



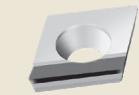
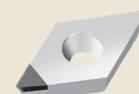
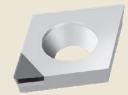
**DTS GmbH**  
Germany

01

## Diamond Indexable Inserts



Tool and  
Mold Forming



Automotive  
Mechanical Engineering



Medical Technology  
Microtechnology



Aerospace

# About us

Diamond Tooling Systems

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## Welcome to DTS - Diamond Tooling Systems GmbH!

Based in Kaiserslautern - Germany - we have specialized in the development, production and distribution of precision tools equipped with ultrahard cutting materials, such as CVD-D (CVD thick film diamond), PCD (polycrystalline 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 DTS - Diamond Tooling Systems 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 cooperation 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!**



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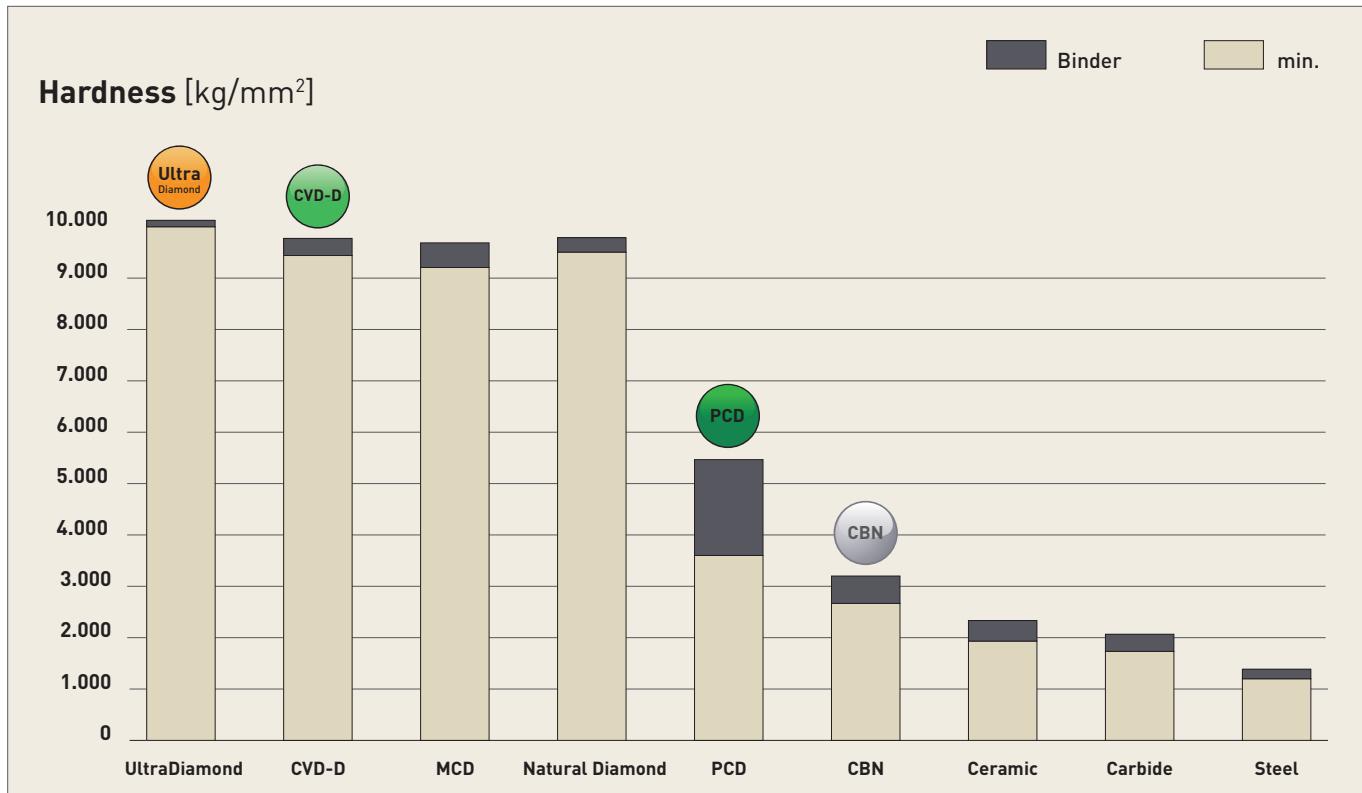
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# PASSION FOR DIAMOND...

ultrahard 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 PDC 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 12% 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 12%.

## **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 Diamond-Grades

and their main applications at a glance

We want to offer you the ideal solution for your application. Therefore, we have developed three main diamond groups, specially adapted to the requirements of the different materials.

Below you will find an overview of the different groups.

## PCD

PCD

is ideally suited for the machining of \*

Aluminum <10% Si | Brass | Copper, Copper Alloys | Graphite |  
Magnesium | PEEK | Tungsten alloy

-  continuous cut
-  light interrupted cut
-  heavy interrupted cut

## CVD-D

CVD-D

is ideally suited for the machining of \*

Acrylic (PMMA) | Aluminum >10% Si | Carbide | Ceramics |  
Composites (GFRP/CFRP) | Copper, Copper Alloys | Glass, Glass Ceramic  
| Magnesium | Plastic | Silver, Gold, Platinum | Titanium | Zirconium

-  continuous cut
-  light interrupted cut
-  heavy interrupted cut

## UltraDiamond

Ultra  
Diamond

is ideally suited for the machining of \*

Acrylic (PMMA) | Carbide | Ceramic | Glass, Glass Ceramic

-  continuous cut
-  light interrupted cut
-  heavy interrupted cut

\* all other applications can be found in the complete cutting material assignment on page 7

# Our Cutting Material Assignment

about the materials



DTS GmbH

Germany

You cannot find your material in the table?

Phone: +49 (0) 6301 32011-0

We are glad to help you by phone or by mail!

Mail: info@diamond-toolingsystems.com

Green ✓

First choice

Orange ✓

Possible alternative

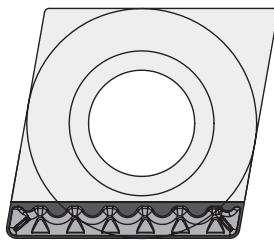
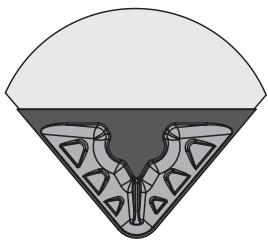
ISO	Material	PCD	CVD-D	Ultra Diamond
S	Titanium (Roughing)	✓		
	Titanium (Finishing)		✓	
N	Acrylic (PMMA)		✓	✓
	Aluminum, < 10% Si	✓	✓	
	Aluminum, > 10% Si		✓	✓
	Brass	✓	✓	
	Carbide G-Grade, < 15% Co		✓	✓
	Carbide G-Grade, > 15% Co		✓	
	Carbide K-Grade, < 15% Co		✓	✓
	Carbide K-Grade, > 15% Co		✓	
	Carbide (Green)	✓		
	Carbide with Ni Binder			✓
N	Ceramics		✓	✓
	Ceramics (Green)	✓		
	Composite such as CFRP/GFRP	✓	✓	
	Copper, Copper Alloys	✓	✓	
	Glass, Glass Ceramic		✓	✓
	Graphite	✓	✓	
	Magnesium	✓	✓	
	MMC		✓	✓
	Plastics		✓	
	PEEK	✓	✓	
	Silver, Gold, Platinum		✓	✓
	Tungsten alloy	✓	✓	
	Zirconium		✓	✓

# 3D - Lasered Micro Chip Breaker

for optimized chip control

Diamond tools are the first choice for the machining of aluminum (<Si1) and magnesium Alloys, lead-free Brass, and a wide variety of plastic composites. However, these long-chipping materials are often plagued by chip problems.

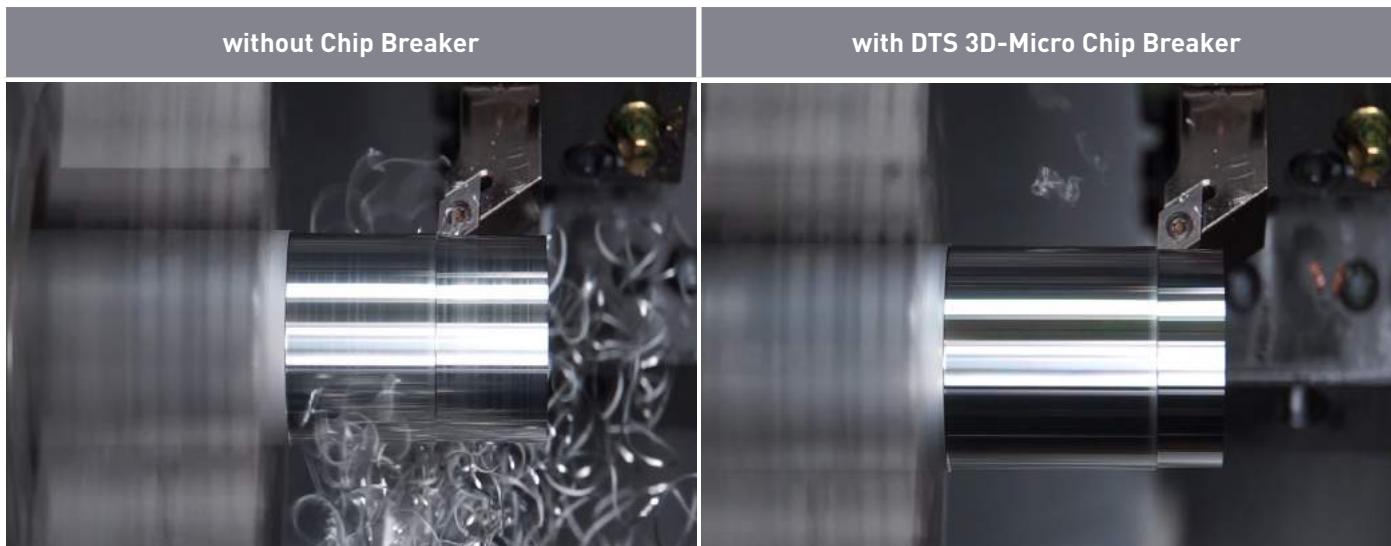
Our laser technology allows us to introduce 3D micro chip grooves into a wide variety of PCD, CVD-D and CBN tools. This special laser ablation process allows more complex chipbreaker shapes and achieve excellent chip control.



A lasered 3D micro chip breaker enables controlled chip breakage in most long-chipping materials. In addition, the chipbreaker minimizes cutting pressure, allowing for the machining of thin-walled components.

For controlled chip breaking, we offer you two different 3D-Micro chip grooves:

- Chip Breaker-F (sharp cutting edge for finishing cuts)
- Chip Breaker-R (stable cutting edge for roughing cuts)



Material: AlSi1

Material: AlSi1

# Wiper Indexable Inserts

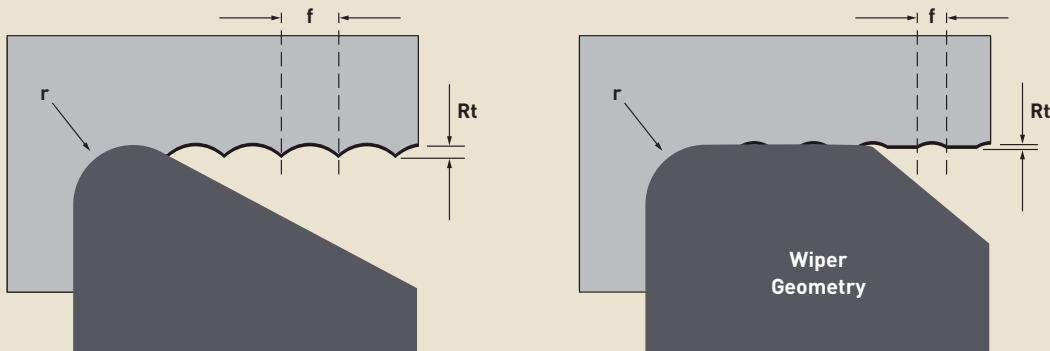
Functionality



DTS GmbH

Germany

## Wiper Indexable Inserts:



## Advantages when using Wiper Geometries

By using the same feed rate a 2-4 times better surface quality can be obtained or with a 2-4 times higher feed rate the same surface quality can be reached.

