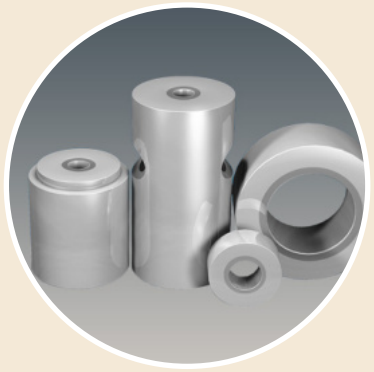
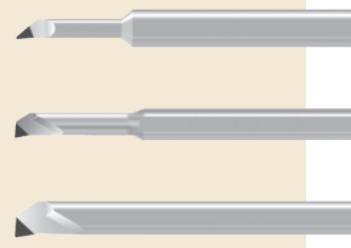


Precision Boring Bars from Ø 0,80 | Mini-Inserts
PCD, CVD-D, UltraDiamond, CBN

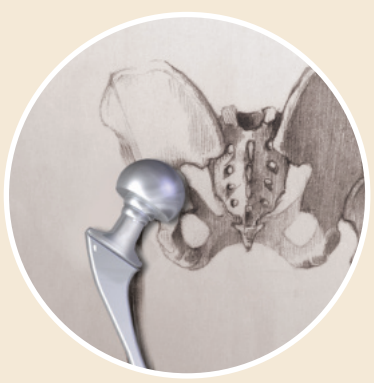
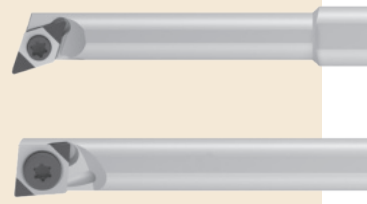
- PCD Diamond
- CVD-D Diamond
- Ultra Diamond
- CBN-H
- CBN-K
- CBN-X



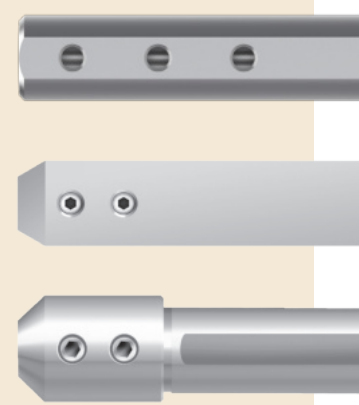
Die and Mold
Industry



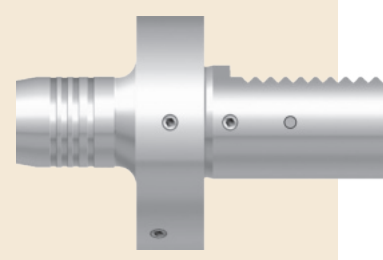
Automotive
Mechanical Engineering



Medical Technology
Micro Technology



Aerospace
Engineering





Welcome to Diamond Tooling Systems - DTS GmbH!

Based in Kaiserslautern - Germany - we have specialized in the development, production and distribution of precision tools equipped with ultrahard cutting materials, such as PCD (polycrystalline diamond), CVD-D (CVD thickfilm diamond), UltraDiamond (monocrystalline binderless diamond) and CBN (cubic boron nitride). As a leading manufacturer for tools with lasered cutting edges, we offer machining solutions in the areas of turning, milling, grooving, drilling, reaming, threading, and tool holding.

To be able to economically process ultra-hard cutting materials such as PCD, CVD-D and CBN on precision tools we realized early on that we would have to move away from the traditional production technology of „grinding“ to new technologies such as the „laser removal process“. This decision has contributed to the fact that our customers regard us, DTS GmbH, as the pioneer and leading manufacturer of lasered tools for machining.

Ultra-hard high-performance cutting materials have a key function in metal-cutting manufacturing. Precision tools equipped with ultra-hard cutting materials are products that require a great deal of explanation. The economical use of the cutting materials is only ensured if the machining process and the cutting material are coordinated with each other.

This is exactly where we at Diamond Tooling Systems DTS GmbH step in: Tools and processes are subjected to a comprehensive analysis by our experienced application engineers. Subsequently, the new process optimization is presented to the customer and in the next step, it is implemented in their production. Only in that way is it possible to exploit the optimum potential of our high-tech cutting materials.

Our experienced application engineers are also available to advise you during ongoing production. This close co-operation and mutual trust is the basis of our success.

With more than 25 years of optimization experience in the processing industry, this is where we see our strength!

Overview

Ultra-hard cutting materials at a glance	04
Our cutting materials and their main areas of application	06
Application examples - our cutting edges in use	07
Our cutting material assignment	08

Products

Brazed boring tools	
Our boring tools at a glance	10
Possible applications for our boring bars	11
Precision Boring Tools - Typ BS	Dmin 0,80 - 9,0012
Precision Boring Tools - Typ BE	Dmin 3,60 - 7,0016

MiniTools - low-vibration boring bars	
ISO Code	18
MiniTools, CVD-D, UltraDiamond and CBN Inserts	19
MT... SCLDR/L	95° / 5°20
MT... SDQCR/L	107,5 ° / 17,5°22
MT... SDUCR/L	93° / 32°23
MT... SELPR/L	95° / 10°24
MT... SRLCR/L	95° / 10°25
MT... STXPR/L	62,5° / 57,5°26
MT... SVXCR/L	5° / 140°27
MT... SVXCR/L	113° / 32°28
MT... SVLCR/L	95° / 50°29
MT... SVVCR	72,5° / 72,5°30
MT... SVXCR/L	50° / 95°31
MT... SWUCR/L	93° / 7°32

Clamping systems	
Hydraulic chunk	34
Clamping adapter	36

Technical Attachment

Cutting parameters	40
Formulas	44
Copyright and Safety Instruction	47

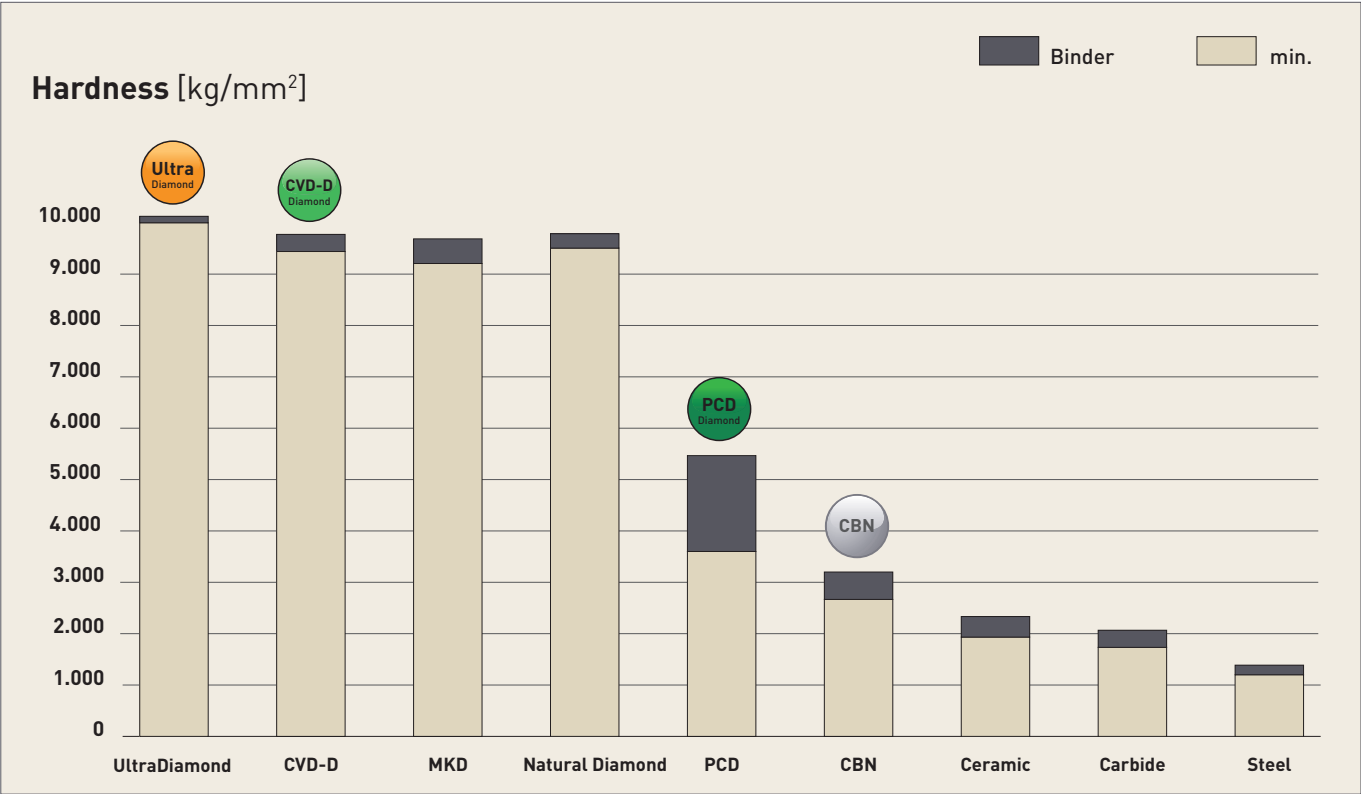


You can also get all of our products via our online shop - anytime, fast and easy.
www.shop.diamond-toolingsystems.com

PASSION FOR DIAMOND...

Ultra-hard cutting materials at a glance

... is not just a slogan for us - we live this passion in our daily dealings with our customers and we are your partner when it comes to diamond or CBN tools.



Polycrystalline diamond (PCD)

The well-known standard diamond

PCD is a synthetically produced, extremely tough, intergrown mass of diamond particles with a random orientation in a metal matrix. It is produced by sintering selected diamond particles under high pressure and high temperatures. Graphite serves as a catalyst allowing the PCD crystals to intergrow. PCD has a high thermal conductivity and good heat dissipation away from the cutting edge. In addition, PCD has the highest bending fracture strength of all cutting materials. PCD is very well suited for machining aluminum with a Si content of up to 10% and/or other abrasive fillers. The thermal hardness is about 750°C. The areas of application are like those of CVD thick-film diamond, but CVD thick film has a higher cost effectiveness with hard-brittle materials or aluminum from a Si content of 10%.

CVD-Thickfilm Diamond (CVD-D)

The star among diamond cutting materials

For the machining of hard-brittle materials such as Ceramics, glass, glass-Ceramics, tungsten Carbide, MMC and fiber-reinforced composites such as CFRP and GFRP. Due to the lack of a bonding matrix, the diamond content is much higher than with PCD. In the group of ultra-hard cutting materials, binderless CVD-D is one of the hardest man-made diamond cutting materials. CVD-D is characterized by high hardness as well as high wear resistance. These properties make CVD-D the perfect cutting material for machining abrasive materials. Compared to PCD, which is damaged by the abrasive particles due to its soft metallic binder phase, the CVD-D cutting edge remains stable due to its binderless anchoring in the diamond matrix. With the correct use of CVD-D, the tool life can be increased by up to 10 times (and even more) compared to PCD!

Binderless Diamond (UltraDiamond)

The hardest mono crystal

Single-crystal elements are laser-cut from diamond blanks in a defined orientation using laser segmentation technology. This new technology makes it possible, in addition to polycrystalline cutting materials such as PCD and CVD-D, to also braze a monocrystal (UltraDiamond) under high vacuum on any tool carrier. Compared to PCD, the tool life can be increased by approx. 15 to 25 times and compared to CVD-D by approx. 2 to 5 times. The areas of application are similar to PCD and CVD-D, but this monocrystalline cutting material offers a further significant increase in tool life in all applications where PCD and CVD-D reach the limits of economic viability. The UltraDiamond cutting material makes economical machining of very hard, highly brittle materials such as Ceramics, glass, glass-Ceramics and hard metals with low cobalt binder and nickel binder (<10%) possible.

Polycrystalline Cubic Boron Nitride (CBN)

Chemically resistant and stable at high temperatures

of up to 1,400°C. Boron nitride powder is the starting point for the production of CBN, which has been available since the end of the 1960s. It is produced under high pressure and at temperatures of over 1,500°C and the many different substrates are specifically adapted to the final application. CBN is now considered the second hardest material after diamond cutting materials! The applications of CBN take place in the automotive industry, aerospace, tool and die and mold making as well as in mechanical engineering. The wide range as cutting and abrasive material includes hardened steels, cast irons, chilled cast iron, sintered materials, stellites, nickel- and cobalt-based superalloys. In many applications, cubic boron nitride is preferred to diamond cutting materials because it is absolutely stable in air at temperatures up to 1,400°C. Diamond, on the other hand, begins to decompose at a temperature of approx. 750°C. Compared to PCD, CBN is also characterized by its chemical resistance to ferrous materials.

Our cutting materials
and their main areas of application at a glance

Our wide range of cutting materials allows us to offer the ideal solution for your applications.
Below you will find an overview of the different cutting materials.

PCD
Diamond

PCD Diamond

is ideally suited for the machining of*

Aluminium <10% Si | Brass | Ceramic green compact | Copper | Copper Alloy | Graphite | Magnesium | PEEK | Tungsten Alloy

CVD-D
Diamond

CVD-D Diamond

is ideally suited for the machining of*

Acrylic (PMMA) | Aluminium >10% Si | Carbide >10%Co | Ceramic | Copper, Copper Alloys | Composites (CFRP, GFRP) | Glass, GlassCeramic | Magnesium | Plastics | Silver, Gold, Platinum | Titanium | Zirconium

Ultra
Diamond

UltraDiamond

is ideally suited for the machining of*

Acrylic (PMMA) | Carbide <12%Co | Ceramic | Glas, GlasCeramic

CBN-H

CBN-H

is ideally suited for the machining of*

Steels, hardened up to 72 HRC
Sintered steels, hardened

continuous cut

light interrupted cut

heavy interrupted cut

CBN-K

CBN-K

is ideally suited for the machining of*

Grey cast iron (GG)
Ductile cast iron (GGG)

continuous cut

light interrupted cut

heavy interrupted cut

CBN-X

CBN-X

is ideally suited for the machining of*

HSS, Tool steel
ASP, CPM and other PM steels
Cold and Hot work steels
Solid carbide steel joints

continuous cut

light interrupted cut

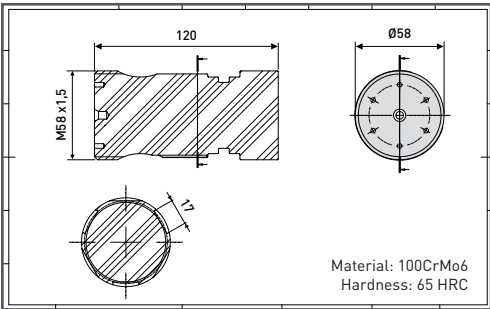
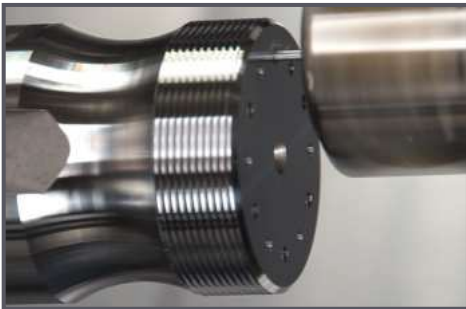
heavy interrupted cut

*all other applications can be found in the complete cutting material assignment from page 8

Application examples
our cutting edges in use

Not only theory - we would like to show you our tools in action. Below you will find a selection of our CBN application videos. Click on the QR code for more information and the video.

