TYcarb
Advanced Materials
Made in Germany

Diamond Indexable Inserts

PCD | CVD-D | Ultra Diamond

Tool and Mold Forming

Automotive Mechanical Engineering

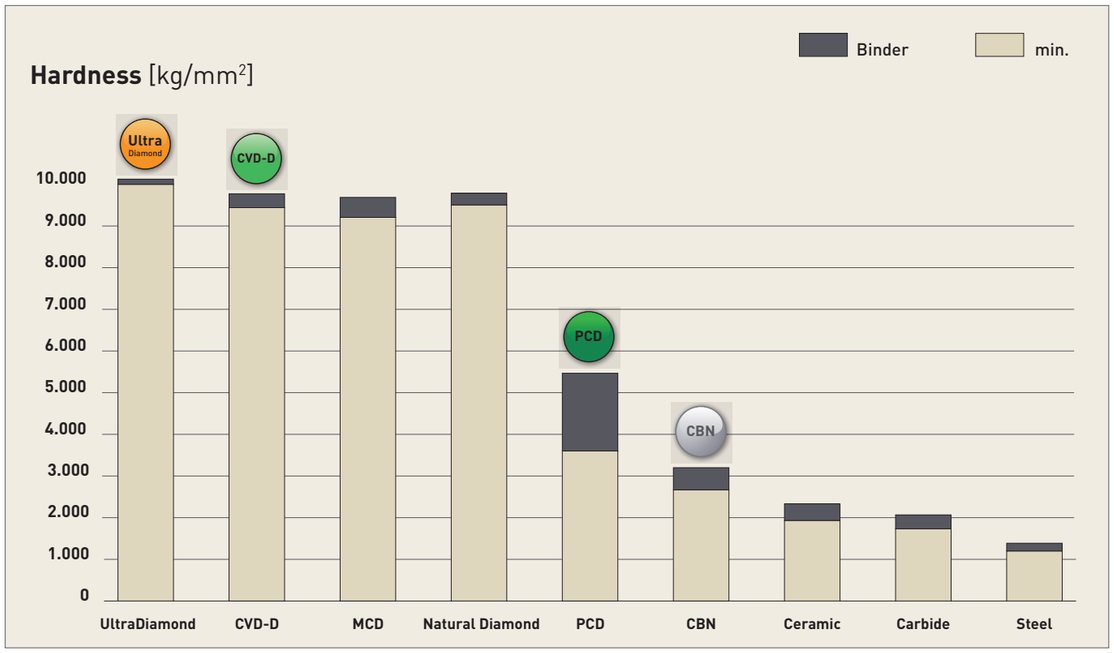
Medical Technology Microtechnology

Aerospace

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.



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 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%.

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

Ultra Diamond

UltraDiamond

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

TYCarb Advanced Materials Made in Germany

You cannot find your material in the table?

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

Phone: 888.554.7264

Mail: sales@ranitool.com

Green ✓ First choice

Orange ✓ Possible alternative

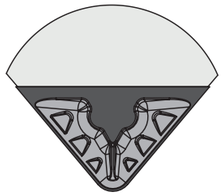
ISO	Material	PCD	CVD-D	Ultra Diamond
S	Titanium (Roughing)	✓		
	Titanium (Finishing)		✓	
N	Acrylic (PMMA)		✓	✓
	Aluminum, < 10% Si	✓	✓	
	Aluminum, > 10% Si		✓	✓
	Brass	✓	✓	
	Carbide G-Grade, < 15% Co		✓	✓
	Carbide G-Grade, > 15% Co		✓	
	Carbide K-Grade, < 15% Co		✓	✓
	Carbide K-Grade, > 15% Co		✓	
	Carbide (Green)	✓		
	Carbide with Ni Binder			✓
	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		✓	✓

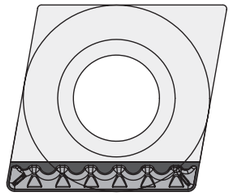
3D - Lasered Micro Chip Breaker

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.

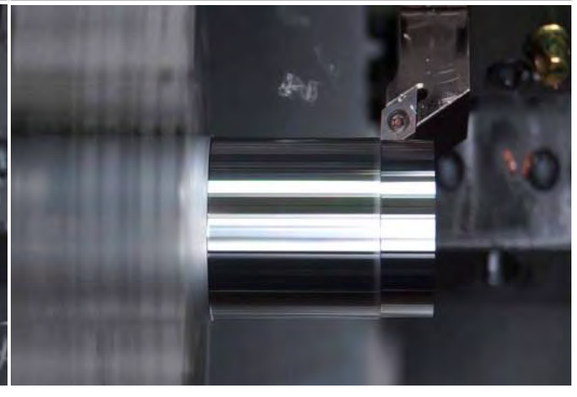




A lasered 3D micro chip breaker enables controlled chip breakage in most long-chipping materials. In addition, the chipbreaker minimizes cutting pressure, allowing for the machining of thin-walled components.

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

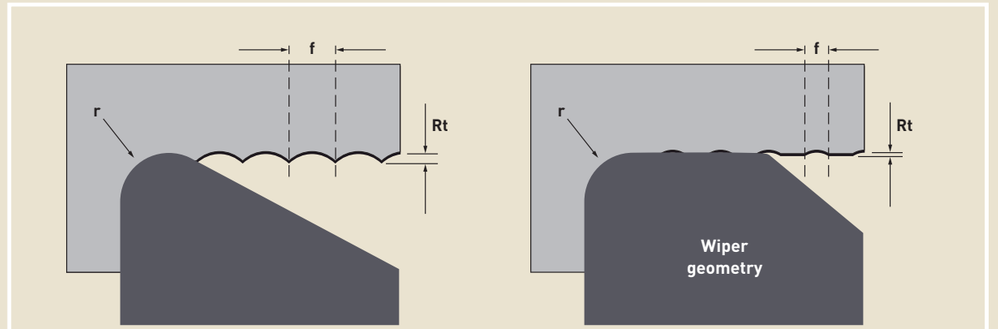
- CBF (sharp cutting edge for finishing cuts)
- CBR (stable cutting edge for roughing cuts)

without Chip Breaker	with 3D-Micro Chip Breaker
	
Material: AlSi1	Material: AlSi1

Wiper Indexable Inserts

Functionality

Wiper Indexable Inserts:



Advantages when using Wiper Geometries

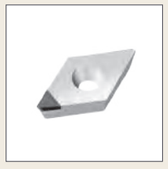
By using the same feed rate a 2-4 times better surface quality can be obtained or with a 2-4 times higher feed rate the same surface quality can be reached.

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

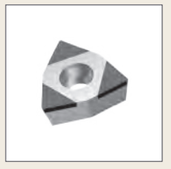
C and W Type: 95°
D Typ: 93°

CCGW ...
(Z1)

DCGW ...
(Z1)



WCGW ...
(Z3)

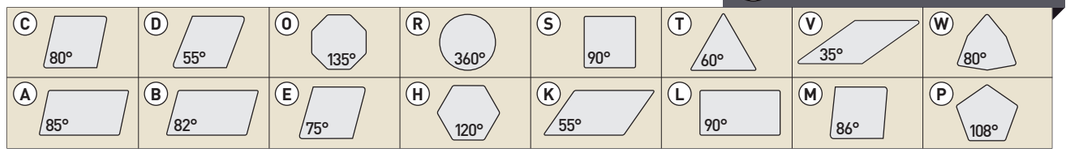


ISO Code

Diamond Indexable Inserts

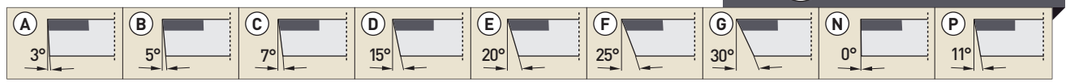
T N G A 16 04 08

Shape



T N G A 16 04 08

Clearance



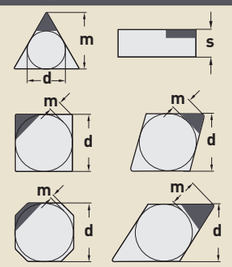
T N G A 16 04 08

Tolerance [mm]

	m	s	d
A	±0,005	±0,025	±0,025
F	±0,005	±0,025	±0,013
C	±0,013	±0,025	±0,025
H	±0,013	±0,025	±0,013
E	±0,025	±0,025	±0,025
G	±0,025	±0,130	±0,025

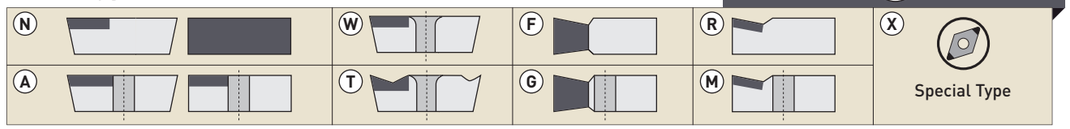
	m	s	d
J	±0,005	±0,025	±0,05 → ±0,15
K	±0,013	±0,025	±0,05 → ±0,15
L	±0,025	±0,025	±0,05 → ±0,15
M*	±0,08 → ±0,20	±0,130	±0,05 → ±0,15
N*	±0,08 → ±0,20	±0,25	±0,05 → ±0,15
U*	±0,13 → ±0,38	±0,130	±0,08 → ±0,15