To get the wiper geometry into cutting condition please use the following lead angles at the machine:

**C and W Type: 95°**

**D Type: 93°**

CCGW ...  
(Z1)



DCGW ...  
(Z1)



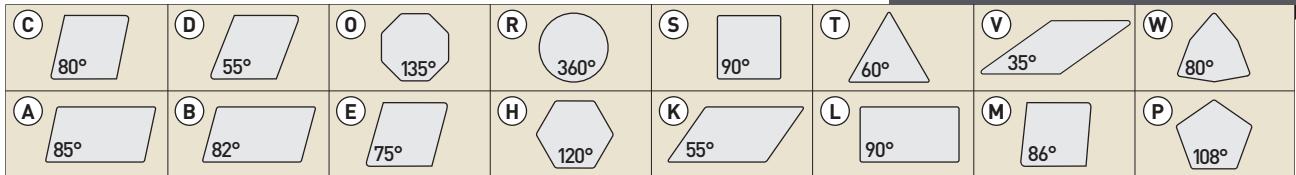
WCGW ...  
(Z3)



# ISO Code

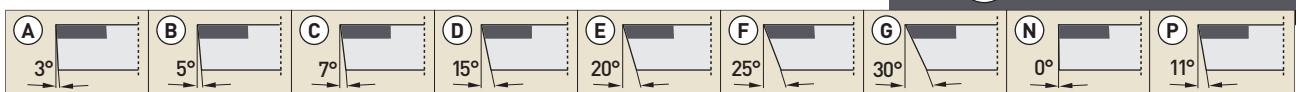
## Diamond Indexable Inserts

### Shape



T N G A 16 04 08

### Clearance

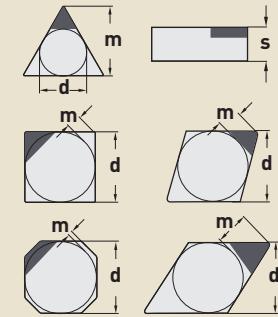


T N G A 16 04 08

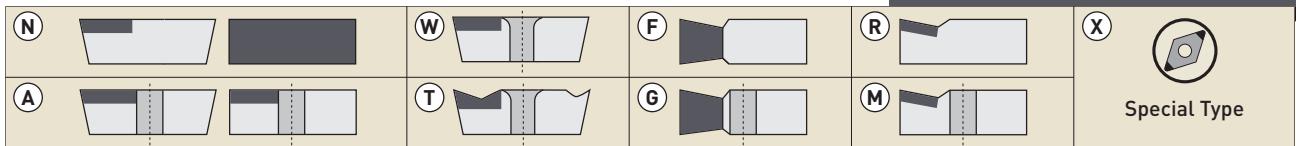
### Tolerance [mm]

	m	s	d		m	s	d		m	G	A	16	04	08	
(A)	±0,005	±0,025	±0,025	(J)	±0,005	±0,025	±0,05 → ±0,15	(K)	±0,013	±0,025	±0,05 → ±0,15	(L)	±0,025	±0,025	±0,05 → ±0,15
(F)	±0,005	±0,025	±0,013	(M)	±0,08 → ±0,20	±0,130	±0,05 → ±0,15	(N)	±0,08 → ±0,20	±0,25	±0,05 → ±0,15	(U)	±0,13 → ±0,38	±0,130	±0,08 → ±0,15
(C)	±0,013	±0,025	±0,025	(U)	±0,13 → ±0,38	±0,130	±0,08 → ±0,15								
(H)	±0,013	±0,025	±0,013												
(E)	±0,025	±0,025	±0,025												
(G)	±0,025	±0,130	±0,025												

\*(M, N, U) The exact tolerance depends on the size of the insert.

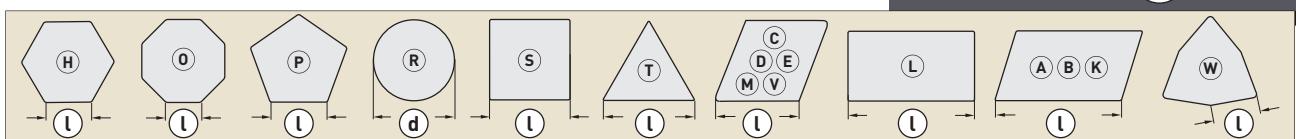


### Insert Type



T N G A 16 04 08

### Insert size [mm]



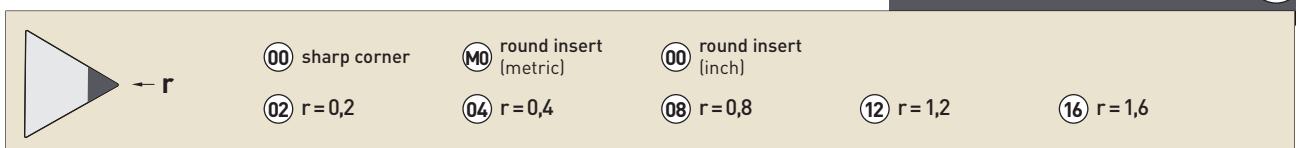
T N G A 16 04 08

### Insert size [mm]

(01) S=1,59	(T1) S=1,98	(02) S=2,38	(03) S=3,18	(T3) S=3,97	(04) S=4,76	(05) S=5,56	(06) S=6,35	
By numbers below 10 a 0 is added in at the front. Decimals remain unconsidered (for example: 4,76 = 04)								

T N G A 16 04 08

### Corner configuration [mm]



T N G A 16 04 08

# Your Notes



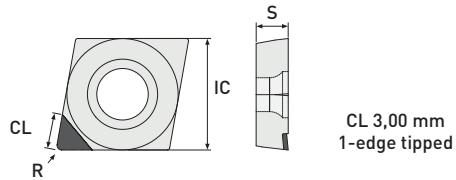
**DTS GmbH**  
Germany

# CCGT - Positive Rake Angle

edge tipped



FN - positive rake angle



Standard	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	PCD	CVD-D	Ultra Diamond					
CCGT 060202	6,35	2,38	0,20	DP1010-0001	DP2010-0001			1-edge tipped
CCGT 060204	6,35	2,38	0,40	DP1010-0002	DP2010-0002			1-edge tipped
CCGT 060208	6,35	2,38	0,80	DP1010-0003	DP2010-0003			1-edge tipped
CCGT 09T302	9,525	3,97	0,20	DP1010-0004	DP2010-0004			1-edge tipped
CCGT 09T304	9,525	3,97	0,40	DP1010-0005	DP2010-0005			1-edge tipped
CCGT 09T308	9,525	3,97	0,80	DP1010-0006	DP2010-0006			1-edge tipped
CCGT 09T312	9,525	3,97	1,20	DP1010-0007	DP2010-0007			1-edge tipped
CCGT 120402	12,70	4,76	0,20	DP1010-0008	DP2010-0008			1-edge tipped
CCGT 120404	12,70	4,76	0,40	DP1010-0009	DP2010-0009			1-edge tipped
CCGT 120408	12,70	4,76	0,80	DP1010-0010	DP2010-0010			1-edge tipped

## Application range:

- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, Sintered Ceramic Materials, highly abrasive materials ...

You will find further application ranges in the detailed overview on page 7.

# CCGT - Chip Breaker

edge tipped



FN - Chip breaker for finishing (SPL-F) or roughing (SPL-R)

				CL 3,00 mm 1-edge tipped	PCD	CVD-D	PCD	CVD-D	
					Item No.	Item No.	Item No.	Item No.	
					SPL-F (Finishing)		SPL-R (Roughing)		Version
Standard	CCGT 060202	6,35	2,38	0,20	DP1011-0001	DP2011-0001	DP1012-0001	DP2012-0001	1-edge tipped
	CCGT 060204	6,35	2,38	0,40	DP1011-0002	DP2011-0002	DP1012-0002	DP2012-0002	1-edge tipped
	CCGT 060208	6,35	2,38	0,80	DP1011-0003	DP2011-0003	DP1012-0003	DP2012-0003	1-edge tipped
	CCGT 09T302	9,525	3,97	0,20	DP1011-0004	DP2011-0004	DP1012-0004	DP2012-0004	1-edge tipped
	CCGT 09T304	9,525	3,97	0,40	DP1011-0005	DP2011-0005	DP1012-0005	DP2012-0005	1-edge tipped
	CCGT 09T308	9,525	3,97	0,80	DP1011-0006	DP2011-0006	DP1012-0006	DP2012-0006	1-edge tipped
	CCGT 120402	12,70	4,76	0,20	DP1011-0458	DP2011-0458	DP1012-0458	DP2012-0458	1-edge tipped
	CCGT 120404	12,70	4,76	0,40	DP1011-0008	DP2011-0008	DP1012-0008	DP2012-0008	1-edge tipped
Wiper	CCGT 120408	12,70	4,76	0,80	DP1011-0009	DP2011-0009	DP1012-0009	DP2012-0009	1-edge tipped
	CCGT 060202 R/L-W	6,35	2,38	0,20	DP1011-0011		DP1012-0011		1-edge tipped
	CCGT 060204 R/L-W	6,35	2,38	0,40	DP1011-0012		DP1012-0012		1-edge tipped
	CCGT 09T302 R/L-W	9,525	3,97	0,20	DP1011-0014		DP1012-0014		1-edge tipped
	CCGT 09T304 R/L-W	9,525	3,97	0,40	DP1011-0015		DP1012-0015		1-edge tipped
	CCGT 09T308 R/L-W	9,525	3,97	0,80	DP1011-0016		DP1012-0016		1-edge tipped
	CCGT 120402 R/L-W	12,70	4,76	0,20	DP1011-0018		DP1012-0018		1-edge tipped
	CCGT 120404 R/L-W	12,70	4,76	0,40	DP1011-0019		DP1012-0019		1-edge tipped
	CCGT 120408 R/L-W	12,70	4,76	0,80	DP1011-0020		DP1012-0020		1-edge tipped



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# CCGT - Positive Rake Angle

entire edge



right version - positive rake angle

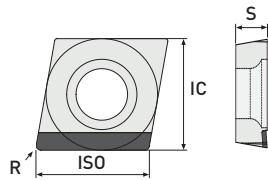


Figure shows  
right version  
entire edge



Standard - right version	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
					DP1020-0055	DP2020-0055		entire edge
CCGT 060202 R-GS	6,35	2,38	0,20		DP1020-0001	DP2020-0001		entire edge
CCGT 060204 R-GS	6,35	2,38	0,40		DP1020-0002	DP2020-0002		entire edge
CCGT 060208 R-GS	6,35	2,38	0,80		DP1020-0003	DP2020-0003		entire edge
CCGT 09T304 R-GS	9,525	3,97	0,40		DP1020-0004	DP2020-0004		entire edge
CCGT 09T308 R-GS	9,525	3,97	0,80		DP1020-0005	DP2020-0005		entire edge
CCGT 09T312 R-GS	9,525	3,97	1,20		DP1020-0006	DP2020-0006		entire edge
CCGT 120404 R-GS	12,70	4,76	0,40		DP1020-0007	DP2020-0007		entire edge
CCGT 120408 R-GS	12,70	4,76	0,80		DP1020-0008	DP2020-0008		entire edge

left version - positive rake angle

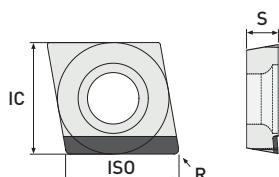


Figure shows  
left version  
entire edge



Standard - left version	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
					DP1020-0058	DP2020-0058		entire edge
CCGT 060202 L-GS	6,35	2,38	0,20		DP1020-0045	DP2020-0045		entire edge
CCGT 060204 L-GS	6,35	2,38	0,40		DP1020-0046	DP2020-0046		entire edge
CCGT 060208 L-GS	6,35	2,38	0,80		DP1020-0047	DP2020-0047		entire edge
CCGT 09T304 L-GS	9,525	3,97	0,40		DP1020-0048	DP2020-0048		entire edge
CCGT 09T308 L-GS	9,525	3,97	0,80		DP1020-0049	DP2020-0049		entire edge
CCGT 09T312 L-GS	9,525	3,97	1,20		DP1020-0050	DP2020-0050		entire edge
CCGT 120404 L-GS	12,70	4,76	0,40		DP1020-0051	DP2020-0051		entire edge
CCGT 120408 L-GS	12,70	4,76	0,80		DP1020-0052	DP2020-0052		entire edge

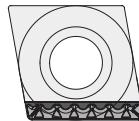
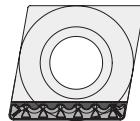
## Application range:

- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

You will find further application ranges in the detailed overview on page 7.

# CCGT - Chip Breaker

entire edge



right version - FN - Chip breaker for finishing (SPL-F) or roughing (SPL-R)

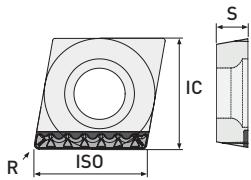


Figure shows  
right version  
entire edge



Item No.



