

# Solid Carbide Rods

2017.V1 US



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

Tooling the Future



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# Welcome to CERATIZIT USA's Solid Carbide Rods Catalog:

With innovative production technologies and ongoing carbide grade development for the precision tool industry, CERATIZIT USA offers solutions for every field of application. Thanks to our extended product range and wide variety of carbide grades, we deliver top performing carbide rods for every tool. Our high performance carbide grades give you the best selection to produce tools for the machining of Aluminum to Titanium, from Inconel to CFRP materials, and everything in between. Whether your tool is destined for diamond coating, PVD or CVD coatings, or even to be run uncoated, count on CERATIZIT's knowledge and technical capability to be your partner.

In addition to delivering an industry leading product, we are proud to manufacture a large portion of this offering right here in the USA. Located in Warren, Michigan, just north of Detroit,

CERATIZIT USA strives to put the expertise, passion, and quality this automotive mecca is known for into every rod we produce. Our team looks forward to supplying our partners with high quality products made in America, made by Americans.

In addition to this Solid Rod catalog, please be sure to check out our other catalogs; Coolant Hole Rods, our highly popular Rotary Tool Preforms, Carbide Grades, and the Technical Reference Book.

We thank you for taking time to view this catalog, and we look forward to speaking with you in person to assist you in creating the best product ever.

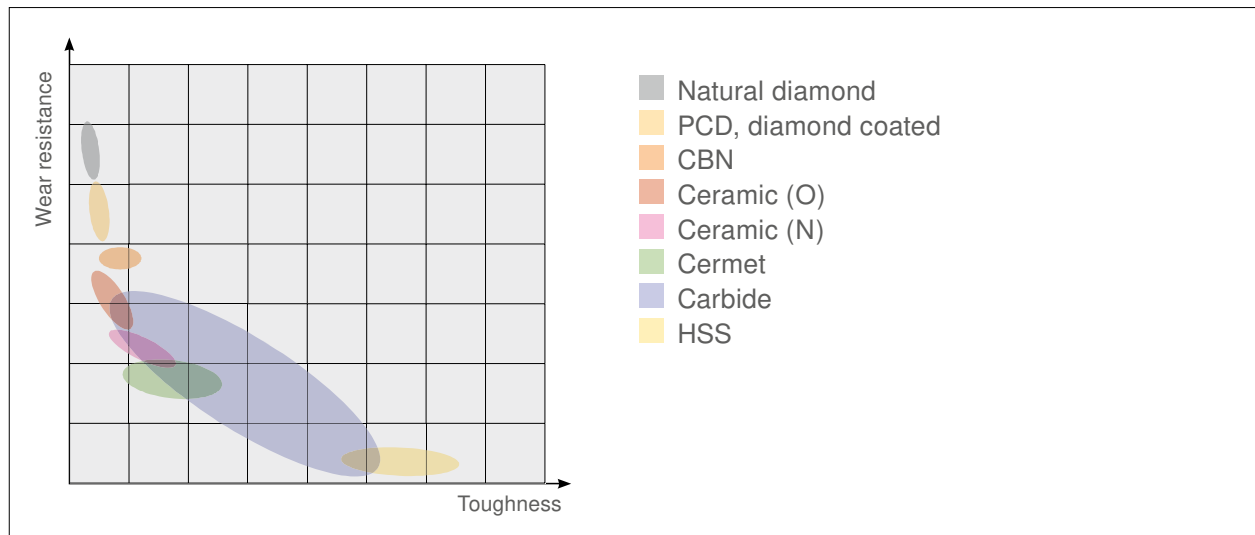
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# Carbide: Application and Composition

Carbide is a hard material with mechanical properties that can be adjusted within a very wide range, given its composition and micro-structure. The hardness and toughness range

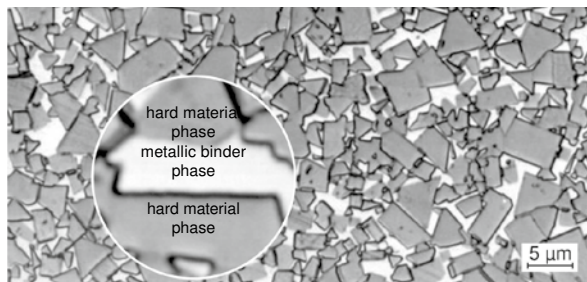
of the CERATIZIT grades includes everything from wear-resistant tool steel to super-hard ceramic materials.



## Criteria relevant for application

- ▲ Wear resistance, hardness
- ▲ Compressive strength
- ▲ Impact strength
- ▲ Transverse rupture strength
- ▲ Tribological properties
- ▲ Specific weight

- ▲ Magnetic properties
- ▲ Modulus of elasticity, rigidity
- ▲ Thermal properties
- ▲ Corrosion



## The hard material provides the necessary

- ▲ Hardness
- ▲ Wear resistance

## The metallic binder provides

- ▲ Toughness

# Designation System

R	Rod									
	G	Ground Polished h6								
	U	Utility Ground								
	P	Gound Polished h5								
	F	Finish Ground h6								
	R	Unground Rod (Raw)								
		I Inch								
		M Metric								
			C Chamfered							
				Y Radial Exit Hole						
				B Ball Nose						
				A Conical Head						
				O Centers						
				W Weldon Flat						
R	G	I	C							
								OD – [inch] or [mm]	OAL – [inch] or [mm]	Grade
								1/2	3.50	CTS20D
								1270	100	

1 = required  
2 = optional

# Carbide: Grades

## Composition and Properties

CERATIZIT grade code	ISO code	U.S. code	Binder [m %]	Density [g/cm <sup>3</sup> ]	Hardness HV30	Hardness HRA	Transverse rupture strength		K <sub>IC</sub> * (Shetty)
							[MPa]	[psi]	[MPa·m <sup>1/2</sup> ]
<b>Ultrafine grades</b>									
CTU08L	K10	C-2	4.2	15.05	2200	95.2	3700	536.600	8.4
TSF22	K10 – K20	C-2	8.2	14.55	1930	93.7	4400	638.800	9.2
TSF44	K10 – K20	C-2	12.0	14.10	1730	92.7	4600	667.000	9.8
<b>Submicron grades</b>									
CTS12D	K05 – K10	C-3	6.0	14.80	1820	93.1	3600	522.100	9.3
CTS15D	K10 – K30	C-3	7.5	14.70	1750	92.8	3700	536.000	9.5
CTS18D	K20 – K40	C-2	9.0	14.55	1590	91.9	3650	529.400	10.7
CTS20D	K20 – K40	C-2	10.0	14.38	1600	91.9	4000	580.100	10.4
CTS25D	K20 – K40	C-2	12.5	14.13	1540	91.5	4300	623.700	11.8
CTS30D	K30 – K40	C-2	15.0	13.84	1400	90.4	4300	623.700	13.2
CTS20Z	K20 – K40	C-2	10.0	14.50	1590	91.9	3700	536.000	9.4
CTS24Z	K20 – K40	C-2	12.0	14.10	1570	91.7	4000	580.100	11.3
<b>Fine grades</b>									
CTF12E	K15	C-2	6.0	14.95	1620	92.1	2200	319.100	9.9
CTF25E	K30 – K40	C-2	12.5	14.15	1300	89.5	3500	507.600	15.0
CTF12A	K15	C-2	6.0	15.00	1630	92.1	2600	377.000	10.2
<b>Cermet grade</b>									
CTF28T	K05 – K10	C-2	14.1	6.40	1580	91.8	2000	290.100	8.5

Grain size classification		CERATIZIT code
Average grain size [µm]	Classification	
< 0.2	nano	<b>N</b>
0.2 – < 0.5	ultrafine	<b>U</b>
0.5 – < 0.8	submicron	<b>S</b>
0.8 – < 1.3	fine	<b>F</b>
1.3 – < 2.5	medium	<b>M</b>
2.5 – < 6.0	coarse	<b>C</b>
> 6.0	extra-coarse	<b>E</b>

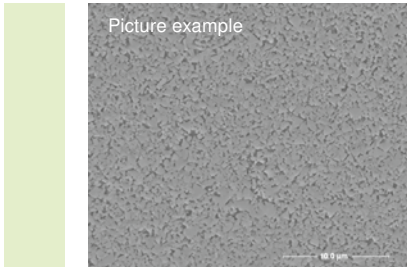
The classification of carbides according to grain size corresponds to the recommendations of the Powder Metallurgy Association. The standard ISO codes for carbides which were developed for fine to medium grain sizes no longer correspond to today's state of the art. In order to choose the correct grades, only the application data are relevant.

#### Comment:

- The data in this table are typical material parameters. We reserve the right to modify the data due to technical progress or due to further development within our company.
- K<sub>IC</sub>\*: The measured critical tension intensity factors (K<sub>IC</sub>) 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.