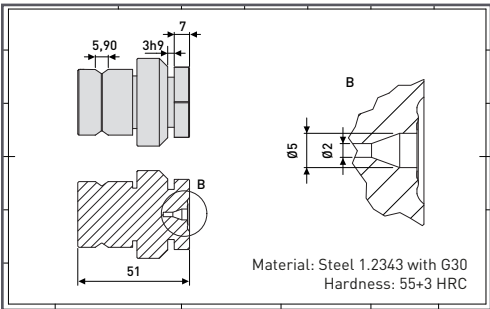
Also visit our YouTube Channel at [dts-gmbh!](#)



Hard spindles
100CrMo6 65 HRC
Brazed boring bar



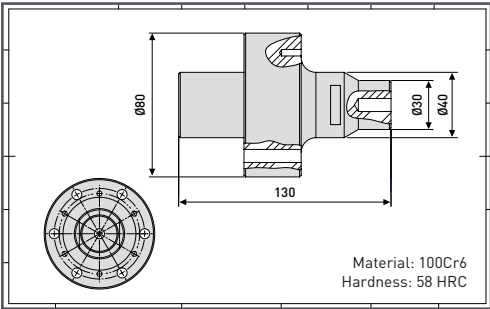
Here you can see the video!



Internal boring
Carbide G30
Brazed boring bar



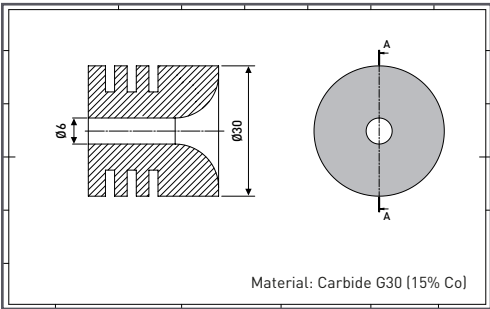
Here you can see the video!



Internal boring
100Cr6 58 HRC
MiniTool mit CDGW 040102



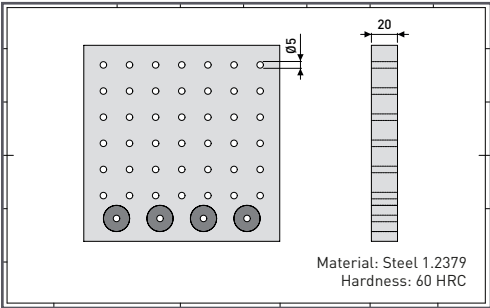
Here you can see the video!



Internal boring
Carbide G30 (15% Co)
MiniTool mit CDGW 040202



Here you can see the video!



Internal boring
Steel 1.2379 60+2 HRC
MiniTool mit CDGW 040102



Here you can see the video!

Our cutting material assignment
about the materials

DTS cutting materials are successfully used in many industries:
• Mechanical Engineering
• Die and Mold Industry
• Automotive
• Aerospace
• Medical Technology
• Optical Industry
• Ceramic Industry

Table with 5 columns: ISO, Materials, DTS Diamond Types (PCD, CVD-D, Ultra Diamond). Rows include categories H, P, K, M, and N with various materials like Cold Work Steel, PM-Steels, Steel, Hot Work Steel, Tool Steel, Sintered Steel, Grey Cast Iron, Ductile Cast Iron, Shell Chilled Cast Iron, Stainless Steel, Acrylic, Aluminum, Glass, Ceramics, Carbide, and Titanium.

The cutting material combination you are looking for is not in the table?
Our consultants and application engineers are available by phone or e-mail:
Tel.: +49(0)6301 32011-0
Mail: info@diamond-toolingsystems.com

Table with 5 columns: CBN Types (CBN-K, CBN-H, CBN-X), Materials, ISO. Rows include categories H, P, K, M, and N with materials like Sintered Steel, Sintered Steel (hardened), Steel, Hot Work Steel, Tool Steel, Grey Cast Iron, Ductile Cast Iron, Shell Chilled Cast Iron, Stainless Steel, and Carbide.



Our boring tools at a glance

for bore machining and spindling

For the machining on turning and milling centers we offer you two systems for boring starting from Ø 0,80 mm.

You can choose between soldered tools and a system with carbide boring bars and indexable inserts.

Brazed precision boring tools

starting from Ø 0,80 mm

- ✓ Corner radius 0,10 - 0,40 mm
- ✓ Carbide shank
- ✓ Up to four machining depths per Ø for optimum rigidity
- ✓ Simple alignment due to adjustment bevel and clamping surface

from Page 12

Typ BS

Typ BE

MiniTool - with multi-edged Inserts

starting from Ø 4,80 mm

- ✓ Corner radius 0,10 - 0,40 mm
- ✓ Low-vibration shank design
- ✓ High efficiency due to multi-edged inserts
- ✓ Simple alignment due to adjustment bevel and clamping surface

from Page 20

SCLDR

SDQCR

CDGW ... Z2	DCGW ... Z2	EPGW ... Z2	TPGW ... Z1	VCGW ... Z2	WCGW ... Z3
from Ø 4,80	from Ø 5,20	from Ø 8,00	from Ø 8,00	from Ø 8,00	from Ø 5,80

Matching clamping adapters

- ✓ Boring bar adjustable in length
- ✓ Exact positioning of the cutting edge

from Page 34

Hydraulic chuck

Clamping adapter, round short, compact

Clamping adapter, 4-sided short, compact

Clamping adapter, compact

Cooling through the clamping surface of the tool possible for all holders.

Application possibilities

of our precision boring tools

To adapt our boring tools perfectly to your application, we have two different types in our standard program. These enable you to use ultra hard cutting materials to reliably machine cylindrical and conical surfaces with radial transitions as well as flat surfaces.

Typ BS

starting from Ø 0,80 mm

all colored surfaces can be machined

Robust system for turning contours in bores.

Typ BE

starting from Ø 3,60 mm

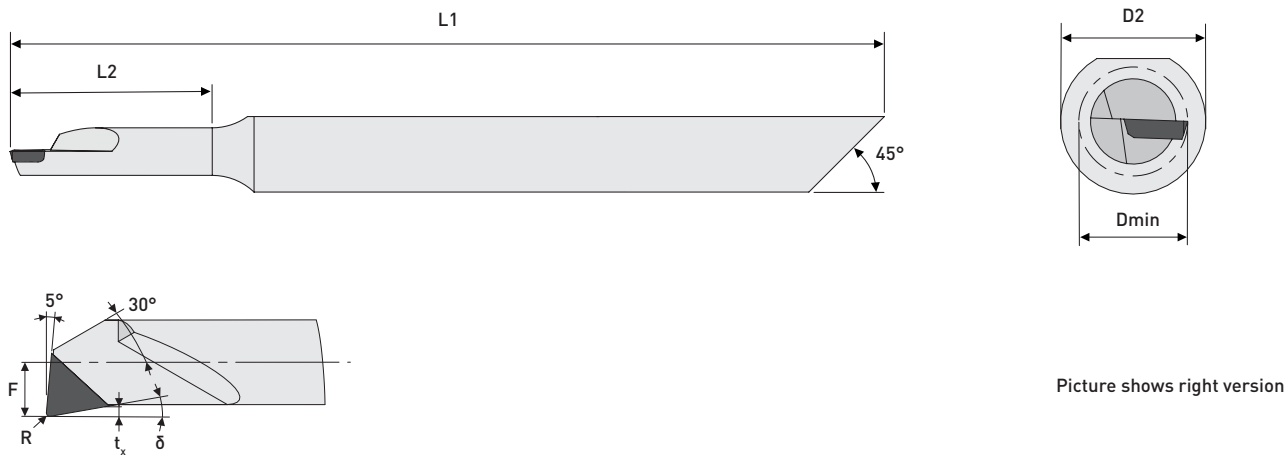
all colored surfaces can be machined

For contour turning on the plane surface.

Precision boring bars

brazed cutting edge for internal machining from Dmin 0,80 mm

Typ BS



Dmin	F	L2	L1	R	D2	t _x	δ	Version	PCD Diamond CVD-D Diamond CBN		
									Item No.	Item No.	Item No.
0,80	0,40	5,00	74,0	0,10	4h6	0,05	2,5°	right		BS2050-0806	BS3550-0806
								left		BS2050-0805	BS3550-0805
1,00	0,50	3,00	72,00	0,10	4h6	0,05	3°	right		BS2050-1002	BS3550-1002
								left		BS2050-1003	BS3550-1003
	0,50	10,00	80,00	0,10	4h6	0,05	3°	right	BS1050-0000	BS2050-0000	BS3550-0000
								left	BS1050-0001	BS2050-0001	BS3550-0001
1,50	0,75	3,00	71,00	0,10	4h6	0,15	3°	right		BS2050-1007	BS3550-1007
								left		BS2050-1008	BS3550-1008
	0,75	6,00	74,00	0,10	4h6	0,15	3°	right		BS2050-1005	BS3550-1005
								left		BS2050-1006	BS3550-1006
	0,75	15,00	80,00	0,10	4h6	0,15	3°	right	BS1050-0005	BS2050-0005	BS3550-0005
								left	BS1050-0006	BS2050-0006	BS3550-0006
2,00	1,00	6,00	74,00	0,10	4h6	0,17	3°	right		BS2050-1012	BS3550-1012
								left		BS2050-1013	BS3550-1013
	1,00	6,00	74,00	0,20	4h6	0,17	3°	right		BS2050-2012	BS3550-2012
								left		BS2050-2013	BS3550-2013
	1,00	10,00	80,00	0,10	4h6	0,17	3°	right	BS1050-0010	BS2050-0010	BS3550-0010
								left	BS1050-0011	BS2050-0011	BS3550-0011

on request

Dmin	F	L2	L1	R	D2	t _x	δ	Version	PCD Diamond CVD-D Diamond CBN		
									Item No.	Item No.	Item No.
2,50	1,25	6,00	74,00	0,10	4h6	0,25	10°	right		BS2050-1022	BS3550-1022
								left		BS2050-1023	BS3550-1023
	1,25	6,00	74,00	0,20	4h6	0,25	10°	right		BS2050-2022	BS3550-2022
								left		BS2050-2023	BS3550-2023
	1,25	10,00	80,00	0,10	4h6	0,25	10°	right	BS1050-0020	BS2050-0020	BS3550-0020
								left	BS1050-0021	BS2050-0021	BS3550-0021
3,00	1,50	6,00	74,00	0,10	4h6	0,33	10°	right		BS2050-1028	BS3550-1028
								left		BS2050-1029	BS3550-1029
	1,50	6,00	74,00	0,20	4h6	0,33	10°	right		BS2050-2028	BS3550-2028
								left		BS2050-2029	BS3550-2029
	1,50	10,00	78,00	0,10	4h6	0,33	10°	right		BS2050-1026	BS3550-1026
								left		BS2050-1027	BS3550-1027
	1,50	10,00	78,00	0,20	4h6	0,33	10°	right	BS1050-2026	BS2050-2026	BS3550-2026
								left	BS1050-2027	BS2050-2027	BS3550-2027
	1,50	15,00	83,00	0,10	4h6	0,33	10°	right	BS1050-1024	BS2050-1024	BS3550-1024
								left	BS1050-1025	BS2050-1025	BS3550-1025
3,50	1,50	15,00	83,00	0,20	4h6	0,33	10°	right		BS1050-2024	BS2050-2024
								left		BS1050-2025	BS2050-2025
	1,75	6,00	74,00	0,10	4h6	0,35	10°	right		BS2050-1032	BS3550-1032
								left		BS2050-1033	BS3550-1033
	1,75	6,00	74,00	0,20	4h6	0,35	10°	right		BS2050-2032	BS3550-2032
								left		BS2050-2033	BS3550-2033
	1,75	10,00	78,00	0,10	4h6	0,35	10°	right		BS2050-1034	BS3550-1034
								left		BS2050-1035	BS3550-1035
	1,75	10,00	78,00	0,20	4h6	0,35	10°	right		BS2050-2034	BS3550-2034
								left		BS2050-2035	BS3550-2035
	1,75	15,00	80,00	0,10	4h6	0,35	10°	right	BS1050-0030	BS2050-0030	BS3550-0030
								left	BS1050-0031	BS2050-0031	BS3550-0031
	1,75	15,00	83,00	0,20	4h6	0,35	10°	right		BS1050-2030	BS2050-2030
								left		BS1050-2031	BS2050-2031
1,75	21,00	89,00	0,10	4h6	0,35	10°		right	BS1050-1036	BS2050-1036	BS3550-1036
								left	BS1050-1037	BS2050-1037	BS3550-1037
	1,75	21,00	89,00	0,20	4h6	0,35	10°	right	BS1050-2036	BS2050-2036	BS3550-2036
								left	BS1050-2037	BS2050-2037	BS3550-2037

on request

Application range:

- PCD Aluminum <10% Si, Brass, Brass lead-free, Graphite, Titanium (Roughing) ...
- CVD-D Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- CBN Steel hardened up to 72 HRC, Werkzeugstahl bis 72 HRC, pulvermetallurgische Stähle ...



Special tools on request for you!
Please send inquiries to info@diamond-toolingsystems.com



All our products are also available in the online shop.
Visit us at shop.diamond-toolingsystems.com!

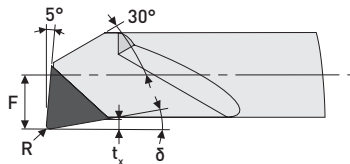
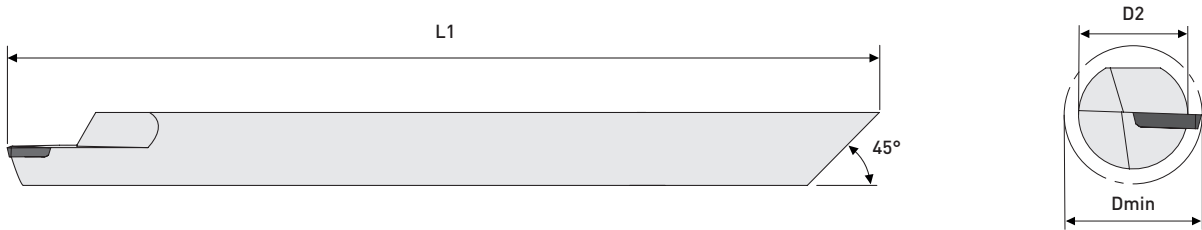


Scan me!

Precision boring bars

brazed cutting edge for internal machining from Dmin 4,00 mm

Typ BS



Picture shows right version



Dmin	F	L2	L1	R	D2	t _x	δ	Version	Item No.	Item No.	Item No.
4,00	2,00	10,00	78,00	0,10	4h6	0,30	10°	right		BS2050-1132	BS3550-1132
								left		BS2050-1133	BS3550-1133
		10,00	78,00	0,20	4h6	0,30	10°	right		BS2050-2132	BS3550-2132
								left		BS2050-2133	BS3550-2133
	2,00	15,00	80,00	0,10	4h6	0,30	10°	right	BS1050-1140	BS2050-1140	BS3550-1140
								left		BS2050-1141	BS3550-1141
		15,00	83,00	0,20	4h6	0,30	10°	right		BS2050-2130	BS3550-2130
								left		BS2050-2131	BS3550-2131
	2,00	21,00	89,00	0,10	4h6	0,30	10°	right	BS1050-1134	BS2050-1134	BS3550-1038
								left		BS2050-1135	BS3550-1039
		21,00	89,00	0,20	4h6	0,30	10°	right		BS2050-2134	BS3550-2038
								left		BS2050-2135	BS3550-2039
4,50	2,25	-	78,00	0,10	4h6	0,25	10°	right		BS2050-1230	BS3550-1240
								left		BS2050-1231	BS3550-1241
		-	78,00	0,20	4h6	0,25	10°	right		BS2050-2230	BS3550-2240
								left		BS2050-2231	BS3550-2241
	2,25	-	83,00	0,10	4h6	0,25	10°	right	BS1050-1232	BS2050-1232	BS3550-1242
								left		BS2050-1233	BS3550-1243
		-	83,00	0,20	4h6	0,25	10°	right		BS2050-2232	BS3550-2242
								left		BS2050-2233	BS3550-2243
	2,25	-	89,00	0,10	4h6	0,25	10°	right		BS2050-1234	BS3550-1244
								left		BS2050-1235	BS3550-1245
		-	89,00	0,20	4h6	0,25	10°	right		BS2050-2234	BS3550-2244
								left		BS2050-2235	BS3550-2245

on request

Application range:

- PCD Aluminum <10% Si, Brass, Brass lead-free, Graphite, Titanium (Roughing) ...
- CVD-D Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- CBN Steel hardened up to 72 HRC, Werkzeugstahl bis 72 HRC, pulvermetallurgische Stähle ...