Item No.



Item No.



Item No.

Standard - right version	ISO Code	IC	S	R	SPL-F (Finishing)		SPL-R (Roughing)		Version
					DP1021-0032	DP2021-0032	DP1022-0032	DP2022-0032	entire edge
CCGT 060202 R-GS	6,35	2,38	0,20		DP1021-0032	DP2021-0032	DP1022-0032	DP2022-0032	entire edge
CCGT 060204 R-GS	6,35	2,38	0,40		DP1021-0001	DP2021-0001	DP1022-0001	DP2022-0001	entire edge
CCGT 060208 R-GS	6,35	2,38	0,80		DP1021-0002	DP2021-0002	DP1022-0002	DP2022-0002	entire edge
CCGT 09T304 R-GS	9,525	3,97	0,40		DP1021-0033	DP2021-0033	DP1022-0033	DP2022-0033	entire edge
CCGT 09T308 R-GS	9,525	3,97	0,80		DP1021-0003	DP2021-0003	DP1022-0003	DP2022-0003	entire edge
CCGT 120404 R-GS	12,70	4,76	0,40		DP1021-0034	DP2021-0034	DP1022-0034	DP2022-0034	entire edge
CCGT 120408 R-GS	12,70	4,76	0,80		DP1021-0005	DP2021-0005	DP1022-0005	DP2022-0005	entire edge

left version - FN - Chip breaker for finishing (SPL-F) or roughing (SPL-R)

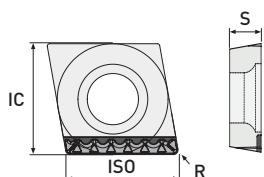


Figure shows  
left version  
entire edge



Item No.



Item No.



Item No.



Item No.

Standard - left version	ISO Code	IC	S	R	SPL-F (Finishing)		SPL-R (Roughing)		Version
					DP1021-0035	DP2021-0035	DP1022-0035	DP2022-0035	entire edge
CCGT 060202 L-GS	6,35	2,38	0,20		DP1021-0035	DP2021-0035	DP1022-0035	DP2022-0035	entire edge
CCGT 060204 L-GS	6,35	2,38	0,40		DP1021-0031	DP2021-0031	DP1022-0031	DP2022-0031	entire edge
CCGT 060208 L-GS	6,35	2,38	0,80		DP1021-0027	DP2021-0027	DP1022-0027	DP2022-0027	entire edge
CCGT 09T304 L-GS	9,525	3,97	0,40		DP1021-0036	DP2021-0036	DP1022-0036	DP2022-0036	entire edge
CCGT 09T308 L-GS	9,525	3,97	0,80		DP1021-0028	DP2021-0028	DP1022-0028	DP2022-0028	entire edge
CCGT 120404 L-GS	12,70	4,76	0,40		DP1021-0037	DP2021-0037	DP1022-0037	DP2022-0037	entire edge
CCGT 120408 L-GS	12,70	4,76	0,80		DP1021-0030	DP2021-0030	DP1022-0030	DP2022-0030	entire edge



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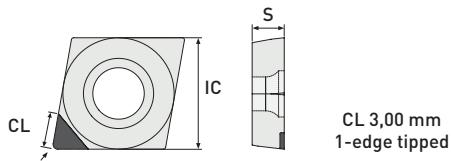
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# CCGW

edge tipped



FN - neutral



	ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
	Item No.	Item No.	Item No.					
Standard	CCGW 060201	6,35	2,38	0,10		DP2010-0591	DP1110-0591	1-edge tipped
	CCGW 060202	6,35	2,38	0,20	DP1010-0021	DP2010-0021	DP1110-0021	1-edge tipped
	CCGW 060204	6,35	2,38	0,40	DP1010-0022	DP2010-0022	DP1110-0022	1-edge tipped
	CCGW 060208	6,35	2,38	0,80	DP1010-0023	DP2010-0023	DP1110-0023	1-edge tipped
	CCGW 09T302	9,525	3,97	0,20	DP1010-0024	DP2010-0024		1-edge tipped
	CCGW 09T304	9,525	3,97	0,40	DP1010-0025	DP2010-0025		1-edge tipped
	CCGW 09T308	9,525	3,97	0,80	DP1010-0026	DP2010-0026		1-edge tipped
	CCGW 09T312	9,525	3,97	1,20	DP1010-0027	DP2010-0027		1-edge tipped
	CCGW 120402	12,70	4,76	0,20	DP1010-0700	DP2010-0129		1-edge tipped
	CCGW 120404	12,70	4,76	0,40	DP1010-0028	DP2010-0028		1-edge tipped
Wiper	CCGW 120408	12,70	4,76	0,80	DP1010-0029	DP2010-0029		1-edge tipped
	CCGW 120412	12,70	4,76	1,20	DP1010-0030	DP2010-0030		1-edge tipped
	CCGW 060202 R/L-W	6,35	2,38	0,20	DP1010-0031	DP2010-0031		1-edge tipped
	CCGW 060204 R/L-W	6,35	2,38	0,40	DP1010-0032	DP2010-0032		1-edge tipped
	CCGW 09T302 R/L-W	9,525	3,97	0,20	DP1010-0034	DP2010-0034		1-edge tipped
	CCGW 09T304 R/L-W	9,525	3,97	0,40	DP1010-0035	DP2010-0035		1-edge tipped
	CCGW 09T308 R/L-W	9,525	3,97	0,80	DP1010-0036	DP1010-0036		1-edge tipped
	CCGW 120402 R/L-W	12,70	4,76	0,20	DP1010-0038	DP2010-0038		1-edge tipped
	CCGW 120404 R/L-W	12,70	4,76	0,40	DP1010-0039	DP2010-0039		1-edge tipped
	CCGW 120408 R/L-W	12,70	4,76	0,80	DP1010-0040	DP2010-0040		1-edge tipped

#### Application range:

- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

You will find further application ranges in the detailed overview on page 7.

# CCGW

entire edge | right and left version



## right version - neutral

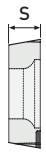
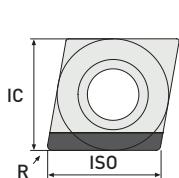


Figure shows  
right version  
entire edge



Item No.



Item No.



Ultra  
Diamond

Item No.

Standard - right version	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	CCGW 060202 R-GS	6,35	2,38	0,20	DP1020-0061	DP2020-0061		entire edge
	CCGW 060204 R-GS	6,35	2,38	0,40	DP1020-0006	DP2020-0006		entire edge
	CCGW 060208 R-GS	6,35	2,38	0,80	DP1020-0007	DP2020-0007		entire edge
	CCGW 09T304 R-GS	9,525	3,97	0,40	DP1020-0062	DP2020-0062		entire edge
	CCGW 09T308 R-GS	9,525	3,97	0,80	DP1020-0008	DP2020-0008		entire edge
	CCGW 09T312 R-GS	9,525	3,97	1,20	DP1020-0009	DP2020-0009		entire edge
	CCGW 120404 R-GS	12,70	4,76	0,40	DP1020-0063	DP2020-0063		entire edge
	CCGW 120408 R-GS	12,70	4,76	0,80	DP1020-0010	DP2020-0010		entire edge

## left version - neutral

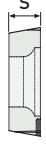
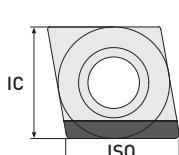


Figure shows  
left version  
entire edge



Item No.



Item No.



Ultra  
Diamond

Standard - left Version	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	CCGW 060202 L-GS	6,35	2,38	0,20	DP1020-0064	DP2020-0064		entire edge
	CCGW 060204 L-GS	6,35	2,38	0,40	DP1020-0050	DP2020-0050		entire edge
	CCGW 060208 L-GS	6,35	2,38	0,80	DP1020-0051	DP2020-0051		entire edge
	CCGW 09T304 L-GS	9,525	3,97	0,40	DP1020-0065	DP2020-0065		entire edge
	CCGW 09T308 L-GS	9,525	3,97	0,80	DP1020-0052	DP2020-0052		entire edge
	CCGW 09T312 L-GS	9,525	3,97	1,20	DP1020-0053	DP2020-0053		entire edge
	CCGW 120404 L-GS	12,70	4,76	0,40	DP1020-0066	DP2020-0066		entire edge
	CCGW 120408 L-GS	12,70	4,76	0,80	DP1020-0054	DP2020-0054		entire edge



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# CDGW

FullFace | edge tipped



FullFace | right and left version

MiniTools	right	ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
						Item No.	Item No. <small>New</small>	Item No.	
left	right	CDGW 03X101-R	3,20	0,63	0,10		DP2030-0500		FullFace (Z1)
		CDGW 03X102-R	3,20	0,63	0,20		DP2030-0502		FullFace (Z1)
		CDGW 03X101-L	3,20	0,63	0,10		DP2030-0501		FullFace (Z1)
		CDGW 03X102-L	3,20	0,63	0,20		DP2030-0503		FullFace (Z1)

! You will find the matching boring bar holder in our boring bar catalog (03) on page 21.

FN - neutral

MiniTools	ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
					Item No.	Item No.	Item No. <small>New</small>	
left	CDGW 040101	3,97	1,00	0,10		DP2010-0511	DP1110-1480	2-edge tipped
	CDGW 040102	3,97	1,00	0,20		DP2010-0512	DP1110-1482	2-edge tipped
	CDGW 040104	3,97	1,00	0,40		DP2010-0513	DP1110-1484	2-edge tipped

! You will find the matching boring bar holder in our boring bar catalog (03) on page 22.

#### Application range:

- PCD Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia. Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

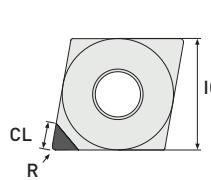
You will find further application ranges in the detailed overview on page 7.

# CNGA

edge tipped



FN - neutral



CL 3,00 mm  
1-edge tipped



Item No.



Item No.



Item No.

Version

Standard	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	CNGA 120404	12,70	4,76	0,40		DP2010-0173		1-edge tipped
	CNGA 120408	12,70	4,76	0,80		DP2010-0174		1-edge tipped
	CNGA 120412	12,70	4,76	1,20		DP2010-0175		1-edge tipped



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# CPGT - Positive Rake Angle

edge tipped



FN - positive rake angle

Standard	ISO Code	IC	S	R	CL 3,00 mm 1-edge tipped			Version
					Item No.	Item No.	Item No.	
	CPGT 060202	6,35	2,38	0,20	DP1010-0201	DP2010-0201		1-edge tipped
	CPGT 060204	6,35	2,38	0,40	DP1010-0202	DP2010-0202		1-edge tipped
	CPGT 060208	6,35	2,38	0,80	DP1010-0203	DP2010-0203		1-edge tipped

## Application range:

- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

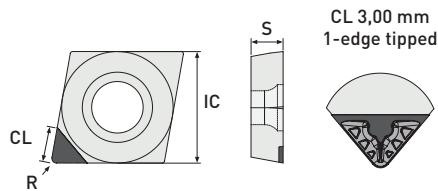
You will find further application ranges in the detailed overview on page 7.

# CPGT - Chip Breaker

edge tipped



FN - neutral - FN - Chip breaker for finishing (SPL-F) or roughing (SPL-R)



PCD

CVD-D

PCD

CVD-D

Item No.

Item No.

Item No.

Item No.