# Grade Description

## Ultrafine grades

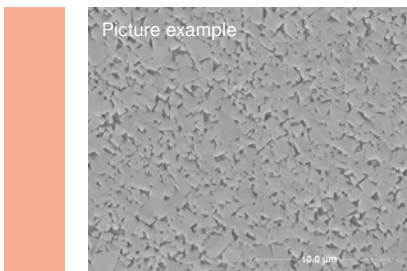


**CTU08L:** grade with a typical grain size of 0.2 µm for the machining of materials with a hardness > 65 HRC. Thanks to the high wear resistance also excellent suitability for abrasive fiber composite materials.

**TSF22:** grade for HSC machining of tempered steels with a hardness of > 60 HRC and abrasive aluminium alloys.

**TSF44:** grade for HSC machining of tempered steels up to 60 HRC, suitable for micro- and finishing tools and for a variety of materials.

## Submicron grades



**CTS12D:** grade for machining aluminium alloys, fiber-reinforced plastics (carbon-fiber and glass-fiber reinforced), composite materials, graphite; particularly suitable for diamond coating.

**CTS15D:** grade for machining grey cast iron, tempered cast iron, non alloyed steel, non-ferrous metals and plastics.

**CTS18D:** grade for high-performance machining of steel, stainless steel and the machining of difficult to machine materials, for example titanium or Inconel.

**CTS20D:** grade for the universal machining of alloyed and non alloyed steels, titanium alloys and nickel-based alloys. Improved toughness ensures a reduced risk of ruptures on the cutting edges.

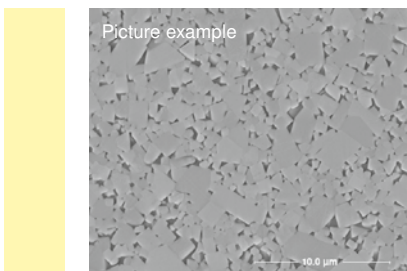
**CTS25D:** grade with high toughness for the machining of difficult materials and under unfavorable conditions.

**CTS30D:** grade with very high toughness for difficult machining conditions.

**CTS20Z:** grade for rotating solid carbide tools. For machining stainless steels, acid and heat-resistant steels, chromium alloyed steels, nickel & cobalt alloyed steels, titanium alloys, non ferrous metals, plastics.

**CTS24Z:** grade for improved machining of titanium alloys and stainless steels as well as increased drilling performance in alloy steels.

## Fine grain grades

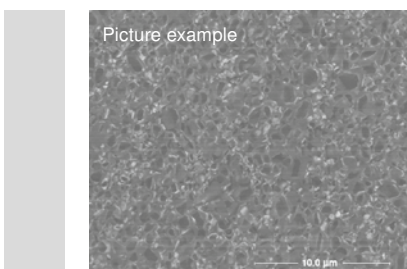


**CTF12E:** grade for gun drills with an adapted relation between hardness and toughness. Suitable also for diamond-coated solid carbide tools.

**CTF25E:** grade for the production of PCD tools and tool shanks. The increased cobalt content and the coarser grain improve brazability while increasing fracture toughness.

**CTF12A:** grain grade for solid carbide tools with diamond coating. Excellent suitability for the machining of graphite and aluminum with a high silicon content.

## Cermet



**CTF28T:** grade particularly for the finish machining of steel. Thanks to high oxidation resistance and low tendency to stick it is particularly suitable for the production of uncoated reamers.





# Made in the US

Welcome to CERATIZIT USA's newest catalog. We appreciate you taking the time to view the catalog, and to read this letter so we can introduce you to who CERATIZIT USA truly is.

CERATIZIT USA is a company with a long and interesting history, based in Warren, Michigan, just north of Detroit. We are the only carbide company that controls the entire process chain, from raw material manufacturing through to the finished part that arrives at your facility, completely within the United States. But this did not happen overnight.

Founded in 1968 as Duramet Corp., Cerametal purchased the company in 1988. They maintained the name Duramet until 2000 when it was changed to Cerametal Michigan. Then in 2002, with the merger of Cerametal and Plansee Tizit we became the CERATIZIT we all know today.

So while today we manufacture products in various countries, we are proud to be supplying high performance carbide rods made in America. The following pages are filled with the solid

carbide rod selection manufactured at our Michigan based facility. And if you don't see exactly what you need, contact us anyway! We make special rods on demand and can create the carbide blank you need. Special size, finish, tolerance? We can do that. Hey, we are American after all!

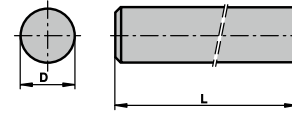
Please reach out and contact us at any time; your business' success matters to us, so rest assured we do not want to sell you just any carbide rod, we are here to assist you in selecting the best material for the manufacture of your cutting tools. Is your tool destined to cut Titanium? Aluminum? Inconel? Steel? Let us help select the best grade of carbide for you to make the best tool possible.

We at CERATIZIT USA do not have customers; we have partners. So, thank you again for stopping by, and we look forward to strengthening our partnership over the coming years.



# Solid Carbide Rods, Ground

## 10% Submicron Grades



D [inch]	Description	L [inch]	Dia. Tol.	CTS20Z	CTS20D
1/8	RGIC 1/8"-1 1/2"	1 1/2	h6		
1/8	RGIC 1/8"-2"	2	h6		
1/8	RGIC 1/8"-2 1/2"	2 1/2	h6		
1/8	RGIC 1/8"-3"	3	h6		
3/16	RGIC 3/16"-2"	2	h6	US	US
3/16	RGIC 3/16"-2 1/4"	2 1/4	h6		US
3/16	RGIC 3/16"-2 1/2"	2 1/2	h6	US	US
3/16	RGIC 3/16"-2 3/4"	2 3/4	h6		
3/16	RGIC 3/16"-3"	3	h6	US	US
3/16	RGIC 3/16"-4"	4	h6	O	US
1/4	RGIC 1/4"-2"	2	h6	US	US
1/4	RGIC 1/4"-2 1/2"	2 1/2	h6	US	US
1/4	RGIC 1/4"-3"	3	h6	US	US
1/4	RGIC 1/4"- 3 1/4"	3 1/4	h6		
1/4	RGIC 1/4"-3 1/2"	3 1/2	h6	US	O
1/4	RGIC 1/4"-4"	4	h6	US	US
1/4	RGIC 1/4"-5"	5	h6		
1/4	RGIC 1/4"-6"	6	h6	O	US
5/16	RGIC 5/16"- 2"	2	h6	US	US
5/16	RGIC 5/16"-2 1/8"	2 1/8	h6		
5/16	RGIC 5/16"-2 1/2"	2 1/2	h6	US	US
5/16	RGIC 5/16"-3"	3	h6	US	US
5/16	RGIC 5/16"-4"	4	h6	US	US
5/16	RGIC 5/16"-6"	6	h6	O	US
3/8	RGIC 3/8"-2"	2	h6	US	US
3/8	RGIC 3/8"-2 1/2"	2 1/2	h6	US	US
3/8	RGIC 3/8"-3"	3	h6	US	US
3/8	RGIC 3/8"- 3 1/4"	3 1/4	h6		
3/8	RGIC 3/8"-3 1/2"	3 1/2	h6	US	US
3/8	RGIC 3/8"-4"	4	h6	US	US
3/8	RGIC 3/8"- 5"	5	h6	O	US
3/8	RGIC 3/8"-6"	6	h6	US	US
7/16	RGIC 7/16"-2 1/2"	2 1/2	h6	US	US
7/16	RGIC 7/16"-2 3/4"	2 3/4	h6	US	US
7/16	RGIC 7/16"-3"	3	h6	O	US
7/16	RGIC 7/16"-4"	4	h6	US	US
7/16	RGIC 7/16"-4 1/2"	4 1/2	h6		
7/16	RGIC 7/16"-5"	5	h6		
7/16	RGIC 7/16"-6"	6	h6	O	US
1/2	RGIC 1/2"-2 1/2"	2 1/2	h6	US	US
1/2	RGIC 1/2"-3"	3	h6	US	US
1/2	RGIC 1/2"-3 1/4"	3 1/4	h6		
1/2	RGIC 1/2"- 3 1/2"	3 1/2	h6	US	US
1/2	RGIC 1/2"-4"	4	h6	US	US
1/2	RGIC 1/2"- 4 1/2"	4 1/2	h6		
1/2	RGIC 1/2"-5"	5	h6	US	US
1/2	RGIC 1/2"-6"	6	h6	O	US

