


Premium carbide for the health industry



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



Dr.-Ing. Michael Dröschel,
Research and Development Manager

**As we manage the entire
process chain, we can
always guarantee top
quality and smooth
collaboration.**

Cemented carbide: the best solution for your health

In the medical systems sector, carbide solutions are the leading alternative: when doctors treat teeth and bones or when specialists work with implants and dentures, **highly precise and extremely resistant tools** are needed. On the basis of carbide grades developed for you, Hard Material Solutions by CERATIZIT supplies you with both standard and customer-specific solutions: being extremely hard, tough, resistant to breakage and heat, carbide blanks prove maximum performance and are many times superior to conventional steel products.

At headquarters in Mamer, Luxembourg, technology experts create customer-specific blanks which you can **provide rapidly and efficiently** with an individual finish for your customer: you receive sintered or ground blanks

for numerous medical and laboratory applications, e.g. for dental drills, needle holder tips and other special tools.

If you are counting on certified quality, CERATIZIT offers you numerous grades which match the **special premium requirements of FDA***. For customers in the healthcare sector, this represents an important issue, as this is ultimately a matter of human health!

Medical tools must be treated frequently with cleaning agents and disinfectants, **in fact hygiene in the health sector is crucial**. Corrosion-resistant grades offer security, reliability and durability.



* The Food and Drug Administration (FDA) is an agency of the U.S. Department of Health and Human Services which monitors both the safety and efficiency of medical products, among others. Only FDA-certified products that pass the strict approval processes of this government authority may be offered on the market. Click here for further information: <https://www.accessdata.fda.gov/scripts/fdcc/?set=FCN>



Advantages and benefits

Advantages

Benefits

As sintered or ground products, corrosion-resistant grades	→	Maximum flexibility made to measure for your application
Needle holder tips with pyramid profile, directly pressed and sintered, available only with CERATIZIT	→	Quick and productive finishing
Full range from one source: directly pressed, hand-shaped, extrusion-pressed and ground parts; ISO 9001 certification	→	Rapid and reliable processing; guaranteed consistent high quality standard
CERATIZIT commands the entire process chain: all the way from carbide powder to the blank – now for more than 95 years.	→	Constant premium product quality; maximum precision, best performance, continuous development
Maximum wear resistance and fracture toughness compared to steel	→	Durable tool with continually high performance
More than 60 sales subsidiaries worldwide	→	There is always a contact person nearby

The best individual solution ...

Whether you need a standard stock product or a customised blank: with Hard Material Solutions by CERATIZIT you will receive the exact high-tech product you need **to achieve the best for your process chain**. Productivity at all times!

Guaranteed by one of the few carbide manufacturers that manages the entire process chain of carbide production – from the raw material to the blank.

... and exactly your lot

Guaranteed by your development partner, who is **the only one in the sector with the full product range** needed for offering patients the best healthcare services: whether hand-shaped minimum quantities starting from 100 items or lot sizes of 10,000 pieces, together we can find

a solution that will allow you to work efficiently.

Numerous international brands trust Hard Material Solutions by CERATIZIT.

When would you like to talk with us?



Dental drills & burs

For your dental drill production, you can choose between sintered or ground carbide blanks. In addition to a standard range of pins and preforms of different dimensions, our experts are always available to assist you when it comes to implementing customer-specific designs. – To make it easy for you to finalise your tool!

Blanks for solid carbide tools

Alternatively, you can order solid carbide drills offering specific metallurgical qualities that are additionally available in different geometries, diameters and lengths. Solid carbide blanks from Hard Material Solutions by CERATIZIT can be used for the following materials:

- ▲ Metal-ceramic/full ceramic
- ▲ Precious metal alloys
- ▲ Alloys with reduced precious metal content
- ▲ Non-precious metal alloys
- ▲ Chrome cobalt alloys (CrCo)
- ▲ Chrome nickel alloys (CrNi)
- ▲ Titanium
- ▲ Crown and bridge materials
- ▲ Denture acrylics and plate materials
- ▲ Dental plasters
- ▲ Soft plastics