Standard	ISO Code	IC	S	R	SPL-F (Finishing)		SPL-R (Roughing)		Version
	CPGT 060202	6,35	2,38	0,20	DP1011-0251	DP2011-0251	DP1012-0251	DP2012-0251	1-edge tipped
CPGT 060204	6,35	2,38	0,40	DP1011-0252	DP2011-0252	DP1012-0252	DP2012-0252	1-edge tipped	
CPGT 060208	6,35	2,38	0,80	DP1011-0253	DP2011-0253	DP1012-0253	DP2012-0253	1-edge tipped	
CPGT 09T302	9,525	3,97	0,20	DP1011-0254	DP2011-0254	DP1012-0254	DP2012-0254	1-edge tipped	
CPGT 09T304	9,525	3,97	0,40	DP1011-0255	DP2011-0255	DP1012-0255	DP2012-0255	1-edge tipped	
CPGT 09T308	9,525	3,97	0,80	DP1011-0256	DP2011-0256	DP1012-0256	DP2012-0256	1-edge tipped	
CPGT 120404	12,70	4,76	0,40	DP1011-0257	DP2011-0257	DP1012-0257	DP2012-0257	1-edge tipped	
CPGT 120408	12,70	4,76	0,80	DP1011-0258	DP2011-0258	DP1012-0258	DP2012-0258	1-edge tipped	



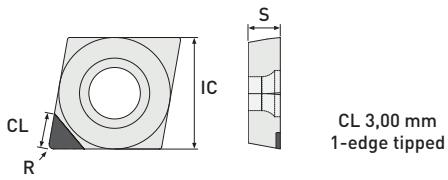
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## FN - neutral



Standard	ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
					Item No.	Item No.	Item No.	
	CPGW 060201	6,35	2,38	0,10		DP2010-0595		1-edge tipped
	CPGW 060202	6,35	2,38	0,20	DP1010-0251	DP2010-0251		1-edge tipped
	CPGW 060204	6,35	2,38	0,40	DP1010-0252	DP2010-0252		1-edge tipped
	CPGW 060208	6,35	2,38	0,80	DP1010-0253	DP2010-0253		1-edge tipped
	CPGW 09T301	9,525	3,97	0,10		DP2010-0596		1-edge tipped
	CPGW 09T302	9,525	3,97	0,20	DP1010-0254	DP2010-0254		1-edge tipped
	CPGW 09T304	9,525	3,97	0,40	DP1010-0255	DP2010-0255		1-edge tipped
	CPGW 09T308	9,525	3,97	0,80	DP1010-0256	DP2010-0256		1-edge tipped
	CPGW 120404	12,70	4,76	0,40	DP1010-0257	DP2010-0257		1-edge tipped
	CPGW 120408	12,70	4,76	0,80	DP1010-0258	DP2010-0258		1-edge tipped
	CPGW 120412	12,70	4,76	1,20	DP1010-0259	DP2010-0259		1-edge tipped

## Application range:

- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

You will find further application ranges in the detailed overview on page 7.

# Your Notes



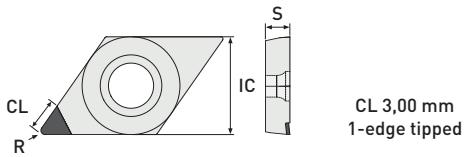
**DTS GmbH**  
Germany

# DCGT - Positive Rake Angle

edge tipped



FN - positive rake angle



Standard	ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
					Item No.	Item No.	Item No.	
	DCGT 070201	6,35	2,38	0,10	DP1010-0601	DP2010-0601		1-edge tipped
	DCGT 070202	6,35	2,38	0,20	DP1010-0042	DP2010-0042		1-edge tipped
	DCGT 070204	6,35	2,38	0,40	DP1010-0043	DP2010-0043		1-edge tipped
	DCGT 070208	6,35	2,38	0,80	DP1010-0044	DP2010-0044		1-edge tipped
	DCGT 11T301	9,525	3,97	0,10	DP1010-0602	DP2010-0602		1-edge tipped
	DCGT 11T302	9,525	3,97	0,20	DP1010-0045	DP2010-0045		1-edge tipped
	DCGT 11T304	9,525	3,97	0,40	DP1010-0046	DP2010-0046		1-edge tipped
	DCGT 11T308	9,525	3,97	0,80	DP1010-0047	DP2010-0047		1-edge tipped
	DCGT 11T312	9,525	3,97	1,20	DP1010-0048	DP2010-0048		1-edge tipped

## Application range:

- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

You will find further application ranges in the detailed overview on page 7.

# DCGT - Chip Breaker

edge tipped



FN - neutral - FN - Chip breaker for finishing (SPL-F) or roughing (SPL-R)

				CL 3,00 mm 1-edge tipped		PCD	CVD-D	PCD	CVD-D	
				Item No.	Item No.	Item No.	Item No.			
				SPL-F (Finishing)		SPL-R (Roughing)		Version		
<b>Standard</b>	<b>DCGT 070202</b>	6,35	2,38	0,20	DP1011-0022	DP2011-0022	DP1012-0022	DP2012-0022	1-edge tipped	
	<b>DCGT 070204</b>	6,35	2,38	0,40	DP1011-0023	DP2011-0023	DP1012-0023	DP2012-0023	1-edge tipped	
	<b>DCGT 070208</b>	6,35	2,38	0,80	DP1011-0024	DP2011-0024	DP1012-0024	DP2012-0024	1-edge tipped	
	<b>DCGT 11T302</b>	9,525	3,97	0,20	DP1011-0025	DP2011-0025	DP1012-0025	DP2012-0025	1-edge tipped	
	<b>DCGT 11T304</b>	9,525	3,97	0,40	DP1011-0026	DP2011-0026	DP1012-0026	DP2012-0026	1-edge tipped	
	<b>DCGT 11T308</b>	9,525	3,97	0,80	DP1011-0027	DP2011-0027	DP1012-0027	DP2012-0027	1-edge tipped	
<b>Wiper</b>	<b>DCGT 070202 R/L W*</b>	6,35	2,38	0,20	DP1011-0029	DP2011-0029	DP1012-0029	DP2012-0029	1-edge tipped	
	<b>DCGT 070204 R/L W*</b>	6,35	2,38	0,40	DP1011-0030	DP2011-0030	DP1012-0030	DP2012-0030	1-edge tipped	
	<b>DCGT 070208 R/L W*</b>	6,35	2,38	0,80	DP1011-0071	DP2011-0072	DP1012-0071	DP2012-0072	1-edge tipped	
	<b>DCGT 11T302 R/L W*</b>	9,525	3,97	0,20	DP1011-0031	DP2011-0031	DP1012-0031	DP2012-0031	1-edge tipped	
	<b>DCGT 11T304 R/L W*</b>	9,525	3,97	0,40	DP1011-0032	DP2011-0032	DP1012-0032	DP2012-0032	1-edge tipped	
	<b>DCGT 11T308 R/L W*</b>	9,525	3,97	0,80	DP1011-0072	DP2011-0073	DP1012-0072	DP2012-0073	1-edge tipped	

\* for lengthwise turning



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## FN - neutral

	ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
					Item No.	Item No.	Item No. <small>New</small>	
MiniTools	DCGW 04T001	3,10	1,20	0,10		DP2010-0521	DP1110-1492	2-edge tipped
	DCGW 04T002	3,10	1,20	0,20		DP2010-0522	DP1110-1494	2-edge tipped
	DCGW 04T004	3,10	1,20	0,40		DP2010-0523	DP1110-1496	2-edge tipped

! You will find the matching boring bar holder in our boring bar catalog (03) on page 24.

	ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
					Item No.	Item No.	Item No. <small>New</small>	
Standard	DCGW 070201	6,35	2,38	0,10	DP1010-0603	DP2010-0603	DP1110-0603	1-edge tipped
	DCGW 070202	6,35	2,38	0,20	DP1010-0056	DP2010-0056	DP1110-0056	1-edge tipped
	DCGW 070204	6,35	2,38	0,40	DP1010-0057	DP2010-0057	DP1110-0057	1-edge tipped
	DCGW 070208	6,35	2,38	0,80	DP1010-0058	DP2010-0058	DP1110-0058	1-edge tipped
	DCGW 11T301	9,525	3,97	0,10	DP1010-0604	DP2010-0604	DP1110-0604	1-edge tipped
	DCGW 11T302	9,525	3,97	0,20	DP1010-0059	DP2010-0059	DP1110-0059	1-edge tipped
	DCGW 11T304	9,525	3,97	0,40	DP1010-0060	DP2010-0060	DP1110-0060	1-edge tipped
	DCGW 11T308	9,525	3,97	0,80	DP1010-0061	DP2010-0061	DP1110-0061	1-edge tipped
	DCGW 11T312	9,525	3,97	1,20	DP1010-0062	DP2010-0062	DP1110-0062	1-edge tipped
	DCGW 11T320	9,525	3,97	2,00			DP1110-0133	1-edge tipped
Wiper	DCGW 070202 R/L W	6,35	2,38	0,20	DP1010-0063	DP2010-0063		1-edge tipped
	DCGW 070204 R/L W	6,35	2,38	0,40	DP1010-0064	DP2010-0064		1-edge tipped
	DCGW 070208 R/L W	6,35	2,38	0,80	DP1010-0128	DP2010-0130		1-edge tipped
	DCGW 11T302 R/L W	9,525	3,97	0,20	DP1010-0065	DP2010-0065		1-edge tipped
	DCGW 11T304 R/L W	9,525	3,97	0,40	DP1010-0066	DP2010-0066		1-edge tipped
	DCGW 11T308 R/L W	9,525	3,97	0,80	DP1010-0129	DP2010-0131		1-edge tipped

## Application range:

- PCD Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia. Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

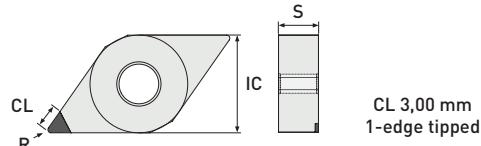
You will find further application ranges in the detailed overview on page 7.

# DNGA

edge tipped



FN - neutral



Item No.

Item No.

Item No.

Version

Standard	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	DNGA 150602	12,70	6,35	0,20		DP2010-0282		1-edge tipped
	DNGA 150604	12,70	6,35	0,40		DP2010-0283		1-edge tipped
	DNGA 150608	12,70	6,35	0,80		DP2010-0284		1-edge tipped



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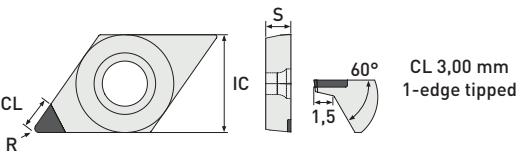
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# DXGW

edge tipped

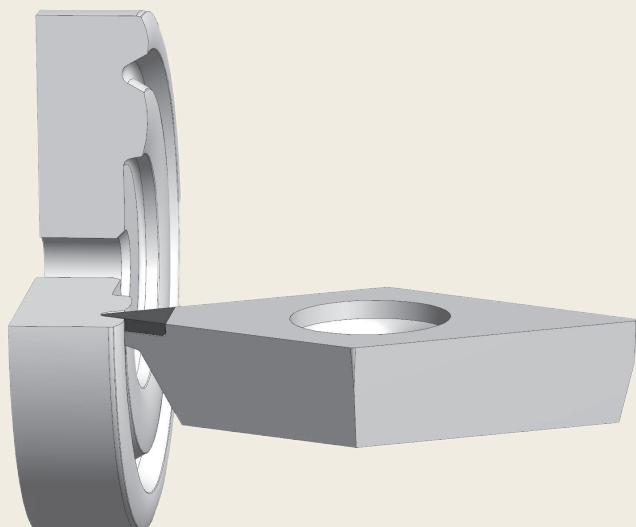


FN - neutral



DTS - Specials	ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
					Item No.	Item No.	Item No.	
	DXGW 11T301	9,525	3,97	0,10		DP2010-0300		1-edge tipped
	DXGW 11T302	9,525	3,97	0,20		DP2010-0301		1-edge tipped
	DXGW 11T304	9,525	3,97	0,40		DP2010-0302		1-edge tipped
	DXGW 11T308	9,525	3,97	0,80		DP2010-0303		1-edge tipped

## DTS-Specials Face / Axial Machining



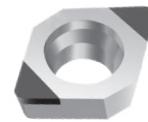
### Application range:

- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

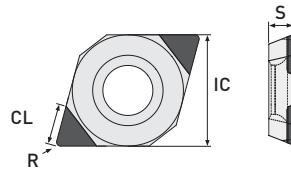
You will find further application ranges in the detailed overview on page 7.

# EPGW

edge tipped



FN - neutral



CL 2,00 mm  
2-edge tipped

PCD

CVD-D

Ultra  
Diamond

New

ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
				PCD	CVD-D	Ultra Diamond	
EPGW 050201	5,56	2,38	0,10		DP2010-0531	DP1110-1400	2-edge tipped
EPGW 050202	5,56	2,38	0,20		DP2010-0532	DP1110-1402	2-edge tipped
EPGW 050204	5,56	2,38	0,40		DP2010-0533	DP1110-1404	2-edge tipped



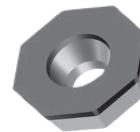
You will find the matching boring bar holder in our boring bar catalog (03) on page 26.



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## FN - FullFace

Standard	ISO Code	FullFace			PCD	CVD-D	Ultra Diamond	Version
		IC	S	R	Item No.	Item No.	Item No.	
	<b>ODGW 05T302 FF</b>	12,70	3,97	0,20	MI1030-0100	MI2030-0100		FullFace (Z8)
	<b>ODGW 05T304 FF</b>	12,70	3,97	0,40	MI1030-0102	MI2030-0102		FullFace (Z8)
	<b>ODGW 05T308 FF</b>	12,70	3,97	0,80	MI1030-0104	MI2030-0104		FullFace (Z8)

**Turning and milling inserts (8-edged)**

You can find suitable milling heads in our milling systems with indexable inserts catalog (05).