D [inch]	Description	L [inch]	Dia. Tol.	CTS20Z	CTS20D
1/2	RGIC 1/2"-7"	7	h6		
1/2	RGIC 1/2"-8"	8	h6		US
9/16	RGIC 9/16"-3"	3	h6	US	US
9/16	RGIC 9/16"-3 1/2"	3 1/2	h6	US	US
9/16	RGIC 9/16"-4"	4	h6		
9/16	RGIC 9/16"-6"	6	h6		
5/8	RGIC 5/8"-3"	3	h6	US	US
5/8	RGIC 5/8"-3 1/2"	3 1/2	h6	US	US
5/8	RGIC 5/8"-4"	4	h6	US	US
5/8	RGIC 5/8"-5"	5	h6	○	US
5/8	RGIC 5/8"-6"	6	h6	US	US
5/8	RGIC 5/8"-7"	7	h6		
5/8	RGIC 5/8"-8"	8	h6		
5/8	RGIC 5/8"-9"	9	h6		
3/4	RGIC 3/4"-3"	3	h6	US	US
3/4	RGIC 3/4"-4"	4	h6	US	US
3/4	RGIC 3/4 - 4 1/2"	4 1/2	h6		
3/4	RGIC 3/4"-5"	5	h6	US	US
3/4	RGIC 3/4"-6"	6	h6	○	US
3/4	RGIC 3/4"-7"	7	h6	○	US
3/4	RGIC 3/4"-8"	8	h6		
3/4	RGIC 3/4"-9"	9	h6		
3/4	RGIC 3/4"-10"	10	h6		
7/8	RGIC 7/8"-3"	3	h6		
7/8	RGIC 7/8"-4"	4	h6	○	○
7/8	RGIC 7/8"-6"	6	h6		
1	RGIC 1"-3"	3	h6		
1	RGIC 1"-4"	4	h6	US	US
1	RGIC 1" 4 1/2"	4 1/2	h6	○	○
1	RGIC 1"-5"	5	h6	US	US
1	RGIC 1"-6"	6	h6	US	US
1	RGIC 1"-7"	7	h6	○	○
1	RGIC 1"-8"	8	h6		
1	RGIC 1"-9"	9	h6		
1	RGIC 1"-10"	10	h6		
1 1/4	RGIC 1 1/4"-4"	4	h6		○
1 1/4	RGIC 1 1/4"-4 1/2"	4 1/2	h6		
1 1/4	RGIC 1 1/4"-5"	5	h6		
1 1/4	RGIC 1 1/4"-6"	6	h6		
1 1/4	RGIC 1 1/4"-7"	7	h6		
1 1/4	RGIC 1 1/4"-7 1/2"	7 1/2	h6		
1 1/4	RGIC 1 1/4"-8"	8	h6		
1 1/4	RGIC 1 1/4"-9"	9	h6		
1 1/4	RGIC 1 1/4"-12"	12	h6		

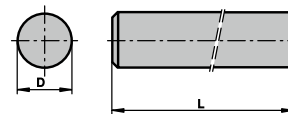
Additional dimensions and sizes are available upon request.

#### Stock Symbols

US	US Stock, delivery as requested
G	Global Inventory, various facilities
○	Limited Stock
Δ	New – Call For Availability

# Solid Carbide Rods, Ground

## 6% Fine Grade



D [inch]	Description	L [inch]	Dia. Tol.	CTF12A
1/8	RGIC 1/8"-1 1/2"	1 1/2	h6	US
1/8	RGIC 1/8"-2"	2	h6	O
1/8	RGIC 1/8"-2 1/2"	2 1/2	h6	O
1/8	RGIC 1/8"-3"	3	h6	US
3/16	RGIC 3/16"-2"	2	h6	US
3/16	RGIC 3/16"-2 1/4"	2 1/4	h6	
3/16	RGIC 3/16"-2 1/2"	2 1/2	h6	
3/16	RGIC 3/16"-2 3/4"	2 3/4	h6	
3/16	RGIC 3/16"-3"	3	h6	US
3/16	RGIC 3/16"-4"	4	h6	
1/4	RGIC 1/4"-2"	2	h6	
1/4	RGIC 1/4"-2 1/2"	2 1/2	h6	US
1/4	RGIC 1/4"-3"	3	h6	US
1/4	RGIC 1/4"- 3 1/4"	3 1/4	h6	
1/4	RGIC 1/4"-3 1/2"	3 1/2	h6	O
1/4	RGIC 1/4"-4"	4	h6	US
1/4	RGIC 1/4"-5"	5	h6	
1/4	RGIC 1/4"-6"	6	h6	
5/16	RGIC 5/16"- 2"	2	h6	
5/16	RGIC 5/16"-2 1/8"	2 1/8	h6	
5/16	RGIC 5/16"-2 1/2"	2 1/2	h6	O
5/16	RGIC 5/16"-3"	3	h6	
5/16	RGIC 5/16"-4"	4	h6	O
5/16	RGIC 5/16"-6"	6	h6	
3/8	RGIC 3/8"-2"	2	h6	
3/8	RGIC 3/8"-2 1/2"	2 1/2	h6	US
3/8	RGIC 3/8"-3"	3	h6	US
3/8	RGIC 3/8" - 3 1/4"	3 1/4	h6	US
3/8	RGIC 3/8"-3 1/2"	3 1/2	h6	US
3/8	RGIC 3/8"-4"	4	h6	US
3/8	RGIC 3/8" - 5"	5	h6	
3/8	RGIC 3/8"-6"	6	h6	
7/16	RGIC 7/16"-2 1/2"	2 1/2	h6	
7/16	RGIC 7/16"-2 3/4"	2 3/4	h6	
7/16	RGIC 7/16"-3"	3	h6	
7/16	RGIC 7/16"-4"	4	h6	
7/16	RGIC 7/16"-4 1/2"	4 1/2	h6	
7/16	RGIC 7/16"-5"	5	h6	
7/16	RGIC 7/16"-6"	6	h6	
1/2	RGIC 1/2"-2 1/2"	2 1/2	h6	
1/2	RGIC 1/2"-3"	3	h6	US
1/2	RGIC 1/2"-3 1/4"	3 1/4	h6	
1/2	RGIC 1/2"- 3 1/2"	3 1/2	h6	O
1/2	RGIC 1/2"-4"	4	h6	US
1/2	RGIC 1/2"- 4 1/2"	4 1/2	h6	
1/2	RGIC 1/2"-5"	5	h6	
1/2	RGIC 1/2"-6"	6	h6	O
1/2	RGIC 1/2"-7"	7	h6	

D [inch]	Description	L [inch]	Dia. Tol.	CTF12A
1/2	RGIC 1/2"-8"	8	h6	
9/16	RGIC 9/16"-3"	3	h6	
9/16	RGIC 9/16"-3 1/2"	3 1/2	h6	
9/16	RGIC 9/16"-4"	4	h6	
9/16	RGIC 9/16"-6"	6	h6	
5/8	RGIC 5/8"-3"	3	h6	
5/8	RGIC 5/8"-3 1/2"	3 1/2	h6	
5/8	RGIC 5/8 - 4 5/8"	4 5/8	h6	
5/8	RGIC 5/8"-4"	4	h6	
5/8	RGIC 5/8"-5"	5	h6	
5/8	RGIC 5/8"-6"	6	h6	
5/8	RGIC 5/8"-7"	7	h6	
5/8	RGIC 5/8"-8"	8	h6	
5/8	RGIC 5/8"-9"	9	h6	
3/4	RGIC 3/4"-3"	3	h6	
3/4	RGIC 3/4"-4"	4	h6	US
3/4	RGIC 3/4 - 4 1/2"	4 1/2	h6	
3/4	RGIC 3/4"-5"	5	h6	
3/4	RGIC 3/4"-6"	6	h6	
3/4	RGIC 3/4"-7"	7	h6	
3/4	RGIC 3/4"-8"	8	h6	
3/4	RGIC 3/4"-9"	9	h6	
3/4	RGIC 3/4"-10"	10	h6	
7/8	RGIC 7/8"-3"	3	h6	
7/8	RGIC 7/8"-4"	4	h6	
7/8	RGIC 7/8"-6"	6	h6	
1	RGIC 1"-3"	3	h6	
1	RGIC 1"-4"	4	h6	
1	RGIC 1" 4 1/2"	4 1/2	h6	
1	RGIC 1"-5"	5	h6	
1	RGIC 1"-6"	6	h6	
1	RGIC 1"-7"	7	h6	
1	RGIC 1"-8"	8	h6	
1	RGIC 1"-9"	9	h6	
1	RGIC 1"-10"	10	h6	
1 1/4	RGIC 1 1/4"-4"	4	h6	
1 1/4	RGIC 1 1/4"-4 1/2"	4 1/2	h6	
1 1/4	RGIC 1 1/4"-5"	5	h6	
1 1/4	RGIC 1 1/4"-6"	6	h6	
1 1/4	RGIC 1 1/4"-7"	7	h6	
1 1/4	RGIC 1 1/4"-7 1/2"	7 1/2	h6	
1 1/4	RGIC 1 1/4"-8"	8	h6	
1 1/4	RGIC 1 1/4"-9"	9	h6	
1 1/4	RGIC 1 1/4"-12"	12	h6	

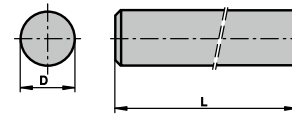
Additional dimensions and sizes are available upon request.