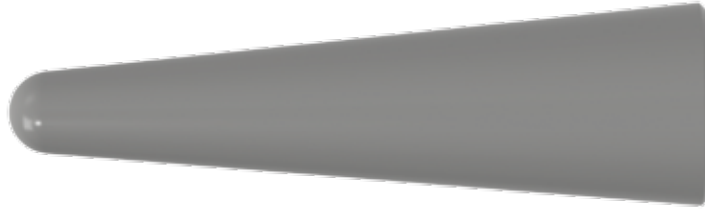
In order to make brazing or welding on the steel shaft easier, the blanks can be subjected to surface treatment that deposits a cobalt or nickel layer.

Blanks



Finished products



Pre-shaped blanks (DFR R)**Surface treatment:**

Cobalt or nickel coating (TSX, TSN)
(to improve brazability or weldability)

Carbide grades:

- ▲ CTS20L
- ▲ CTF12E
- ▲ CTS18D
- ▲ Other grades are available upon request

Dimensions:

- ▲ Ø3 - Ø8 mm,
- ▲ Length 6 - 15 mm
- ▲ Other dimensions are available upon request

Lot sizes:

~1,000 to 10,000 items

Sintered blanks (DST R)**Surface treatment:**

Cobalt or nickel coating (TSX, TSN)
(to improve brazability or weldability)

Carbide grades:

- ▲ CTS20L
- ▲ CTF12E
- ▲ CTS18D
- ▲ Other grades are available upon request

Dimensions:

- ▲ Ø3 - Ø8 mm
- ▲ Length 6 - 45 mm
- ▲ Other dimensions are possible

Batch sizes:

~1,000 to 10,000 items

Ground pins (DST G)**Carbide grades:**

- ▲ CTS20L

Dimensions:

- ▲ Ø1.6 - Ø8 mm
- ▲ Length 0.5 - 45 mm

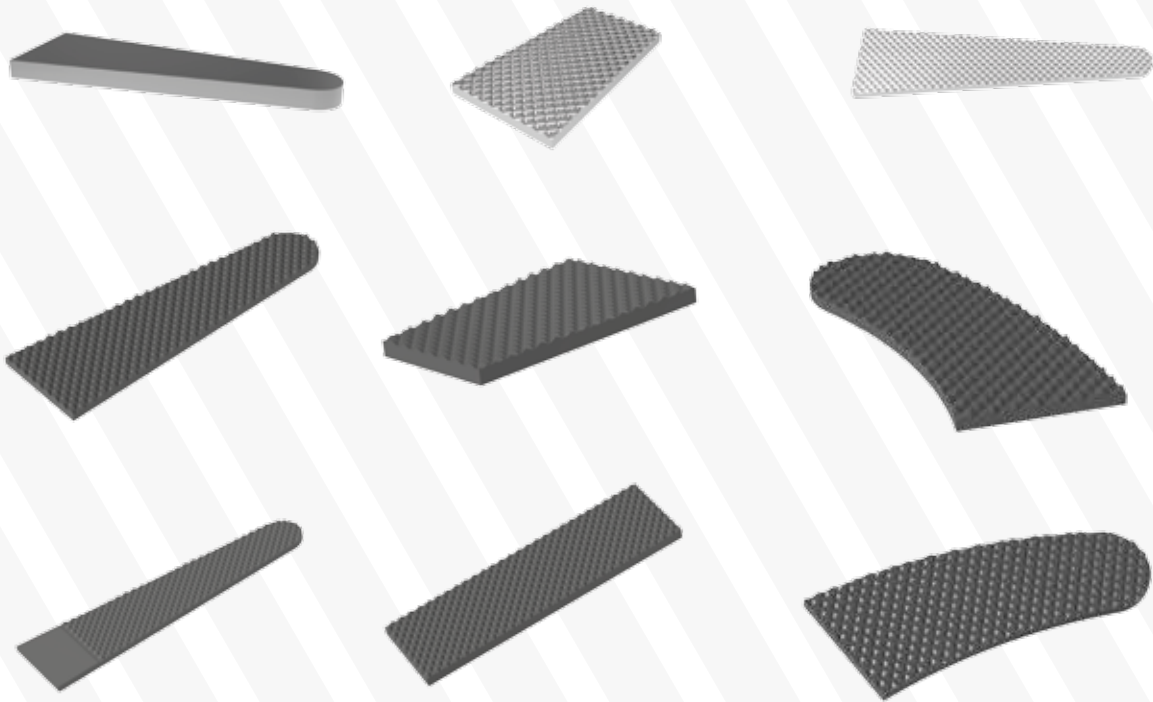
Needle holder tips

Just like dental drills, blanks for needle holder tips are delivered as sintered or ground. The standard range is supplemented by customer-specific designs: these can differ in shape, dimensions, surface treatment, carbide grade, finish and serration.

Furthermore, CERATIZIT is the only producer worldwide that creates the specific pyramid profile during pressing and sintering, saving you time, money and overall work effort.

95 % of all needle holder tips are available from stock (standard range).