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



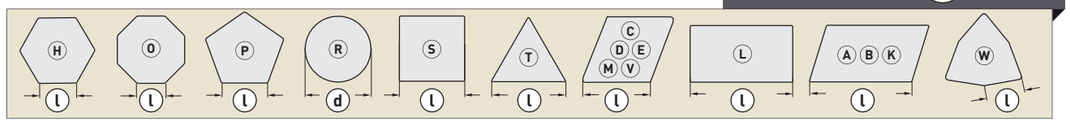
T N G A 16 04 08

Insert Type



T N G A 16 04 08

Insert size [mm]



T N G A 16 04 08

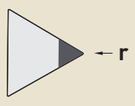
Insert size [mm]

01 S=.062 T1 S=.078 02 S=.094 03 S=.125 T3 S=.156 04 S=.187 05 S=.219 06 S= .250

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]



00 sharp corner

M0 round insert (metric)

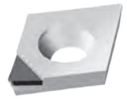
00 round insert (inch)

02 r = 0,2 | 04 r = 0,4 | 08 r = 0,8 | 12 r = 1,2 | 16 r = 1,6

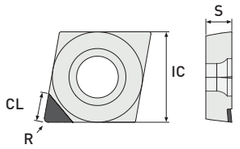
Your Notes

CCGT - Positive Rake Angle

edge tipped



FN - positive rake angle



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	CCGT-21.50.5	.250	.094	.008	DP1010-0001	DP2010-0001		1-edge tipped
	CCGT-21.51	.250	.094	.016	DP1010-0002	DP2010-0002		1-edge tipped
	CCGT-21.52	.250	.094	.031	DP1010-0003	DP2010-0003		1-edge tipped
	CCGT-32.50.5	.375	.156	.008	DP1010-0004	DP2010-0004		1-edge tipped
	CCGT-32.51	.375	.156	.016	DP1010-0005	DP2010-0005		1-edge tipped
	CCGT-32.52	.375	.156	.031	DP1010-0006	DP2010-0006		1-edge tipped
	CCGT-32.53	.375	.156	.047	DP1010-0007	DP2010-0007		1-edge tipped
	CCGT-430.5	.500	.187	.008	DP1010-0008	DP2010-0008		1-edge tipped
	CCGT-431	.500	.187	.016	DP1010-0009	DP2010-0009		1-edge tipped
	CCGT-432	.500	.187	.031	DP1010-0010	DP2010-0010		1-edge tipped

Application range:

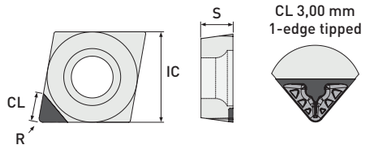
- PCD — Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D — Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, 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 (CBF) or roughing (CBR)



	ISO Code	IC	S	R	CBF (Finishing) PCD Item No.	CBF (Finishing) CVD-D Item No.	CBR (Roughing) PCD Item No.	CBR (Roughing) CVD-D Item No.	Version
Standard	CCGT-21.50.5	.250	.094	.008	DP1011-0001	DP2011-0001	DP1012-0001	DP2012-0001	1-edge tipped
	CCGT-21.51	.250	.094	.016	DP1011-0002	DP2011-0002	DP1012-0002	DP2012-0002	1-edge tipped
	CCGT-21.52	.250	.094	.031	DP1011-0003	DP2011-0003	DP1012-0003	DP2012-0003	1-edge tipped
	CCGT-32.50.5	.375	.156	.008	DP1011-0004	DP2011-0004	DP1012-0004	DP2012-0004	1-edge tipped
	CCGT-32.51	.375	.156	.016	DP1011-0005	DP2011-0005	DP1012-0005	DP2012-0005	1-edge tipped
	CCGT-32.52	.375	.156	.031	DP1011-0006	DP2011-0006	DP1012-0006	DP2012-0006	1-edge tipped
	CCGT-430.5	.500	.187	.008	DP1011-0458	DP2011-0458	DP1012-0458	DP2012-0458	1-edge tipped
	CCGT-431	.500	.187	.016	DP1011-0008	DP2011-0008	DP1012-0008	DP2012-0008	1-edge tipped
	CCGT-432	.500	.187	.031	DP1011-0009	DP2011-0009	DP1012-0009	DP2012-0009	1-edge tipped
Wiper	CCGT-21.50.5 R/L-W	.250	.094	.008	DP1011-0011		DP1012-0011		1-edge tipped
	CCGT-21.51 R/L-W	.250	.094	.016	DP1011-0012		DP1012-0012		1-edge tipped
	CCGT-32.50.5 R/L-W	.375	.156	.008	DP1011-0014		DP1012-0014		1-edge tipped
	CCGT-32.51 R/L-W	.375	.156	.016	DP1011-0015		DP1012-0015		1-edge tipped
	CCGT-32.52 R/L-W	.375	.156	.031	DP1011-0016		DP1012-0016		1-edge tipped
	CCGT-430.5 R/L-W	.500	.187	.008	DP1011-0018		DP1012-0018		1-edge tipped
	CCGT-431 R/L-W	.500	.187	.016	DP1011-0019		DP1012-0019		1-edge tipped
	CCGT-432 R/L-W	.500	.187	.031	DP1011-0020		DP1012-0020		1-edge tipped

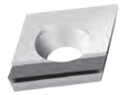
Special tools on request for you!
Please send inquiries to **sales@ranitool.com**

All our products are also available in the online shop.
Visit us at **ranitool.com**

Subject to technical changes.

CCGT - Positive Rake Angle

entire edge



right version - positive rake angle

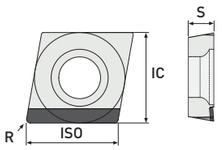


Figure shows right version entire edge

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard - right version	CCGT-21.50.5 R-GS	.250	.094	.008	DP1020-0055	DP2020-0055		entire edge
	CCGT-21.51 R-GS	.250	.094	.016	DP1020-0001	DP2020-0001		entire edge
	CCGT-21.52 R-GS	.250	.094	.031	DP1020-0002	DP2020-0002		entire edge
	CCGT-32.51 R-GS	.375	.156	.016	DP1020-0056	DP2020-0056		entire edge
	CCGT-32.52 R-GS	.375	.156	.031	DP1020-0003	DP2020-0003		entire edge
	CCGT-32.53 R-GS	.375	.156	.047	DP1020-0004	DP2020-0004		entire edge
	CCGT-431 R-GS	.500	.187	.016	DP1020-0057	DP2020-0057		entire edge
	CCGT-432 R-GS	.500	.187	.031	DP1020-0005	DP2020-0005		entire edge

left version - positive rake angle

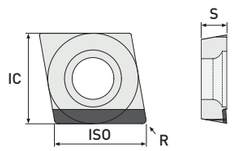


Figure shows left version entire edge

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard - left version	CCGT-21.50.5 L-GS	.250	.094	.008	DP1020-0058	DP2020-0058		entire edge
	CCGT-21.51 L-GS	.250	.094	.016	DP1020-0045	DP2020-0045		entire edge
	CCGT-21.52 L-GS	.250	.094	.031	DP1020-0046	DP2020-0046		entire edge
	CCGT-32.51 L-GS	.375	.156	.016	DP1020-0059	DP2020-0059		entire edge
	CCGT-32.52 L-GS	.375	.156	.031	DP1020-0047	DP2020-0047		entire edge
	CCGT-32.53 L-GS	.375	.156	.047	DP1020-0048	DP2020-0048		entire edge
	CCGT-431 L-GS	.500	.187	.016	DP1020-0060	DP2020-0060		entire edge
	CCGT-432 L-GS	.500	.187	.031	DP1020-0049	DP2020-0049		entire edge

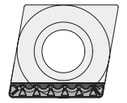
Application range:

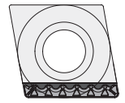
- PCD — Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D — Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, 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 (CBF) or roughing (CBR)

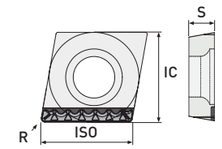


Figure shows right version entire edge

	ISO Code	IC	S	R	CBF (Finishing) PCD Item No.	CBF (Finishing) CVD-D Item No.	CBR (Roughing) PCD Item No.	CBR (Roughing) CVD-D Item No.	Version
Standard - right version	CCGT-21.50.5 R-GS	.250	.094	.008	DP1021-0032	DP2021-0032	DP1022-0032	DP2022-0032	entire edge
	CCGT-21.51 R-GS	.250	.094	.016	DP1021-0001	DP2021-0001	DP1022-0001	DP2022-0001	entire edge
	CCGT-21.52 R-GS	.250	.094	.031	DP1021-0002	DP2021-0002	DP1022-0002	DP2022-0002	entire edge
	CCGT-32.51 R-GS	.375	.156	.016	DP1021-0033	DP2021-0033	DP1022-0033	DP2022-0033	entire edge
	CCGT-32.52 R-GS	.375	.156	.031	DP1021-0003	DP2021-0003	DP1022-0003	DP2022-0003	entire edge
	CCGT-431 R-GS	.500	.187	.016	DP1021-0034	DP2021-0034	DP1022-0034	DP2022-0034	entire edge
	CCGT-432 R-GS	.500	.187	.031	DP1021-0005	DP2021-0005	DP1022-0005	DP2022-0005	entire edge

left version - FN - Chip breaker for finishing (CBF) or roughing (CBR)