#### Stock Symbols

US	US Stock, delivery as requested
G	Global Inventory, various facilities
O	Limited Stock
Δ	New – Call For Availability

# Solid Carbide Rods, Ground

## 6% Submicron Grade



D [inch]	Description	L [inch]	Dia. Tol.	CTS12D
1/8	RPIC 1/8"-1 1/2"	1 1/2	h5	US
1/8	RPIC 1/8"-2"	2	h5	US
1/8	RPIC 1/8"-2 1/2"	2 1/2	h5	US
1/8	RPIC 1/8"-3"	3	h5	US
3/16	RPIC 3/16"-2"	2	h5	US
3/16	RPIC 3/16"-2 1/4"	2 1/4	h5	
3/16	RPIC 3/16"-2 1/2"	2 1/2	h5	O
3/16	RPIC 3/16"-2 3/4"	2 3/4	h5	
3/16	RPIC 3/16"-3"	3	h5	US
3/16	RPIC 3/16"-4"	4	h5	
1/4	RPIC 1/4"-2"	2	h5	O
1/4	RPIC 1/4"-2 1/2"	2 1/2	h5	US
1/4	RPIC 1/4"-3"	3	h5	US
1/4	RPIC 1/4"-3 1/4"	3 1/4	h5	
1/4	RPIC 1/4"-3 1/2"	3 1/2	h5	O
1/4	RPIC 1/4"-4"	4	h5	US
1/4	RPIC 1/4"-5"	5	h5	
1/4	RPIC 1/4"-6"	6	h5	US
5/16	RPIC 5/16"- 2"	2	h5	
5/16	RPIC 5/16"-2 1/8"	2 1/8	h5	
5/16	RPIC 5/16"-2 1/2"	2 1/2	h5	US
5/16	RPIC 5/16"-3"	3	h5	O
5/16	RPIC 5/16"-4"	4	h5	US
5/16	RPIC 5/16"-6"	6	h5	
3/8	RPIC 3/8"-2"	2	h5	O
3/8	RPIC 3/8"-2 1/2"	2 1/2	h5	US
3/8	RPIC 3/8"-3"	3	h5	US
3/8	RPIC 3/8" - 3 1/4"	3 1/4	h5	US
3/8	RPIC 3/8"-3 1/2"	3 1/2	h5	US
3/8	RPIC 3/8"-4"	4	h5	US
3/8	RPIC 3/8" - 5"	5	h5	
3/8	RPIC 3/8"-6"	6	h5	US
7/16	RPIC 7/16"-2 1/2"	2 1/2	h5	
7/16	RPIC 7/16"-2 3/4"	2 3/4	h5	O
7/16	RPIC 7/16"-3"	3	h5	
7/16	RPIC 7/16"-4"	4	h5	O
7/16	RPIC 7/16"-4 1/2"	4 1/2	h5	
7/16	RPIC 7/16"-5"	5	h5	
7/16	RPIC 7/16"-6"	6	h5	
1/2	RPIC 1/2"-2 1/2"	2 1/2	h5	O
1/2	RPIC 1/2"-3"	3	h5	US
1/2	RPIC 1/2"-3 1/4"	3 1/4	h5	
1/2	RPIC 1/2"- 3 1/2"	3 1/2	h5	O
1/2	RPIC 1/2"-4"	4	h5	US
1/2	RPIC 1/2"- 4 1/2"	4 1/2	h5	O
1/2	RPIC 1/2"-5"	5	h5	O
1/2	RPIC 1/2"-6"	6	h5	US
1/2	RPIC 1/2"-7"	7	h5	

D [inch]	Description	L [inch]	Dia. Tol.	CTS12D
1/2	RPIC 1/2"-8"	8	h5	
9/16	RPIC 9/16"-3"	3	h5	
9/16	RPIC 9/16"-3 1/2"	3 1/2	h5	
9/16	RPIC 9/16"-4"	4	h5	
9/16	RPIC 9/16"-6"	6	h5	
5/8	RPIC 5/8"-3"	3	h5	○
5/8	RPIC 5/8"-3 1/2"	3 1/2	h5	○
5/8	RPIC 5/8 - 4 5/8"	4 5/8	h5	
5/8	RPIC 5/8"-4"	4	h5	○
5/8	RPIC 5/8"-5"	5	h5	○
5/8	RPIC 5/8"-6"	6	h5	○
5/8	RPIC 5/8"-7"	7	h5	
5/8	RPIC 5/8"-8"	8	h5	
5/8	RPIC 5/8"-9"	9	h5	
3/4	RPIC 3/4"-3"	3	h5	○
3/4	RPIC 3/4"-4"	4	h5	US
3/4	RPIC 3/4 - 4 1/2"	4 1/2	h5	○
3/4	RPIC 3/4"-5"	5	h5	○
3/4	RPIC 3/4"-6"	6	h5	○
3/4	RPIC 3/4"-7"	7	h5	○
3/4	RPIC 3/4"-8"	8	h5	
3/4	RPIC 3/4"-9"	9	h5	
3/4	RPIC 3/4"-10"	10	h5	○
7/8	RPIC 7/8"-3"	3	h5	
7/8	RPIC 7/8"-4"	4	h5	
7/8	RPIC 7/8"-6"	6	h5	
1	RPIC 1"-3"	3	h5	
1	RPIC 1"-4"	4	h5	○
1	RPIC 1" 4 1/2"	4 1/2	h5	○
1	RPIC 1"-5"	5	h5	○
1	RPIC 1"-6"	6	h5	○
1	RPIC 1"-7"	7	h5	○
1	RPIC 1"-8"	8	h5	
1	RPIC 1"-9"	9	h5	
1	RPIC 1"-10"	10	h5	
1 1/4	RPIC 1 1/4"-4"	4	h5	
1 1/4	RPIC 1 1/4"-4 1/2"	4 1/2	h5	
1 1/4	RPIC 1 1/4"-5"	5	h5	
1 1/4	RPIC 1 1/4"-6"	6	h5	
1 1/4	RPIC 1 1/4"-7"	7	h5	
1 1/4	RPIC 1 1/4"-7 1/2"	7 1/2	h5	
1 1/4	RPIC 1 1/4"-8"	8	h5	
1 1/4	RPIC 1 1/4"-9"	9	h5	
1 1/4	RPIC 1 1/4"-12"	12	h5	

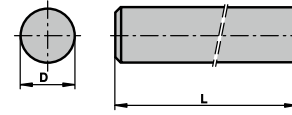
Additional dimensions and sizes are available upon request.

#### Stock Symbols

US	US Stock, delivery as requested
G	Global Inventory, various facilities
○	Limited Stock
Δ	New – Call For Availability

# Solid Carbide Rods, Ground

## 12% Submicron Grade



D [inch]	Description	L [inch]	Dia. Tol.	CTS24Z
1/8	RPIC 1/8"-1 1/2"	1 1/2	h5	
1/8	RPIC 1/8"-2"	2	h5	
1/8	RPIC 1/8"-2 1/2"	2 1/2	h5	
1/8	RPIC 1/8"-3"	3	h5	
3/16	RPIC 3/16"-2"	2	h5	Δ
3/16	RPIC 3/16"-2 1/4"	2 1/4	h5	
3/16	RPIC 3/16"-2 1/2"	2 1/2	h5	
3/16	RPIC 3/16"-2 3/4"	2 3/4	h5	
3/16	RPIC 3/16"-3"	3	h5	Δ
3/16	RPIC 3/16"-4"	4	h5	
1/4	RPIC 1/4"-2"	2	h5	US
1/4	RPIC 1/4"-2 1/2"	2 1/2	h5	US
1/4	RPIC 1/4"-3"	3	h5	US
1/4	RPIC 1/4"- 3 1/4"	3 1/4	h5	
1/4	RPIC 1/4"-3 1/2"	3 1/2	h5	
1/4	RPIC 1/4"-4"	4	h5	Δ
1/4	RPIC 1/4"-5"	5	h5	
1/4	RPIC 1/4"-6"	6	h5	
5/16	RPIC 5/16"- 2"	2	h5	Δ
5/16	RPIC 5/16"-2 1/8"	2 1/8	h5	
5/16	RPIC 5/16"-2 1/2"	2 1/2	h5	Δ
5/16	RPIC 5/16"-3"	3	h5	Δ
5/16	RPIC 5/16"-4"	4	h5	Δ
5/16	RPIC 5/16"-6"	6	h5	
3/8	RPIC 3/8"-2"	2	h5	Δ
3/8	RPIC 3/8"-2 1/2"	2 1/2	h5	US
3/8	RPIC 3/8"-3"	3	h5	Δ
3/8	RPIC 3/8" - 3 1/4"	3 1/4	h5	
3/8	RPIC 3/8"-3 1/2"	3 1/2	h5	Δ
3/8	RPIC 3/8"-4"	4	h5	US
3/8	RPIC 3/8" - 5"	5	h5	
3/8	RPIC 3/8"-6"	6	h5	Δ
7/16	RPIC 7/16"-2 1/2"	2 1/2	h5	
7/16	RPIC 7/16"-2 3/4"	2 3/4	h5	Δ
7/16	RPIC 7/16"-3"	3	h5	
7/16	RPIC 7/16"-4"	4	h5	Δ
7/16	RPIC 7/16"-4 1/2"	4 1/2	h5	
7/16	RPIC 7/16"-5"	5	h5	
7/16	RPIC 7/16"-6"	6	h5	
1/2	RPIC 1/2"-2 1/2"	2 1/2	h5	Δ
1/2	RPIC 1/2"-3"	3	h5	US
1/2	RPIC 1/2"-3 1/4"	3 1/4	h5	
1/2	RPIC 1/2"- 3 1/2"	3 1/2	h5	Δ
1/2	RPIC 1/2"-4"	4	h5	US
1/2	RPIC 1/2"- 4 1/2"	4 1/2	h5	Δ
1/2	RPIC 1/2"-5"	5	h5	Δ