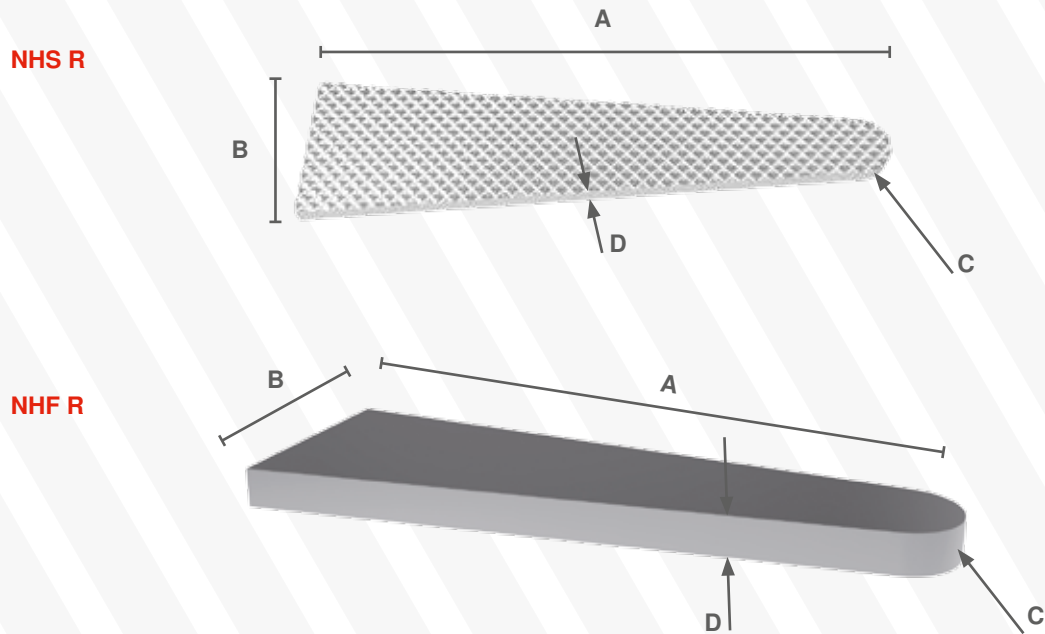
Blanks



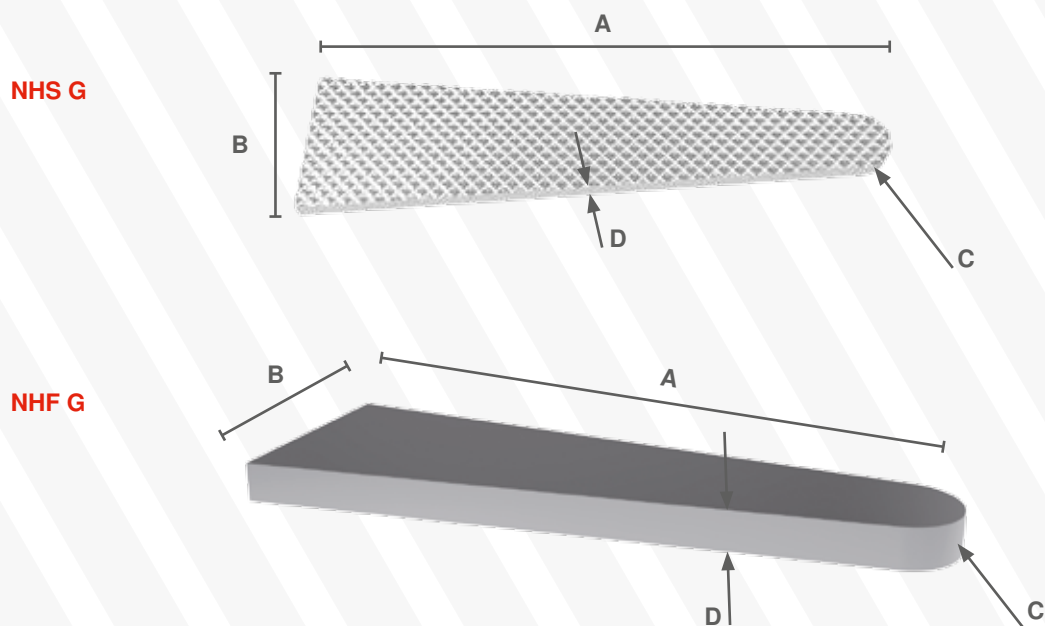
Ready-to-use finished products



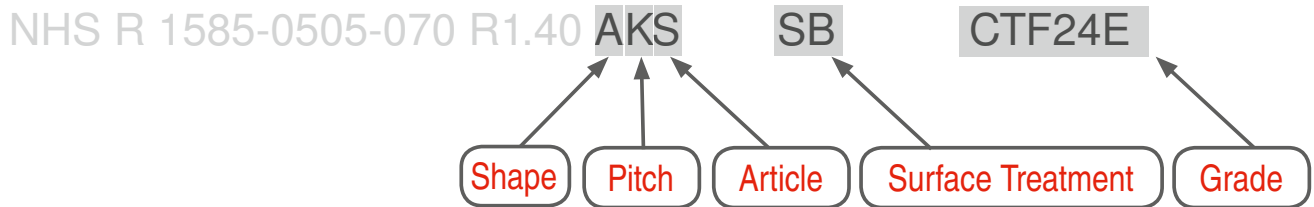
Blank needle holder tips



Ground needle holder tips



Designation:



Shape



A



B



C



D



E



F



G



H

Pitch

A: no serration
 B: < 0.1 mm
 C: 0.1 mm
 D: intermediate
 E: 0.2 mm
 F: intermediate
 G: 0.3 mm
 H: intermediate

I: 0.4 mm
 J: intermediate
 K: 0.5 mm
 L: intermediate
 M: 0.6 mm
 N: intermediate
 O: 0.7 mm
 P: > 0.7 mm

Article

S: standard as sintered
 G: two faces ground
 F: one face ground
 (flat or serrated)
 E: economy article