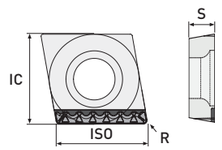


Figure shows left version entire edge

	ISO Code	IC	S	R	CBF (Finishing) PCD Item No.	CBF (Finishing) CVD-D Item No.	CBR (Roughing) PCD Item No.	CBR (Roughing) CVD-D Item No.	Version
Standard - left version	CCGT-21.50.5 L-GS	.250	.094	.008	DP1021-0035	DP2021-0035	DP1022-0035	DP2022-0035	entire edge
	CCGT-21.51 L-GS	.250	.094	.016	DP1021-0031	DP2021-0031	DP1022-0031	DP2022-0031	entire edge
	CCGT-21.52 L-GS	.250	.094	.031	DP1021-0027	DP2021-0027	DP1022-0027	DP2022-0027	entire edge
	CCGT-32.51 L-GS	.375	.156	.016	DP1021-0036	DP2021-0036	DP1022-0036	DP2022-0036	entire edge
	CCGT-32.52 L-GS	.375	.156	.031	DP1021-0028	DP2021-0028	DP1022-0028	DP2022-0028	entire edge
	CCGT-431 L-GS	.500	.187	.016	DP1021-0037	DP2021-0037	DP1022-0037	DP2022-0037	entire edge
	CCGT-432 L-GS	.500	.187	.031	DP1021-0030	DP2021-0030	DP1022-0030	DP2022-0030	entire edge

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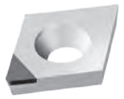
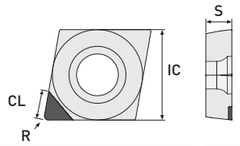
Subject to technical changes.

CCGW

edge tipped



FN - neutral



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No. (New)	Version
Standard	CCGW 21.50	.250	.094	.004		DP2010-0591	DP1110-0591	1-edge tipped
	CCGW 21.50.5	.250	.094	.008	DP1010-0021	DP2010-0021	DP1110-0021	1-edge tipped
	CCGW 21.51	.250	.094	.016	DP1010-0022	DP2010-0022	DP1110-0022	1-edge tipped
	CCGW 21.52	.250	.094	.031	DP1010-0023	DP2010-0023	DP1110-0023	1-edge tipped
	CCGW 32.50.5	.375	.156	.008	DP1010-0024	DP2010-0024		1-edge tipped
	CCGW 32.51	.375	.156	.016	DP1010-0025	DP2010-0025		1-edge tipped
	CCGW 32.52	.375	.156	.031	DP1010-0026	DP2010-0026		1-edge tipped
	CCGW 32.53	.375	.156	.047	DP1010-0027	DP2010-0027		1-edge tipped
	CCGW 430.5	.500	.187	.008	DP1010-0700	DP2010-0129		1-edge tipped
	CCGW 431	.500	.187	.016	DP1010-0028	DP2010-0028		1-edge tipped
	CCGW 432	.500	.187	.031	DP1010-0029	DP2010-0029		1-edge tipped
	CCGW 120412	.500	.187	.047	DP1010-0030	DP2010-0030		1-edge tipped
Wiper	CCGW 21.50.5 R/L-W	.250	.094	.008	DP1010-0031	DP2010-0031		1-edge tipped
	CCGW 21.51 R/L-W	.250	.094	.016	DP1010-0032	DP2010-0032		1-edge tipped
	CCGW 32.50.5 R/L-W	.375	.156	.008	DP1010-0034	DP2010-0034		1-edge tipped
	CCGW 32.51 R/L-W	.375	.156	.016	DP1010-0035	DP2010-0035		1-edge tipped
	CCGW 32.52 R/L-W	.375	.156	.031	DP1010-0036	DP1010-0036		1-edge tipped
	CCGW 430.5 R/L-W	.500	.187	.008	DP1010-0038	DP2010-0038		1-edge tipped
	CCGW 431 R/L-W	.500	.187	.016	DP1010-0039	DP2010-0039		1-edge tipped
	CCGW 432 R/L-W	.500	.187	.031	DP1010-0040	DP2010-0040		1-edge tipped

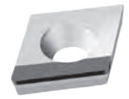
Application range:

- 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) ...
- U-Diamond — 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

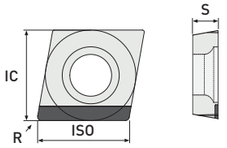


Figure shows right version entire edge

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard - right version	CCGW 21.50.5 R-GS	.250	.094	.008	DP1020-0061	DP2020-0061		entire edge
	CCGW 21.51 R-GS	.250	.094	.016	DP1020-0006	DP2020-0006		entire edge
	CCGW 21.52 R-GS	.250	.094	.031	DP1020-0007	DP2020-0007		entire edge
	CCGW 32.51 R-GS	.375	.156	.016	DP1020-0062	DP2020-0062		entire edge
	CCGW 32.52 R-GS	.375	.156	.031	DP1020-0008	DP2020-0008		entire edge
	CCGW 32.53 R-GS	.375	.156	.047	DP1020-0009	DP2020-0009		entire edge
	CCGW 431 R-GS	.500	.187	.016	DP1020-0063	DP2020-0063		entire edge
	CCGW 432 R-GS	.500	.187	.031	DP1020-0010	DP2020-0010		entire edge

left version - neutral

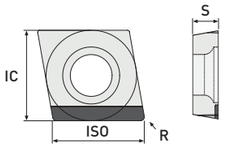


Figure shows left version entire edge

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard - left Version	CCGW 21.50.5 L-GS	.250	.094	.008	DP1020-0064	DP2020-0064		entire edge
	CCGW 21.51 L-GS	.250	.094	.016	DP1020-0050	DP2020-0050		entire edge
	CCGW 21.52 L-GS	.250	.094	.031	DP1020-0051	DP2020-0051		entire edge
	CCGW 32.51 L-GS	.375	.156	.016	DP1020-0065	DP2020-0065		entire edge
	CCGW 32.52 L-GS	.375	.156	.031	DP1020-0052	DP2020-0052		entire edge
	CCGW 32.53 L-GS	.375	.156	.047	DP1020-0053	DP2020-0053		entire edge
	CCGW 431 L-GS	.500	.187	.016	DP1020-0066	DP2020-0066		entire edge
	CCGW 432 L-GS	.500	.187	.031	DP1020-0054	DP2020-0054		entire edge

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Subject to technical changes.

CDGW

FullFace | edge tipped

FullFace | right and left version

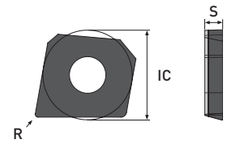
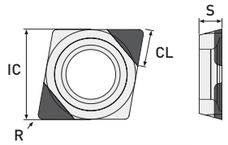


Figure shows right version FullFace

		New ISO Code	IC	S	R	PCD Item No.	CVD-D Item No. New	Ultra Diamond Item No.	Version
MiniTools	right	CDGW 03X101-R	.126	.025	.004		DP2030-0500		FullFace (Z1)
		CDGW 03X102-R	.126	.025	.008		DP2030-0502		FullFace (Z1)
	left	CDGW 03X101-L	.126	.025	.004		DP2030-0501		FullFace (Z1)
		CDGW 03X102-L	.126	.025	.008		DP2030-0503		FullFace (Z1)

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

FN - neutral



CL 1,60 mm
2-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No. New	Version
MiniTools	CDGW 040101	.156	.039	.004		DP2010-0511	DP1110-1480	2-edge tipped
	CDGW 040102	.156	.039	.008		DP2010-0512	DP1110-1482	2-edge tipped
	CDGW 040104	.156	.039	.016		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:

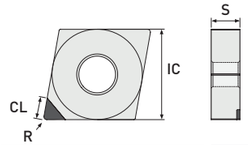
- PCD — Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D — Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, 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

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	CNGA 431	.500	.187	.016		DP2010-0173		1-edge tipped
	CNGA 432	.500	.187	.031		DP2010-0174		1-edge tipped
	CNGA 120412	.500	.187	.047		DP2010-0175		1-edge tipped

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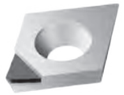
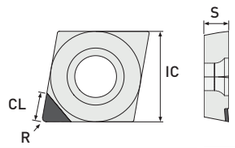
Subject to technical changes.