D [inch]	Description	L [inch]	Dia. Tol.	CTS24Z
1/2	RPIC 1/2"-6"	6	h5	US
1/2	RPIC 1/2"-7"	7	h5	Δ
1/2	RPIC 1/2"-8"	8	h5	Δ
9/16	RPIC 9/16"-3"	3	h5	
9/16	RPIC 9/16"-3 1/2"	3 1/2	h5	Δ
9/16	RPIC 9/16"-4"	4	h5	
9/16	RPIC 9/16"-6"	6	h5	Δ
5/8	RPIC 5/8"-3"	3	h5	Δ
5/8	RPIC 5/8"-3 1/2"	3 1/2	h5	Δ
5/8	RPIC 5/8 - 4 5/8"	4 5/8	h5	
5/8	RPIC 5/8"-4"	4	h5	US
5/8	RPIC 5/8"-5"	5	h5	Δ
5/8	RPIC 5/8"-6"	6	h5	US
5/8	RPIC 5/8"-7"	7	h5	Δ
5/8	RPIC 5/8"-8"	8	h5	Δ
5/8	RPIC 5/8"-9"	9	h5	
3/4	RPIC 3/4"-3"	3	h5	Δ
3/4	RPIC 3/4"-4"	4	h5	US
3/4	RPIC 3/4 - 4 1/2"	4 1/2	h5	
3/4	RPIC 3/4"-5"	5	h5	US
3/4	RPIC 3/4"-6"	6	h5	US
3/4	RPIC 3/4"-7"	7	h5	Δ
3/4	RPIC 3/4"-8"	8	h5	Δ
3/4	RPIC 3/4"-9"	9	h5	
3/4	RPIC 3/4"-10"	10	h5	
7/8	RPIC 7/8"-3"	3	h5	
7/8	RPIC 7/8"-4"	4	h5	Δ
7/8	RPIC 7/8"-6"	6	h5	Δ
1	RPIC 1"-3"	3	h5	Δ
1	RPIC 1"-4"	4	h5	US
1	RPIC 1" 4 1/2"	4 1/2	h5	US
1	RPIC 1"-5"	5	h5	US
1	RPIC 1"-6"	6	h5	US
1	RPIC 1"-7"	7	h5	Δ
1	RPIC 1"-8"	8	h5	Δ
1	RPIC 1"-9"	9	h5	
1	RPIC 1"-10"	10	h5	
1 1/4	RPIC 1 1/4"-4"	4	h5	Δ
1 1/4	RPIC 1 1/4"-4 1/2"	4 1/2	h5	Δ
1 1/4	RPIC 1 1/4"-5"	5	h5	Δ
1 1/4	RPIC 1 1/4"-6"	6	h5	Δ
1 1/4	RPIC 1 1/4"-7"	7	h5	Δ
1 1/4	RPIC 1 1/4"-7 1/2"	7 1/2	h5	Δ
1 1/4	RPIC 1 1/4"-8"	8	h5	Δ
1 1/4	RPIC 1 1/4"-9"	9	h5	
1 1/4	RPIC 1 1/4"-12"	12	h5	

Additional dimensions and sizes are available upon request.

#### Stock Symbols

US	US Stock, delivery as requested
G	Global Inventory, various facilities
O	Limited Stock
Δ	New – Call For Availability

## Specifications

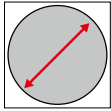
RGIC



RPIC

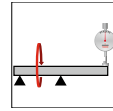


### Outside diameter



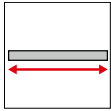
Outside diameter [inch]	Tolerance h6 [inch]	Tolerance h5 [inch]
0 - 0.118"	+0 / -0.0002"	+0 / -0.0001"
0.1181" - 0.236"	+0 / -0.0003"	+0 / -0.0002"
0.2361" - 0.394"	+0 / -0.0004"	+0 / -0.0002"
0.3941" - 0.109"	+0 / -0.0004"	+0 / -0.0003"
0.7091" - 1.181"	+0 / -0.0005"	+0 / -0.0004"

### Run-out



Outside diameter [inch]	OAL [in] / Max Concentricity		
	1.500" - 2.500"	2.501" - 3.500"	3.501" - 8.000"
0.1250" - 0.1874"	0.0002"	0.0003"	n/a
0.1875" - 1.000"	0.0002"	0.0003"	0.0004"
1.0001" - 1.250"	0.0002"	0.0003"	0.0004"

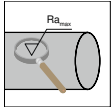
### Length



Total length tolerance  
[inch]

-0 / +0.62"

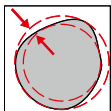
### Surface finish



$Ra_{max}$  [ $\mu\text{m}$ ]

0.05

### Roundness



Outside diameter [inch]	Tolerance [inch]	
	h6	h5
0 - 0.118"	0.00011"	0.00011"
0.1181" - 0.236"	0.00015"	0.00011"
0.2361" - 0.394"	0.00019"	0.00011"
0.3941" - 0.709"	0.00023"	0.00015"
0.7091" - 1.181"	0.00031"	0.00019"



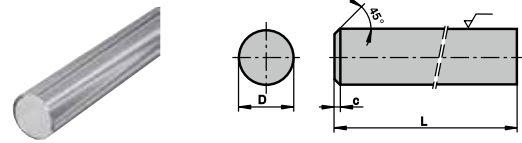
# Made in Austria

The balance of this catalog is filled with the standard products our Austrian counterparts manufacture at their facility in Reutte. We are proud to offer the following high quality products in addition what we make here in Michigan. Reutte is home to manufacturing all of our rods longer than ten inches in length and additionally works with a larger variety of grade selections than we do here in the US. Please take the time to review this section and contact a CERATIZIT USA team member at 800/783-2280 with any inquiries that you may have. Again, we look forward to hearing from you.



# Solid Carbide Rods, Ground

## Ultrafine Grades

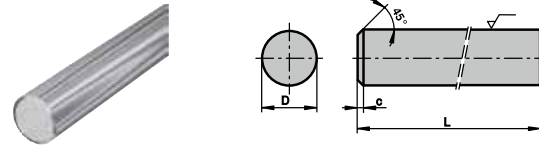


D [mm]	L [mm]	Description	Dia. tol.	CTU08L	TSF22	TSF44
3.00	39	RGMC 0300-039	h5	G	G	G
3.00	40	RGMC 0300-040	h5		G	
3.00	50	RGMC 0300-050	h5		G	G
3.00	60	RGMC 0300-060	h5		G	
4.00	51	RGMC 0400-051	h5	G	G	G
4.00	60	RGMC 0400-060	h5		G	
4.00	75	RGMC 0400-075	h5		G	
5.00	51	RGMC 0500-051	h5			G
6.00	51	RGMC 0600-051	h5		G	G
6.00	58	RGMC 0600-058	h5	G	G	G
6.00	60	RGMC 0600-060	h5		G	
6.00	65	RGMC 0600-065	h5		G	
6.00	70	RGMC 0600-070	h5		G	
6.00	75	RGMC 0600-075	h5		G	
6.00	80	RGMC 0600-080	h5		G	
6.00	100	RGMC 0600-100	h5		G	G
8.00	64	RGMC 0800-064	h5	G	G	G
8.00	70	RGMC 0800-070	h5		G	
8.00	75	RGMC 0800-075	h5		G	
8.00	100	RGMC 0800-100	h5		G	G
8.00	120	RGMC 0800-120	h5		G	G
10.00	67	RGMC 1000-067	h5			G
10.00	173	RGMC 1000-073	h5	G	G	G
10.00	75	RGMC 1000-075	h5		G	
10.00	80	RGMC 1000-080	h5		G	
10.00	100	RGMC 1000-100	h5		G	G
10.00	120	RGMC 1000-120	h5		G	G
12.00	84	RGMC 1200-084	h5		G	G
12.00	100	RGMC 1200-100	h5		G	G
12.00	120	RGMC 1200-120	h5		G	G
16.00	93	RGMC 1600-093	h5		G	G
16.00	110	RGMC 1600-110	h5		G	
16.00	120	RGMC 1600-120	h5			G
16.00	130	RGMC 1600-130	h5			G
16.00	150	RGMC 1600-150	h5			O
20.00	105	RGMC 2000-105	h5			G
20.00	125	RGMC 2000-125	h5		G	G
20.00	150	RGMC 2000-150	h5			G
25.00	125	RGMC 2500-125	h5			O
25.00	150	RGMC 2500-150	h5			G