Surface Treatment

SB: sandblasted

Grade

• CTF24E
 • CTF30M

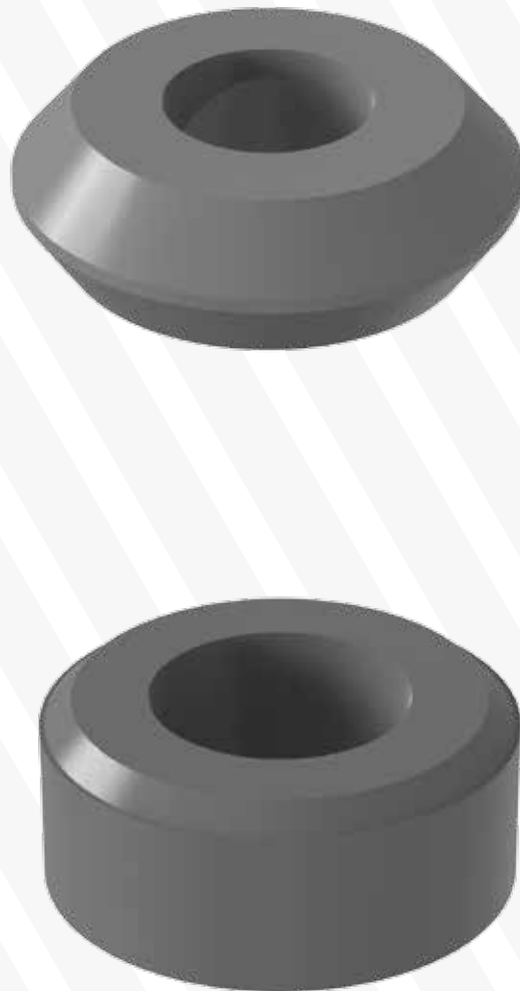
Standard range needle holders available from stock:

Material No.	Description	Grade	Old designation	Finish	Length A (0+)	Width B (0+)	Thickness C (0+)	Serration	Radius R
6238505	NHS R 0890-0520-060 R1.30 AIS SB	CTF24E	T/47836/1 GC20	As sintered	8.90	5.20	0.60	0.4	R1.30
6238506	NHS R 0740-0280-050 R1.30 AIS SB	CTF24E	T/47836/2 GC20	As sintered	7.40	2.80	0.50	0.4	R1.30
6238508	NHS R 1685-0635-060 R1.75 AKE SB	CTF24E	T/47836/3 GC20	As sintered	16.85	6.35	0.60	0.5	R1.75
6238509	NHS R 1985-0585-070 R1.75 AKS SB	CTF24E	T/47836/4 GC20	As sintered	19.85	5.85	0.70	0.5	R1.75
6238515	NHS R 1585-0505-070 R1.40 AKS SB	CTF24E	T/47836/5 GC20	As sintered	15.85	5.05	0.70	0.5	R1.40
6238517	NHS R 1485-0495-065 R1.75 AIS SB	CTF24E	T/47836/6 GC20	As sintered	14.85	4.95	0.65	0.4	R1.75
6238518	NHS R 1685-0545-065 R1.75 AIS SB	CTF24E	T/47836/7 GC20	As sintered	16.85	5.45	0.65	0.4	R1.75
6238519	NHS R 1300-0360-050 R0.75 AKS SB	CTF24E	T/47836/8 GC20	As sintered	13.00	3.60	0.50	0.5	R0.75
6238520	NHS R 1685-0435-070 R1.20 AKS SB	CTF24E	T/47836/9 GC20	As sintered	16.85	4.35	0.70	0.5	R1.20
6238521	NHS R 1585-0505-070 R1.40 AIS SB	CTF24E	T/47836/10 GC20	As sintered	15.85	5.05	0.70	0.4	R1.40
6238523	NHS R 1985-0585-070 R1.75 AIS SB	CTF24E	T/47836/11 GC20	As sintered	19.85	5.85	0.70	0.4	R1.75
6238525	NHS R 1485-0465-070 R1.20 AIS SB	CTF24E	T/47836/12 GC20	As sintered	14.85	4.65	0.70	0.4	R1.20
6238527	NHS R 2130-0685-070 R2.40 AKS SB	CTF24E	T/47836/13 GC20	As sintered	21.30	6.85	0.70	0.5	R2.40
6257906	NHS R 1685-0635-060 R1.75 AGS SB	CTF24E	T/47836/15 GC20	As sintered	16.85	6.35	0.60	0.3	R1.75
6257907	NHS R 1485-0495-065 R1.75 AGS SB	CTF24E	T/47836/16 GC20	As sintered	14.85	4.95	0.65	0.3	R1.75
6111809	NHS G 0890-0520-060 R1.30 AIF	CTF24E	T/21836/1 GC20	Ground on one side	8.90	5.20	0.60	0.4	R1.30
6107540	NHS G 0740-0280-050 R1.30 AIF	CTF24E	T/21836/2 GC20	Ground on one side	7.40	2.80	0.50	0.4	R1.30
6210278	NHS G 1685-0635-060 R1.75 AKF	CTF24E	T/21836/3 GC20	Ground on one side	16.85	6.35	0.60	0.5	R1.75
11548266	NHS G 1685-0635-060 R1.75 AKF SB	CTF24E	T/21836/3 GC20	Ground on one side	16.85	6.35	0.60	0.5	R1.75
6210279	NHS G 1985-0585-070 R1.75 AKF SB	CTF24E	T/21836/4 GC20	Ground on one side	19.85	5.85	0.70	0.5	R1.75
11776012	NHS G 1985-0585-055 R1.75 AKF	CTF24E	T/21836/4 -0.55 GC20	Ground on one side	19.85	5.85	0.55	0.5	R1.75
6210298	NHS G 1585-0505-070 R1.40 AKF SB	CTF24E	T/21836/5 GC20	Ground on one side	15.85	5.05	0.70	0.5	R1.40
12041588	NHS G 1585-0505-070 R1.40 AKF SB	CTF30M	T/21836/5 GC20	Ground on one side	15.85	5.05	0.70	0.5	R1.40
6210280	NHS G 1485-0495-065 R1.75 AIF SB	CTF24E	T/21836/6 GC20	Ground on one side	14.85	4.95	0.65	0.4	R1.75
6210286	NHS G 1685-0545-065 R1.75 AIF SB	CTF24E	T/21836/7 GC20	Ground on one side	16.85	5.45	0.65	0.4	R1.75
11494979	NHS G 1685-0545-065 R1.75 AIF SB	CTF30M	T/21836/7 KCR18	Ground on one side	16.85	5.45	0.65	0.4	R1.75
6111807	NHS G 1300-0360-050 R0.75 AKF SB	CTF24E	T/21836/8 GC20	Ground on one side	13.00	3.60	0.50	0.5	R0.75
6210307	NHS G 1685-0435-070 R1.20 AKF	CTF24E	T/21836/9 GC20	Ground on one side	16.85	4.35	0.70	0.5	R1.20
6210281	NHS G 1585-0505-070 R1.40 AIF SB	CTF24E	T/21836/10 GC20	Ground on one side	15.85	5.05	0.70	0.4	R1.40
6210291	NHS G 1985-0585-070 R1.75 AIF SB	CTF24E	T/21836/11 GC20	Ground on one side	19.85	5.85	0.70	0.4	R1.75
11523386	NHS G 1985-0585-070 R1.75 AIF SB	CTF30M	T/21836/11 KCR18	Ground on one side	19.85	5.85	0.70	0.4	R1.75
6210282	NHS G 1485-0465-070 R1.20 AIF SB	CTF24E	T/21836/12 GC20	Ground on one side	14.85	4.65	0.70	0.4	R1.20
6210323	NHS G 2130-0685-070 R2.40 AKF SB	CTF24E	T/21836/13 GC20	Ground on one side	21.30	6.85	0.70	0.5	R2.40
6257902	NHS G 1685-0635-060 R1.75 AGF	CTF24E	T/21836/15 GC20	Ground on one side	16.85	6.35	0.60	0.3	R1.75
6257905	NHS G 1485-0495-065 R1.75 AGF	CTF24E	T/21836/16 GC20	Ground on one side	14.85	4.95	0.65	0.3	R1.75
6237571	NHS G 1685-0635-070 R1.75 AKF SB	CTF24E	T/21836/17 GC20	Ground on one side	16.85	6.35	0.70	0.5	R1.75
11551805	NHS G 1985-0585-060 R1.75 AIF SB	CTF30M	T/21836/18 KCR18	Ground on one side	19.85	5.85	0.60	0.4	R1.75
6210310	NHF G 1475-0490-060 R1.75 AAG	CTF24E	T/38779 Pos. 6 GC20	Ground on both sides	14.75	4.90	0.60	/	R1.75

Other parts

In addition to dental tools and needle holder tips, we can develop solutions for any medical application upon customer request, e.g. knives for wire cutting.