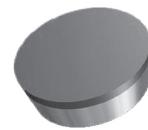
You can find suitable external clamp holders in our online shop.

**Application range:**

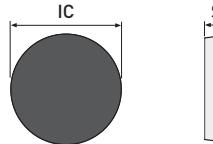
- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

# RBN

FullFace



## FN - FullFace



FullFace



Item No.



Item No.



Item No.

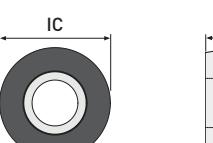
Standard	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	RBGN 0602M0 FF	6,00	2,38	-	DP1030-0090	DP2030-0090		FullFace
	RBGN 0803M0 FF	8,00	3,18	-	DP1030-0092	DP2030-0092		FullFace
	RBGN 1003M0 FF	10,00	3,18	-	DP1030-0094	DP2030-0094		FullFace
	RBGN 1203M0 FF	12,00	3,18	-	DP1030-0096	DP2030-0096		FullFace

# RCGW

FullFace



## FN - FullFace



FullFace



Item No.



Item No.



Item No.

Standard	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	RCGW 0602M0 FF	6,00	2,38	-	DP1030-0001	DP2030-0001		FullFace
	RCGW 0803M0 FF	8,00	3,18	-	DP1030-0002	DP2030-0002		FullFace
	RCGW 1003M0 FF	10,00	3,18	-	DP1030-0003	DP2030-0003		FullFace
	RCGW 10T3M0 FF	10,00	3,97	-	DP1030-0004	DP2030-0004		FullFace
	RCGW 1204M0 FF	12,00	4,76	-	DP1030-0005	DP2030-0005		FullFace



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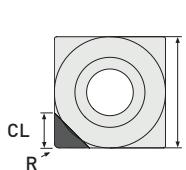
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# SCGT - Positive Rake Angle

edge tipped



FN - positive rake angle



CL 3,00 mm  
1-edge tipped



Item No.



Item No.



Item No.

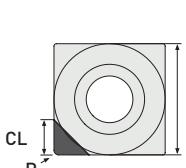
Standard	ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
	SCGT 09T302	9,525	3,97	0,20	DP1010-0067	DP2010-0067		1-edge tipped
	SCGT 09T304	9,525	3,97	0,40	DP1010-0068	DP2010-0068		1-edge tipped
	SCGT 09T308	9,525	3,97	0,80	DP1010-0069	DP2010-0069		1-edge tipped
	SCGT 09T312	9,525	3,97	1,20	DP1010-0070	DP2010-0070		1-edge tipped
	SCGT 120404	12,70	4,76	0,40	DP1010-0130	DP2010-0132		1-edge tipped
	SCGT 120408	12,70	4,76	0,80	DP1010-0071	DP2010-0071		1-edge tipped
	SCGT 120412	12,70	4,76	1,20	DP1010-0072	DP2010-0072		1-edge tipped

# SCGW

edge tipped



FN - neutral



CL 3,00 mm  
1-edge tipped



Item No.



Item No.



Item No.

Standard	ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
	SCGW 09T302	9,525	3,97	0,20	DP1010-0073	DP2010-0073		1-edge tipped
	SCGW 09T304	9,525	3,97	0,40	DP1010-0074	DP2010-0074		1-edge tipped
	SCGW 09T308	9,525	3,97	0,80	DP1010-0075	DP2010-0075		1-edge tipped
	SCGW 09T312	9,525	3,97	1,20	DP1010-0076	DP2010-0076		1-edge tipped
	SCGW 120404	12,70	4,76	0,40	DP1010-0077	DP2010-0077		1-edge tipped
	SCGW 120408	12,70	4,76	0,80	DP1010-0078	DP2010-0078		1-edge tipped
	SCGW 120412	12,70	4,76	1,20	DP1010-0079	DP2010-0079		1-edge tipped

## Application range:

- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

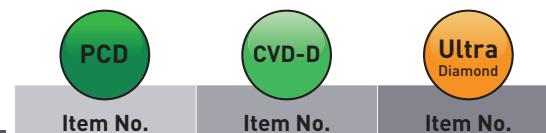
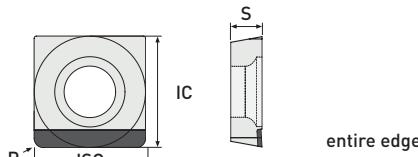
You will find further application ranges in the detailed overview on page 7.

# SCGT - Positive Rake Angle

entire edge



FN - positive rake angle



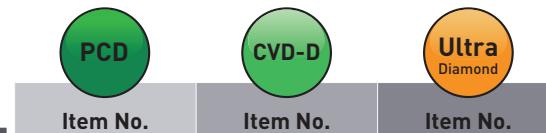
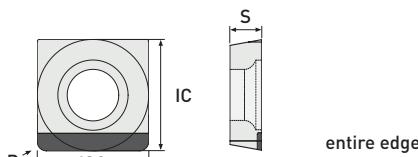
	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
Standard	SCGT 09T304 GS	9,525	3,97	0,40	DP1020-0067	DP2020-0067		entire edge
	SCGT 09T308 GS	9,525	3,97	0,80	DP1020-0011	DP2020-0011		entire edge
	SCGT 09T312 GS	9,525	3,97	1,20	DP1020-0012	DP2020-0012		entire edge
	SCGT 120404 GS	12,70	4,76	0,40	DP1020-0068	DP2020-0068		entire edge
	SCGT 120408 GS	12,70	4,76	0,80	DP1020-0013	DP2020-0013		entire edge
	SCGT 120412 GS	12,70	4,76	1,20	DP1020-0014	DP2020-0014		entire edge

# SCGW

entire edge



FN - neutral



	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
Standard	SCGW 09T304 GS	9,525	3,97	0,40	DP1020-0015	DP2020-0015		entire edge
	SCGW 09T308 GS	9,525	3,97	0,80	DP1020-0016	DP2020-0016		entire edge
	SCGW 09T312 GS	9,525	3,97	1,20	DP1020-0017	DP2020-0017		entire edge
	SCGW 120404 GS	12,70	4,76	0,40	DP1020-0018	DP2020-0018		entire edge
	SCGW 120408 GS	12,70	4,76	0,80	DP1020-0019	DP2020-0019		entire edge
	SCGW 120412 GS	12,70	4,76	1,20	DP1020-0020	DP2020-0020		entire edge



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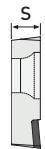
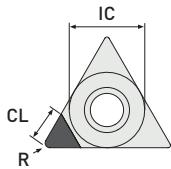
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# TCGT - Positive Rake Angle

edge tipped



FN - positive rake angle



CL 3,00 mm  
1-edge tipped



Item No.



Item No.



Item No.

Standard	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	TCGT 090202	5,56	2,38	0,20	DP1010-0080	DP2010-0080		1-edge tipped
	TCGT 090204	5,56	2,38	0,40	DP1010-0081	DP2010-0081		1-edge tipped
	TCGT 090208	5,56	2,38	0,80	DP1010-0082	DP2010-0082		1-edge tipped
	TCGT 110202	6,35	2,38	0,20	DP1010-0083	DP2010-0083		1-edge tipped
	TCGT 110204	6,35	2,38	0,40	DP1010-0084	DP2010-0084		1-edge tipped
	TCGT 110208	6,35	2,38	0,80	DP1010-0085	DP2010-0085		1-edge tipped
	TCGT 16T302	9,525	3,97	0,20	DP1010-0086	DP2010-0086		1-edge tipped
	TCGT 16T304	9,525	3,97	0,40	DP1010-0087	DP2010-0087		1-edge tipped
	TCGT 16T308	9,525	3,97	0,80	DP1010-0088	DP2010-0088		1-edge tipped
	TCGT 16T312	9,525	3,97	1,20	DP1010-0089	DP2010-0089		1-edge tipped

## Application range:

- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

You will find further application ranges in the detailed overview on page 7.

# TCGT - Chip Breaker

edge tipped



FN - neutral - FN - Chip breaker for finishing (SPL-F) or roughing (SPL-R)

Standard	ISO Code	IC	S	R	SPL-F (Finishing)		SPL-R (Roughing)		Version
					Item No.	Item No.	Item No.	Item No.	
	TCGT 090202	5,56	2,38	0,20	DP1011-0040		DP1012-0040		1-edge tipped
	TCGT 090204	5,56	2,38	0,40	DP1011-0041		DP1012-0041		1-edge tipped
	TCGT 090208	5,56	2,38	0,80	DP1011-0042		DP1012-0042		1-edge tipped
	TCGT 110202	6,35	2,38	0,20	DP1011-0043		DP1012-0043		1-edge tipped
	TCGT 110204	6,35	2,38	0,40	DP1011-0044		DP1012-0044		1-edge tipped
	TCGT 110208	6,35	2,38	0,80	DP1011-0045		DP1012-0045		1-edge tipped
	TCGT 16T302	9,525	3,97	0,20	DP1011-0046		DP1012-0046		1-edge tipped
	TCGT 16T304	9,525	3,97	0,40	DP1011-0047		DP1012-0047		1-edge tipped
	TCGT 16T308	9,525	3,97	0,80	DP1011-0048		DP1012-0048		1-edge tipped



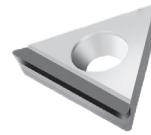
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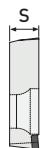
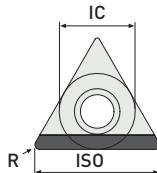
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# TCGT - Positive Rake Angle

entire edge



## FN - positive rake angle



entire edge



Item No.



Item No.



Item No.

Version

Standard	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	TCGT 090202 GS	5,56	2,38	0,20	DP1020-0069	DP2020-0069		entire edge
	TCGT 090204 GS	5,56	2,38	0,40	DP1020-0021	DP2020-0021		entire edge
	TCGT 090208 GS	5,56	2,38	0,80	DP1020-0022	DP2020-0022		entire edge
	TCGT 110202 GS	6,35	2,38	0,20	DP1020-0070	DP2020-0070		entire edge
	TCGT 110204 GS	6,35	2,38	0,40	DP1020-0023	DP2020-0023		entire edge
	TCGT 110208 GS	6,35	2,38	0,80	DP1020-0024	DP2020-0024		entire edge
	TCGT 110212 GS	6,35	2,38	1,20	DP1020-0025	DP2020-0025		entire edge
	TCGT 16T302 GS	9,525	3,97	0,20	DP1020-0071	DP2020-0071		entire edge
	TCGT 16T304 GS	9,525	3,97	0,40	DP1020-0027	DP2020-0027		entire edge
	TCGT 16T308 GS	9,525	3,97	0,80	DP1020-0028	DP2020-0028		entire edge
	TCGT 16T312 GS	9,525	3,97	1,20	DP1020-0029	DP2020-0029		entire edge

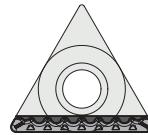
### Application range:

- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

You will find further application ranges in the detailed overview on page 7.

# TCGT - Chip Breaker

entire edge



FN - neutral - FN - Chip breaker for finishing (SPL-F) or roughing (SPL-R)

Standard	ISO Code	IC	S	R	Item No.		Item No.		Item No.		Item No.	
					SPL-F (Finishing)		SPL-R (Roughing)		Version			
	TCGT 090202 GS	5,56	2,38	0,20	DP1021-0038		DP1022-0038				entire edge	
	TCGT 090204 GS	5,56	2,38	0,40	DP1021-0012		DP1022-0012				entire edge	
	TCGT 090208 GS	5,56	2,38	0,80	DP1021-0013		DP1022-0013				entire edge	
	TCGT 110202 GS	6,35	2,38	0,20	DP1021-0039		DP1022-0039				entire edge	
	TCGT 110204 GS	6,35	2,38	0,40	DP1021-0014		DP1022-0014				entire edge	
	TCGT 110208 GS	6,35	2,38	0,80	DP1021-0015		DP1022-0015				entire edge	
	TCGT 16T302 GS	9,525	3,97	0,20	DP1021-0040		DP1022-0040				entire edge	
	TCGT 16T304 GS	9,525	3,97	0,40	DP1021-0018		DP1022-0018				entire edge	
	TCGT 16T308 GS	9,525	3,97	0,80	DP1021-0019		DP1022-0019				entire edge	



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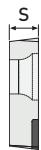
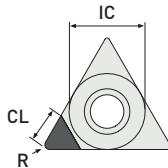
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# TCGW

edge tipped | FullFace



## FN - neutral



CL 3,00 mm  
1-edge tipped



Item No.