Dmin	F	L2	L1	R	D2	t _x	δ	Version	Item No.	Item No.	Item No.
5,00	2,50	-	80,00	0,10	4h6	0,50	10°	right		BS2050-1240	BS3550-1040
								left		BS2050-1241	BS3550-1041
	2,50	-	80,00	0,20	4h6	0,50	10°	right	BS1050-2040	BS2050-2040	BS3550-2040
								left	BS1050-2041	BS2050-2041	BS3550-2041
	2,50	-	80,00	0,40	4h6	0,50	10°	right	BS1050-4040	BS2050-4040	BS3550-4040
								left	BS1050-4041	BS2050-4041	BS3550-4041
6,00	3,00	-	100,00	0,10	5h6	0,50	10°	right		BS2050-1050	BS3550-1050
								left		BS2050-1051	BS3550-1051
	3,00	-	100,00	0,20	5h6	0,50	10°	right	BS1050-2050	BS2050-2050	BS3550-2050
								left	BS1050-2051	BS2050-2051	BS3550-2051
	3,00	-	100,00	0,40	5h6	0,50	10°	right	BS1050-4050	BS2050-4050	BS3550-4050
								left	BS1050-4051	BS2050-4051	BS3550-4051
7,00	3,50	-	100,00	0,20	6h6	0,50	10°	right	BS1050-2060	BS2050-2060	BS3550-2060
								left	BS1050-2061	BS2050-2061	BS3550-2061
	3,50	-	100,00	0,40	6h6	0,50	10°	right	BS1050-4060	BS2050-4060	BS3550-4060
								left	BS1050-4061	BS2050-4061	BS3550-4061
9,00	4,50	-	100,00	0,20	8h6	0,50	10°	right	BS1050-2080	BS2050-2080	BS3550-2080
								left	BS1050-2081	BS2050-2081	BS3550-2081
	4,50	-	100,00	0,40	8h6	0,50	10°	right	BS1050-4080	BS2050-4080	BS3550-4080
								left	BS1050-4081	BS2050-4081	BS3550-4081

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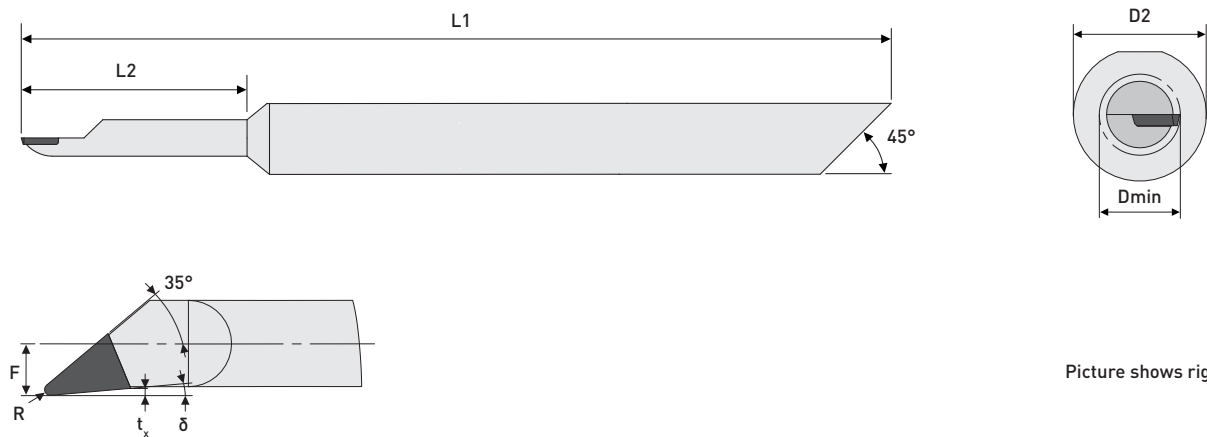
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Subject to technical changes.

Precision boring bars

brazed cutting edge for internal machining from Dmin 3,60 mm

Typ BE



Picture shows right version

Dmin	F	L2	L1	R	D2	tx	δ	Version	PCD Diamond	CVD-D Diamond	CBN
									Item No.	Item No.	Item No.
3,60	1,80	10,00	100,00	0,20	6h6	0,30	5°	right	📞	BE2050-2130	BE3550-2130
								left		BE2050-2131	BE3550-2131
	1,80	18,00	100,00	0,20	6h6	0,30	5°	right		BE2050-2030	BE3550-2030
								left		BE2050-2031	BE3550-2031
7,00	3,50	-	100,00	0,20	6h6	0,50	5°	right		BE2050-2060	BE3550-2060
								left		BE2050-2061	BE3550-2061
	3,50	-	100,00	0,40	6h6	0,50	5°	right		BE2050-4060	BE3550-4060
								left		BE2050-4061	BE3550-4061

📞 on request

Your Notes

Application range:

- PCD
- Aluminum <10% Si, Brass, Brass lead-free, Graphite, Titanium (Roughing) ...
-
- CVD-D
- Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
-
- CBN
- Steel hardened up to 72 HRC, Werkzeugstahl bis 72 HRC, pulvermetallurgische Stähle ...
-

ISO Code

Shank specification

A

Steel shank with IC

C

Carbide shank without IC

E

Carbide shank with IC

MT

MiniTool shank with IC

S

Steel shank without IC

E

08

X

S

C

L

C

R

06

Shank diameter [mm]

d

08

= 8 mm

12

= 12 mm

20

= 20 mm

32

= 32 mm

50

= 50 mm

10

= 10 mm

16

= 16 mm

25

= 25 mm

40

= 40 mm

60

= 60 mm

E

08

X

S

C

L

C

R

06

Tool length L1 [mm]

L1

F

= 80 mm

L

= 140 mm

P

= 170 mm

S

= 250 mm

V

= 400 mm

X

= Special

H

= 100 mm

M

= 150 mm

Q

= 180 mm

T

= 300 mm

W

= 450 mm

K

= 125 mm

N

= 160 mm

R

= 200 mm

U

= 350 mm

Y

= 500 mm

E

08

X

S

C

L

C

R

06

Clamping system

C

D

M

P

S

E

08

X

S

C

L

C

R

06

Insert shape

C

80°

D

55°

K

55°

R

360°

S

90°

T

60°

V

35°

W

80°

E

08

X

S

C

L

C

R

06

Approach angle

F

90°

L

95°

P

117,5°

Q

107,5°

U

93°

W

62,5°

E

08

X

S

C

L

C

R

06

Insert clearance angle

A

3°

B

5°

C

7°

D

15°

E

20°

F

25°

G

30°

H

0°

I

11°

E

08

X

S

C

L

C

R

06

Hand of tool

R

L

E

08

X

S

C

L

C

R

06

Cutting edge length [mm]

C

E

D

K

R

S

T

V

W

E

08

X

S

C

L

C

R

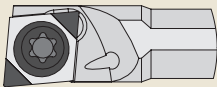
06

MiniTools

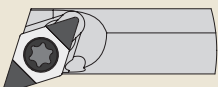
Boring bars and multi-edged Inserts tipped with Diamond or CBN

Boring bars:

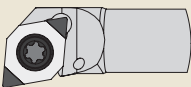
- ✓ Highly economical due to multi-edged inserts
- ✓ Starting from bore Ø 3,50 mm
- ✓ Low-vibration shaft design
- ✓ With inner cooling
- ✓ For internal turning on lathes
- ✓ For spindle turning on milling machines



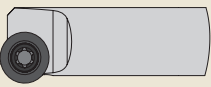
MT-SCLDR/L



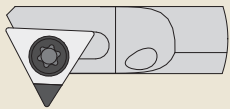
MT-SDQCR/L



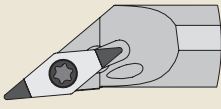
MT-SELPR/L



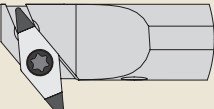
MT-SRLCR/L



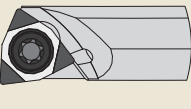
MT-STXPR/L



MT-SVXCR/L



MT-SVXCR/L



MT-SWUCR/L

Large selection of multi-edged indexable inserts!



Application range of our diamond indexable inserts:

- ✓ All abrasive non-ferrous materials
- ✓ Aluminum
- ✓ Carbide G-Grade
- ✓ Carbide K-Grade
- ✓ Carbide with Ni Binder
- ✓ Ceramic Materials
- ✓ Composite such as CFRP / GFRP
- ✓ Copper Alloys
- ✓ Glass and Glass Ceramic
- ✓ MMC
- ✓ Other brittle non-ferrous materials
- ✓ Titanium (Finishing)

Application range of our CBN indexable inserts:

- ✓ Cast Iron
- ✓ Special Alloys such as ASP, CPM, Hardox
- ✓ Steel hardened up to 72 HRC
- ✓ Stellite
- ✓ Tool Steel up to 72 HRC

CDGW 04...
Z2



from Ø 4,80

DCGW 04...
Z2



from Ø 5,20

EPGW 05...
Z2



from Ø 8,00

TPGW 06...
Z1



from Ø 8,00

VCGW 05...
Z2



from Ø 8,00

WCGW 02...
Z3

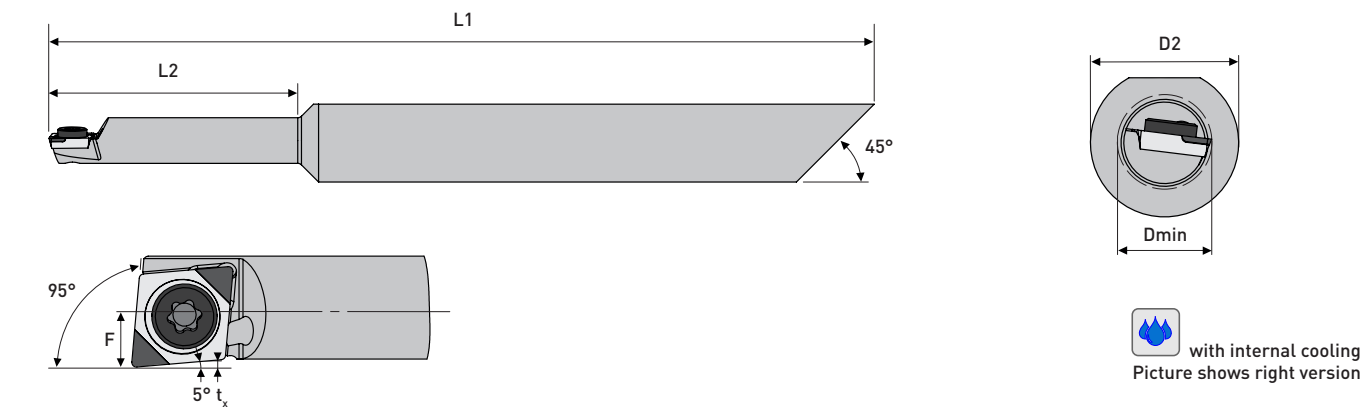


from Ø 5,80

Inserts available with radii from 0.10 mm to 0.40 mm.

MT... SCLDR/L 95°/5°
offset shaft | for cutting inserts CDGW 0401...

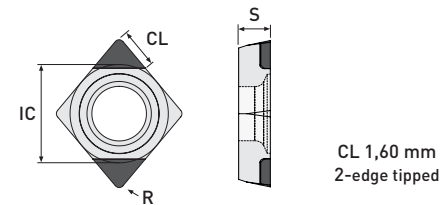
low-vibration version



Dmin	L2	L1	D2	Version	ISO Code	Item No.	Clamping Screw
4,80	24,00	80,00	8h6	right	MT0408X SCLDR 04	BW6060-0130	01-BW9060-0011
				left	MT0408X SCLDL 04	BW6060-0131	01-BW9060-0011
5,80	21,50	100,00	8h6	right	MT0508X SCLDR 04	BW6060-0132	01-BW9060-0011
				left	MT0508X SCLDL 04	BW6060-0133	01-BW9060-0011
6,80	22,00	100,00	8h6	right	MT0608X SCLDR 04	BW6060-0134	01-BW9060-0011
				left	MT0608X SCLDL 04	BW6060-0135	01-BW9060-0011

Tightening torque max. 0,45 Nm

ISO Code	Radius	tx size	F size
CDGW 0401...	R0,1	0,31	2,51
	R0,2	0,30	2,50
	R0,4	0,28	2,48



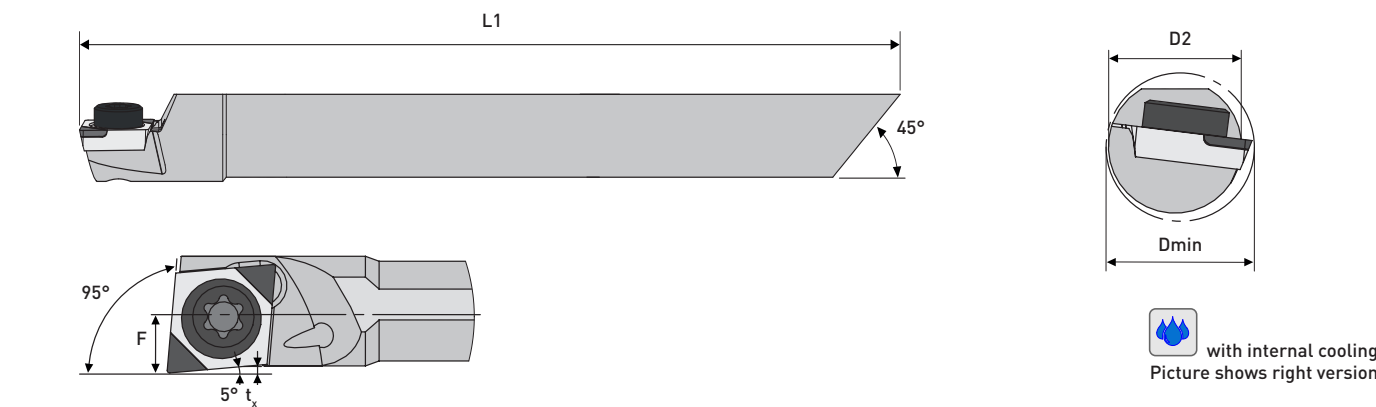
ISO Code	IC	S	R	CVD-D Diamond	Ultra Diamond	CBN-H	CBN-K	CBN-X
				Item No.	Item No.	Item No.	Item No.	Item No.
CDGW 040101	3,97	1,00	0,10	DP2010-0511	DP1110-1480	TI5010-1511	TI5510-2510	TI5910-2510
CDGW 040102	3,97	1,00	0,20	DP2010-0512	DP1110-1482	TI5010-1512	TI5510-2512	TI5910-2512
CDGW 040104	3,97	1,00	0,40	DP2010-0513	DP1110-1484	TI5010-1513	TI5510-2514	TI5910-2514

Application range:

- CVD-D Aluminum, Carbide >10%Co, Brass, Lead-free Brass, Graphite, Composite Materials (CFRP, GFRP, MMC), Titanium ...
- UltraDia. Acrylic, Ceramic, Carbide <12%Co, Zircon ...
- CBN-H Steel hardened up to 72 HRC
- CBN-K Grey Cast Iron (GG), Ductile Cast Iron (GGG ...
- CBN-X Hardened Tool Steel, Stellite, Hardened Stainless Steel, Hardened Powder Metallurgical Steel ...