CPGT - Positive Rake Angle

edge tipped



FN - positive rake angle



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	**CPGT 21.50.5**	.250	.094	.008	DP1010-0201	DP2010-0201		1-edge tipped
	CPGT 21.51	.250	.094	.016	DP1010-0202	DP2010-0202		1-edge tipped
	CPGT 21.52	.250	.094	.031	DP1010-0203	DP2010-0203		1-edge tipped

Application range:

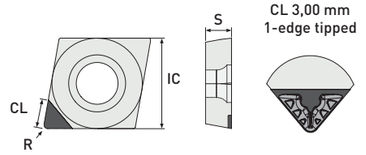
- **PCD** — Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- **CVD-D** — Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- **U-Diamond** — Carbide <10% Co, Carbide with Nickel Binder, 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 (CBF) or roughing (CBR)



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	CBF (Finishing) PCD Item No.	CBF (Finishing) CVD-D Item No.	CBR (Roughing) PCD Item No.	CBR (Roughing) CVD-D Item No.	Version
Standard	**CPGT 21.50.5**	.250	.094	.008	DP1011-0251	DP2011-0251	DP1012-0251	DP2012-0251	1-edge tipped
	CPGT 21.51	.250	.094	.016	DP1011-0252	DP2011-0252	DP1012-0252	DP2012-0252	1-edge tipped
	CPGT 21.52	.250	.094	.031	DP1011-0253	DP2011-0253	DP1012-0253	DP2012-0253	1-edge tipped
	CPGT 32.50.5	.375	.156	.008	DP1011-0254	DP2011-0254	DP1012-0254	DP2012-0254	1-edge tipped
	CPGT 32.51	.375	.156	.016	DP1011-0255	DP2011-0255	DP1012-0255	DP2012-0255	1-edge tipped
	CPGT 32.52	.375	.156	.031	DP1011-0256	DP2011-0256	DP1012-0256	DP2012-0256	1-edge tipped
	CPGT 431	.500	.187	.016	DP1011-0257	DP2011-0257	DP1012-0257	DP2012-0257	1-edge tipped
	CPGT 432	.500	.187	.031	DP1011-0258	DP2011-0258	DP1012-0258	DP2012-0258	1-edge tipped

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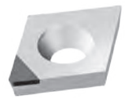
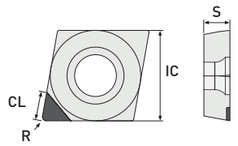
Subject to technical changes.

CPGW

edge tipped



FN - neutral



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	CPGW 21.50	.250	.094	.004		DP2010-0595		1-edge tipped
	CPGW 21.50.5	.250	.094	.008	DP1010-0251	DP2010-0251		1-edge tipped
	CPGW 21.51	.250	.094	.016	DP1010-0252	DP2010-0252		1-edge tipped
	CPGW 21.52	.250	.094	.031	DP1010-0253	DP2010-0253		1-edge tipped
	CPGW 32.50	.375	.156	.004		DP2010-0596		1-edge tipped
	CPGW 32.50.5	.375	.156	.008	DP1010-0254	DP2010-0254		1-edge tipped
	CPGW 32.51	.375	.156	.016	DP1010-0255	DP2010-0255		1-edge tipped
	CPGW 32.52	.375	.156	.031	DP1010-0256	DP2010-0256		1-edge tipped
	CPGW 431	.500	.187	.016	DP1010-0257	DP2010-0257		1-edge tipped
	CPGW 432	.500	.187	.031	DP1010-0258	DP2010-0258		1-edge tipped
	CPGW 433	.500	.187	.047	DP1010-0259	DP2010-0259		1-edge tipped

Application range:

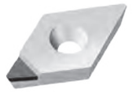
- PCD — Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D — Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials,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

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

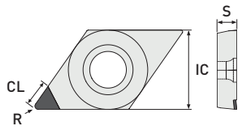
Your Notes

DCGT - Positive Rake Angle

edge tipped



FN - positive rake angle



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	DCGT 21.50	.250	.094	.004	DP1010-0601	DP2010-0601		1-edge tipped
	DCGT 21.50.5	.250	.094	.008	DP1010-0042	DP2010-0042		1-edge tipped
	DCGT 21.50.5	.250	.094	.016	DP1010-0043	DP2010-0043		1-edge tipped
	DCGT 21.51	.250	.094	.031	DP1010-0044	DP2010-0044		1-edge tipped
	DCGT 32.50	.375	.156	.004	DP1010-0602	DP2010-0602		1-edge tipped
	DCGT 32.50.5	.375	.156	.008	DP1010-0045	DP2010-0045		1-edge tipped
	DCGT 32.51	.375	.156	.016	DP1010-0046	DP2010-0046		1-edge tipped
	DCGT 32.52	.375	.156	.031	DP1010-0047	DP2010-0047		1-edge tipped
	DCGT 32.53	.375	.156	.047	DP1010-0048	DP2010-0048		1-edge tipped

Application range:

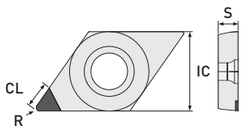
- PCD — Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D — Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, 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 (CBF) or roughing (CBR)



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	CBF (Finishing) PCD Item No.	CBF (Finishing) CVD-D Item No.	CBR (Roughing) PCD Item No.	CBR (Roughing) CVD-D Item No.	Version
Standard	DCGT 21.50.5	.250	.094	.008	DP1011-0022	DP2011-0022	DP1012-0022	DP2012-0022	1-edge tipped
	DCGT 21.51	.250	.094	.016	DP1011-0023	DP2011-0023	DP1012-0023	DP2012-0023	1-edge tipped
	DCGT 21.52	.250	.094	.031	DP1011-0024	DP2011-0024	DP1012-0024	DP2012-0024	1-edge tipped
	DCGT 32.50.5	.375	.156	.008	DP1011-0025	DP2011-0025	DP1012-0025	DP2012-0025	1-edge tipped
	DCGT 32.51	.375	.156	.016	DP1011-0026	DP2011-0026	DP1012-0026	DP2012-0026	1-edge tipped
	DCGT 32.52	.375	.156	.031	DP1011-0027	DP2011-0027	DP1012-0027	DP2012-0027	1-edge tipped
Wiper	DCGT 21.50.5 R/L W*	.250	.094	.008	DP1011-0029	DP2011-0029	DP1012-0029	DP2012-0029	1-edge tipped
	DCGT 21.51 R/L W*	.250	.094	.016	DP1011-0030	DP2011-0030	DP1012-0030	DP2012-0030	1-edge tipped
	DCGT 21.52 R/L W*	.250	.094	.031	DP1011-0071	DP2011-0072	DP1012-0071	DP2012-0072	1-edge tipped
	DCGT 32.50.5 R/L W*	.375	.156	.008	DP1011-0031	DP2011-0031	DP1012-0031	DP2012-0031	1-edge tipped
	DCGT 32.51 R/L W*	.375	.156	.016	DP1011-0032	DP2011-0032	DP1012-0032	DP2012-0032	1-edge tipped
	DCGT 32.52 R/L W*	.375	.156	.031	DP1011-0072	DP2011-0073	DP1012-0072	DP2012-0073	1-edge tipped

* for lengthwise turning

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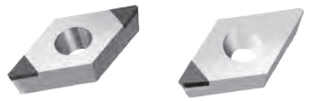
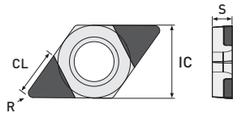
Subject to technical changes.

DCGW

edge tipped



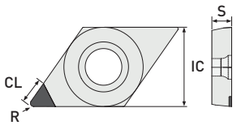
FN - neutral



CL 2,00 mm
2-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No. (New)	Version
MiniTools	DCGW 04T001	.122	.047	.004		DP2010-0521	DP1110-1492	2-edge tipped
	DCGW 04T002	.122	.047	.008		DP2010-0522	DP1110-1494	2-edge tipped
	DCGW 04T004	.122	.047	.016		DP2010-0523	DP1110-1496	2-edge tipped

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



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No. (New)	Version
Standard	DCGW 21.50	.250	.094	.004	DP1010-0603	DP2010-0603	DP1110-0603	1-edge tipped
	DCGW 21.50.5	.250	.094	.008	DP1010-0056	DP2010-0056	DP1110-0056	1-edge tipped
	DCGW 21.51	.250	.094	.016	DP1010-0057	DP2010-0057	DP1110-0057	1-edge tipped
	DCGW 21.52	.250	.094	.031	DP1010-0058	DP2010-0058	DP1110-0058	1-edge tipped
	DCGW 32.50	.375	.156	.004	DP1010-0604	DP2010-0604	DP1110-0604	1-edge tipped
	DCGW 32.50.5	.375	.156	.008	DP1010-0059	DP2010-0059	DP1110-0059	1-edge tipped
	DCGW 32.51	.375	.156	.016	DP1010-0060	DP2010-0060	DP1110-0060	1-edge tipped
	DCGW 32.52	.375	.156	.031	DP1010-0061	DP2010-0061	DP1110-0061	1-edge tipped
	DCGW 32.53	.375	.156	.047	DP1010-0062	DP2010-0062	DP1110-0062	1-edge tipped
	DCGW 32.55	.375	.156	.078			DP1110-0133	1-edge tipped
Wiper	DCGW 21.50.5 R/L W	.250	.094	.008	DP1010-0063	DP2010-0063		1-edge tipped
	DCGW 21.51 R/L W	.250	.094	.016	DP1010-0064	DP2010-0064		1-edge tipped
	DCGW 21.52 R/L W	.250	.094	.031	DP1010-0128	DP2010-0130		1-edge tipped
	DCGW 32.50.5 R/L W	.375	.156	.008	DP1010-0065	DP2010-0065		1-edge tipped
	DCGW 32.51 R/L W	.375	.156	.016	DP1010-0066	DP2010-0066		1-edge tipped
	DCGW 32.52 R/L W	.375	.156	.031	DP1010-0129	DP2010-0131		1-edge tipped

Application range:

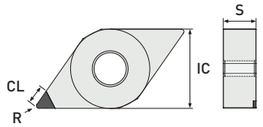
- PCD — Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D — Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials,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