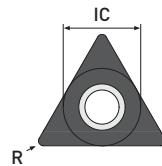
Item No.



Item No.

Standard	ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
	TCGW 090201	5,56	2,38	0,10	DP1010-0613	DP2010-0613		1-edge tipped
	TCGW 090202	5,56	2,38	0,20	DP1010-0090	DP2010-0090		1-edge tipped
	TCGW 090204	5,56	2,38	0,40	DP1010-0091	DP2010-0091		1-edge tipped
	TCGW 090208	5,56	2,38	0,80	DP1010-0092	DP2010-0092		1-edge tipped
	TCGW 110201	6,35	2,38	0,10	DP1010-0614	DP2010-0614		1-edge tipped
	TCGW 110202	6,35	2,38	0,20	DP1010-0093	DP2010-0093		1-edge tipped
	TCGW 110204	6,35	2,38	0,40	DP1010-0094	DP2010-0094		1-edge tipped
	TCGW 110208	6,35	2,38	0,80	DP1010-0095	DP2010-0095		1-edge tipped
	TCGW 16T302	9,525	3,97	0,20	DP1010-0096	DP2010-0096		1-edge tipped
	TCGW 16T304	9,525	3,97	0,40	DP1010-0097	DP2010-0097		1-edge tipped
	TCGW 16T308	9,525	3,97	0,80	DP1010-0098	DP2010-0098		1-edge tipped
	TCGW 16T312	9,525	3,97	1,20	DP1010-0099	DP2010-0099		1-edge tipped

## FN - FullFace



FullFace



Item No.



Item No.



Item No.

Standard	ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
	TCGW 090202 FF	5,56	2,38	0,20	DP1030-0030	DP2030-0030		FullFace
	TCGW 090204 FF	5,56	2,38	0,40	DP1030-0031	DP2030-0031		FullFace
	TCGW 090208 FF	5,56	2,38	0,80	DP1030-0032	DP2030-0032		FullFace
	TCGW 110202 FF	6,35	2,38	0,20	DP1030-0010	DP2030-0010		FullFace
	TCGW 110204 FF	6,35	2,38	0,40	DP1030-0011	DP2030-0011		FullFace
	TCGW 110208 FF	6,35	2,38	0,80	DP1030-0012	DP2030-0012		FullFace

### Application range:

- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

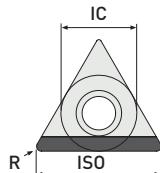
You will find further application ranges in the detailed overview on page 7.

# TCGW

entire edge



## FN - neutral



entire edge

**PCD**

**CVD-D**

**Ultra  
Diamond**

Standard	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	TCGW 090202 GS	5,56	2,38	0,20	DP1020-0072	DP2020-0072		entire edge
	TCGW 090204 GS	5,56	2,38	0,40	DP1020-0030	DP2020-0030		entire edge
	TCGW 090208 GS	5,56	2,38	0,80	DP1020-0031	DP2020-0031		entire edge
	TCGW 110202 GS	6,35	2,38	0,20	DP1020-0073	DP2020-0073		entire edge
	TCGW 110204 GS	6,35	2,38	0,40	DP1020-0032	DP2020-0032		entire edge
	TCGW 110208 GS	6,35	2,38	0,80	DP1020-0033	DP2020-0033		entire edge
	TCGW 110212 GS	6,35	2,38	1,20	DP1020-0034	DP2020-0034		entire edge
	TCGW 16T302 GS	9,525	3,97	0,20	DP1020-0074	DP2020-0074		entire edge
	TCGW 16T304 GS	9,525	3,97	0,40	DP1020-0036	DP2020-0036		entire edge
	TCGW 16T308 GS	9,525	3,97	0,80	DP1020-0037	DP2020-0037		entire edge
	TCGW 16T312 GS	9,525	3,97	1,20	DP1020-0038	DP2020-0038		entire edge



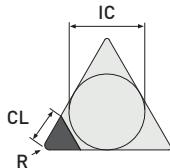
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## FN - neutral

CL 3,00 mm  
1-edge tipped

Item No.



Item No.



Item No.

Standard	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	TPGN 090204	5,56	2,38	0,40	DP1010-0100	DP2010-0100		1-edge tipped
	TPGN 090208	5,56	2,38	0,80	DP1010-0101	DP2010-0101		1-edge tipped
	TPGN 110204	6,35	2,38	0,40	DP1010-0102	DP2010-0102		1-edge tipped
	TPGN 110208	6,35	2,38	0,80	DP1010-0103	DP2010-0103		1-edge tipped
	TPGN 110302	6,35	3,18	0,20	DP1010-0104	DP2010-0104		1-edge tipped
	TPGN 110304	6,35	3,18	0,40	DP1010-0105	DP2010-0105		1-edge tipped
	TPGN 110308	6,35	3,18	0,80	DP1010-0106	DP2010-0106		1-edge tipped
	TPGN 160304	9,525	3,18	0,40	DP1010-0107	DP2010-0107		1-edge tipped
	TPGN 160308	9,525	3,18	0,80	DP1010-0108	DP2010-0108		1-edge tipped
	TPGN 160312	9,525	3,18	1,20	DP1010-0109	DP2010-0109		1-edge tipped

## Application range:

- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

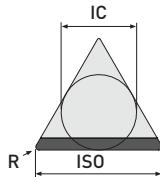
You will find further application ranges in the detailed overview on page 7.

# TPGN

entire edge



FN - neutral



entire edge



Item No.



Item No.



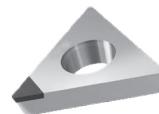
Item No.

Version

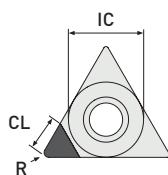
Standard	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	TPGN 110304 GS	6,35	3,18	0,40	DP1020-0039	DP2020-0039		entire edge
	TPGN 110308 GS	6,35	3,18	0,80	DP1020-0040	DP2020-0040		entire edge
	TPGN 110312 GS	6,35	3,18	1,20	DP1010-0041	DP2010-0041		entire edge
	TPGN 160304 GS	9,525	3,18	0,40	DP1020-0042	DP2020-0042		entire edge
	TPGN 160308 GS	9,525	3,18	0,80	DP1020-0043	DP2020-0043		entire edge
	TPGN 160312 GS	9,525	3,18	1,20	DP1020-0044	DP2020-0044		entire edge

# TPGW

edge tipped



FN - neutral



CL 2,00 mm  
1-edge tipped



Item No.



Item No.



Item No.

New

Version

MiniTools	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	TPGW 06T101	3,97	1,98	0,10		DP2010-0671	DP1110-1410	1-edge tipped
	TPGW 06T102	3,97	1,98	0,20		DP2010-0672	DP1110-1412	1-edge tipped
	TPGW 06T104	3,97	1,98	0,40		DP2010-0673	DP1110-1414	1-edge tipped



You will find the matching boring bar holder in our boring bar catalog (03) on page 27.



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# VBGT - Positive Rake Angle



edge tipped

## FN - positive rake angle

Standard	ISO Code	IC	S	R	CL 3,00 mm 1-edge tipped			Version
					PCD	CVD-D	Ultra Diamond	
	VBGT 110201	6,35	2,38	0,10	DP1010-0605	DP2010-0605		1-edge tipped
	VBGT 110202	6,35	2,38	0,20	DP1010-0401	DP2010-0401		1-edge tipped
	VBGT 110204	6,35	2,38	0,40	DP1010-0402	DP2010-0402		1-edge tipped
	VBGT 110208	6,35	2,38	0,80	DP1010-0403	DP2010-0403		1-edge tipped
	VBGT 160401	9,525	4,76	0,10	DP1010-0606	DP2010-0606		1-edge tipped
	VBGT 160402	9,525	4,76	0,20	DP1010-0404	DP2010-0404		1-edge tipped
	VBGT 160404	9,525	4,76	0,40	DP1010-0405	DP2010-0405		1-edge tipped
	VBGT 160408	9,525	4,76	0,80	DP1010-0406	DP2010-0406		1-edge tipped
	VBGT 160412	9,525	4,76	1,20	DP1010-0407	DP2010-0407		1-edge tipped

### Application range:

- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

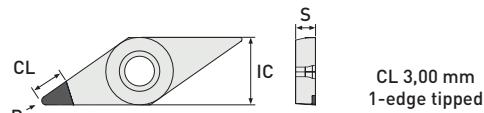
You will find further application ranges in the detailed overview on page 7.

# VBGW

edge tipped



FN - neutral



CL 3,00 mm  
1-edge tipped



Item No.



Item No.



Item No.

Version

Standard	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	<b>VBGW 110201</b>	6,35	2,38	0,10	DP1010-0607	DP2010-0607		1-edge tipped
	<b>VBGW 110202</b>	6,35	2,38	0,20	DP1010-0451	DP2010-0451		1-edge tipped
	<b>VBGW 110204</b>	6,35	2,38	0,40	DP1010-0452	DP2010-0452		1-edge tipped
	<b>VBGW 110208</b>	6,35	2,38	0,80	DP1010-0453	DP2010-0453		1-edge tipped
	<b>VBGW 160401</b>	9,525	4,76	0,10	DP1010-0608	DP2010-0608		1-edge tipped
	<b>VBGW 160402</b>	9,525	4,76	0,20	DP1010-0454	DP2010-0454		1-edge tipped
	<b>VBGW 160404</b>	9,525	4,76	0,40	DP1010-0455	DP2010-0455		1-edge tipped
	<b>VBGW 160408</b>	9,525	4,76	0,80	DP1010-0456	DP2010-0456		1-edge tipped
	<b>VBGW 160412</b>	9,525	4,76	1,20	DP1010-0457	DP2010-0457		1-edge tipped



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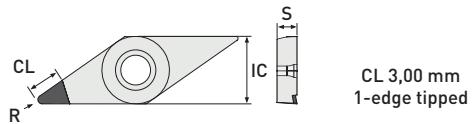
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# VCGT - Positive Rake Angle

edge tipped



FN - positive rake angle



CL 3,00 mm  
1-edge tipped



Standard	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
					DP1010-0131	DP2010-0133		1-edge tipped
	VCGT 070201	3,97	2,38	0,10	DP1010-0119	DP2010-0119		1-edge tipped
	VCGT 070202	3,97	2,38	0,20	DP1010-0120	DP2010-0120		1-edge tipped
	VCGT 070204	3,97	2,38	0,40	DP1010-0132	DP2010-0134		1-edge tipped
	VCGT 070208	3,97	2,38	0,80	DP1010-0609	DP2010-0609		1-edge tipped
	VCGT 110301	6,35	3,18	0,10	DP1010-0121	DP2010-0121		1-edge tipped
	VCGT 110302	6,35	3,18	0,20	DP1010-0122	DP2010-0122		1-edge tipped
	VCGT 110304	6,35	3,18	0,40	DP1010-0123	DP2010-0123		1-edge tipped
	VCGT 110308	6,35	3,18	0,80	DP1010-0610	DP2010-0610		1-edge tipped
	VCGT 160401	9,525	4,76	0,10	DP1010-0124	DP2010-0124		1-edge tipped
	VCGT 160402	9,525	4,76	0,20	DP1010-0125	DP2010-0125		1-edge tipped
	VCGT 160404	9,525	4,76	0,40	DP1010-0126	DP2010-0126		1-edge tipped
	VCGT 160408	9,525	4,76	0,80	DP1010-0127	DP2010-0127		1-edge tipped
	VCGT 160412	9,525	4,76	1,20				1-edge tipped

## Application range:

- PCD      Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D      Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia.      Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

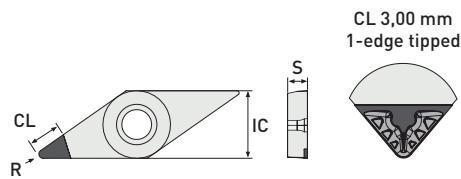
You will find further application ranges in the detailed overview on page 7.

# VCGT - Chip Breaker

edge tipped



FN - neutral - FN - Chip breaker for finishing (SPL-F) or roughing (SPL-R)



PCD	CVD-D	PCD	CVD-D
Item No.	Item No.	Item No.	Item No.