MT... SCLDR/L 95°/5°
full-length shaft | for cutting inserts CDGW 0401...

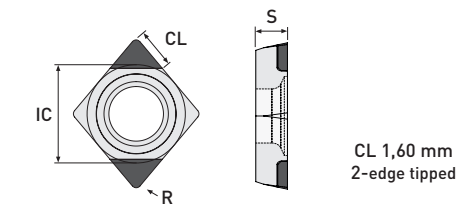
low-vibration version



Dmin	L2	L1	D2	Version	ISO Code	Item No.	Clamping Screw
4,80	-	80,00	4h6	right	MT04X SCLDR 04	BW6060-0120	01-BW9060-0011
				left	MT04X SCLDL 04	BW6060-0121	01-BW9060-0011
5,80	-	100,00	5h6	right	MT05X SCLDR 04	BW6060-0122	01-BW9060-0011
				left	MT05X SCLDL 04	BW6060-0123	01-BW9060-0011
6,80	-	100,00	6h6	right	MT06X SCLDR 04	BW6060-0124	01-BW9060-0011
				left	MT06X SCLDL 04	BW6060-0125	01-BW9060-0011

Tightening torque max. 0,45 Nm

ISO Code	Radius	tx size	F size
CDGW 0401...	R0,1	0,45	3,51
	R0,2	0,44	3,50
	R0,4	0,42	3,48



ISO Code	IC	S	R	CVD-D Diamond	Ultra Diamond	CBN-H	CBN-K	CBN-X
				Item No.	Item No.	Item No.	Item No.	Item No.
CDGW 040101	3,97	1,00	0,10	DP2010-0511	DP1110-1480	TI5010-1511	TI5510-2510	TI5910-2510
CDGW 040102	3,97	1,00	0,20	DP2010-0512	DP1110-1482	TI5010-1512	TI5510-2512	TI5910-2512
CDGW 040104	3,97	1,00	0,40	DP2010-0513	DP1110-1484	TI5010-1513	TI5510-2514	TI5910-2514



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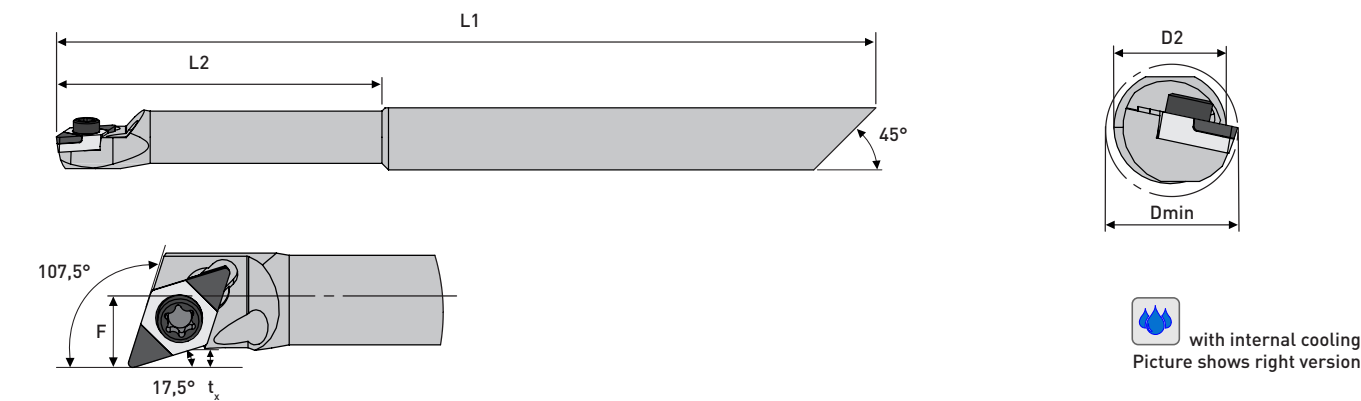


Scan me!

Subject to technical changes.

MT... SDQCR/L 107,5°/17,5°
offset shaft | for cutting inserts DCGW 04T0...

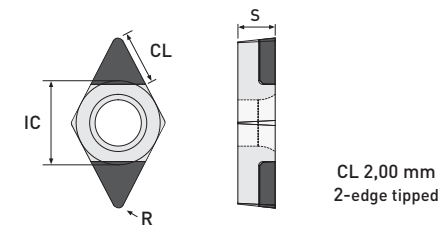
low-vibration version



Dmin	L2	L1	D2	Version	ISO Code	Item No.	Clamping Screw
5,20	25,00	100,00	5h6	right	MT0405X SDQCR 04	BW6060-0166	01-BW9060-0010
				left	MT0405X SDQCL 04	BW6060-0167	01-BW9060-0010

Tightening torque max. 0,45 Nm

ISO Code	Radius	tx size	F size
DCGW 04T0...	R0,1	1,16	3,01
	R0,2	1,11	2,96
	R0,4	1,00	2,85



ISO Code	IC	S	R					
				Item No.	Item No.	Item No.	Item No.	Item No.
DCGW 04T001	3,10	1,20	0,10	DP2010-0521	DP1110-1492	TI5010-1521	TI5510-2522	TI5910-2522
DCGW 04T002	3,10	1,20	0,20	DP2010-0522	DP1110-1494	TI5010-1522	TI5510-2524	TI5910-2524
DCGW 04T004	3,10	1,20	0,40	DP2010-0523	DP1110-1496	TI5010-1523	TI5510-2526	TI5910-2526

Application range:

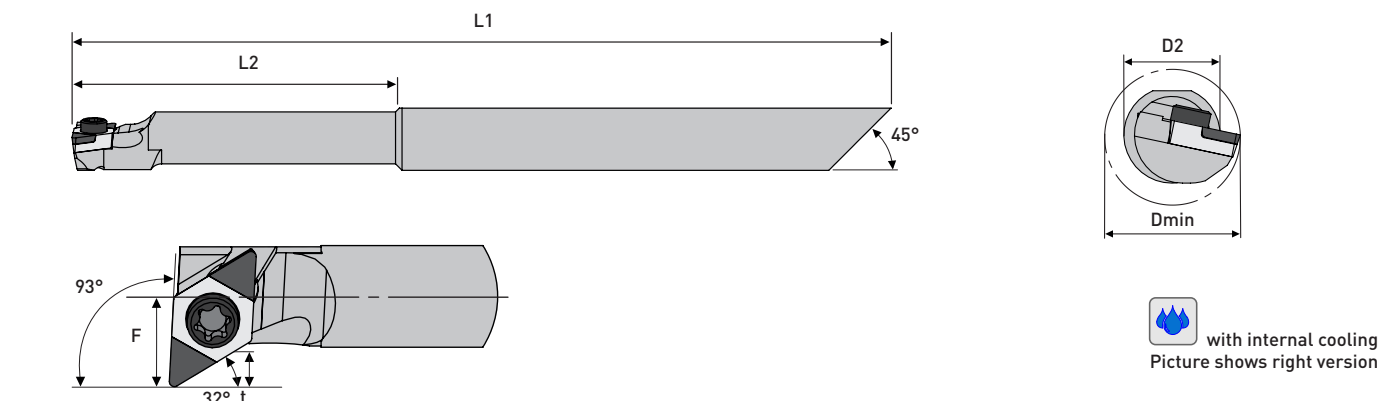
- CVD-D Aluminum, Carbide >10%Co, Brass, Lead-free Brass, Graphite, Composite Materials (CFRP, GFRP, MMC), Titanium ...
- UltraDia. Acrylic, Ceramic, Carbide <12%Co, Zircon ...
- CBN-H Steel hardened up to 72 HRC
- CBN-K Grey Cast Iron (GG), Ductile Cast Iron (GGG ...
- CBN-X Hardened Tool Steel, Stellite, Hardened Stainless Steel, Hardened Powder Metallurgical Steel ...

Suitable clamping adapters can be found from page 34.

You will find further application ranges in the detailed overview from page 8.

MT... SDUCR/L 93°/32°
offset shaft | for cutting inserts DCGW 04T0...

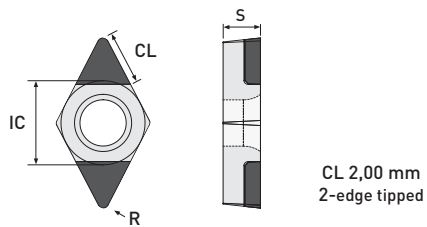
low-vibration version



Dmin	L2	L1	D2	Version	ISO Code	Item No.	Clamping Screw
5,80	25,00	100,00	5h6	right	MT0405X SDUCR 04	BW6060-0160	01-BW9060-0010
				left	MT0405X SDUCL 04	BW6060-0161	01-BW9060-0010

Tightening torque max. 0,45 Nm

ISO Code	Radius	tx size	F size
DCGW 04T0...	R0,1	1,60	3,56
	R0,2	1,51	3,47
	R0,4	1,34	3,30



ISO Code	IC	S	R					
				Item No.	Item No.	Item No.	Item No.	Item No.
DCGW 04T001	3,10	1,20	0,10	DP2010-0521	DP1110-1492	TI5010-1521	TI5510-2522	TI5910-2522
DCGW 04T002	3,10	1,20	0,20	DP2010-0522	DP1110-1494	TI5010-1522	TI5510-2524	TI5910-2524
DCGW 04T004	3,10	1,20	0,40	DP2010-0523	DP1110-1496	TI5010-1523	TI5510-2526	TI5910-2526



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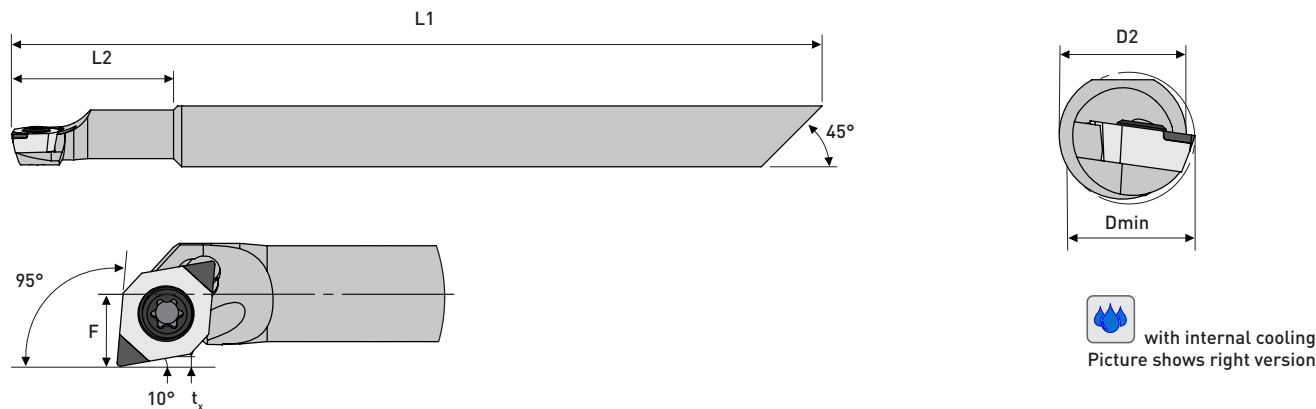


Scan me!

Subject to technical changes.

MT... SELPR/L 95°/10°
offset shaft | for cutting inserts EPGW 0502...

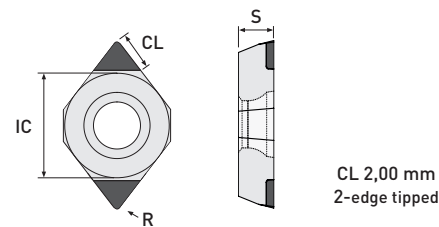
low-vibration version



Dmin	L2	L1	D2	Version	ISO Code	Item No.	Clamping Screw
8,00	20,00	100,00	8h6	right	MT0608X SELPR 05	BW6060-0150	01-BW9060-0005
				left	MT0608X SELPL 05	BW6060-0151	01-BW9060-0005
11,00	33,00	100,00	10h6	right	MT0810X SELPR 05	BW6060-0152	01-BW9060-0005
				left	MT0810X SELPL 05	BW6060-0153	01-BW9060-0005

Tightening torque max. 0,45 Nm

ISO Code	Radius	tx size	F size
EPGW 0502...	R0,1	1,18	4,52
	R0,2	1,16	4,50
	R0,4	1,11	4,45



ISO Code	IC	S	R					
				Item No.	Item No.	Item No.	Item No.	Item No.
EPGW 050201	5,56	2,38	0,10	DP2010-0531	DP1110-1400	TI5010-1531	TI5510-2550	TI5910-2550
EPGW 050202	5,56	2,38	0,20	DP2010-0532	DP1110-1402	TI5010-1532	TI5510-2552	TI5910-2552
EPGW 050204	5,56	2,38	0,40	DP2010-0533	DP1110-1404	TI5010-1533	TI5510-2554	TI5910-2554

Application range:

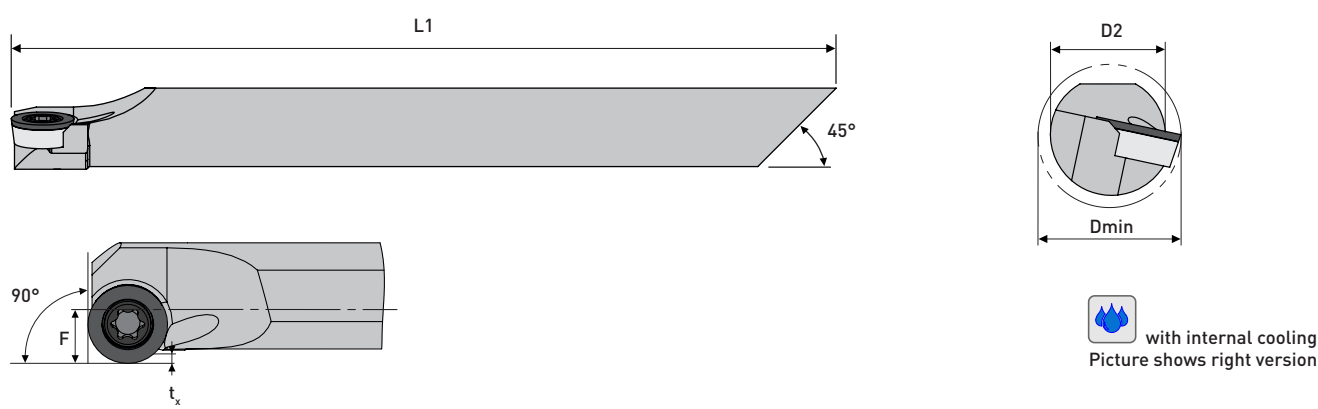
- CVD-D Aluminum, Carbide >10%Co, Brass, Lead-free Brass, Graphite, Composite Materials (CFRP, GFRP, MMC), Titanium ...
- UltraDia. Acrylic, Ceramic, Carbide <12%Co, Zircon ...
- CBN-H Steel hardened up to 72 HRC
- CBN-K Grey Cast Iron (GG), Ductile Cast Iron (GGG ...
- CBN-X Hardened Tool Steel, Stellite, Hardened Stainless Steel, Hardened Powder Metallurgical Steel ...

