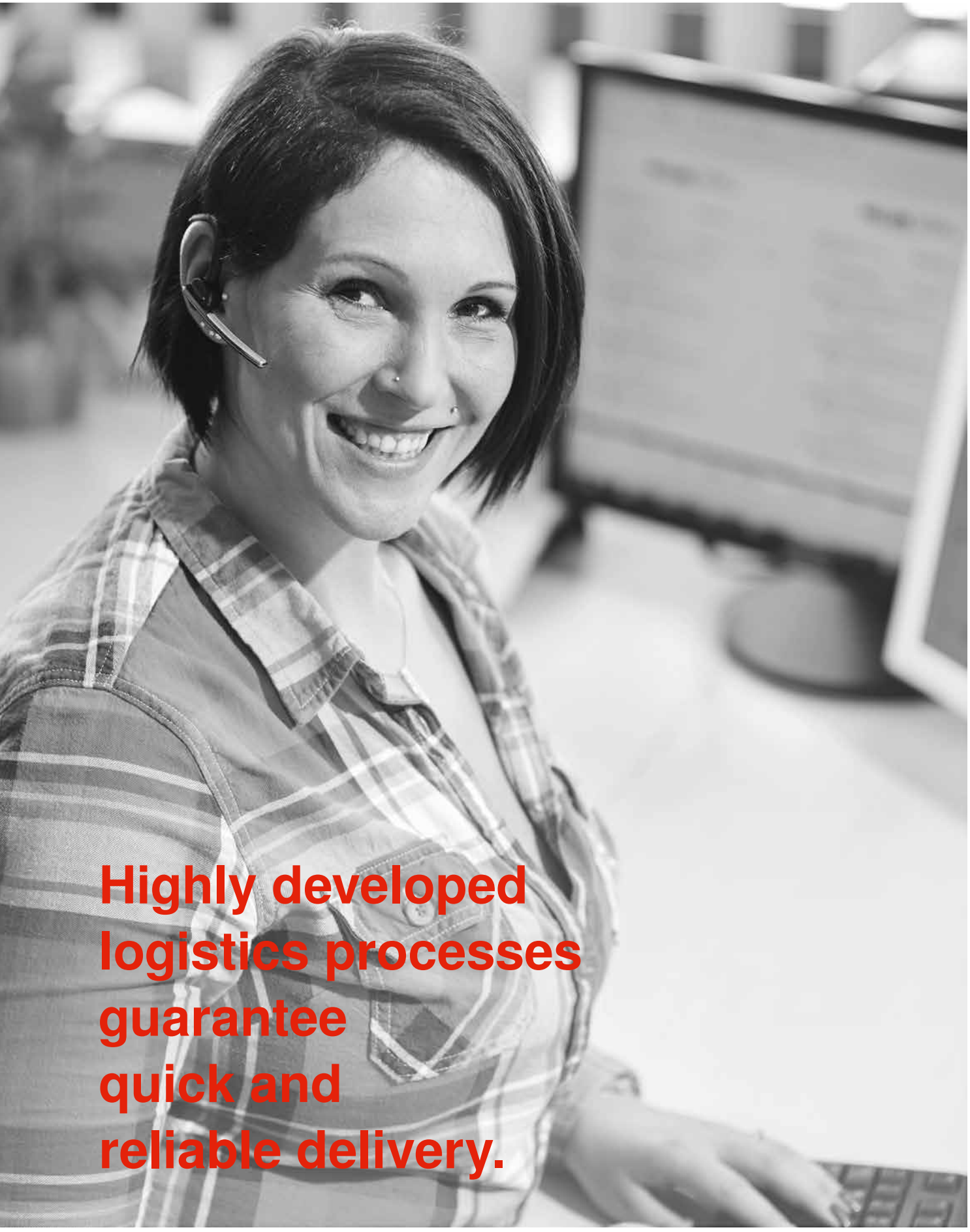
Dear customers,

under the brand name Toolmaker Solutions by CERATIZIT, the CERATIZIT Group develops and manufactures innovative solutions for tool manufacturers. Based on your requirements and the desired price category, when it comes to tool production you can choose from three different product lines for carbide rods:

e-line
Our **e-line** (economy line) offers you reliable industrial quality along with an excellent cost-benefit ratio. For this product line carbide grades from our joint venture partners CB-CERATIZIT in China and Taiwan are used. CB-CERATIZIT has over 30 years of experience in carbide production and a quality management system according to ISO 9001.