Standard	ISO Code	IC	S	R	SPL-F (Finishing)		SPL-R (Roughing)		Version
	VCGT 070202	3,97	2,38	0,20	DP1011-0060	DP2011-0060	DP1012-0060	DP2012-0060	1-edge tipped
	VCGT 070204	3,97	2,38	0,40	DP1011-0061	DP2011-0061	DP1012-0061	DP2012-0061	1-edge tipped
	VCGT 070208	3,97	2,38	0,80	DP1011-0075	DP2011-0075	DP1012-0075	DP2012-0075	1-edge tipped
	VCGT 110302	6,35	3,18	0,20	DP1011-0062	DP2011-0062	DP1012-0062	DP2012-0062	1-edge tipped
	VCGT 110304	6,35	3,18	0,40	DP1011-0063	DP2011-0063	DP1012-0063	DP2012-0063	1-edge tipped
	VCGT 110308	6,35	3,18	0,80	DP1011-0064	DP2011-0064	DP1012-0064	DP2012-0064	1-edge tipped
	VCGT 160402	9,525	4,76	0,20	DP1011-0065	DP2011-0065	DP1012-0065	DP2012-0065	1-edge tipped
	VCGT 160404	9,525	4,76	0,40	DP1011-0066	DP2011-0066	DP1012-0066	DP2012-0066	1-edge tipped
	VCGT 160408	9,525	4,76	0,80	DP1011-0067	DP2011-0067	DP1012-0067	DP2012-0067	1-edge tipped



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# VCGW

edge tipped



FN - neutral

MiniTools	ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
					Item No.	Item No.	Item No. <small>New</small>	
	VCGW 050101	3,10	1,59	0,10		DP2010-0561	DP1110-1498	2-edge tipped
	VCGW 050102	3,10	1,59	0,20		DP2010-0562	DP1110-1500	2-edge tipped
	VCGW 050104	3,10	1,59	0,40		DP2010-0563	DP1110-1502	2-edge tipped

! You will find the matching boring bar holder in our boring bar catalog (03) on page 28.

Standard	ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
					Item No.	Item No.	Item No.	
	VCGW 070201	3,97	2,38	0,10	DP1010-0135	DP2010-0135		1-edge tipped
	VCGW 070202	3,97	2,38	0,20	DP1010-0110	DP2010-0110		1-edge tipped
	VCGW 070204	3,97	2,38	0,40	DP1010-0111	DP2010-0111		1-edge tipped
	VCGW 070208	3,97	2,38	0,80	DP1010-0136	DP2010-0136		1-edge tipped
	VCGW 110301	6,35	3,18	0,10	DP1010-0611	DP2010-0611		1-edge tipped
	VCGW 110302	6,35	3,18	0,20	DP1010-0112	DP2010-0112		1-edge tipped
	VCGW 110304	6,35	3,18	0,40	DP1010-0113	DP2010-0113		1-edge tipped
	VCGW 110308	6,35	3,18	0,80	DP1010-0114	DP2010-0114		1-edge tipped
	VCGW 160401	9,525	4,76	0,10	DP1010-0612	DP2010-0612		1-edge tipped
	VCGW 160402	9,525	4,76	0,20	DP1010-0115	DP2010-0115		1-edge tipped
	VCGW 160404	9,525	4,76	0,40	DP1010-0116	DP2010-0116		1-edge tipped
	VCGW 160408	9,525	4,76	0,80	DP1010-0117	DP2010-0117		1-edge tipped
	VCGW 160412	9,525	4,76	1,20	DP1010-0118	DP2010-0118		1-edge tipped

#### Application range:

- PCD Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia. Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

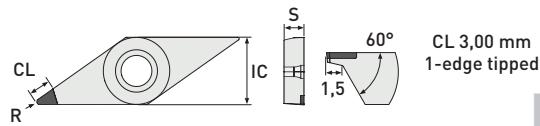
You will find further application ranges in the detailed overview on page 7.

# VXGW

edge tipped



FN - neutral



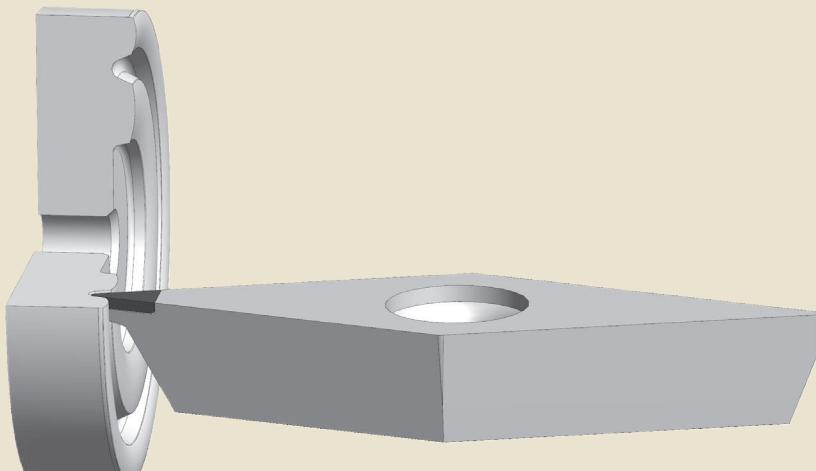
PCD

CVD-D

Ultra  
Diamond

DTS - Specials	ISO Code	IC	S	R	Item No.	Item No.	Item No.	Version
	VXGW 160401	9,525	4,76	0,10		DP2010-0310		1-edge tipped
	VXGW 160402	9,525	4,76	0,20		DP2010-0311		1-edge tipped
	VXGW 160404	9,525	4,76	0,40		DP2010-0312		1-edge tipped
	VXGW 160408	9,525	4,76	0,80		DP2010-0313		1-edge tipped

## DTS-Specials Face / Axial Machining



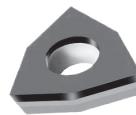
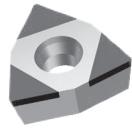
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# WCGW

edge tipped | FullFace



## FN - neutral

**Minitools**

ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
	Item No.	Item No.	Item No. <small>New</small>				
WCGW 020101	3,97	1,59	0,10		DP2010-0571	DP1110-1504	3-edge tipped
WCGW 020102	3,97	1,59	0,20		DP2010-0572	DP1110-1506	3-edge tipped
WCGW 020104	3,97	1,59	0,40		DP2010-0573	DP1110-1508	3-edge tipped

! You will find the matching boring bar holder in our boring bar catalog (03) on page 33.

## FN - FullFace

**Minitools**

ISO Code	IC	S	R	PCD	CVD-D	Ultra Diamond	Version
	Item No.	Item No.	Item No.				
WCGW 020101 FF	3,97	1,59	0,10		DP2030-0117		FullFace
WCGW 020102 FF	3,97	1,59	0,20		DP2030-0113		FullFace
WCGW 020104 FF	3,97	1,59	0,40		DP2030-0114		FullFace

! You will find the matching boring bar holder in our boring bar catalog (03) on page 33.

### Application range:

- PCD Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- Ultra-Dia. Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

You will find further application ranges in the detailed overview on page 7.

# Your Notes



**DTS GmbH**  
Germany

# Cutting Parameters

for our diamond indexable inserts

Material	Diamond Indexable Inserts											
	PCD						CVD-D					
	$V_c$ [m/min]		$a_p$ [mm]		$F$ [mm/rev]		$V_c$ [m/min]		$a_p$ [mm]		$F$ [mm/rev]	
	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
Acrylic (PMMA)	100	2.000	0,01	2,80	0,01	0,40	200	5.000	0,01	2,60	0,01	0,50
Al Si <10%	300	3.000	0,01	2,80	0,01	0,50	200	5.000	0,01	2,80	0,01	0,60
Al Si >10%							150	4.000	0,01	2,80	0,01	0,40
Brass, Brass lead-free	120	2.000	0,01	2,60	0,01	0,40	80	3.000	0,01	2,60	0,01	0,50
Carbide G-Grade <15% Co												
Carbide G-Grade >15% Co												
Carbide K-Grade <15% Co												
Carbide K-Grade >15% Co												
Carbide with Ni Binder												
Ceramics, Zirconium												
Composites GFRP/CFRP / MMC							80	3.000	0,01	2,60	0,01	0,50
Copper, Copper alloy	100	2.000	0,01	2,60	0,01	0,40	60	3.500	0,01	2,60	0,005	0,60
Glass, Glass Ceramics												
Gold, Silver, Platinum							80	3.000	0,01	2,60	0,01	0,50
Graphite	150	1.000	0,01	2,80	0,02	0,50	80	1.500	0,01	2,80	0,01	0,60
Magnesium	200	3.000	0,01	2,80	0,01	0,30	80	4.500	0,01	2,60	0,01	0,40
Plastics							100	1.500	0,01	2,80	0,01	0,60
PEEK	80	3.000	0,01	2,60	0,01	0,50						
Titanium	80	150	0,01	0,50	0,01	0,30	100	200	0,01	0,50	0,01	0,40
Tungsten Copper							40	1.200	0,01	2,00	0,01	0,30

Subject to technical changes.



Diamond Indexable Inserts										
UltraDiamond										
V <sub>c</sub> [m/min]		a <sub>p</sub> [mm]		F [mm/rev]		Cooling				
min.	max.	min.	max.	min.	max.	Dry	Air	Emulsion	Oil	MQL
80	5.000	0,01	2,60	0,005	0,50	5. Choice	4. Choice	1. Choice	2. Choice	3. Choice
						5. Choice	4. Choice	1. Choice	2. Choice	3. Choice
								1. Choice	2. Choice	3. Choice
						5. Choice	4. Choice	1. Choice	2. Choice	3. Choice
on request						on request				
						4. Choice	1. Choice	2. Choice		3. Choice
							4. Choice	1. Choice	2. Choice	3. Choice
on request						on request				
							3. Choice	1. Choice		2. Choice
						2. Choice	1. Choice			
							4. Choice	1. Choice	2. Choice	3. Choice
							3. Choice	1. Choice		2. Choice
							4. Choice	1. Choice	2. Choice	3. Choice
							4. Choice	1. Choice	2. Choice	3. Choice
							3. Choice	1. Choice	2. Choice	
								3. Choice	1. Choice	2. Choice

# Cutting Parameters

for our diamond indexable inserts with chip breaker



		Chip Breaker											
Material	R	Chip breaker F (Finishing chip breaker)						Chip breaker R (Roughing chip breaker)					
		$V_c$ [m/min]		$a_p$ [mm]		F [mm/rev]		$V_c$ [m/min]		$a_p$ [mm]		F [mm/rev]	
		min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
AlSi <3%	0,2	100	800	0,01	2,80	0,02	0,10	100	800	0,05	2,00	0,03	0,10
	0,4	100	800	0,01	2,80	0,04	0,20	100	800	0,06	2,50	0,03	0,20
	0,8	100	800	0,01	2,80	0,05	0,40	100	800	0,08	2,80	0,06	0,40
	1,2	100	800	0,01	2,80	0,05	0,40	100	800	0,10	2,80	0,08	0,60
AlSi <12%	0,2	80	600	0,01	2,00	0,02	0,10	80	800	0,10	2,50	0,08	0,10
	0,4	80	600	0,01	2,50	0,04	0,20	80	800	0,12	2,50	0,10	0,20
	0,8	80	600	0,01	2,50	0,05	0,40	80	800	0,15	2,80	0,15	0,40
	1,2	80	600	0,01	2,80	0,05	0,60	80	800	0,20	2,80	0,20	0,60
Brass lead-free	0,2	80	600	0,01	2,00	0,02	0,10	80	600	0,10	2,80	0,05	0,10
	0,4	80	800	0,01	2,50	0,04	0,20	80	800	0,12	2,80	0,07	0,20
	0,8	80	800	0,01	2,80	0,05	0,40	80	800	0,15	2,80	0,07	0,40
	1,2	80	800	0,01	2,80	0,05	0,60	80	800	0,20	2,80	0,12	0,60
Copper, Bronze	0,2	80	600	0,01	2,00	0,02	0,10	80	600	0,12	2,80	0,08	0,10
	0,4	80	600	0,01	2,50	0,04	0,20	80	600	0,15	2,80	0,10	0,20
	0,8	80	600	0,01	2,50	0,05	0,40	80	600	0,15	2,80	0,20	0,40
	1,2	80	600	0,01	2,80	0,05	0,60	80	600	0,20	2,80	0,25	0,60
MMC	0,2	100	500	0,01	2,80	0,02	0,10	100	500	0,08	2,80	0,05	0,10
	0,4	100	500	0,01	2,80	0,04	0,20	100	500	0,10	2,80	0,06	0,20
	0,8	100	500	0,01	2,80	0,05	0,40	100	500	0,20	2,80	0,10	0,40
	1,2	100	500	0,01	2,80	0,05	0,60	100	500	0,25	2,80	0,15	0,60

Subject to technical changes.