Suitable clamping adapters can be found from page 34.

You will find further application ranges in the detailed overview from page 8.

MT... SRLCR/L 95°/10°
full-length shaft | for cutting inserts RCGW 0602...

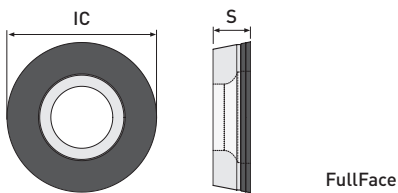
low-vibration version



Dmin	L2	L1	D2	Version	ISO Code	Item No.	Clamping Screw
10,00	-	125,00	8h6	right	MT08X SRLCR 06	BW6060-1024	01-KL9060-0005
				left	MT08X SRLCL 06	BW6060-1025	01-KL9060-0005

Tightening torque max. 1,00 Nm

ISO Code	Radius	tx size	F size
RCGW 0602...	M0	1,00	5,00



ISO Code	IC	S	R					
				Item No.	Item No.	Item No.	Item No.	Item No.
RCGW 0602M0 FF	6,00	2,38	-	DP1030-0001	DP2030-0001	TI5030-0100	TI5530-0102	TI5930-0102

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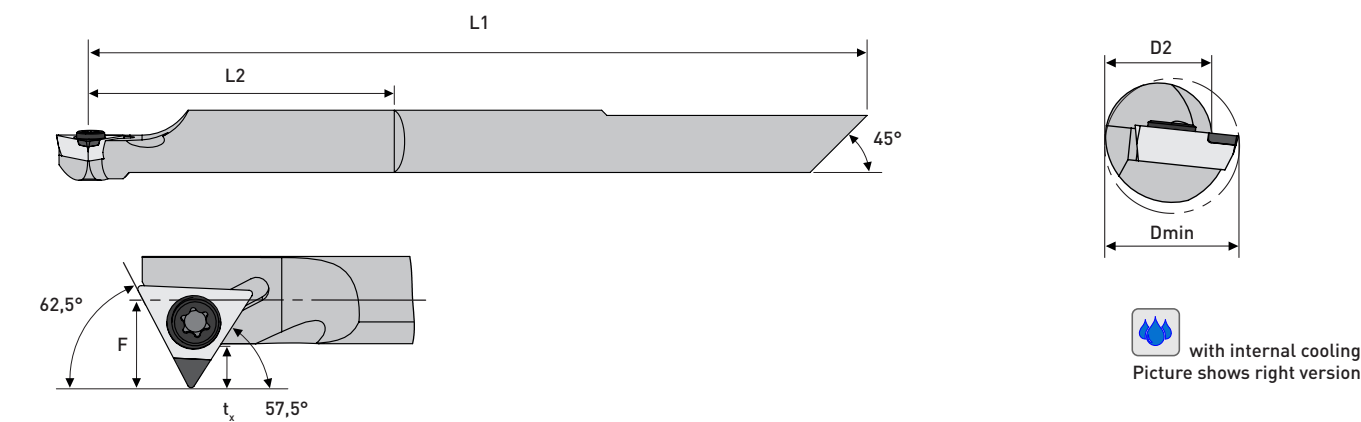


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Subject to technical changes.

MT... STXPR/L 62,5°/57,5°
offset shaft | for cutting inserts TPGW 06T1...

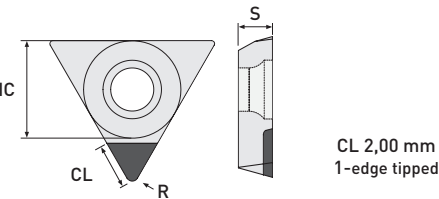
low-vibration version



Dmin	L2	L1	D2	Version	ISO Code	Item No.	Clamping Screw
8,00	40,00	100,00	6h6	right	MT06X STXPR 06	BW6060-0126	01-BW9060-0126
				left	MT06X STXPL 06	BW6060-0127	01-BW9060-0126

Tightening torque max. 0,45 Nm

ISO Code	Radius	tx size	F size
TPGW 06T1...	R0,1	1,65	3,57
	R0,2	1,55	3,47
	R0,4	1,35	3,27



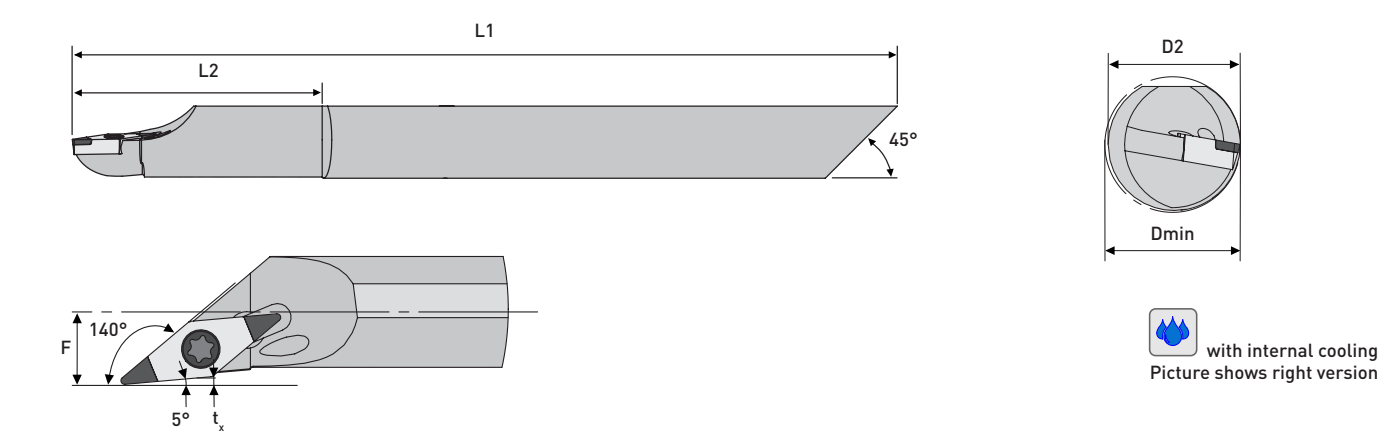
ISO Code	IC	S	R					
				Item No.	Item No.	Item No.	Item No.	Item No.
TPGW 06T101	3,97	1,98	0,10	DP2010-0671	DP1110-1410	TI5010-0786	TI5510-0786	TI5910-0786
TPGW 06T102	3,97	1,98	0,20	DP2010-0672	DP1110-1412	TI5010-0787	TI5510-0787	TI5910-0787
TPGW 06T104	3,97	1,98	0,40	DP2010-0673	DP1110-1414	TI5010-0788	TI5510-0788	TI5910-0788

Application range:

- CVD-D Aluminum, Carbide >10%Co, Brass, Lead-free Brass, Graphite, Composite Materials (CFRP, GFRP, MMC), Titanium ...
- UltraDia. Acrylic, Ceramic, Carbide <12%Co, Zircon ...
- CBN-H Steel hardened up to 72 HRC
- CBN-K Grey Cast Iron (GG), Ductile Cast Iron (GGG ...
- CBN-X Hardened Tool Steel, Stellite, Hardened Stainless Steel, Hardened Powder Metallurgical Steel ...

MT... SVXCR/L 5°/140°
offset shaft | for cutting inserts VCGW 0501...

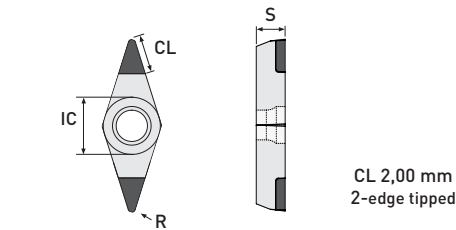
low-vibration version



Dmin	L2	L1	D2	Version	ISO Code	Item No.	Clamping Screw
8,00	26,00	80,00	8h6	right	MT08X SVXCR 05 5°	BW6060-0180	01-BW9060-0010
				left	MT08X SVXCL 05 5°	BW6060-0181	01-BW9060-0010

Tightening torque max. 0,45 Nm

ISO Code	Radius	tx size	F size
VCGW 0501...	R0,1	0,95	3,97
	R0,2	0,92	3,94
	R0,4	0,87	3,88



ISO Code	IC	S	R					
				Item No.	Item No.	Item No.	Item No.	Item No.
VCGW 050101	3,10	1,59	0,10	DP2010-0561	DP1110-1498	TI5010-1561	TI5510-2528	TI5910-2528
VCGW 050102	3,10	1,59	0,20	DP2010-0562	DP1110-1500	TI5010-1562	TI5510-2530	TI5910-2530
VCGW 050104	3,10	1,59	0,40	DP2010-0563	DP1110-1502	TI5010-1563	TI5510-2532	TI5910-2532



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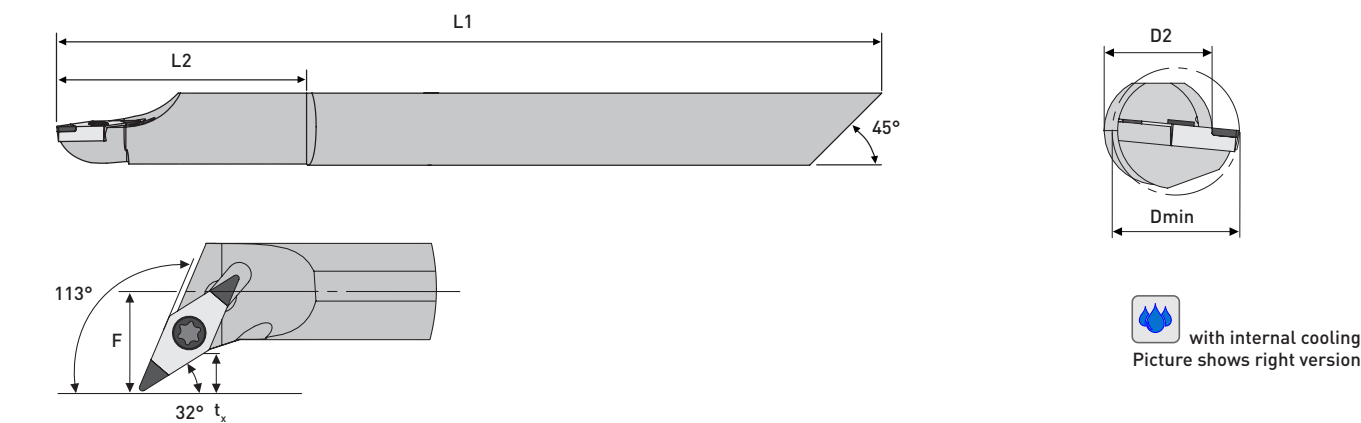


Scan me!

Subject to technical changes.

MT... SVXCR/L 113°/32°
offset shaft | for cutting inserts VCGW 0501...

low-vibration version



Dmin	L2	L1	D2	Version	ISO Code	Item No.	Clamping Screw
9,20	26,00	80,00	8h6	right	MT08X SVXCR 05 113°	BW6060-0186	01-BW9060-0010
				left	MT08X SVXCL 05 113°	BW6060-0187	01-BW9060-0010

Tightening torque max. 0,45 Nm

ISO Code	Radius	tx size	F size
VCGW 0501...	R0,1	3,35	6,36
	R0,2	3,20	6,20
	R0,4	2,89	5,90

				CL 2,00 mm 2-edge tipped				
ISO Code	IC	S	R	Item No.	Item No.	Item No.	Item No.	Item No.
VCGW 050101	3,10	1,59	0,10	DP2010-0561	DP1110-1498	TI5010-1561	TI5510-2528	TI5910-2528
VCGW 050102	3,10	1,59	0,20	DP2010-0562	DP1110-1500	TI5010-1562	TI5510-2530	TI5910-2530
VCGW 050104	3,10	1,59	0,40	DP2010-0563	DP1110-1502	TI5010-1563	TI5510-2532	TI5910-2532

Application range:

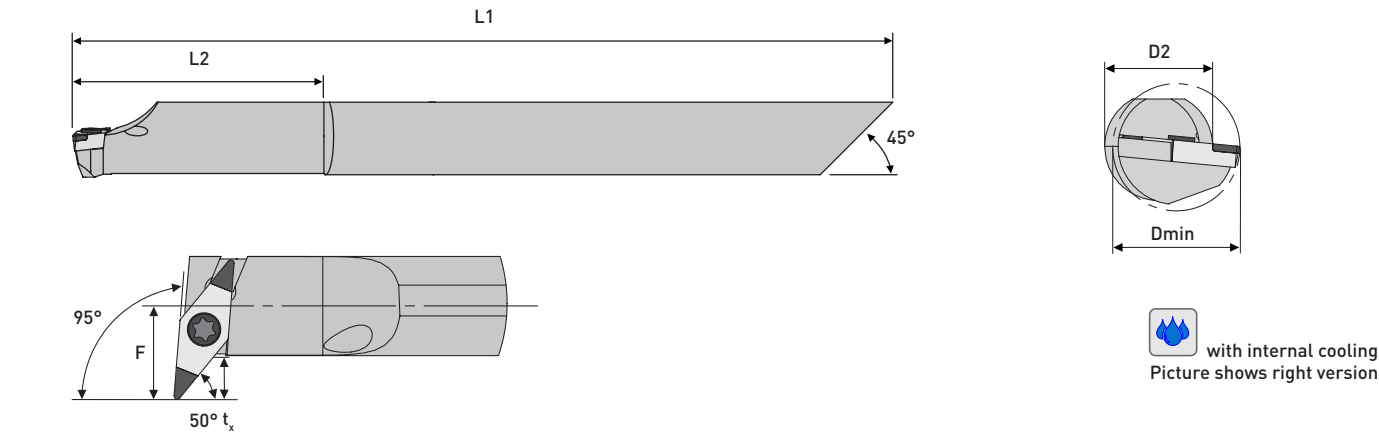
- CVD-D Aluminum, Carbide >10%Co, Brass, Lead-free Brass, Graphite, Composite Materials (CFRP, GFRP, MMC), Titanium ...
- UltraDia. Acrylic, Ceramic, Carbide <12%Co, Zircon ...
- CBN-H Steel hardened up to 72 HRC
- CBN-K Grey Cast Iron (GG), Ductile Cast Iron (GGG ...
- CBN-X Hardened Tool Steel, Stellite, Hardened Stainless Steel, Hardened Powder Metallurgical Steel ...

Suitable clamping adapters can be found from page 34.

You will find further application ranges in the detailed overview from page 8.