Highly developed logistics processes
You can count on our high and flexible production capacity for stock products: an optimally stocked warehouse ensures that your order will always be dealt with swiftly and reliably. You can order stock products without any problem 24/7 online from our E-Techstore, and take advantage of the technical expertise of our sales and office staff. With over 70 company sites in Europe, America and Asia, we are available for you any time throughout the world.




Highly developed
logistics processes
guarantee
quick and
reliable delivery.

Supreme availability

A majority of our standard products are available from stock. A well-organised warehouse means that we can respond quickly and reliably to your order, even for bulk quantities. Thanks to our advanced supply chain management, our production capacity is flexible and able to produce a maximum of quantities, even in a short time frame.

You can order stock products online around the clock at our E-Techstore.

e-techstore.com
Available 24/7 for you

Your benefits

- Live product availability check
- Detailed up-to-date technical information and graphic illustrations
- Fast delivery: orders up to 6.30 pm will leave our warehouse in Kempten, Germany, on the same day
- Reliable delivery: we work only with the best and most reliable service providers in the sector

Everything from one source

CERATIZIT is one of the few carbide manufacturers who manages the entire process chain single-handedly: from mineral extraction to powder preparation, from the blank to the semi-finished part and the ready-to-use product. This means that you will consistently receive supreme quality you can count on.

- Highly skilled and trained specialists in a great variety of fields
- We are on top of things for every step of the production process
- A modern machine park that is constantly being expanded and updated
- Optimised production processes reduce the process costs and ensure the highest quality as well as environmental compatibility of our products
- Independently checked and certified products

Powder preparation and mixing

Forming / pressing

Sintering

Grinding

Dispatch

Recycling

Grades

Composition and properties

Grade	ISO code	U.S. code	Grain size	Binder	Density	Hardness		Transverse rupture strength TRS		K_{ic}* SEVNB
				m %	g/cm³	HV30	HRA	MPa	P.S.I.	MPa*m$^{1/2}$
K200	K20–K40	C–3	submicron	10,0	14,40	1.510	91,3	3.920	568.500	10,5
WF15	K20–K40	C–3	submicron	10,0	14,35	1.580	91,8	3.720	540.000	9,1

K200 Submicron grade with well-balanced wear resistance and toughness. Particularly suitable for drilling applications.

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

Classification of tungsten carbide grain size

Tungsten carbide grain size [µm]	Classification
< 0,2	nano
0,2 – 0,5	ultra-fine
0,5 – 0,8	submicron
0,8 – 2,5	fine/medium
2,5 – 6,0	coarse
> 6,0	extra-coarse

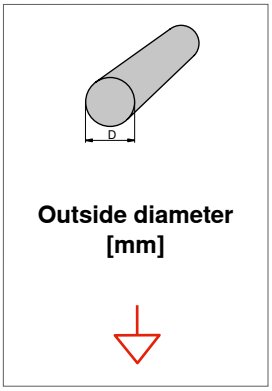
Comments:

1. The data in this table are typical material parameters. We reserve the right to modify the data due to technical progress or 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.