## Cooling recommended

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

Here you will find our recommendation:

Material	Cooling				
	Dry	Air	Emulsion	Oil	MQL
AlSi <3%			1. Choice	2. Choice	3. Choice
AlSi <12%			1. Choice	2. Choice	3. Choice
Brass lead-free	5.Choice	4.Choice	1. Choice	2. Choice	3. Choice
Copper, Bronze			1. Choice	2. Choice	3. Choice
MMC		2.Choice	1.Choice		



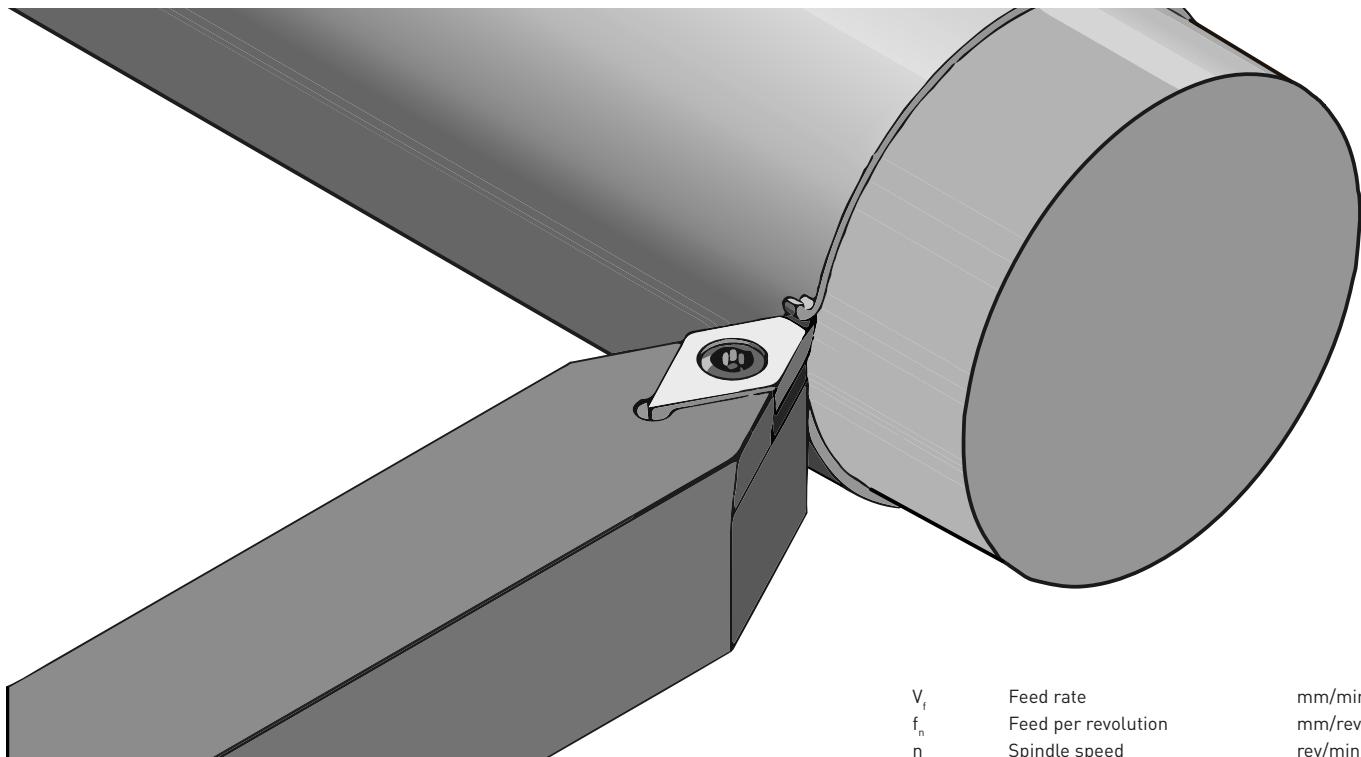
If you have any further technical questions, please do not hesitate to contact us  
by phone or e-mail!

Phone: +49(0)6301 32011-0

Mail: [info@diamond-toolingsystems.com](mailto:info@diamond-toolingsystems.com)

# Formulas

## Turning



$V_f$	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	cm <sup>3</sup> /min
$a_p$	Cutting depth	mm

### ► Cutting speed

$$V_c = \frac{D_c \times \pi \times n}{1000} \quad [\text{m/min}]$$

### ► Spindle speed

$$n = \frac{v_c \times 1000}{\pi \times D_c} \quad [\text{rev/min}]$$

### ► Feed per revolution

$$f_n = \frac{V_f}{n} \quad [\text{mm/rev}]$$

### ► Cutting time

$$t_c = \frac{l_m}{f_n \times n} \quad [\text{min}]$$

### ► Stock removal rate

$$Q = v_c \times a_p \times f_n \quad [\text{cm}^3/\text{min}]$$

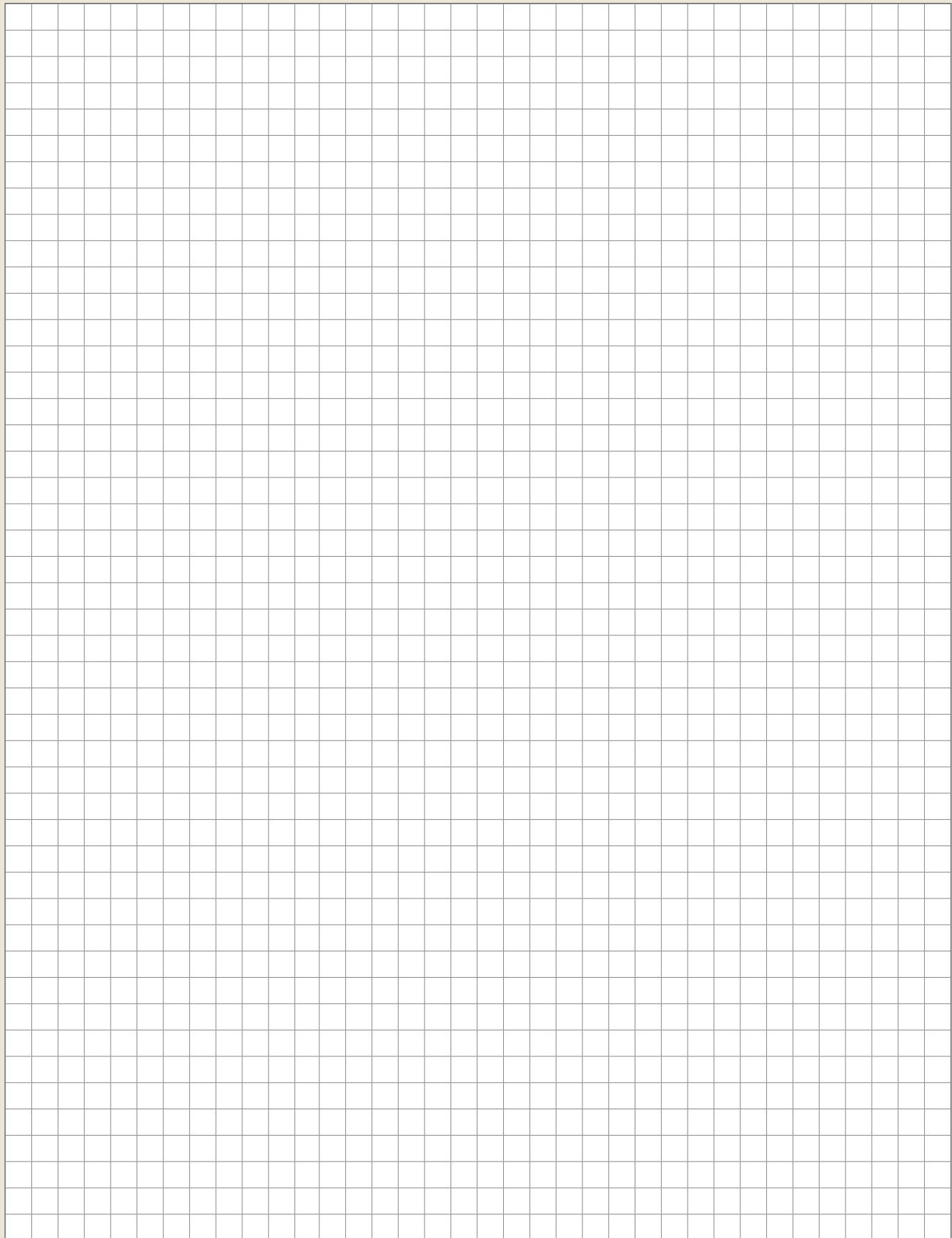
# Your Notes



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Germany

## Your Notes

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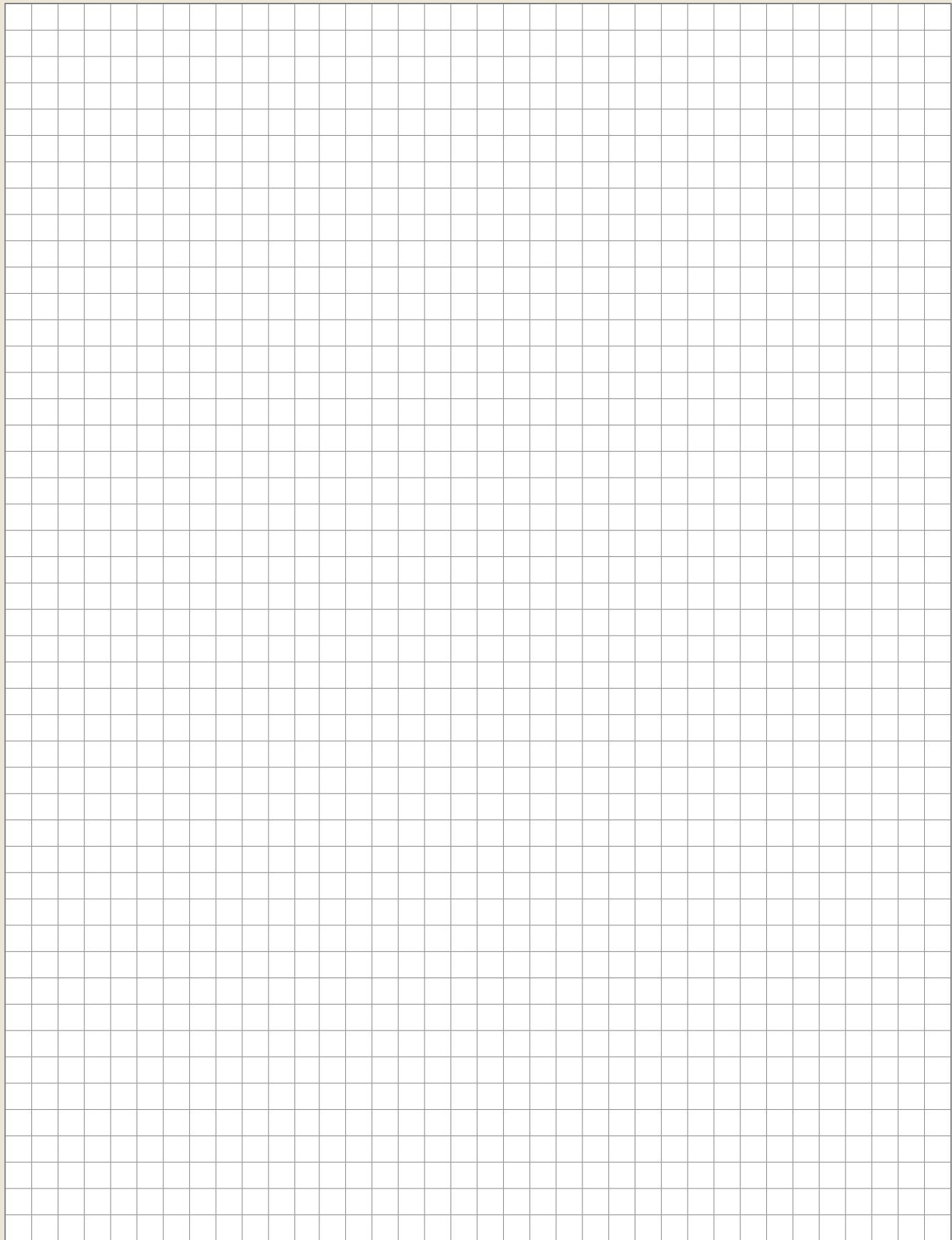
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We reserve the right to make production-related technical changes and changes to the delivery program. The cutting values given are guide values which must be adjusted according to the process environment.

## 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.



PASSION FOR DIAMOND



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