MT... SVLCR/L 95°/50°
offset shaft | for cutting inserts VCGW 0501...

low-vibration version



Dmin	L2	L1	D2	Version	ISO Code	Item No.	Clamping Screw
9,20	26,00	80,00	8h6	right	MT08X SVLCR 05	BW6060-0190	01-BW9060-0010
				left	MT08X SVLCL 05	BW6060-0191	01-BW9060-0010

Tightening torque max. 0,45 Nm

ISO Code	Radius	tx size	F size
VCGW 0501...	R0,1	3,21	6,18
	R0,2	3,00	5,97
	R0,4	2,58	5,56

				CL 2,00 mm 2-edge tipped				
ISO Code	IC	S	R	Item No.	Item No.	Item No.	Item No.	Item No.
VCGW 050101	3,10	1,59	0,10	DP2010-0561	DP1110-1498	TI5010-1561	TI5510-2528	TI5910-2528
VCGW 050102	3,10	1,59	0,20	DP2010-0562	DP1110-1500	TI5010-1562	TI5510-2530	TI5910-2530
VCGW 050104	3,10	1,59	0,40	DP2010-0563	DP1110-1502	TI5010-1563	TI5510-2532	TI5910-2532



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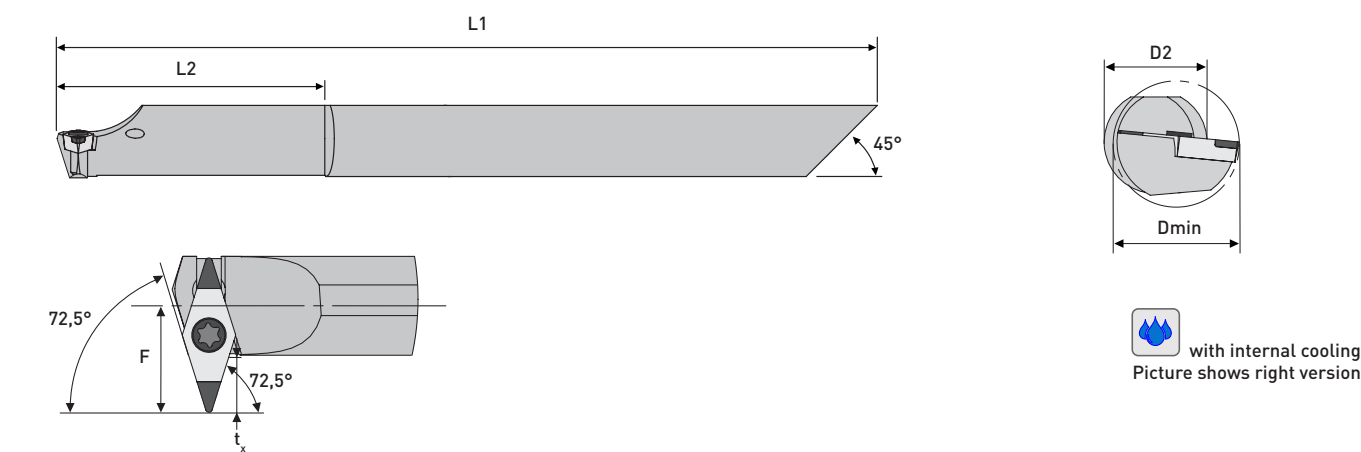


Scan me!

Subject to technical changes.

MT... SVVCR 72,5°/72,5°
offset shaft | for cutting inserts VCGW 0501...

low-vibration version



Dmin	L2	L1	D2	Version	ISO Code	Item No.	Clamping Screw
10,00	26,00	80,00	8h6	right	MT08X SVVCR 05	BW6060-0196	01-BW9060-0010

Tightening torque max. 0,45 Nm

ISO Code	Radius	tx size	F size
VCGW 0501...	R0,1	3,74	6,70
	R0,2	3,31	6,27
	R0,4	3,05	6,00

				CL 2,00 mm 2-edge tipped				
ISO Code	IC	S	R	Item No.	Item No.	Item No.	Item No.	Item No.
VCGW 050101	3,10	1,59	0,10	DP2010-0561	DP1110-1498	TI5010-1561	TI5510-2528	TI5910-2528
VCGW 050102	3,10	1,59	0,20	DP2010-0562	DP1110-1500	TI5010-1562	TI5510-2530	TI5910-2530
VCGW 050104	3,10	1,59	0,40	DP2010-0563	DP1110-1502	TI5010-1563	TI5510-2532	TI5910-2532

Application range:

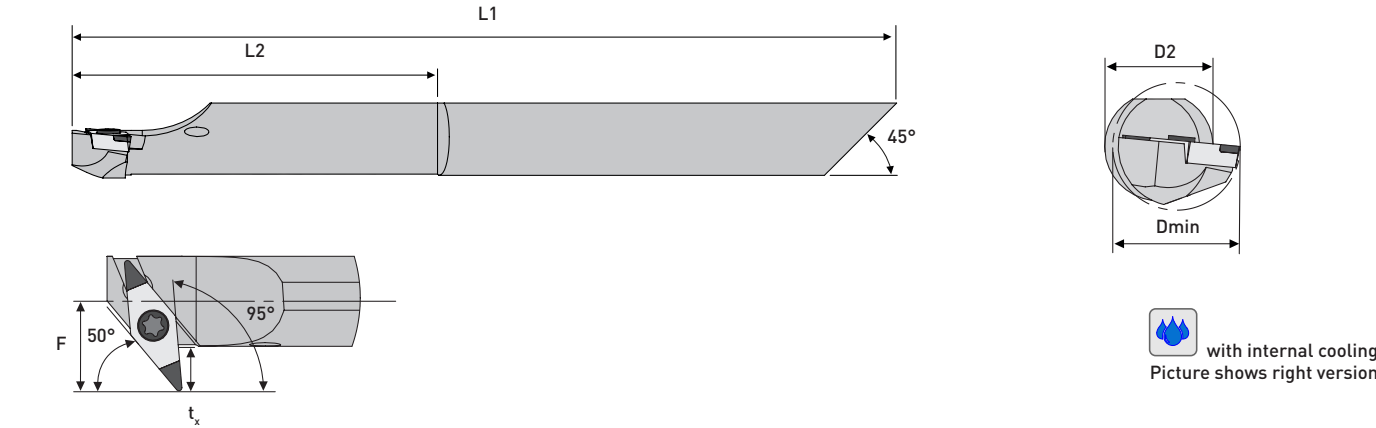
- CVD-D Aluminum, Carbide >10%Co, Brass, Lead-free Brass, Graphite, Composite Materials (CFRP, GFRP, MMC), Titanium ...
- UltraDia. Acrylic, Ceramic, Carbide <12%Co, Zircon ...
- CBN-H Steel hardened up to 72 HRC
- CBN-K Grey Cast Iron (GG), Ductile Cast Iron (GGG ...
- CBN-X Hardened Tool Steel, Stellite, Hardened Stainless Steel, Hardened Powder Metallurgical Steel ...

Suitable clamping adapters can be found from page 34.

You will find further application ranges in the detailed overview from page 8.

MT... SVXCR/L 50°/95° EX
offset shaft | for cutting inserts VCGW 0501...

low-vibration version



Dmin	L2	L1	D2	Version	ISO Code	Item No.	Clamping Screw
9,20	26,00	80,00	8h6	right	MT08X SVXCR 05	BW6060-0200	01-BW9060-0010
				left	MT08X SVXCR 05	BW6060-0201	01-BW9060-0010

Tightening torque max. 0,45 Nm

ISO Code	Radius	tx size	F size
VCGW 0501...	R0,1	3,18	6,18
	R0,2	2,97	5,97
	R0,4	2,55	5,56

				CL 2,00 mm 2-edge tipped				
ISO Code	IC	S	R	Item No.	Item No.	Item No.	Item No.	Item No.
VCGW 050101	3,10	1,59	0,10	DP2010-0561	DP1110-1498	TI5010-1561	TI5510-2528	TI5910-2528
VCGW 050102	3,10	1,59	0,20	DP2010-0562	DP1110-1500	TI5010-1562	TI5510-2530	TI5910-2530
VCGW 050104	3,10	1,59	0,40	DP2010-0563	DP1110-1502	TI5010-1563	TI5510-2532	TI5910-2532



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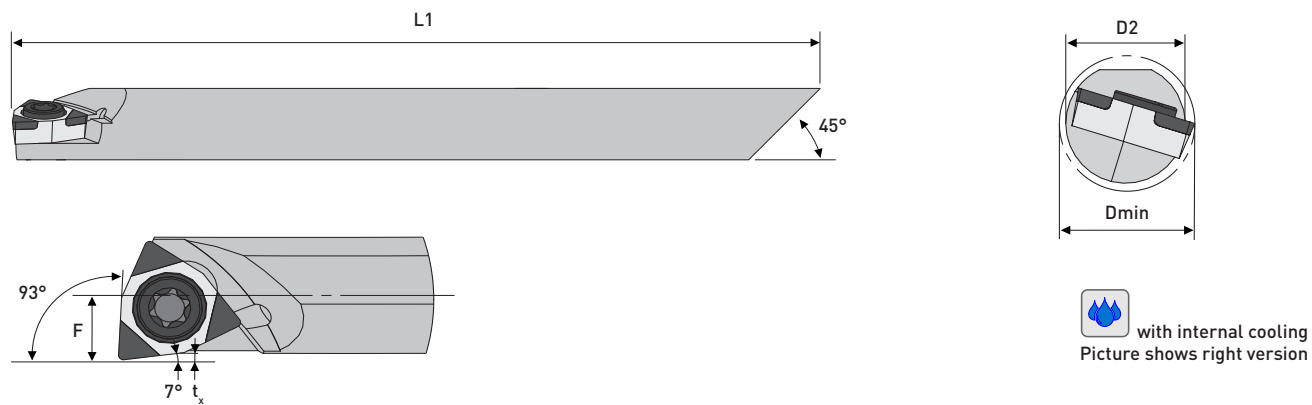


Scan me!

Subject to technical changes.

MT... SWUCR/L 93°/7°
full-length shaft | for cutting inserts WCGW 0201...

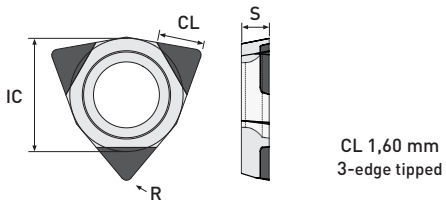
low-vibration version



Dmin	L2	L1	D2	Version	ISO Code	Item No.	Clamping Screw
5,80	-	100,00	5h6	right	MT05X SWUCR 02	BW6060-0090	01-BW9060-0012
				left	MT05X SWUCL 02	BW6060-0091	01-BW9060-0012
7,80	-	100,00	6h6	right	MT06X SWUCR 02	BW6060-0094	01-BW9060-0012
				left	MT06X SWUCL 02	BW6060-0095	01-BW9060-0012

 Tightening torque max. 0,60 Nm

ISO Code	Radius	tx size	F size
WCGW 0201...	R0,1	0,41	2,67
	R0,2	0,40	2,65
	R0,4	0,37	2,63



ISO Code	IC	S	R	 CVD-D Diamond	 Ultra Diamond	 CBN-H	 CBN-K	 CBN-X
				Item No.	Item No.	Item No.	Item No.	Item No.
WCGW 020101	3,97	1,59	0,10	DP2010-0571	DP1110-1504	TI5010-1571	TI5510-2534	TI5910-2534
WCGW 020102	3,97	1,59	0,20	DP2010-0572	DP1110-1506	TI5010-1572	TI5510-2536	TI5910-2536
WCGW 020104	3,97	1,59	0,40	DP2010-0573	DP1110-1508	TI5010-1573	TI5510-2538	TI5910-2538

Your Notes

Application range:

-  CVD-D Aluminium, Hartmetall >10%Co, Messing, Messing bleifrei, Graphit, Verbundwerkstoffe (CFK, GFK, MMC), Titan ...
-  UltraDia. Acryl, Keramik, Hartmetall <12%Co, Zirkon ...
-  CBN-H Stahl gehärtet bis 72 HRC
-  CBN-K Grauguss (GG), Sphäroguss (GGG) ...
-  CBN-X Werkzeugstahl gehärtet, Stellite, Edelstahl gehärtet, pulvermetallurgischer Stahl, gehärtet ...

Clamping Systems

Hydraulic Expansion Chuck

Take advantage!

- ✓ High damping
- ✓ Tool life increase up to approximately 30%
- ✓ Automatic cutting edge adjustment
- ✓ Excellent surface quality
- ✓ High dimensional stability
- ✓ Easy and quick change of the boring bar

Functionality

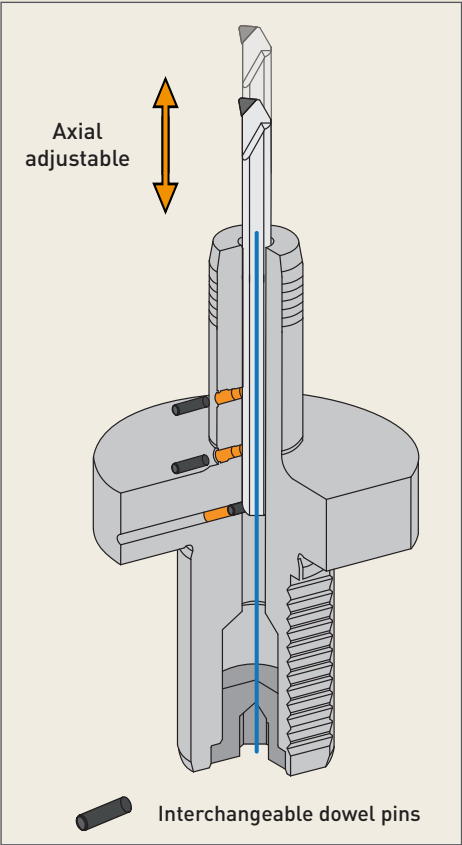
Automatic adjustment of center height through pin, resulting in a very high repeat accuracy
This gives you a very high repeat accuracy.



Cooling through the clamping surface

Note:

Never clamp the hydraulic expansion mount without the boring bar inserted



Adjustment Guide

for tool change

1. Loosen screw 4
2. Insert boring bar
3. Turn tool slightly at stop until resistance is felt
4. Tighten screw 4 with max. 10Nm

-> Tool ready for use

Extended length too long?