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

DNGA

edge tipped

FN - neutral



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	DNGA 440.5	.500	.250	.008		DP2010-0282		1-edge tipped
	DNGA 441	.500	.250	.016		DP2010-0283		1-edge tipped
	DNGA 442	.500	.250	.031		DP2010-0284		1-edge tipped

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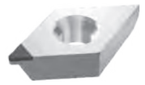
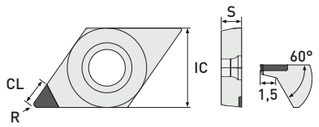
DXGW

edge tipped



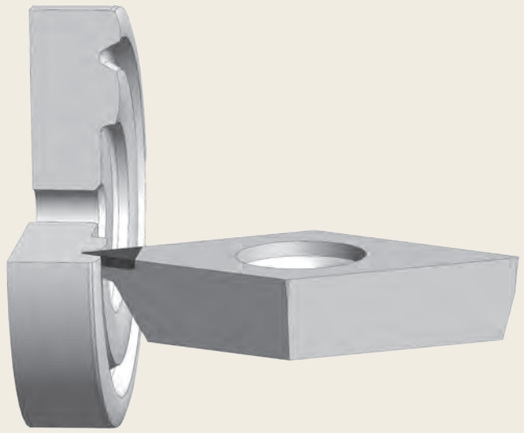
FN - neutral



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
DTS - Specials	**DXGW 32.50**	.375	.156	.004		DP2010-0300		1-edge tipped
	DXGW 32.50.5	.375	.156	.008		DP2010-0301		1-edge tipped
	DXGW 32.51	.375	.156	.016		DP2010-0302		1-edge tipped
	DXGW 32.52	.375	.156	.031		DP2010-0303		1-edge tipped

DXGW
Face / Axial Machining



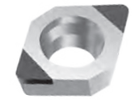
Application range:

- 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) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

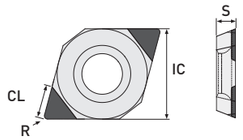
You will find further application ranges in the detailed overview on page 7.

EPGW

edge tipped



FN - neutral



CL 2,00 mm
2-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No. New	Version
MiniTools	**EPGW 050201**	.219	.094	.004		DP2010-0531	DP1110-1400	2-edge tipped
	EPGW 050202	.219	.094	.008		DP2010-0532	DP1110-1402	2-edge tipped
	EPGW 050204	.219	.094	.016		DP2010-0533	DP1110-1404	2-edge tipped

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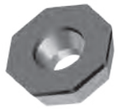
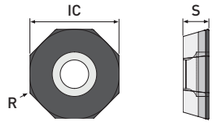
ODGW

FullFace



FN - FullFace



	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	ODGW 05T302 FF	.500	.156	.008	MI1030-0100	MI2030-0100		FullFace (Z8)
	ODGW 05T304 FF	.500	.156	.016	MI1030-0102	MI2030-0102		FullFace (Z8)
	ODGW 05T308 FF	.500	.156	.031	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.

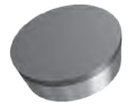
Application range:

- 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) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

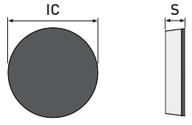
You will find further application ranges in the detailed overview on page 7.

RBGN

FullFace



FN - FullFace

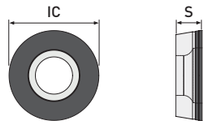


	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	RBGN 0602M0 FF	6,00	.094	-	DP1030-0090	DP2030-0090		FullFace
	RBGN 0803M0 FF	8,00	.125	-	DP1030-0092	DP2030-0092		FullFace
	RBGN 1003M0 FF	10,00	.125	-	DP1030-0094	DP2030-0094		FullFace
	RBGN 1203M0 FF	12,00	.125	-	DP1030-0096	DP2030-0096		FullFace

RCGW

FullFace

FN - FullFace



	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	RCGW 0602M0 FF	6,00	.094	-	DP1030-0001	DP2030-0001		FullFace
	RCGW 0803M0 FF	8,00	.125	-	DP1030-0002	DP2030-0002		FullFace
	RCGW 1003M0 FF	10,00	.125	-	DP1030-0003	DP2030-0003		FullFace
	RCGW 10T3M0 FF	10,00	.156	-	DP1030-0004	DP2030-0004		FullFace
	RCGW 1204M0 FF	12,00	.187	-	DP1030-0005	DP2030-0005		FullFace

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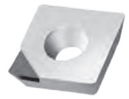
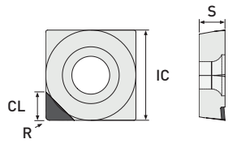
SCGT - Positive Rake Angle

edge tipped



FN - positive rake angle



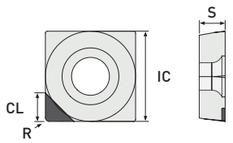
CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	SCGT 32.50.5	.375	.156	.008	DP1010-0067	DP2010-0067		1-edge tipped
	SCGT 32.51	.375	.156	.016	DP1010-0068	DP2010-0068		1-edge tipped
	SCGT 32.52	.375	.156	.031	DP1010-0069	DP2010-0069		1-edge tipped
	SCGT 32.53	.375	.156	.047	DP1010-0070	DP2010-0070		1-edge tipped
	SCGT 431	.500	.187	.016	DP1010-0130	DP2010-0132		1-edge tipped
	SCGT 432	.500	.187	.031	DP1010-0071	DP2010-0071		1-edge tipped
	SCGT 433	.500	.187	.047	DP1010-0072	DP2010-0072		1-edge tipped

SCGW

edge tipped

FN - neutral



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	SCGW 32.50.5	.375	.156	.008	DP1010-0073	DP2010-0073		1-edge tipped
	SCGW 32.51	.375	.156	.016	DP1010-0074	DP2010-0074		1-edge tipped
	SCGW 32.52	.375	.156	.031	DP1010-0075	DP2010-0075		1-edge tipped
	SCGW 32.53	.375	.156	.047	DP1010-0076	DP2010-0076		1-edge tipped
	SCGW 431	.500	.187	.016	DP1010-0077	DP2010-0077		1-edge tipped
	SCGW 432	.500	.187	.031	DP1010-0078	DP2010-0078		1-edge tipped
	SCGW 433	.500	.187	.047	DP1010-0079	DP2010-0079		1-edge tipped

Application range:

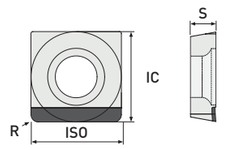
- PCD — Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D — Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, 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

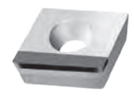


entire edge

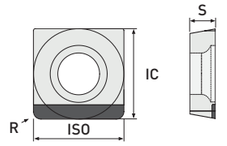
	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	SCGT 32.51 GS	.375	.156	.016	DP1020-0067	DP2020-0067		entire edge
	SCGT 32.52 GS	.375	.156	.031	DP1020-0011	DP2020-0011		entire edge
	SCGT 32.53 GS	.375	.156	.047	DP1020-0012	DP2020-0012		entire edge
	SCGT 431 GS	.500	.187	.016	DP1020-0068	DP2020-0068		entire edge
	SCGT 432 GS	.500	.187	.031	DP1020-0013	DP2020-0013		entire edge
	SCGT 433 GS	.500	.187	.047	DP1020-0014	DP2020-0014		entire edge

SCGW

entire edge



FN - neutral



entire edge

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	SCGW 32.51 GS	.375	.156	.016	DP1020-0015	DP2020-0015		entire edge
	SCGW 32.52 GS	.375	.156	.031	DP1020-0016	DP2020-0016		entire edge
	SCGW 32.53 GS	.375	.156	.047	DP1020-0017	DP2020-0017		entire edge
	SCGW 431 GS	.500	.187	.016	DP1020-0018	DP2020-0018		entire edge
	SCGW 432 GS	.500	.187	.031	DP1020-0019	DP2020-0019		entire edge
	SCGW 433 GS	.500	.187	.047	DP1020-0020	DP2020-0020		entire edge

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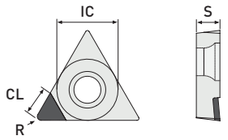
Subject to technical changes.