### Stock Symbols

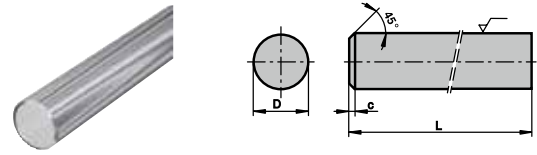
US	US Stock, delivery as requested
G	Global Inventory, various facilities
O	Limited Stock
Δ	New – Call For Availability

# Solid Carbide Rods, Ground Submicron Grades



D [mm]	L [mm]	Description	Dia. tol.	CTS18D	CTS20D
3.00	39	RGMC 0300-039	h6		G
3.00	40	RGMC 0300-040	h5		G
3.00	50	RGMC 0300-050	h5		G
3.00	60	RGMC 0300-060	h5		G
4.00	51	RGMC 0400-051	h6		G
4.00	60	RGMC 0400-060	h5		G
4.00	75	RGMC 0400-075	h5		G
5.00	51	RGMC 0500-051	h6		G
6.00	51	RGMC 0600-051	h6		G
6.00	55	RGMC 0600-055	h6		G
6.00	58	RGMC 0600-058	h6	G	G
6.00	60	RGMC 0600-060	h5		G
6.00	65	RGMC 0600-065	h5		G
6.00	70	RGMC 0600-070	h5		G
6.00	75	RGMC 0600-075	h5		G
6.00	80	RGMC 0600-080	h5		G
6.00	100	RGMC 0600-100	h5		G
8.00	59	RGMC 0800-059	h6		G
8.00	64	RGMC 0800-064	h6	G	G
8.00	70	RGMC 0800-070	h5		G
8.00	75	RGMC 0800-075	h5		G
8.00	80	RGMC 0800-080	h5		G
8.00	100	RGMC 0800-100	h5		G
8.00	120	RGMC 0800-120	h5		G
10.00	67	RGMC 1000-067	h6		G
10.00	73	RGMC 1000-073	h6	G	G
10.00	75	RGMC 1000-075	h5		G
10.00	80	RGMC 1000-080	h5		G
10.00	90	RGMC 1000-090	h5		G
10.00	100	RGMC 1000-100	h5		G
10.00	120	RGMC 1000-120	h5		G
12.00	74	RGMC 1200-074	h6		G
12.00	84	RGMC 1200-084	h6	G	G
12.00	100	RGMC 1200-100	h5		G
12.00	120	RGMC 1200-120	h5		G
14.00	76	RGMC 1400-076	h6		G
14.00	84	RGMC 1400-084	h6		G
16.00	83	RGMC 1600-083	h6		G
16.00	93	RGMC 1600-093	h6	G	G
16.00	110	RGMC 1600-110	h5		G
16.00	120	RGMC 1600-120	h5		G
16.00	130	RGMC 1600-130	h5		G

# Solid Carbide Rods, Ground Submicron Grades



D [mm]	L [mm]	Description	Dia. tol.	CTS18D	CTS20D
16.00	150	RGMC 1600-150	h5		G
18.00	93	RGMC 1800-093	h6		G
20.00	93	RGMC 2000-093	h6		G
20.00	105	RGMC 2000-105	h6	G	G
20.00	125	RGMC 2000-125	h5		G
20.00	150	RGMC 2000-150	h5		G
25.00	125	RGMC 2500-125	h5		G
25.00	150	RGMC 2500-150	h5		G

## Stock Symbols

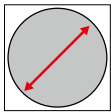
US	US Stock, delivery as requested
G	Global Inventory, various facilities
○	Limited Stock
Δ	New – Call For Availability

### Specifications

RGMC

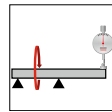


#### Outside diameter



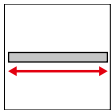
Outside diameter [mm]	Tolerance h6 [mm]	Tolerance h5 [mm]
1.0 – 3.0	+0/-0.006	+0/-0.004
3.1 – 6.0	+0/-0.008	+0/-0.005
6.1 – 10.0	+0/-0.009	+0/-0.006
10.1 – 18.0	+0/-0.011	+0/-0.008
18.1 – 30.0	+0/-0.013	+0/-0.009
30.1 – 40.0	+0/-0.016	+0/-0.011

#### Run-out



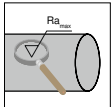
Outside diameter [mm]	max. concentricity [µm]									
	30	40	50	60	70	80	90	110	140	
3.0	5	5	6	7	-	-	-	-	-	
4.0 – 5.0	5	5	6	6	7	-	-	-	-	
6.0	4	5	5	6	6	7	8	-	-	
8.0 – 10.0	4	4	4	5	5	5	6	7	-	
12.0 – 14.0	3	4	4	4	4	5	5	6	-	
16.0 – 20.0	3	4	4	4	4	4	5	5	6	
25.0	11	4	4	4	4	4	5	5	6	

#### Length



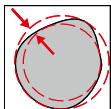
Total length tolerance [mm]
+0%/+1%

#### Surface finish



Ra <sub>max</sub> [µm]
0.05

#### Roundness



Outside diameter [mm]	Tolerance [mm]	
	h6	h5
3.0	0.003	0.002
3.1 – 6.0	0.004	0.002
6.1 – 10.0	0.005	0.003
10.1 – 18.0	0.005	0.004
18.1 – 25.0	0.006	0.005





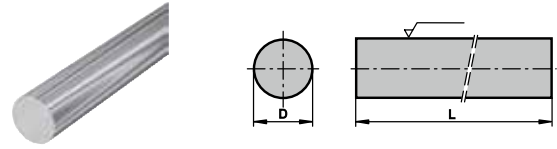
# Solid Carbide Long Rods

In addition to our cut to length rod offerings CERATIZIT also offers long rod blanks in various grades both as fully ground, and as unground oversized. All long rods are manufactured in Austria and while some are stocked only in our European warehouse, some sizes are available from local USA stock as well.

Should you need a size or grade that is not listed here, please let us know. Specials can always be manufactured to your specifications.



## Solid Carbide Long Rods, Ground Submicron Grades (inch dimensions)

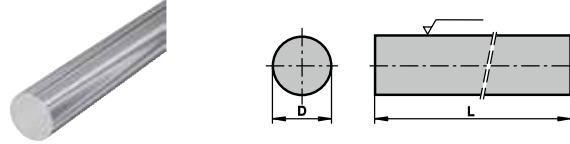


D [inch]	L [inch]	Description	Dia. tol.	CTS20D
0.125	13	RGI 1/8-13	h6	G
0.188	13	RGI 3/16-13	h6	G
0.250	13	RGI 1/4-13	h6	G
0.313	13	RGI 5/16-13	h6	G
0.375	13	RGI 3/8-13	h6	G
0.438	13	RGI 7/16-13	h6	G
0.500	13	RGI 1/2-13	h6	G
0.625	13	RGI 5/8-13	h6	G
0.750	13	RGI 3/4-13	h6	G
1.000	13	RGI 1-13	h6	G

### Stock Symbols

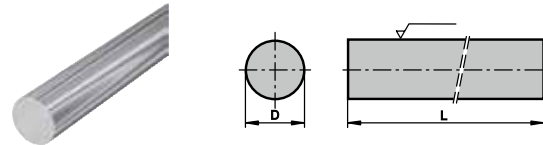
US	US Stock, delivery as requested
G	Global Inventory, various facilities
O	Limited Stock
Δ	New – Call For Availability

# Solid Carbide Long Rods, Ground Ultrafine Grades



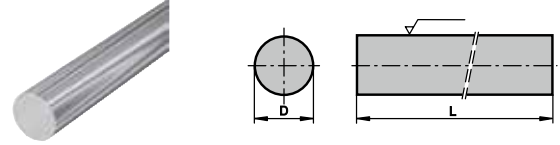
D [mm]	L [mm]	Description	Dia. tol.	TSF22	TSF44
1.00	330	RGM 0100-330	h5		G
2.00	330	RGM 0200-330	h5		G
3.00	330	RGM 0300-330	h5	G	G
4.00	330	RGM 0400-330	h5	G	G
5.00	330	RGM 0500-330	h5	G	
6.00	330	RGM 0600-330	h5	G	G
8.00	330	RGM 0800-330	h5	G	G
10.00	330	RGM 1000-330	h5	G	G
12.00	330	RGM 1200-330	h5	G	G
14.00	330	RGM 1400-330	h5	G	G
16.00	330	RGM 1600-330	h5	G	G
20.00	330	RGM 2000-330	h5	G	G
25.00	330	RGM 2500-330	h5	G	G