Designation system

RGM		Solid carbide rods, ground, metric
RGM	C	with chamfer
30	R	Coolant hole rods, as sintered
40	G	Coolant hole rods, ground

Helix angle of coolant holes



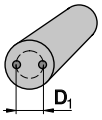
Outside diameter [mm]

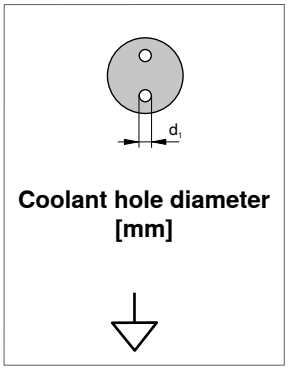
CB-30R2 / 1030 / 4,5

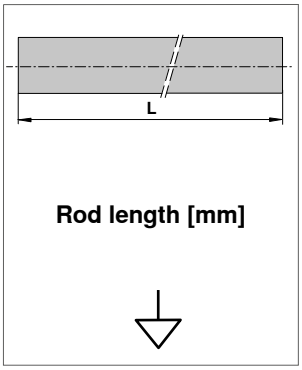
e-line

Number of coolant holes

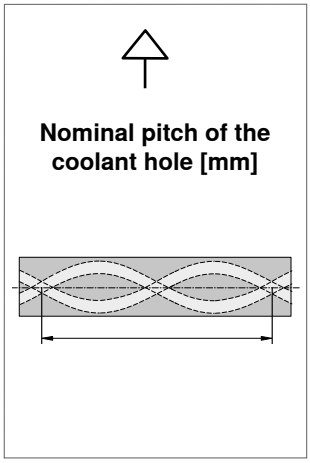
Pitch circle of the coolant holes [mm]

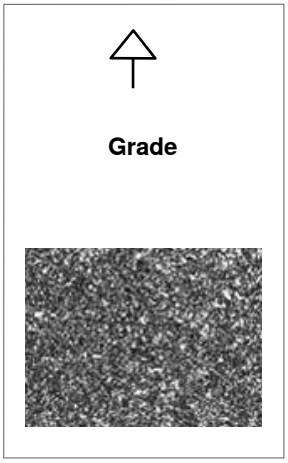






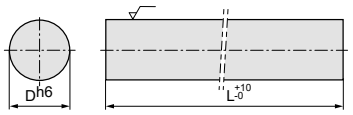
1,3 / 43,5 - 330 WF15





Solid carbide rods, ground, metric

Ø D 3.00 – 40.00 mm

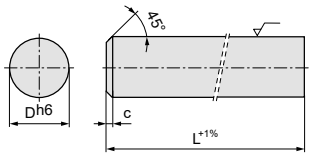


D [mm]	L [mm]	Type, description	Dia. tol. [mm]	WF15
3.00	330	CB-RGM 0300-330	+0/-0.006	●
4.00	330	CB-RGM 0400-330	+0/-0.008	●
5.00	330	CB-RGM 0500-330	+0/-0.008	●
6.00	330	CB-RGM 0600-330	+0/-0.008	●
8.00	330	CB-RGM 0800-330	+0/-0.009	●
10.00	330	CB-RGM 1000-330	+0/-0.009	●
12.00	330	CB-RGM 1200-330	+0/-0.011	●
14.00	330	CB-RGM 1400-330	+0/-0.011	●
16.00	330	CB-RGM 1600-330	+0/-0.011	●
18.00	330	CB-RGM 1800-330	+0/-0.011	●
20.00	330	CB-RGM 2000-330	+0/-0.013	●
25.00	330	CB-RGM 2500-330	+0/-0.013	●
32.00	330	CB-RGM 3200-330	+0/-0.016	●