TCGT - Positive Rake Angle

edge tipped

FN - positive rake angle



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	TCGT 1.81.50.5	.219	.094	.008	DP1010-0080	DP2010-0080		1-edge tipped
	TCGT 1.81.51	.219	.094	.016	DP1010-0081	DP2010-0081		1-edge tipped
	TCGT 1.81.52	.219	.094	.031	DP1010-0082	DP2010-0082		1-edge tipped
	TCGT 21.50.5	.250	.094	.008	DP1010-0083	DP2010-0083		1-edge tipped
	TCGT 21.51	.250	.094	.016	DP1010-0084	DP2010-0084		1-edge tipped
	TCGT 21.52	.250	.094	.031	DP1010-0085	DP2010-0085		1-edge tipped
	TCGT 32.50.5	.375	.156	.008	DP1010-0086	DP2010-0086		1-edge tipped
	TCGT 32.51	.375	.156	.016	DP1010-0087	DP2010-0087		1-edge tipped
	TCGT 32.52	.375	.156	.031	DP1010-0088	DP2010-0088		1-edge tipped
	TCGT 32.53	.375	.156	.047	DP1010-0089	DP2010-0089		1-edge tipped

Application range:

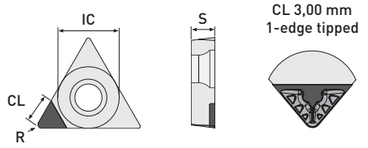
- PCD — Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D — Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, 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 (CBF) or roughing (CBR)



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	CBF (Finishing) PCD Item No.	CBF (Finishing) CVD-D Item No.	CBR (Roughing) PCD Item No.	CBR (Roughing) CVD-D Item No.	Version
Standard	TCGT 1.81.50.5	.219	.094	.008	DP1011-0040		DP1012-0040		1-edge tipped
	TCGT 1.81.51	.219	.094	.016	DP1011-0041		DP1012-0041		1-edge tipped
	TCGT 1.81.52	.219	.094	.031	DP1011-0042		DP1012-0042		1-edge tipped
	TCGT 21.50.5	.250	.094	.008	DP1011-0043		DP1012-0043		1-edge tipped
	TCGT 21.51	.250	.094	.016	DP1011-0044		DP1012-0044		1-edge tipped
	TCGT 21.52	.250	.094	.031	DP1011-0045		DP1012-0045		1-edge tipped
	TCGT 32.50.5	.375	.156	.008	DP1011-0046		DP1012-0046		1-edge tipped
	TCGT 32.51	.375	.156	.016	DP1011-0047		DP1012-0047		1-edge tipped
	TCGT 32.52	.375	.156	.031	DP1011-0048		DP1012-0048		1-edge tipped

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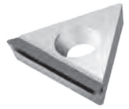
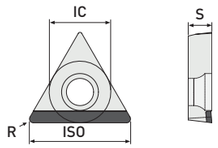
Subject to technical changes.

TCGT - Positive Rake Angle

entire edge



FN - positive rake angle



entire edge

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	TCGT 1.81.50.5 GS	.219	.094	.008	DP1020-0069	DP2020-0069		entire edge
	TCGT 1.81.51 GS	.219	.094	.016	DP1020-0021	DP2020-0021		entire edge
	TCGT 1.81.52 GS	.219	.094	.031	DP1020-0022	DP2020-0022		entire edge
	TCGT 21.50.5 GS	.250	.094	.008	DP1020-0070	DP2020-0070		entire edge
	TCGT 21.51 GS	.250	.094	.016	DP1020-0023	DP2020-0023		entire edge
	TCGT 21.52 GS	.250	.094	.031	DP1020-0024	DP2020-0024		entire edge
	TCGT 21.53 GS	.250	.094	.047	DP1020-0025	DP2020-0025		entire edge
	TCGT 32.50.5 GS	.375	.156	.008	DP1020-0071	DP2020-0071		entire edge
	TCGT 32.51 GS	.375	.156	.016	DP1020-0027	DP2020-0027		entire edge
	TCGT 32.52 GS	.375	.156	.031	DP1020-0028	DP2020-0028		entire edge
	TCGT 32.53 GS	.375	.156	.047	DP1020-0029	DP2020-0029		entire edge

Application range:

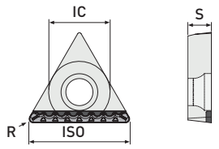
- PCD — Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D — Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, 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 (CBF) or roughing (CBR)



entire edge

	ISO Code	IC	S	R	CBF (Finishing) PCD Item No.	CBF (Finishing) CVD-D Item No.	CBR (Roughing) PCD Item No.	CBR (Roughing) CVD-D Item No.	Version
Standard	TCGT 1.81.50.5 GS	.219	.094	.008	DP1021-0038		DP1022-0038		entire edge
	TCGT 1.81.51 GS	.219	.094	.016	DP1021-0012		DP1022-0012		entire edge
	TCGT 1.81.52 GS	.219	.094	.031	DP1021-0013		DP1022-0013		entire edge
	TCGT 21.50.5 GS	.250	.094	.008	DP1021-0039		DP1022-0039		entire edge
	TCGT 21.51 GS	.250	.094	.016	DP1021-0014		DP1022-0014		entire edge
	TCGT 21.52 GS	.250	.094	.031	DP1021-0015		DP1022-0015		entire edge
	TCGT 32.50.5 GS	.375	.156	.008	DP1021-0040		DP1022-0040		entire edge
	TCGT 32.51 GS	.375	.156	.016	DP1021-0018		DP1022-0018		entire edge
	TCGT 32.52 GS	.375	.156	.031	DP1021-0019		DP1022-0019		entire edge

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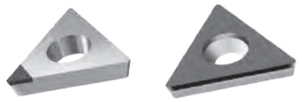
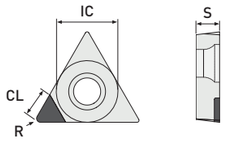
Subject to technical changes.

TCGW

edge tipped | FullFace



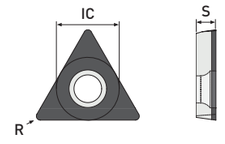
FN - neutral



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	TCGW 1.81.50	.219	.094	.004	DP1010-0613	DP2010-0613		1-edge tipped
	TCGW 1.81.50.5	.219	.094	.008	DP1010-0090	DP2010-0090		1-edge tipped
	TCGW 1.81.51	.219	.094	.016	DP1010-0091	DP2010-0091		1-edge tipped
	TCGW 1.81.52	.219	.094	.031	DP1010-0092	DP2010-0092		1-edge tipped
	TCGW 21.50	.250	.094	.004	DP1010-0614	DP2010-0614		1-edge tipped
	TCGW 21.50.5	.250	.094	.008	DP1010-0093	DP2010-0093		1-edge tipped
	TCGW 21.51	.250	.094	.016	DP1010-0094	DP2010-0094		1-edge tipped
	TCGW 21.52	.250	.094	.031	DP1010-0095	DP2010-0095		1-edge tipped
	TCGW 32.50.5	.375	.156	.008	DP1010-0096	DP2010-0096		1-edge tipped
	TCGW 32.51	.375	.156	.016	DP1010-0097	DP2010-0097		1-edge tipped
	TCGW 32.52	.375	.156	.031	DP1010-0098	DP2010-0098		1-edge tipped
	TCGW 32.53	.375	.156	.047	DP1010-0099	DP2010-0099		1-edge tipped

FN - FullFace



FullFace

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	TCGW 1.81.50.5 FF	.219	.094	.008	DP1030-0030	DP2030-0030		FullFace
	TCGW 1.81.51 FF	.219	.094	.016	DP1030-0031	DP2030-0031		FullFace
	TCGW 1.81.52 FF	.219	.094	.031	DP1030-0032	DP2030-0032		FullFace
	TCGW 21.50.5 FF	.250	.094	.008	DP1030-0010	DP2030-0010		FullFace
	TCGW 21.51 FF	.250	.094	.016	DP1030-0011	DP2030-0011		FullFace
	TCGW 21.52 FF	.250	.094	.031	DP1030-0012	DP2030-0012		FullFace

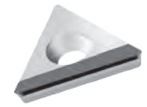
Application range:

- 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) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, sintered Ceramic Materials, highly abrasive materials ...

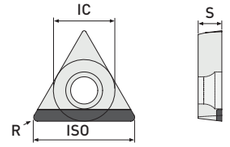
You will find further application ranges in the detailed overview on page 7.

TCGW

entire edge



FN - neutral



entire edge

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	TCGW 1.81.50.5 GS	.219	.094	.008	DP1020-0072	DP2020-0072		entire edge
	TCGW 1.81.51 GS	.219	.094	.016	DP1020-0030	DP2020-0030		entire edge
	TCGW 1.81.52 GS	.219	.094	.031	DP1020-0031	DP2020-0031		entire edge
	TCGW 21.50.5 GS	.250	.094	.008	DP1020-0073	DP2020-0073		entire edge
	TCGW 21.51 GS	.250	.094	.016	DP1020-0032	DP2020-0032		entire edge
	TCGW 21.52 GS	.250	.094	.031	DP1020-0033	DP2020-0033		entire edge
	TCGW 21.53 GS	.250	.094	.047	DP1020-0034	DP2020-0034		entire edge
	TCGW 32.50.5 GS	.375	.156	.008	DP1020-0074	DP2020-0074		entire edge
	TCGW 32.51 GS	.375	.156	.016	DP1020-0036	DP2020-0036		entire edge
	TCGW 32.52 GS	.375	.156	.031	DP1020-0037	DP2020-0037		entire edge
	TCGW 32.53 GS	.375	.156	.047	DP1020-0038	DP2020-0038		entire edge

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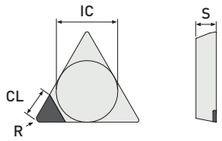
Subject to technical changes.