# Submicron Grades



D [mm]	L [mm]	Description	Dia. tol.	CTS12D	CTS15D	CTS18D	CTS20D	CTS25D	CTS30D
1.00	330	RGM 0100-330	h6	G			G		
1.50	330	RGM 0150-330	h6				G		
2.00	330	RGM 0200-330	h6				G		
2.50	330	RGM 0250-330	h6		G		G		
3.00	330	RGM 0300-330	h6	G			G		
3.50	330	RGM 0350-330	h6				G		
4.00	330	RGM 0400-330	h6	G			G		
4.50	330	RGM 0450-330	h6				G		
5.00	330	RGM 0500-330	h6				G		
5.50	330	RGM 0550-330	h6				G		
6.00	330	RGM 0600-330	h6	G	G	G	G	G	O
6.50	330	RGM 0650-330	h6				G		
7.00	330	RGM 0700-330	h6				G		
7.50	330	RGM 0750-330	h6				G		
8.00	330	RGM 0800-330	h6	G	G	G	G	G	O

# Solid Carbide Long Rods, Ground Submicron Grades

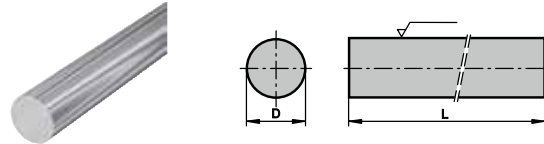


D [mm]	L [mm]	Description	Dia. tol.	CTS12D	CTS15D	CTS18D	CTS20D	CTS25D	CTS30D
8.50	330	RGM 0850-330	h6				G		
9.00	330	RGM 0900-330	h6				G		
9.50	330	RGM 0950-330	h6				G		
10.00	330	RGM 1000-330	h6	G	G	G	G	G	O
11.00	330	RGM 1100-330	h6				G		
12.00	330	RGM 1200-330	h6	G	G	G	G	G	O
13.00	330	RGM 1300-330	h6				G		
14.00	330	RGM 1400-330	h6	G			G		
15.00	330	RGM 1500-330	h6				G		
16.00	330	RGM 1600-330	h6	G	G	G	G	G	O
18.00	330	RGM 1800-330	h6		G		G		
19.00	330	RGM 1900-330	h6				G		
20.00	330	RGM 2000-330	h6	G	G	G	G	G	O
22.00	330	RGM 2200-330	h6				G		
24.00	330	RGM 2400-330	h6				G		
25.00	330	RGM 2500-330	h6			G	G	G	O
28.00	330	RGM 2800-330	h6				G		
30.00	330	RGM 3000-330	h6				G		
32.00	330	RGM 3200-330	h6			G	G		
38.00	330	RGM 3800-330	h6				G		
40.00	330	RGM 4000-330	h6				G		

## Stock Symbols

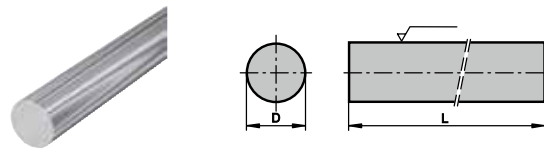
US	US Stock, delivery as requested
G	Global Inventory, various facilities
O	Limited Stock
Δ	New – Call For Availability

# Solid Carbide Long Rods, Ground Fine Grades



D [mm]	L [mm]	Description	Dia. tol.	CTF12E	CTF25E
3.00	330	RGM 0300-330	h6	Δ	
4.00	330	RGM 0400-330	h6	Δ	
6.00	330	RGM 0600-330	h6	G	○
8.00	330	RGM 0800-330	h6	G	○
10.00	330	RGM 1000-330	h6	G	○
12.00	330	RGM 1200-330	h6	G	○
14.00	330	RGM 1400-330	h6	○	
16.00	330	RGM 1600-330	h6	G	○
18.00	330	RGM 1800-330	h6	○	
20.00	330	RGM 2000-330	h6	○	○
25.00	330	RGM 2500-330	h6		○

## Cermet



D [mm]	L [mm]	Description	Dia. tol.	CTF28T
3.00	330	RGM 0300-330	h6	G
4.00	330	RGM 0400-330	h6	G
6.00	330	RGM 0600-330	h6	G
8.00	330	RGM 0800-330	h6	G
10.00	330	RGM 1000-330	h6	G

### Stock Symbols

US	US Stock, delivery as requested
G	Global Inventory, various facilities
○	Limited Stock
Δ	New – Call For Availability

## Specifications

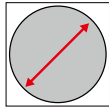
RGM



RGI



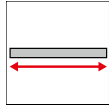
### Outside diameter



Outside diameter [mm]	Tolerance [mm]	
	h6 [mm]	h5 [mm]
1.0 – 3.0	+0/-0.006	+0/-0.004
3.1 – 6.0	+0/-0.008	+0/-0.005
6.1 – 10.0	+0/-0.009	+0/-0.006
10.1 – 18.0	+0/-0.011	+0/-0.008
18.1 – 30.0	+0/-0.013	+0/-0.009
30.1 – 40.0	+0/-0.016	+0/-0.011

Outside diameter [inch]	Tolerance [inch]	
	h6 [inch]	h5 [inch]
0 - 0.118"	+0 / -0.0002"	+0 / -0.0001"
0.1181" - 0.236"	+0 / -0.0003"	+0 / -0.0002"
0.2361" - 0.394"	+0 / -0.0004"	+0 / -0.0002"
0.3941" - 0.109"	+0 / -0.0004"	+0 / -0.0003"
0.7091" - 1.181"	+0 / -0.0005"	+0 / -0.0004"

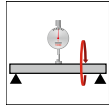
### Length



Total length tolerance  
[mm]  
+0/+10

Total length tolerance  
[inch]  
+0 / +0.3937"

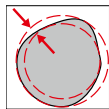
### Straightness



Outside diameter [mm]	max. deflection [mm]
1.0 – 2.9	1.20
3.0 – 5.9	0.15
6.0 – 7.9	0.12
8.0 – 9.9	0.10
10.0 – 11.9	0.08
12.0 – 19.9	0.05
20.0 – 40.0	< 0.05

Outside diameter [inch]	max. deflection [inch]
0.0394" - 0.1142"	0.0472"
0.1181" - 0.2323"	0.0059"
0.2362" - 0.3110"	0.0047"
0.3150" - 0.3898"	0.0039"
0.3937" - 0.4685"	0.0031"
0.4724" - 0.7835"	0.0020"
0.3937" - 1.5748"	<0.0020"

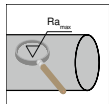
### Roundness



Outside diameter [mm]	Tolerance [mm]	
	RGM h6	RGM h5
1.0 – 3.0	0.003	0.003
3.1 – 6.0	0.004	0.003
6.1 – 10.0	0.005	0.003
10.1 – 30.0	0.006	0.004
30.1 – 40.0	0.008	0.005

Outside diameter [inch]	Tolerance [inch]	
	RGI h6	RGI h5
0 - 0.118"	0.00011"	0.00011"
0.1181" - 0.236"	0.00015"	0.00011"
0.2361" - 0.394"	0.00019"	0.00011"
0.3941" - 1.181"	0.00023"	0.00015"
1.1811" - 1.5748"	0.00031"	0.00019"

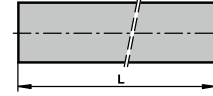
### Surface finish



Ra<sub>max</sub> [μm]  
0.05

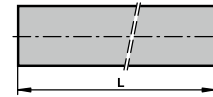
# Solid Carbide Long Rods, Unground

## Ultrafine Grades



D [mm]	L [mm]	Description	Dia. tol. [mm]	CTU08L	TSF22	TSF44
3.25	330	RR 0325-330	-0/+0.20	G	G	G
4.20	330	RR 0420-330	-0/+0.20	G	G	G
5.20	330	RR 0520-330	-0/+0.25	G	G	G
6.20	330	RR 0620-330	-0/+0.25	G	G	G
6.70	330	RR 0670-330	-0/+0.25			G
8.20	330	RR 0820-330	-0/+0.30	G	G	G
10.20	330	RR 1020-330	-0/+0.30	G	G	G
12.20	330	RR 1220-330	-0/+0.30		G	G
14.20	330	RR 1420-330	-0/+0.30		G	G
16.20	330	RR 1620-330	-0/+0.45		G	G
18.20	330	RR 1820-330	-0/+0.45		G	G
20.20	330	RR 2020-330	-0/+0.45		G	G
25.20	330	RR 2520-330	-0/+0.65		G	G
32.20	330	RR 3220-330	-0/+0.65			G