● **Stock item**

End mill blanks

Ø D 3.00 – 25.00 mm



D [mm]	L [mm]	Type, description	c [mm]	Dia. tol. [mm]	DIN 6527	WF15
3.00	39.5	CB-RGMC 0300-0395	0.30	+0/-0.006	x	●
3.00	40	CB-RGMC 0300-040	0.30	+0/-0.006		●
3.00	50	CB-RGMC 0300-050	0.30	+0/-0.006		●
3.00	60	CB-RGMC 0300-060	0.30	+0/-0.006		●
3.00	75	CB-RGMC 0300-075	0.30	+0/-0.006		●
4.00	40	CB-RGMC 0400-040	0.40	+0/-0.008		●
4.00	50	CB-RGMC 0400-050	0.40	+0/-0.008		●
4.00	60	CB-RGMC 0400-060	0.40	+0/-0.008		●
4.00	75	CB-RGMC 0400-075	0.40	+0/-0.008		●
6.00	51	CB-RGMC 0600-051	0.60	+0/-0.008	x	●
6.00	55	CB-RGMC 0600-055	0.60	+0/-0.008	x	●
6.00	57	CB-RGMC 0600-057	0.60	+0/-0.008	x	●
6.00	60	CB-RGMC 0600-060	0.60	+0/-0.008		●
6.00	65	CB-RGMC 0600-065	0.60	+0/-0.008		●
6.00	70	CB-RGMC 0600-070	0.60	+0/-0.008		●
6.00	75	CB-RGMC 0600-075	0.60	+0/-0.008		●
6.00	80	CB-RGMC 0600-080	0.60	+0/-0.008		●
6.00	100	CB-RGMC 0600-100	0.60	+0/-0.008		●
8.00	60	CB-RGMC 0800-060	0.80	+0/-0.009		●
8.00	63	CB-RGMC 0800-063	0.80	+0/-0.009	x	●
8.00	70	CB-RGMC 0800-070	0.80	+0/-0.009		●
8.00	75	CB-RGMC 0800-075	0.80	+0/-0.009		●
8.00	80	CB-RGMC 0800-080	0.80	+0/-0.009		●
8.00	90	CB-RGMC 0800-090	0.80	+0/-0.009		●

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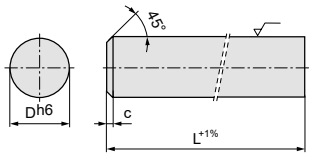
● **Stock item**

End mill blanks

Ø D 3.00 – 25.00 mm



D [mm]	L [mm]	Type, description	c [mm]	Dia. tol. [mm]	DIN 6527	WF15
8.00	100	CB-RGMC 0800-100	0.80	+0/-0.009		●
10.00	70	CB-RGMC 1000-070	1.00	+0/-0.009		●
10.00	72	CB-RGMC 1000-072	1.00	+0/-0.009	x	●
10.00	75	CB-RGMC 1000-075	1.00	+0/-0.009		●
10.00	80	CB-RGMC 1000-080	1.00	+0/-0.009		●
10.00	90	CB-RGMC 1000-090	1.00	+0/-0.009		●
10.00	100	CB-RGMC 1000-100	1.00	+0/-0.009		●
10.00	110	CB-RGMC 1000-110	1.00	+0/-0.009		●
10.00	120	CB-RGMC 1000-120	1.00	+0/-0.009		●
12.00	75	CB-RGMC 1200-075	1.00	+0/-0.011		●
12.00	80	CB-RGMC 1200-080	1.00	+0/-0.011		●
12.00	83	CB-RGMC 1200-083	1.00	+0/-0.011	x	●
12.00	90	CB-RGMC 1200-090	1.00	+0/-0.011		●
12.00	100	CB-RGMC 1200-100	1.00	+0/-0.011		●
12.00	110	CB-RGMC 1200-110	1.00	+0/-0.011		●
12.00	120	CB-RGMC 1200-120	1.00	+0/-0.011		●
12.00	150	CB-RGMC 1200-150	1.00	+0/-0.011		●
14.00	83	CB-RGMC 1400-083	1.00	+0/-0.011	x	●
16.00	92	CB-RGMC 1600-092	1.00	+0/-0.011	x	●
16.00	100	CB-RGMC 1600-100	1.00	+0/-0.011		●
16.00	110	CB-RGMC 1600-110	1.00	+0/-0.011		●
16.00	120	CB-RGMC 1600-120	1.00	+0/-0.011		●
16.00	130	CB-RGMC 1600-130	1.00	+0/-0.011		●
16.00	140	CB-RGMC 1600-140	1.00	+0/-0.011		●
16.00	150	CB-RGMC 1600-150	1.00	+0/-0.011		●
20.00	100	CB-RGMC 2000-100	1.50	+0/-0.013		●
20.00	104	CB-RGMC 2000-104	1.50	+0/-0.013	x	●
20.00	110	CB-RGMC 2000-110	1.50	+0/-0.013		●
20.00	120	CB-RGMC 2000-120	1.50	+0/-0.013		●