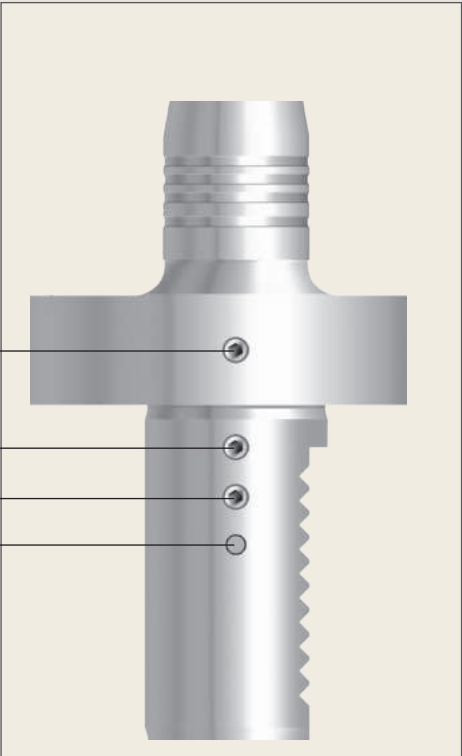
1. Loosen screw 4
2. Remove threaded pin 1 (if necessary 2 also)
3. Remove alignment pin
4. Insert threaded pin 1 (if necessary 2 also)
5. Repeat adjustment guide from point 2

4.) Clamping Screw, max. 10 Nm

1.) Alignment Pin, optional

3.) Alignment Pin, fixed mounted

3.) Alignment Pin, fixed mounted

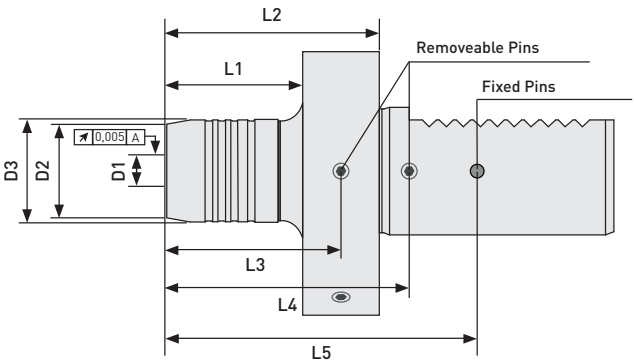


*Positioning of alignment pins may deviate due to manufacturing process

Hydraulic chuck

with VDI-Holder

for brazed boring tools and MiniTools



D1	VDI	D2	D3	L1	L2	L3	L4	L5	Item No.
4,00	16	18,00	20,00	33,00	58,00	46,00	54,00	62,00	BA7090-2040
	20	18,00	20,00	32,00	50,00	46,00	54,00	62,00	BA7090-2240
	25	18,00	20,00	32,00	50,00	46,00	54,00	62,00	BA7090-2245
	30	18,00	20,00	32,00	50,00	46,00	54,00	62,00	BA7090-2340
	40	18,00	20,00	58,00	76,00	46,00	54,00	62,00	BA7090-2440
5,00	16	18,00	20,00	51,00	76,00	62,00	72,00	82,00	BA7090-2050
	20	18,00	20,00	48,00	66,00	62,00	72,00	82,00	BA7090-2250
	25	18,00	20,00	48,00	66,00	62,00	72,00	82,00	BA7090-2255
	30	18,00	20,00	38,00	56,00	62,00	72,00	82,00	BA7090-2350
	40	18,00	20,00	56,00	76,00	62,00	72,00	82,00	BA7090-2450
6,00	16	18,00	20,00	45,00	71,00	55,00	67,00	79,00	BA7090-2060
	20	18,00	20,00	42,00	60,00	55,00	67,00	79,00	BA7090-2260
	25	18,00	20,00	42,00	60,00	55,00	67,00	79,00	BA7090-2265
	30	18,00	20,00	42,00	60,00	55,00	67,00	79,00	BA7090-2360
	40	18,00	20,00	58,00	76,00	55,00	67,00	79,00	BA7090-2460
8,00	16	22,00	24,00	37,00	62,00	41,00	57,00	73,00	BA7090-2080
	20	22,00	24,00	35,00	53,00	41,00	57,00	73,00	BA7090-2280
	25	22,00	24,00	34,00	52,00	41,00	57,00	73,00	BA7090-2285
	30	22,00	24,00	32,00	50,00	41,00	57,00	73,00	BA7090-2380
	40	22,00	24,00	60,00	80,00	41,00	57,00	73,00	BA7090-2480
10,00	20	24,00	26,00	87,00	105,00	77,00	97,00	117,00	BA7090-3911
	25	24,00	26,00	72,00	90,00	77,00	97,00	117,00	BA7090-3913
	30	26,00	28,00	32,00	50,00	37,00	57,00	77,00	BA7090-3915
	40	24,00	26,00	65,00	85,00	77,00	97,00	117,00	BA7090-3917

Accessories and spare parts as well as torque wrenches available on request.

Clamping Systems

Clamping adapter round, 4-sided, compact

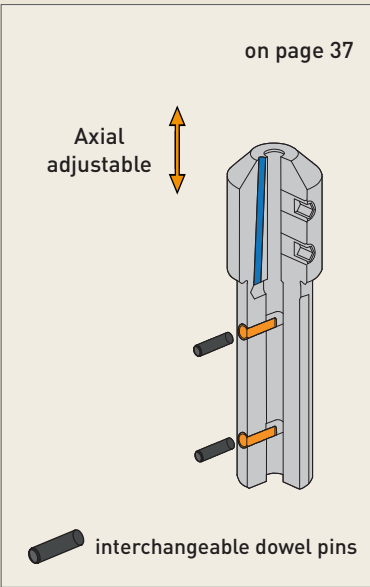
Clamping adapter round, short, compact

Use the advantages!

- ✓ Excellent surface quality
- ✓ High dimensional stability
- ✓ High repeat accuracy

Functionality

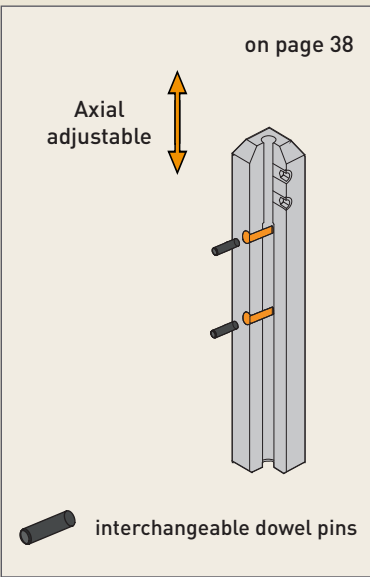
- ✓ Automatic adjustment of center hight through pin and 45° bevel on the tool
- ✓ Safe and stable positioning of the tool due to the 3-point fixing system
- ✓ Defined coolant supply 
- ✓ Adapter with shank tolerance Ø16h6



Clamping adapter 4-sided, short, compact

Functionality

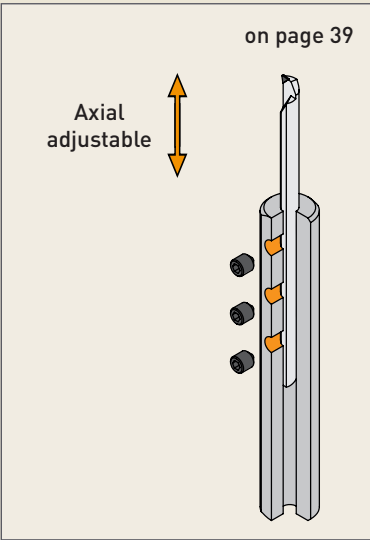
- ✓ Automatic adjustment of center hight through pin and 45° bevel on the tool
- ✓ Safe and stable positioning of the tool due to the 3-point fixing system
- ✓ Grinded 4-sided for flexible use in almost all processing machines
- ✓ General coolant supply through clamping surface 
- ✓ Also suitable for use in conventional and NC machines



Clamping adapter compact

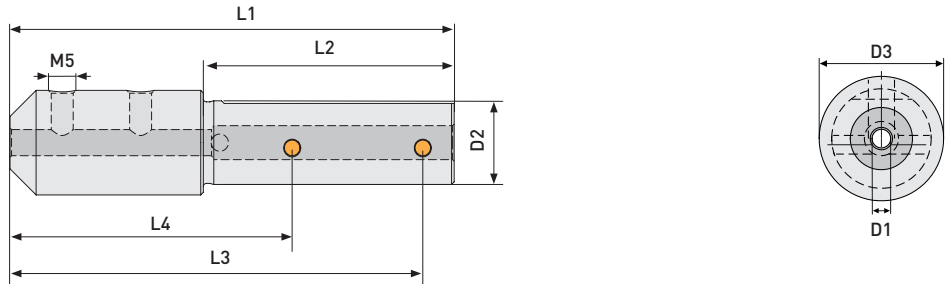
Functionality

- ✓ Clamping adapter with full-length shank
- ✓ Compatible with standard boring bar holders, D16.0mm
- ✓ Also suitable for use in conventional and NC machines
- ✓ Flexible length adjustment
- ✓ Stable clamping via 3 screws
- ✓ Space-saving and suitable for small machines



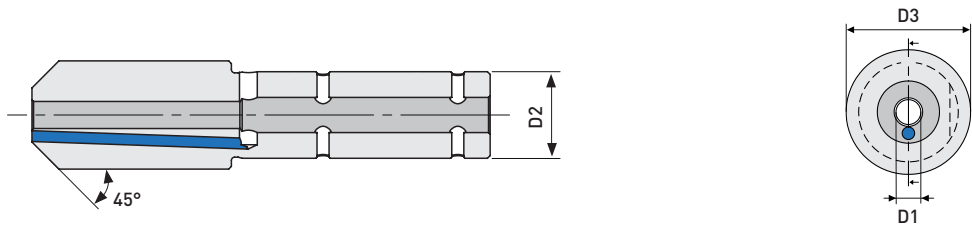
Clamping adapter

optional with or without internal cooling



without internal cooling (light cooling through clamping surface)

D1	D2	D3	L1	L2	L3	L4	Item No.
3G6	16h6	20,00	75,00	48,00	64,00	34,00	BA7090-0000
4G6	16h6	20,00	75,00	48,00	64,00	34,00	BA7090-0001
5G6	16h6	20,00	85,00	48,00	79,00	49,00	BA7090-0002
6G6	16h6	20,00	84,00	48,00	78,00	48,00	BA7090-0003
8G6	16h6	20,00	82,00	48,00	77,00	47,00	BA7090-0004



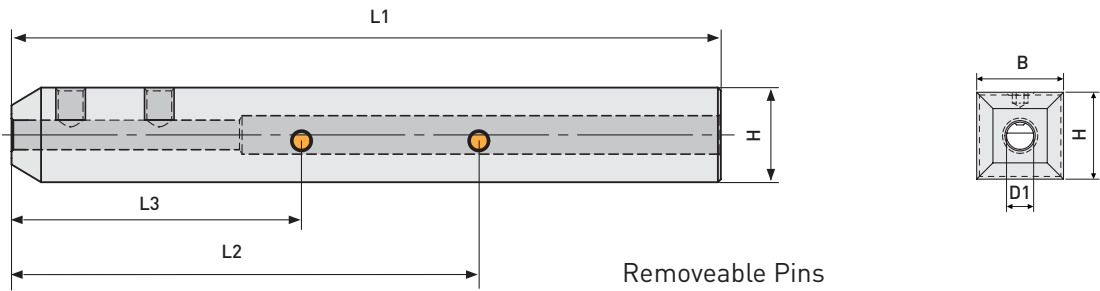
 with internal cooling | Graphic shows right version

D1	D2	D3	L1	L2	L3	L4	Version	Item No.
4G6	16h6	20,00	75,00	48,00	64,00	39,00	right	BA7090-1001
							left	BA7090-2001
5G6	16h6	20,00	85,00	48,00	79,00	54,00	right	BA7090-1002
							left	BA7090-2002
6G6	16h6	20,00	84,00	48,00	78,00	53,00	right	BA7090-1003
							left	BA7090-2003
8G6	16h6	20,00	82,00	48,00	77,00	52,00	right	BA7090-1004
							left	BA7090-2004

Accessories and spare parts as well as torque wrenches available on request.

Clamping adapter

4-sided



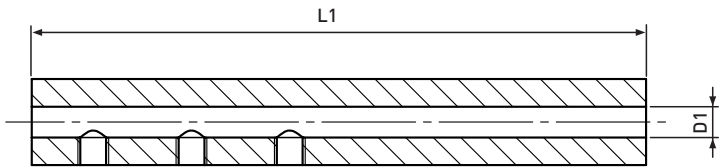
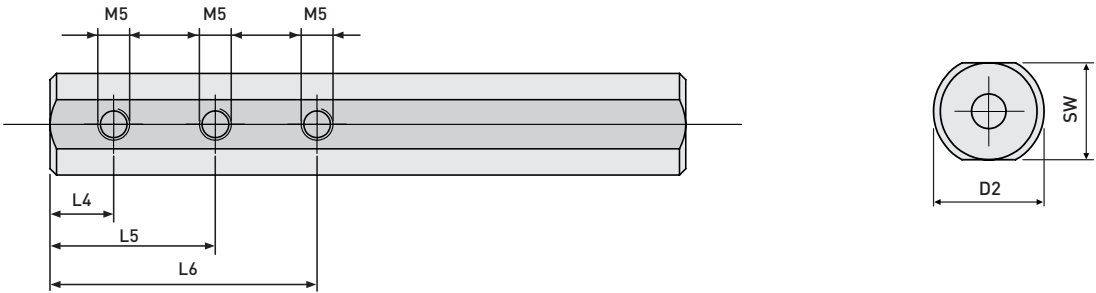
without internal cooling (light cooling through clamping surface)

D1	D2 B x H	L1	L2	L3	Item No.
4G6	12x12	120,00	64,06	39,06	BA7090-4040
	16x16	120,00	64,06	39,06	BA7090-4140
	20x20	120,00	64,06	39,06	BA7090-4240
	25x25	120,00	64,06	39,06	BA7090-4340
5G6	12x12	120,00	79,06	49,06	BA7090-4050
	16x16	120,00	79,06	49,06	BA7090-4150
	20x20	120,00	79,06	49,06	BA7090-4250
	25x25	120,00	79,06	49,06	BA7090-4350
6G6	16x16	120,00	78,06	48,06	BA7090-4160
	20x20	120,00	78,06	48,06	BA7090-4260
	25x25	120,00	78,06	48,06	BA7090-4360
8G6	16x16	120,00	77,06	47,06	BA7090-4180
	20x20	120,00	77,06	47,06	BA7090-4280
	25x25	120,00	77,06	47,06	BA7090-4380

Accessories and spare parts as well as torque wrenches available on request.

Clamping adapter compact

full-length shaft



without internal cooling (light cooling through clamping surface)

D1	D2	SW	L1	L4	L5	L6	Item No.
3,00	16h6	14,00	100,00	10,00	26,00	42,00	BA7090-5500
4,00	16h6	14,00	100,00	10,00	26,00	42,00	BA7090-5501
5,00	16h6	14,00	100,00	10,00	26,00	42,00	BA7090-5502
6,00	16h6	14,00	100,00	10,00	26,00	42,00	BA7090-5503
8,00	16h6	14,00	100,00	10,00	26,00	42,00	BA7090-5504

Subject to technical changes.

Subject to technical changes.