## Submicron Grades

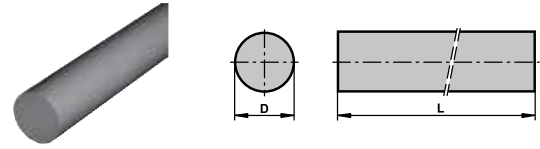


D [mm]	L [mm]	Description	Dia. tol. [mm]	CTS12D	CTS15D	CTS18D	CTS20D	CTS25D	CTS30D	CTS24Z
1.15	330	RR 0115-330	-0/+0.15				US			Δ
1.65	330	RR 0165-330	-0/+0.15	G			US			Δ
1.80	330	RR 0180-330	-0/+0.15				US			
2.20	330	RR 0220-330	-0/+0.20	G			US			Δ
2.70	330	RR 0270-330	-0/+0.20				US			
3.25	330	RR 0325-330	-0/+0.20	G	G	G	US			Δ
3.70	330	RR 0370-330	-0/+0.20				US			Δ
4.20	330	RR 0420-330	-0/+0.20	G	G	G	US			Δ
4.70	330	RR 0470-330	-0/+0.20				US			Δ
5.20	330	RR 0520-330	-0/+0.25	G	G		US			Δ
5.70	330	RR 0570-330	-0/+0.25				US			Δ
6.20	330	RR 0620-330	-0/+0.25	G	G	G	US	G	G	Δ
6.55	330	RR 0655-330	-0/+0.25				US			Δ
6.70	330	RR 0670-330	-0/+0.25		G		US			



# Solid Carbide Long Rods, Unground

## Submicron Grades



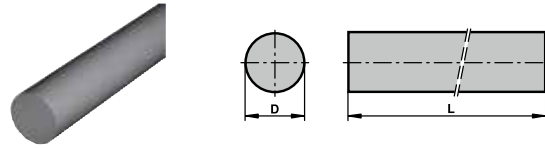
D [mm]	L [mm]	Description	Dia. tol. [mm]	CTS12D	CTS15D	CTS18D	CTS20D	CTS25D	CTS30D	CTS24Z
7.20	330	RR 0720-330	-0/+0.30				US			
7.70	330	RR 0770-330	-0/+0.30				US			
8.20	330	RR 0820-330	-0/+0.30	G	G	G	US	G	G	
8.70	330	RR 0870-330	-0/+0.30				US			
9.20	330	RR 0920-330	-0/+0.30				US			
9.70	330	RR 0970-330	-0/+0.30				US			
10.20	330	RR 1020-330	-0/+0.30	G	G	G	US	G	G	
10.70	330	RR 1070-330	-0/+0.30				US			
11.20	330	RR 1120-330	-0/+0.30				US			
11.70	330	RR 1170-330	-0/+0.30				US			
12.20	330	RR 1220-330	-0/+0.30	G	G	G	US	G	G	
12.70	330	RR 1270-330	-0/+0.30		G		US			
13.00	330	RR 1300-330	-0/+0.30				G			
13.20	330	RR 1320-330	-0/+0.30				US			
14.20	330	RR 1420-330	-0/+0.30	G	G	G	US			
14.70	330	RR 1470-330	-0/+0.30				US			
15.20	330	RR 1520-330	-0/+0.30				G			
16.20	330	RR 1620-330	-0/+0.45		G	G	US	G	G	
17.20	330	RR 1720-330	-0/+0.45				G			
18.20	330	RR 1820-330	-0/+0.45	G	G		G			
19.20	330	RR 1920-330	-0/+0.45				G			
20.20	330	RR 2020-330	-0/+0.45	G	G	G	G	G	G	
21.20	330	RR 2120-330	-0/+0.55				G			
22.20	330	RR 2220-330	-0/+0.55				G			
23.20	330	RR 2320-330	-0/+0.55				G			
24.20	330	RR 2420-330	-0/+0.55				G			
25.20	330	RR 2520-330	-0/+0.65		G	G	G	G	○	
25.80	330	RR 2580-330	-0/+0.60				G			
26.20	330	RR 2620-330	-0/+0.65				G			
28.20	330	RR 2820-330	-0/+0.65				G			
30.20	330	RR 3020-330	-0/+0.65				G			
32.20	330	RR 3220-330	-0/+0.65			G	G			
34.20	330	RR 3420-330	-0/+0.65				G			
36.20	330	RR 3620-330	-0/+0.65				G			
38.20	330	RR 3820-330	-0/+0.70				G			
40.20	330	RR 4020-330	-0/+0.70				G			
42.20	330	RR 4220-330	-0/+0.70				G			
46.20	330	RR 4620-330	-0/+0.70	G	G	G	G			

### Stock Symbols

US	US Stock, delivery as requested
G	Global Inventory, various facilities
○	Limited Stock
△	New – Call For Availability

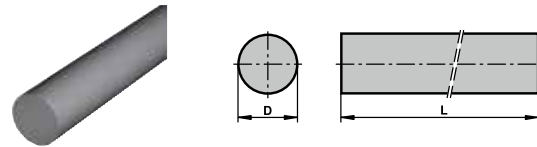
# Solid Carbide Long Rods, Unground

## Fine Grades



D [mm]	L [mm]	Description	Dia. tol. [mm]	CTF12E	CTF25E
3.25	330	RR 0325-330	-0/+0.20	G	
4.20	330	RR 0420-330	-0/+0.20	G	
5.20	330	RR 0520-330	-0/+0.25	G	
6.20	330	RR 0620-330	-0/+0.25	G	○
8.20	330	RR 0820-330	-0/+0.30	G	○
10.20	330	RR 1020-330	-0/+0.30	G	○
12.20	330	RR 1220-330	-0/+0.30	G	○
14.20	330	RR 1420-330	-0/+0.30	G	
16.20	330	RR 1620-330	-0/+0.45	G	○
18.20	330	RR 1820-330	-0/+0.45	○	
20.20	330	RR 2020-330	-0/+0.45	○	○
25.20	330	RR 2520-330	-0/+0.45		○

## Cermet



D [mm]	L [mm]	Description	Dia. tol. [mm]	CTF28T
3.40	330	RR 0340-330	-0/+0.20	G
4.40	330	RR 0440-330	-0/+0.20	G
6.40	330	RR 0640-330	-0/+0.25	G
8.40	330	RR 0840-330	-0/+0.30	G
10.40	330	RR 1040-330	-0/+0.30	G
12.40	330	RR 1240-330	-0/+0.30	G

### Stock Symbols

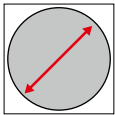
US	US Stock, delivery as requested
G	Global Inventory, various facilities
○	Limited Stock
Δ	New – Call For Availability

## Specifications

RR

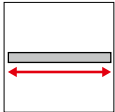


### Outside diameter



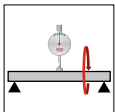
Outside diameter [mm]	Tolerance [mm]
0.8 – 2.1	+0/+0.15
2.2 – 4.7	+0/+0.20
4.8 – 6.7	+0/+0.25
6.8 – 15.2	+0/+0.30
15.3 – 20.2	+0/+0.45
20.3 – 24.2	+0/+0.55
24.3 – 36.2	+0/+0.65
36.3 – 46.2	+0/+0.70

### Length



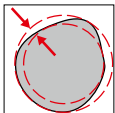
Tolerance [mm]
+0/+10

### Straightness



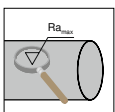
Outside diameter [mm]	max. deflection [mm]
0.80 – 3.20	1.2
3.25 – 46.2	0.5

### Roundness



Outside diameter [mm]	Tolerance [mm]
0.8 – 5.7	0.05
5.8 – 7.7	0.08
7.8 – 12.7	0.10
12.8 – 30.2	0.13
30.3 – 46.2	0.16

### Surface finish



Ra <sub>max</sub> [μm]
as sintered

# Special Rods

## Made in the US

In addition to our standard line of carbide rods CERATIZIT also offers custom solutions to meet your specific needs. Size, finish, tolerance; all can be controlled to your unique requirements here in our USA operation.

- ▲ Solid rod in diameters from .125" through 1.25" and lengths up to 10.00" can be accommodated in our Warren, Michigan manufacturing facility. We also offer custom preforms for your needs that exceed these parameters.
- ▲ Coolant hole rods with straight holes and radial exit holes can be produced in Michigan, please contact a CERATIZIT USA team member at 800/783-2280 for size details
- ▲ Special rods can be produced as h6 tolerance, h5 tolerance, or utility ground with your specified stock allowance accommodated in Michigan.

## Made in Austria

When your needs exceed the manufacturing envelope of our Michigan facility, our Austrian family can step in to meet your requirements as well.

- ▲ With capability to produce rods up to a meter in length our Austrian operation is highly capable of meeting your exacting standards
- ▲ Some of our grade selection is only available through our Austrian operation, such as TSF22 and TSF44. Austria will meet your needs for finish, tolerance and grind stock with precision.
- ▲ Austria is also where the majority of our coolant hole rods are produced, which you will see in a separate catalog. Here, specials are also possible, including a variety of coolant hole profiles to meet your needs.



# Notes

# Notes



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