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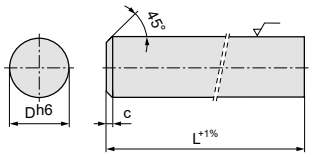
● **Stock item**

End mill blanks

Ø D 3.00 – 25.00 mm

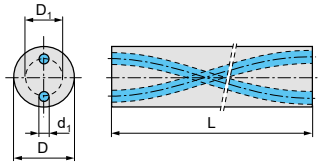


D [mm]	L [mm]	Type, description	c [mm]	Dia. tol. [mm]	DIN 6527	WF15
20.00	125	CB-RGMC 2000-125	1.50	+0/-0.013		●
20.00	130	CB-RGMC 2000-130	1.50	+0/-0.013		●
20.00	140	CB-RGMC 2000-140	1.50	+0/-0.013		●
20.00	150	CB-RGMC 2000-150	1.50	+0/-0.013		●
25.00	125	CB-RGMC 2500-125	1.50	+0/-0.013		●
25.00	150	CB-RGMC 2500-150	1.50	+0/-0.013		●

● **Stock item**

Rods with two helical coolant holes, as sintered

Ø D 6.30 – 25.30 mm

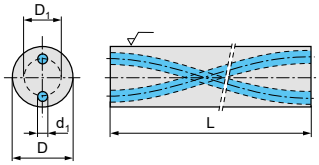


D [mm]	L [mm]	Type, description	D_1 [mm]	d_1 [mm]	Nominal pitch [mm]	[°]	K200
6.30	330	CB-40R2 0630/1.9/0.7/22.5-330	1.90	0.70	22.46	40.0	●
6.30	330	CB-30R2 0630/2.4/0.7/32.7-330	2.40	0.70	32.65	30.0	●
8.30	330	CB-40R2 0830/2.4/0.65/30.0-330	2.40	0.65	29.95	40.0	●
8.30	330	CB-30R2 0830/3.8/1.0/43.5-330	3.80	1.00	43.53	30.0	●
10.30	330	CB-40R2 1030/3.2/1.0/37.4-330	3.20	1.00	37.44	40.0	●
10.30	330	CB-30R2 1030/4.5/1.4/54.4-330	4.50	1.40	54.41	30.0	●
12.30	330	CB-40R2 1230/3.8/1.2/44.9-330	3.80	1.20	44.93	40.0	●
12.30	330	CB-30R2 1230/5.85/1.4/65.3-330	5.85	1.40	65.30	30.0	●
13.30	330	CB-30R2 1330/6.1/1.75/70.7-330	6.10	1.75	70.74	30.0	●
14.30	330	CB-40R2 1430/4.3/1.2/52.4-330	4.30	1.20	52.42	40.0	●
14.30	330	CB-30R2 1430/6.7/1.75/76.2-330	6.70	1.75	76.18	30.0	●
16.30	330	CB-40R2 1630/5.1/1.2/59.9-330	5.10	1.20	59.90	40.0	●
16.30	330	CB-30R2 1630/7.9/2.0/87.1-330	7.90	2.00	87.06	30.0	●
18.30	330	CB-40R2 1830/5.9/1.4/67.4-330	5.90	1.40	67.83	40.0	●
18.30	330	CB-30R2 1830/9.15/2.5/98.0-330	9.15	2.50	97.95	30.0	●
20.30	330	CB-40R2 2030/6.6/1.4/74.9-330	6.60	1.40	74.88	40.0	●
20.30	330	CB-30R2 2030/9.9/2.5/108.8-330	9.90	2.50	108.83	30.0	●
25.30	330	CB-40R2 2530/7.6/1.75/93.6-330	7.60	1.75	93.60	40.0	●
25.30	330	CB-30R2 2530/12.3/2.5/136.0-330	12.30	2.50	136.03	30.0	●