TPGN

edge tipped

FN - neutral



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	TPGN 1.81.51	.219	.094	.016	DP1010-0100	DP2010-0100		1-edge tipped
	TPGN 1.81.52	.219	.094	.031	DP1010-0101	DP2010-0101		1-edge tipped
	TPGN 21.51	.250	.094	.016	DP1010-0102	DP2010-0102		1-edge tipped
	TPGN 21.52	.250	.094	.031	DP1010-0103	DP2010-0103		1-edge tipped
	TPGN 220.5	.250	.125	.008	DP1010-0104	DP2010-0104		1-edge tipped
	TPGN 221	.250	.125	.016	DP1010-0105	DP2010-0105		1-edge tipped
	TPGN 222	.250	.125	.031	DP1010-0106	DP2010-0106		1-edge tipped
	TPGN 321	.375	.125	.016	DP1010-0107	DP2010-0107		1-edge tipped
	TPGN 322	.375	.125	.031	DP1010-0108	DP2010-0108		1-edge tipped
	TPGN 323	.375	.125	.047	DP1010-0109	DP2010-0109		1-edge tipped

Application range:

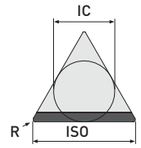
- PCD — Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D — Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials,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

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

TPGN

entire edge

FN - neutral



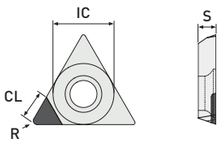
entire edge

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	TPGN 221 GS	.250	.125	.016	DP1020-0039	DP2020-0039		entire edge
	TPGN 222 GS	.250	.125	.031	DP1020-0040	DP2020-0040		entire edge
	TPGN 223 GS	.250	.125	.047	DP1010-0041	DP2010-0041		entire edge
	TPGN 321 GS	.375	.125	.016	DP1020-0042	DP2020-0042		entire edge
	TPGN 322 GS	.375	.125	.031	DP1020-0043	DP2020-0043		entire edge
	TPGN 323 GS	.375	.125	.047	DP1020-0044	DP2020-0044		entire edge

TPGW

edge tipped

FN - neutral



CL 2,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No. (New)	Version
MiniTools	TPGW 06T101	.156	.078	.004		DP2010-0671	DP1110-1410	1-edge tipped
	TPGW 06T102	.156	.078	.008		DP2010-0672	DP1110-1412	1-edge tipped
	TPGW 06T104	.156	.078	.016		DP2010-0673	DP1110-1414	1-edge tipped

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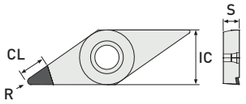
VBGT - Positive Rake Angle

edge tipped

FN - positive rake angle



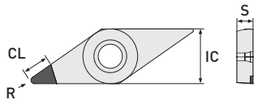
CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	**VBGT 21.50**	.250	.094	.004	DP1010-0605	DP2010-0605		1-edge tipped
	VBGT 21.50.5	.250	.094	.008	DP1010-0401	DP2010-0401		1-edge tipped
	VBGT 21.51	.250	.094	.016	DP1010-0402	DP2010-0402		1-edge tipped
	VBGT 21.52	.250	.094	.031	DP1010-0403	DP2010-0403		1-edge tipped
	VBGT 330	.375	.187	.004	DP1010-0606	DP2010-0606		1-edge tipped
	VBGT 330.5	.375	.187	.008	DP1010-0404	DP2010-0404		1-edge tipped
	VBGT 331	.375	.187	.016	DP1010-0405	DP2010-0405		1-edge tipped
	VBGT 332	.375	.187	.031	DP1010-0406	DP2010-0406		1-edge tipped
	VBGT 333	.375	.187	.047	DP1010-0407	DP2010-0407		1-edge tipped

VBGW

edge tipped

FN - neutral



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	**VBGW 21.50**	.250	.094	.004	DP1010-0607	DP2010-0607		1-edge tipped
	VBGW 21.50.5	.250	.094	.008	DP1010-0451	DP2010-0451		1-edge tipped
	VBGW 21.51	.250	.094	.016	DP1010-0452	DP2010-0452		1-edge tipped
	VBGW 21.52	.250	.094	.031	DP1010-0453	DP2010-0453		1-edge tipped
	VBGW 330	.375	.187	.004	DP1010-0608	DP2010-0608		1-edge tipped
	VBGW 330.5	.375	.187	.008	DP1010-0454	DP2010-0454		1-edge tipped
	VBGW 331	.375	.187	.016	DP1010-0455	DP2010-0455		1-edge tipped
	VBGW 332	.375	.187	.031	DP1010-0456	DP2010-0456		1-edge tipped
	VBGW 333	.375	.187	.047	DP1010-0457	DP2010-0457		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) ...
U-Diamond	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.

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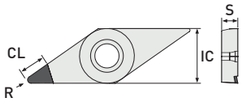
Subject to technical changes.

VCGT - Positive Rake Angle

edge tipped

FN - positive rake angle



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	VCGT 1.21.50	.156	.094	.004	DP1010-0131	DP2010-0133		1-edge tipped
	VCGT 1.21.50.5	.156	.094	.008	DP1010-0119	DP2010-0119		1-edge tipped
	VCGT 1.21.51	.156	.094	.016	DP1010-0120	DP2010-0120		1-edge tipped
	VCGT 1.21.52	.156	.094	.031	DP1010-0132	DP2010-0134		1-edge tipped
	VCGT 220	.250	.125	.004	DP1010-0609	DP2010-0609		1-edge tipped
	VCGT 220.5	.250	.125	.008	DP1010-0121	DP2010-0121		1-edge tipped
	VCGT 221	.250	.125	.016	DP1010-0122	DP2010-0122		1-edge tipped
	VCGT 222	.250	.125	.031	DP1010-0123	DP2010-0123		1-edge tipped
	VCGT 330	.375	.187	.004	DP1010-0610	DP2010-0610		1-edge tipped
	VCGT 330.5	.375	.187	0,20	DP1010-0124	DP2010-0124		1-edge tipped
	VCGT 331	.375	.187	.016	DP1010-0125	DP2010-0125		1-edge tipped
	VCGT 332	.375	.187	.031	DP1010-0126	DP2010-0126		1-edge tipped
	VCGT 333	.375	.187	.047	DP1010-0127	DP2010-0127		1-edge tipped

Application range:

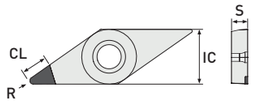
- PCD — Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D — Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials, 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 (CBF) or roughing (CBR)



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	CBF (Finishing) PCD Item No.	CBF (Finishing) CVD-D Item No.	CBR (Roughing) PCD Item No.	CBR (Roughing) CVD-D Item No.	Version
Standard	VCGT 1.21.50.5	.156	.094	.008	DP1011-0060	DP2011-0060	DP1012-0060	DP2012-0060	1-edge tipped
	VCGT 1.21.51	.156	.094	.016	DP1011-0061	DP2011-0061	DP1012-0061	DP2012-0061	1-edge tipped
	VCGT 1.21.52	.156	.094	.031	DP1011-0075	DP2011-0075	DP1012-0075	DP2012-0075	1-edge tipped
	VCGT 220.5	.250	.125	.008	DP1011-0062	DP2011-0062	DP1012-0062	DP2012-0062	1-edge tipped
	VCGT 221	.250	.125	.016	DP1011-0063	DP2011-0063	DP1012-0063	DP2012-0063	1-edge tipped
	VCGT 222	.250	.125	.031	DP1011-0064	DP2011-0064	DP1012-0064	DP2012-0064	1-edge tipped
	VCGT 330.5	.375	.187	.008	DP1011-0065	DP2011-0065	DP1012-0065	DP2012-0065	1-edge tipped
	VCGT 331	.375	.187	.016	DP1011-0066	DP2011-0066	DP1012-0066	DP2012-0066	1-edge tipped
	VCGT 332	.375	.187	.031	DP1011-0067	DP2011-0067	DP1012-0067	DP2012-0067	1-edge tipped

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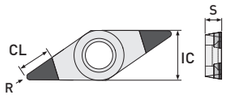
Subject to technical changes.

VCGW

edge tipped

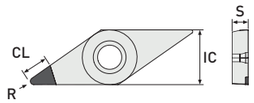
FN - neutral



CL 2,00 mm
2-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No. (New)	Version
MiniTools	VCGW 050101	.122	.062	.004		DP2010-0561	DP1110-1498	2-edge tipped
	VCGW 050102	.122	.062	.008		DP2010-0562	DP1110-1500	2-edge tipped
	VCGW 050104	.122	.062	.016		DP2010-0563	DP1110-1502	2-edge tipped

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



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
Standard	VCGW 1.21.50	.156	.094	.004	DP1010-0135	DP2010-0135		1-edge tipped
	VCGW 1.21.50.5	.156	.094	.008	DP1010-0110	DP2010-0110		1-edge tipped
	VCGW 1.21.51	.156	.094	.016	DP1010-0111	DP2010-0111		1-edge tipped
	VCGW 1.21.52	.156	.094	.031	DP1010-0136	DP2010-0136		1-edge tipped
	VCGW 220	.250	.125	.004	DP1010-0611	DP2010-0611		1-edge tipped
	VCGW 220.5	.250	.125	.008	DP1010-0112	DP2010-0112		1-edge tipped
	VCGW 221	.250	.125	.016	DP1010-0113	DP2010-0113		1-edge tipped
	VCGW 222	.250	.125	.031	DP1010-0114	DP2010-0114		1-edge tipped
	VCGW 330	.375	.187	.004	DP1010-0612	DP2010-0612		1-edge tipped
	VCGW 330.5	.375	.187	.008	DP1010-0115	DP2010-0115		1-edge tipped
	VCGW 331	.375	.187	.016	DP1010-0116	DP2010-0116		1-edge tipped
	VCGW 332	.375	.187	.031	DP1010-0117	DP2010-0117		1-edge tipped
	VCGW 333	.375	.187	.047	DP1010-0118	DP2010-0118		1-edge tipped

Application range:

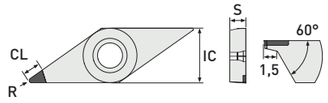
- PCD — Aluminum <10% Si, Brass, Brass lead-free, Graphite coarse-grained, Titanium (Roughing) ...
- CVD-D — Acrylic, Aluminum >10% Si, Carbide, Ceramics, Composites (CFRP, GFRP, MMC), Copper, Plastics, PEEK, Titanium (Finishing) ...
- U-Diamond — Carbide <10% Co, Carbide with Nickel Binder, Glass Materials,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

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

VXGW

edge tipped

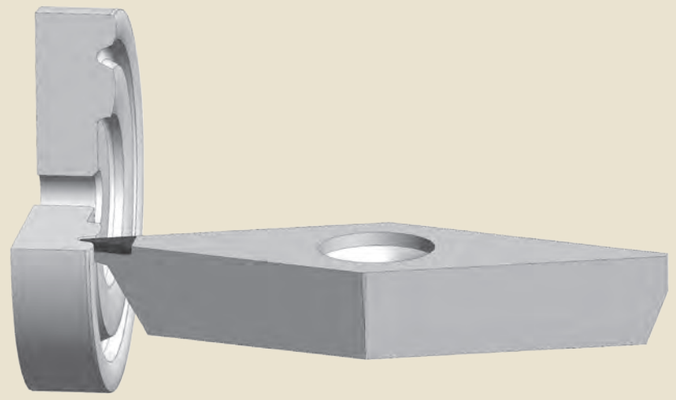
FN - neutral



CL 3,00 mm
1-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
DTS - Specials	VXGW 330	.375	.187	.004		DP2010-0310		1-edge tipped
	VXGW 330.5	.375	.187	.008		DP2010-0311		1-edge tipped
	VXGW 331	.375	.187	.016		DP2010-0312		1-edge tipped
	VXGW 332	.375	.187	.031		DP2010-0313		1-edge tipped

VXGW
Face / Axial Machining



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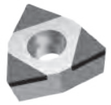
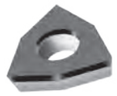
Subject to technical changes.

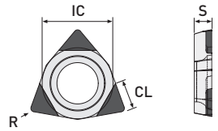
WCGW

edge tipped | FullFace





FN - neutral

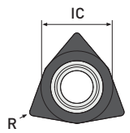


CL 1,60 mm
3-edge tipped

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No. (New)	Version
MiniTools	**WCGW 1.210**	.156	.062	.004		DP2010-0571	DP1110-1504	3-edge tipped
	WCGW 1.210.5	.156	.062	.008		DP2010-0572	DP1110-1506	3-edge tipped
	WCGW 1.211	.156	.062	.016		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



FullFace

	ISO Code	IC	S	R	PCD Item No.	CVD-D Item No.	Ultra Diamond Item No.	Version
MiniTools	**WCGW 1.210 FF**	.156	.062	.004		DP2030-0117		FullFace
	WCGW 1.210.5 FF	.156	.062	.008		DP2030-0113		FullFace
	WCGW 1.211 FF	.156	.062	.016		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) ...
- U-Diamond — 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

Cutting Parameters

for our diamond indexable inserts

Vc X 3.28 = SFM
ap / 25.4 = DOC inches
F / 25.4 = inch / revolution

Vc X 3.28 = SFM
ap / 25.4 = DOC inches
F / 25.4 = inch / revolution

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Material	Diamond Indexable Inserts – PCD						Diamond Indexable Inserts – 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	.016	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	.016
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	on request											
Carbide G-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

Material	Diamond Indexable Inserts – UltraDiamond						Cooling				
	V_c [m/min]		a_p [mm]		F [mm/rev]						
	min.	max.	min.	max.	min.	max.	Dry	Air	Emulsion	Oil	MQL
Acrylic (PMMA)	80	5.000	0,01	2,60	0,005	0,50	5. Choice	4. Choice	1. Choice	2. Choice	3. Choice
Al Si <10%							5. Choice	4. Choice	1. Choice	2. Choice	3. Choice
Al Si >10%									1. Choice	2. Choice	3. Choice
Brass, Brass lead-free							5. Choice	4. Choice	1. Choice	2. Choice	3. Choice
Carbide G-Grade <15% Co	on request						on request				
Carbide G-Grade >15% Co											
Carbide K-Grade <15% Co											
Carbide with Ni Binder											
Ceramics, Zirconium											
Composites GFRP/CFRP / MMC							4. Choice	1. Choice	2. Choice		3. Choice
Copper, Copper alloy								4. Choice	1. Choice	2. Choice	3. Choice
Glass, Glass Ceramics											
Gold, Silver, Platinum								3. Choice	1. Choice		2. Choice
Graphite							2. Choice	1. Choice			
Magnesium								4. Choice	1. Choice	2. Choice	3. Choice
Plastics								3. Choice	1. Choice		2. Choice
PEEK								4. Choice	1. Choice	2. Choice	3. Choice
Titanium								4. Choice	1. Choice	2. Choice	3. Choice
Tungsten Copper								3. Choice	1. Choice		2. Choice

Subject to technical changes.

Cutting Parameters

for our diamond indexable inserts with chip breaker

Vc X 3.28 = SFM
ap / 25.4 = DOC inches
F / 25.4 = inch / revolution

Material	R	Chip Breaker											
		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	.004	100	800	0,05	2,00	0,03	0,10
	0,4	100	800	0,01	2,80	0,04	.008	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!

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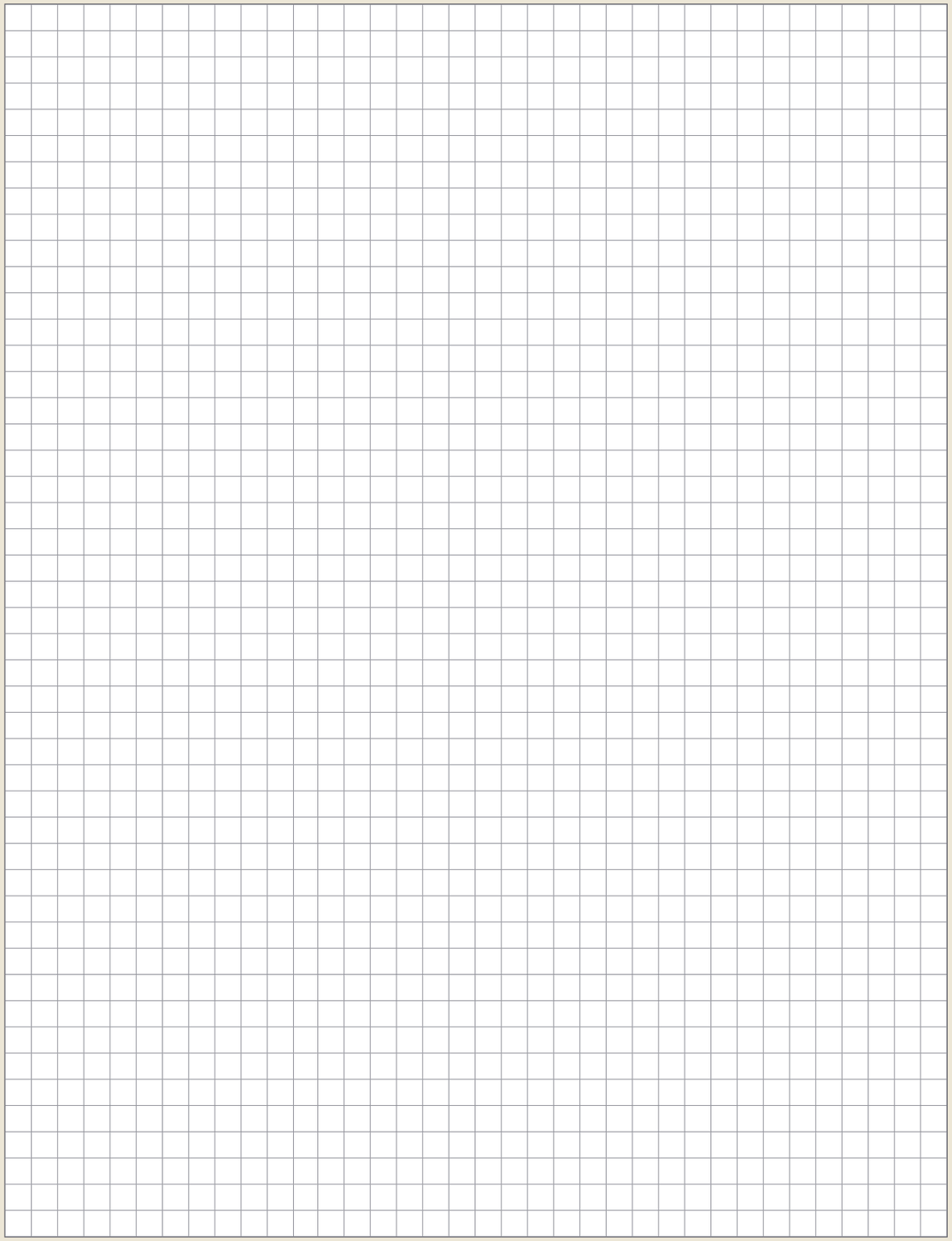
Your Notes



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- 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 tools, sparks may also occur, make sure that no fire can occur.

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