Cutting parameters
for our precision boring bars

		PCD								
Material		n [U/min]			a _p [mm]			F [mm/U]		
		Ø1,0-3,5	Ø4,0-6,0	Ø7,0-10,0	Ø1,0-3,5	Ø4,0-6,0	Ø7,0-10,0	Ø1,0-3,5	Ø4,0-6,0	Ø7,0-10,0
Acrylic (PMMA)	min.	5.000	4.500	3.500	0,01	0,01	0,01	0,01	0,01	0,01
	max.	20.000	20.000	20.000	0,05	0,80	2,00	0,05	0,10	0,12
Al Si <10%	min.	5.000	4.000	3.000	0,01	0,01	0,01	0,01	0,01	0,01
	max.	20.000	20.000	20.000	0,30	1,50	2,50	0,05	0,10	0,18
Al Si >10%	min.	5.000	5.000	3.000	0,01	0,01	0,01	0,01	0,01	0,01
	max.	20.000	20.000	20.000	0,20	1,00	2,00	0,05	0,10	0,18
Brass, Brass, lead-free	min.	4.000	3.500	2.500	0,01	0,01	0,01	0,01	0,01	0,01
	max.	15.000	15.000	15.000	0,30	1,50	2,50	0,05	0,10	0,18
Carbide, Ceramic sintered, Ceramics Green	min.									
	max.									
CFK	min.	5.000	3.000	2.000	0,01	0,01	0,01	0,01	0,01	0,01
	max.	15.000	12.000	10.000	0,10	0,50	2,00	0,05	0,10	0,15
Copper	min.	4.000	3.500	3.000	0,01	0,01	0,01	0,01	0,01	0,01
	max.	20.000	20.000	20.000	0,10	0,50	1,00	0,05	0,10	0,15
GFK	min.	5.000	4.000	3.500	0,01	0,01	0,01	0,01	0,01	0,01
	max.	15.000	15.000	12.000	0,05	0,50	1,00	0,05	0,10	0,12
Gold, Silver, Platinum	min.	4.000	3.000	2.000	0,01	0,01	0,01	0,01	0,01	0,01
	max.	15.000	15.000	15000	0,10	0,50	1,00	0,05	0,10	0,15
Graphit	min.	3.000	2.500	2.000	0,01	0,01	0,01	0,01	0,01	0,01
	max.	15.000	16.000	12.000	0,10	0,50	2,50	0,05	0,15	0,2
MMC	min.	5.000	3.000	2.000	0,01	0,01	0,01	0,01	0,01	0,01
	max.	15.000	12.000	10.000	0,10	0,50	2,00	0,05	0,10	0,15
Plastics	min.	4.000	3.500	3.000	0,02	0,01	0,01	0,01	0,01	0,01
	max.	18.000	15.000	15.000	0,10	1,00	2,50	0,05	0,10	0,20
Titanium	min.	4.000	3.500	2.000	0,010	0,01	0,01	0,01	0,01	0,01
	max.	10.000	8.000	6.000	0,025	0,05	0,10	0,05	0,06	0,08
Zinc	min.	5.000	4.000	3.000	0,01	0,01	0,01	0,01	0,01	0,01
	max.	20.000	20.000	20.000	0,30	1,50	2,50	0,05	0,10	0,2

CVD-D									on request 				
									Cooling 				
n [U/min]			a _p [mm]			F [mm/U]							
Ø1,0-3,5	Ø4,0-6,0	Ø7,0-10,0	Ø1,0-3,5	Ø4,0-6,0	Ø7,0-10,0	Ø1,0-3,5	Ø4,0-6,0	Ø7,0-10,0	Dry	Air	Emulsion	Oil	MQL
4000	3500	2500	0,01	0,01	0,01	0,01	0,01	0,01		2. Choice	1. Choice		
30000	25000	22000	0,05	0,80	2,00	0,05	0,10	0,12		2. Choice	1. Choice		
4500	4000	2000	0,01	0,01	0,01	0,01	0,01	0,01			1. Choice	2. Choice	
30000	30000	30000	0,30	1,50	2,50	0,05	0,10	0,18			1. Choice	2. Choice	
4500	4000	2000	0,01	0,01	0,01	0,01	0,01	0,01			1. Choice	2. Choice	
30000	30000	30000	0,20	1,00	2,00	0,05	0,10	0,18			1. Choice	2. Choice	
3000	2500	1500	0,01	0,01	0,01	0,01	0,01	0,01			1. Choice	1. Choice	
20000	20000	18000	0,30	1,50	2,50	0,05	0,10	0,18			1. Choice	1. Choice	
													
4000	3000	1000	0,01	0,01	0,01	0,01	0,01	0,01		1. Choice			
20000	18000	15000	0,10	0,50	2,00	0,05	0,10	0,15		1. Choice			
3000	2500	2000	0,01	0,01	0,01	0,01	0,01	0,01			1. Choice	2. Choice	
30000	25000	20000	0,10	0,50	1,00	0,05	0,10	0,15			1. Choice	2. Choice	
4000	3000	1500	0,01	0,01	0,01	0,01	0,01	0,01			1. Choice		
20000	20000	18000	0,05	0,50	1,00	0,05	0,10	0,12			1. Choice		
3000	2500	1000	0,01	0,01	0,01	0,01	0,01	0,01			1. Choice	2. Choice	
20000	20000	18000	0,10	0,50	1,00	0,05	0,10	0,15			1. Choice	2. Choice	
2000	1500	1000	0,01	0,01	0,01	0,01	0,01	0,01	1. Choice				
20000	18000	15000	0,10	0,50	2,50	0,05	0,15	0,20	1. Choice				
4000	3000	1000	0,01	0,01	0,01	0,01	0,01	0,01			1. Choice		
20000	15000	15000	0,10	0,50	2,00	0,05	0,10	0,15			1. Choice		
3000	2500	2000	0,02	0,01	0,01	0,01	0,01	0,01			1. Choice		
20000	20000	18000	0,10	1,00	2,50	0,05	0,10	0,20			1. Choice		
3500	2000	1200	0,01	0,01	0,01	0,01	0,01	0,01			1. Choice		
12000	8000	6000	0,025	0,05	0,10	0,05	0,06	0,08			1. Choice		
4000	3000	2000	0,01	0,01	0,01	0,01	0,01	0,01			1. Choice	2. Choice	
30000	30000	30000	0,30	1,50	2,50	0,05	0,10	0,20			1. Choice	2. Choice	

 on request

Material		CBN								
		n [U/min]			a _p [mm]			F [mm/U]		
		Ø1,0-3,5	Ø4,0-6,0	Ø7,0-10,0	Ø1,0-3,5	Ø4,0-6,0	Ø7,0-10,0	Ø1,0-3,5	Ø4,0-6,0	Ø7,0-10,0
Steel hardened to 42 HRC	min.	1.200	3.000	2.000	0,01	0,01	0,01	0,004	0,005	0,005
	max.	12.000	10.000	8.000	0,025	0,20	0,50	0,008	0,08	0,18
Steel hardened to 52 HRC	min.	1.000	3.000	2.000	0,01	0,01	0,01	0,004	0,005	0,005
	max.	12.000	10.000	8.000	0,025	0,20	0,50	0,008	0,08	0,18
Steel hardened to 60 HRC	min.	1.000	2.500	2.000	0,01	0,01	0,01	0,004	0,005	0,005
	max.	10.000	8.000	8.000	0,025	0,20	0,50	0,008	0,10	0,18
Steel hardened to 68 HRC	min.	1.000	2.000	1.500	0,01	0,01	0,01	0,004	0,005	0,005
	max.	8.000	6.000	6.000	0,025	0,15	0,3	0,03	0,12	0,15
Powder metallurgical steels, hardened Cold and hot work steels, hardened	min.	1.000	2.000	1.500	0,01	0,01	0,01	0,004	0,005	0,005
	max.	8.000	6.000	6.000	0,025	0,015	0,30	0,03	0,12	0,15
Tool Steel and HSS, hardened	min.	1.000	2.200	2.500	0,02	0,02	0,02	0,01	0,02	0,03
	max.	8.000	6.000	6.000	0,05	0,30	0,40	0,05	0,10	0,20
Ni-, Co-, Fe- u. Cr-Alloys	min.	2.000	1.500	1.000	0,02	0,025	0,025	0,01	0,02	0,03
	max.	8.000	6.000	5.000	0,05	0,30	0,5	0,05	0,10	0,20
Titanium	min.	2.000	1.500	1.000	0,01	0,03	0,05	0,01	0,02	0,03
	max.	10.000	8.000	6.000	0,015	0,15	0,25	0,05	0,06	0,08
Carbide >20%Co	min.									
	max.									
Carbide-Steel composite	min.									
	max.									

Cooling recommended

In machining with CBN inserts, proper cooling is a key to successful machining.

Here you will find our recommendation:

When machining interrupted cuts, we recommend dry machining or cooling by air.

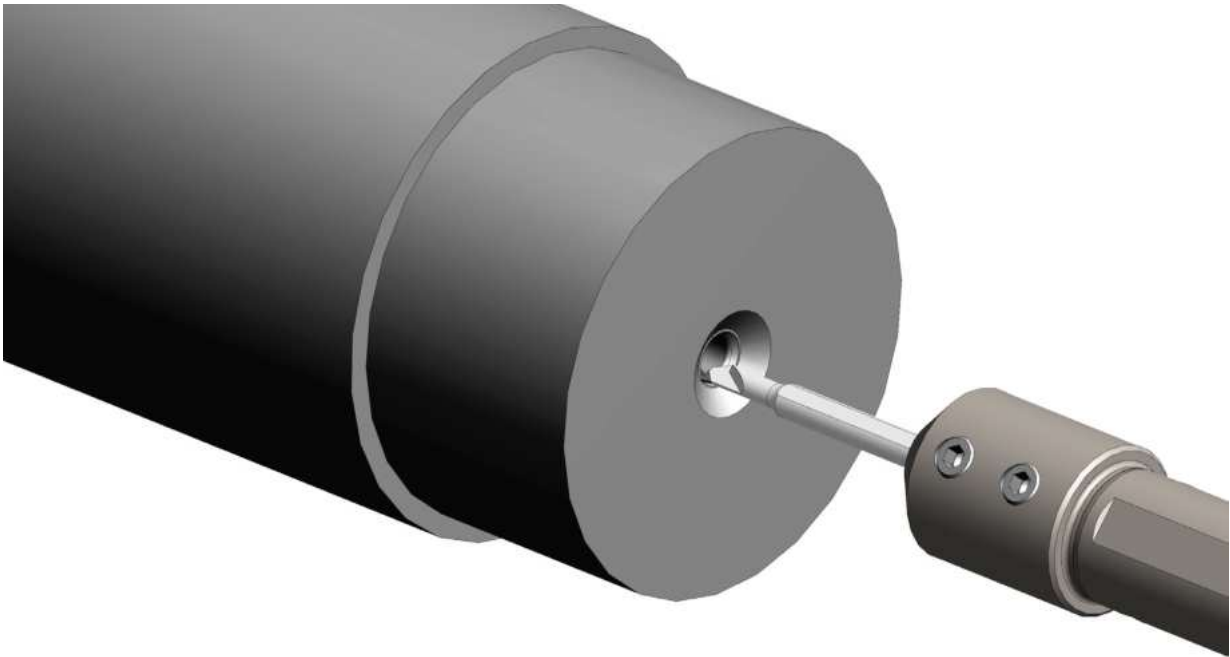
Material	Cooling 				
	Dry	Air	Emulsion	Oil	MQL
Steel hardened to 42 HRC		3. Choice	1. Choice	2. Choice	
Steel hardened to 52 HRC		3. Choice	1. Choice	2. Choice	
Steel hardened to 60 HRC		3. Choice	1. Choice	2. Choice	
Steel hardened to 68 HRC		3. Choice	1. Choice	2. Choice	
Powder metallurgical steels, hardened Cold and hot work steels, hardened		3. Choice	1. Choice	2. Choice	
Tool steel and HSS, hardened		3. Choice	1. Choice	2. Choice	
Ni-, Co-, Fe- u. Cr-Alloys		3. Choice	1. Choice		2. Choice
Titanium			1. Choice		2. Choice
Carbide >20%Co					
Carbide-Steel composite					



If you have any further technical questions, please do not hesitate to contact us
by phone or e-mail!

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V_f	Feed rate	mm/min
f_n	Feed per revolution	mm/rev
n	Spindle speed	rev/min
v_c	Cutting speed	m/min
D_c	Cutter diameter	mm
t_c	Cutting Time	min
l_m	Cutting length	mm
Q	Stock removal rate	cm³/min
a_p	Cutting depth	mm

► Cutting speed

$$V_c = \frac{D_c \times \pi \times n}{1000}$$

[m/min]

► Spindle speed

$$n = \frac{v_c \times 1000}{\pi \times D_c}$$

[U/min]

► Feed per revolution

$$f_n = \frac{V_f}{n}$$

[mm/U]

► Cutting time

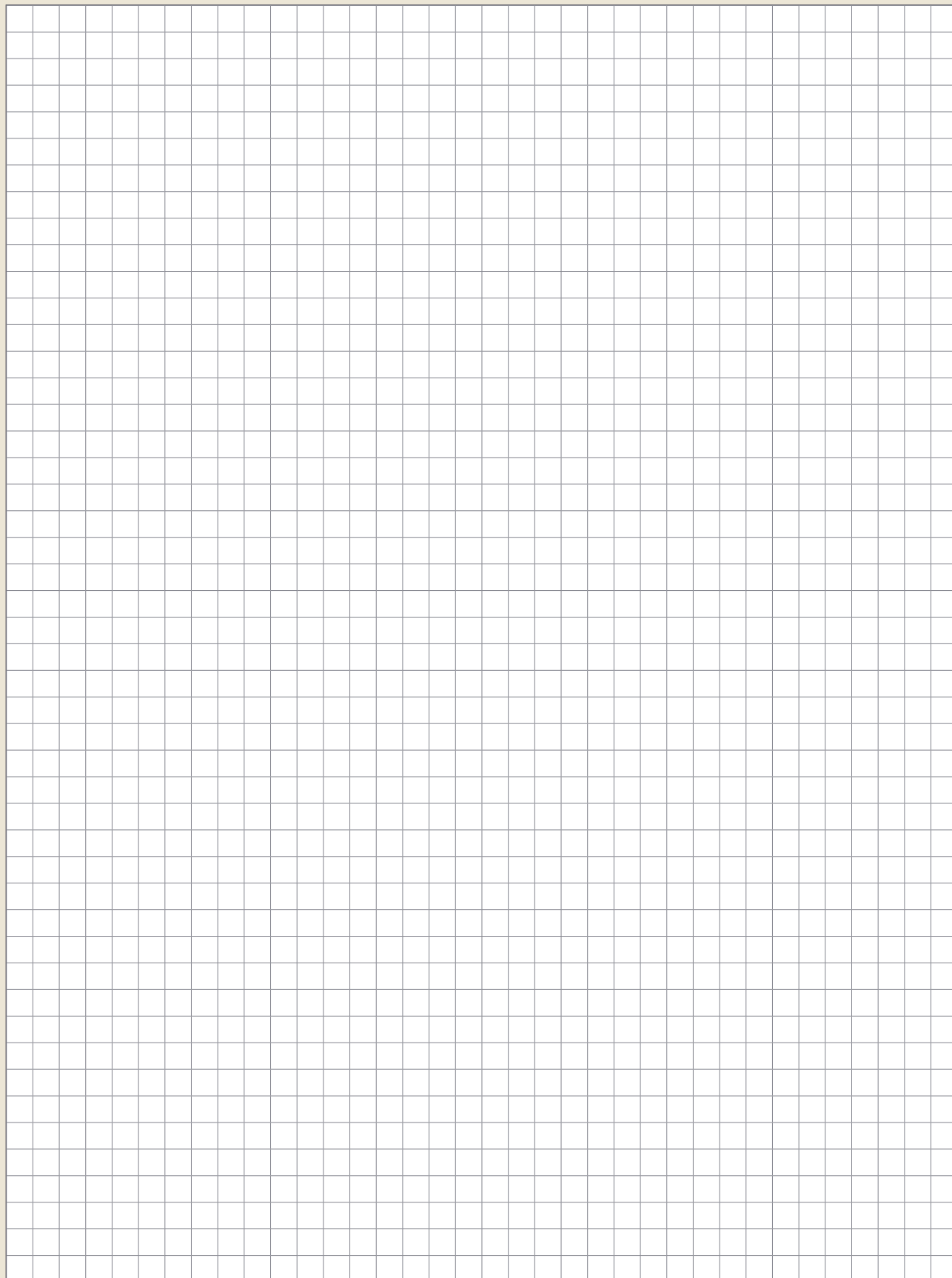
$$t_c = \frac{l_m}{f_n \times n}$$

[min]

► Stock removal rate

$$Q = v_c \times a_p \times f_n$$

[cm³/min]



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All rights are reserved. Errors, misprints or printing errors do not entitle to claims. The pictorial and graphic representation of our tools do not necessarily have to correspond to the actual tool in all details.

We reserve the right to make production-related technical changes and changes to the delivery program. The cutting values given are guide values which must be adjusted according to the process environment.

Safety Instructions:

- ▶ DTS tools equipped with ultra-hard cutting edges are very sharp laser cut tools.
- ▶ Careful handling of the tools during unpacking and their use is recommended.
- ▶ Wearing protective gloves reduces the risk of injury.
- ▶ Material chipping and tool breakage may occur during machining, wearing safety glasses is recommended.
- ▶ Balanced holders are recommended for speeds above 10,000 rpm.
- ▶ We do not accept any responsibility for tools that have been modified, reground or used incorrectly and beyond their normal service life.
- ▶ Protective goggles are recommended when using DTS tools, sparks may also occur, make sure that no fire can occur.

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