● **Stock item**

Rods with two helical coolant holes, ground

Ø D 6.00 – 25.00 mm



D [mm]	L [mm]	Type, description	D_1 [mm]	d_1 [mm]	Nominal pitch [mm]	Nominal pitch [°]	K200
6.00	330	CB-40G2 0600/1.9/0.7/22.5-330	1.90	0.70	22.46	40.0	●
6.00	330	CB-30G2 0600/2.4/0.7/32.7-330	2.40	0.70	32.65	30.0	●
8.00	330	CB-40G2 0800/2.4/0.65/30.0-330	2.40	0.65	29.95	40.0	●
8.00	330	CB-30G2 0800/3.8/1.0/43.5-330	3.80	1.00	43.53	30.0	●
10.00	330	CB-40G2 1000/3.2/1.0/37.4-330	3.20	1.00	37.44	40.0	●
10.00	330	CB-30G2 1000/4.5/1.4/54.4-330	4.50	1.40	54.41	30.0	●
12.00	330	CB-40G2 1200/3.8/1.2/44.9-330	3.80	1.20	44.93	40.0	●
12.00	330	CB-30G2 1200/5.85/1.4/65.3-330	5.85	1.40	65.30	30.0	●
14.00	330	CB-40G2 1400/4.3/1.2/52.4-330	4.30	1.20	52.42	40.0	●
14.00	330	CB-30G2 1400/6.7/1.75/76.2-330	6.70	1.75	76.18	30.0	●
16.00	330	CB-40G2 1600/5.1/1.2/59.9-330	5.10	1.20	59.90	40.0	●
16.00	330	CB-30G2 1600/7.9/2.0/87.1-330	7.90	2.00	87.06	30.0	●
20.00	330	CB-40G2 2000/6.6/1.4/74.9-330	6.60	1.40	74.88	40.0	●
20.00	330	CB-30G2 2000/9.9/2.5/108.8-330	9.90	2.50	108.83	30.0	●
25.00	330	CB-30G2 2500/12.3/2.5/136.0-330	12.30	2.50	136.03	30.0	●

● **Stock item**

Always the right solution for your application

Three product lines for carbide rods

Based on your requirements and the desired price category, when it comes to tool production you can choose from three different product lines for carbide rods.

s-line
Use our **s-line (solid)** to produce high-performing standard tools made of high-quality secondary raw materials. This product line includes solid rods, end mill blanks and rods with helical coolant holes which are all manufactured at our production site in Reutte, Austria.

e-line
Our **e-line (economy)** offers you acknowledged industrial quality at an excellent price-performance ratio, with the products being manufactured by our joint venture partner CB-CERATIZIT in China and Taiwan. CB-CERATIZIT has over 30 years of experience in carbide production and a quality management system certified to ISO 9001 standards.

p-line
Or you can order products from our **p-line (premium)** for high-performance tools: this product line offers you the largest selection of grades and finishes worldwide for maximum performance in every application area. Our p-line products are exclusively manufactured using carbide grades which are produced at our company sites in Reutte, Austria, or Warren, in the USA. Of course we can also supply you with individual near net shape preforms and semi-finished tools based on your drawings, with timely deliveries guaranteed.

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