You benefit from free geometries for any application type!



The right grade for every application

In the table below you can find all available carbide grades.

Where required, corrosion-resistant and many of our grades are FDA certified.

If you are looking for a customer-specific product, simply get in touch with us: we are happy to develop exactly your solution!

Grade code	ISO code	Appli- cation	Binder [m %]	Density [g/cm ³]	Hardness			Transverse rupture strength		Fracture toughness	Com- pressive strength	Modules of elasticity	Thermo- conduct- ivity	Thermo- expansion coefficient
					HV30	HV30	HRA	[MPa]	[P.S.I.]	[MPa·m ^{1/2}]	[MPa]	[GPa]	[W/mK]	[10 ⁻⁶ /K]
CTS18D			9	14.55	1590	1610	91.9	3800		11	6600	590	90	5.3
CTS20L	K20-K40		10.0	14.45	1680	1660	92.3	3700	537000	9.4	6600	580	85	5.5
CTF12E	K20	G10	6.0	14.95	1640	1620	92.1	2200	319000	9.9	6400	625	100	4.7
CTF24E	K40	G20	12.0	14.30	1330	1320	89.7	3000	435000	12.0	4900	560	95	5.5
CTF30M			15	14	1140	1150	87.8	2900		14.3	4000	530	90	6.5
CTM17E			8.5	14.65	1400	1420	90.4	2800		11.3	5300	600	95	5.1

Application fields

Our products are suitable for a variety of medical and laboratory applications, e.g.:

- ▲ Dental tools
- ▲ Medical tools
- ▲ Forceps



Hard Material Solutions by CERATIZIT

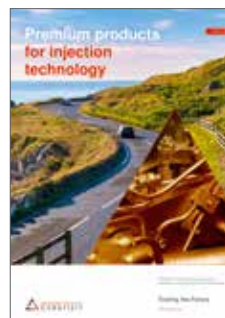
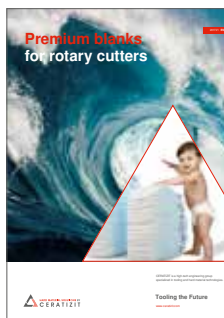
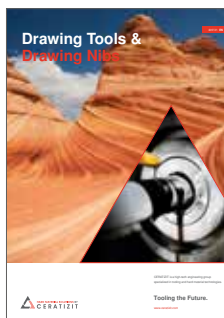
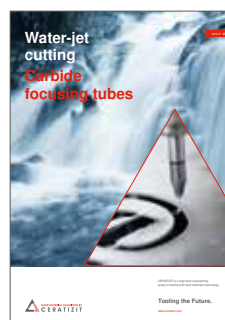
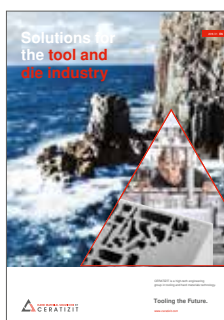
Wear protection for all applications and industries



- ▲ Individual carbide solutions for your application
- ▲ Tools for metal forming
- ▲ High-performance components for tool construction



Extract from our product portfolio



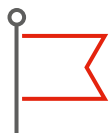
The CERATIZIT Group

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

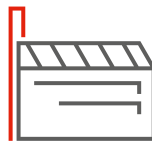
The privately owned company, based in Mamer, Luxembourg, develops and manufactures highly specialised carbide cutting tools, inserts and rods made of hard materials as well as wear parts.

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

Facts and figures



1 headquarters
Mamer (Luxembourg)



27
production sites



> 60
sales subsidiaries



> 6,000
employees



> 100,000
different products



> 600
patents and
utility models



> 100
employees in R&D



> 10
innovation awards



30%
of products developed
in the last 5 years

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