



2021

Katalog

Präzisions PKD und CBN ISO Wendeschneidplatten
zum Drehen und Fräsen

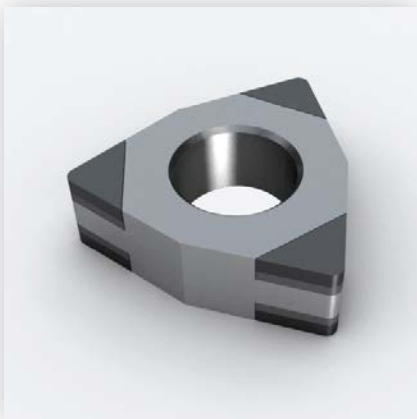
Catalogue

High Precision PCD and CBN ISO Inserts
For Turning and Milling

PKD Wendeplatten
PCD Inserts



CBN Wendeplatten
CBN Inserts



Inhalt nach Übersicht

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Inhalt nach Typen

Content by types

PKD-ISO-Normplatten

PCD standard inserts

Typ CC (7° Freiwinkel) 80°	14
CC (7° clearance angle) type 80°	
Typ CN (0° Freiwinkel) 80°	16
CN (0° clearance angle) type 80°	
Typ CP (11° Freiwinkel) 80°	17
CP (11° clearance angle) type 80°	
Typ DC (7° Freiwinkel) 55°	19
DC (7° clearance angle) type 55°	
Typ DN (0° Freiwinkel) 55°	21
DN (0° clearance angle) type 55°	
Typ DP (11° Freiwinkel) 55°	22
DP (11° clearance angle) type 55°	
Typ RC (7° Freiwinkel) Kreis	24
RC (7° clearance angle) type circle	
Typ RP (11° Freiwinkel) Kreis	24
RP (11° clearance angle) type circle	
Typ SC (7° Freiwinkel) 90°	25
SC (7° clearance angle) type 90°	
Typ SN (0° Freiwinkel) 90°	27
SN (0° clearance angle) type 90°	
Typ SP (11° Freiwinkel) 90°	28
SP (11° clearance angle) type 90°	
Typ TC (7° Freiwinkel) 60°	30
TC (7° clearance angle) type 60°	
Typ TN (0° Freiwinkel) 60°	32
TN (0° clearance angle) type 60°	
Typ TP (11° Freiwinkel) 60°	34
TP (11° clearance angle) type 60°	
Typ VB (5° Freiwinkel) 35°	37
VB (5° clearance angle) type 35°	
Typ VC (7° Freiwinkel) 35°	38
VC (7° clearance angle) type 35°	
Typ VN (0° Freiwinkel) 35°	39
VN (0° clearance angle) type 35°	
Typ VP (11° Freiwinkel) 35°	39
VP (11° clearance angle) type 35°	
Typ WB (5° Freiwinkel) Hexagon	40
WB (5° clearance angle) type hexagon	
Typ WC (7° Freiwinkel) Hexagon	41
WC (7° clearance angle) type hexagon	
Typ WN (0° Freiwinkel) Hexagon	42
WN (0° clearance angle) type hexagon	

CBN-ISO-Normplatten

CBN standard inserts

Typ CC (7° Freiwinkel) 80°	47
CC (7° clearance angle) type 80°	
Typ CN (0° Freiwinkel) 80°	49
CN (0° clearance angle) type 80°	
Typ CP (11° Freiwinkel) 80°	54
CP (11° clearance angle) type 80°	
Typ DC (7° Freiwinkel) 55°	57
DC (7° clearance angle) type 55°	
Typ DN (0° Freiwinkel) 55°	60
DN (0° clearance angle) type 55°	
Typ DP (11° Freiwinkel) 55°	64
DP (11° clearance angle) type 55°	
Typ RC (7° Freiwinkel) Kreis	67
RC (7° clearance angle) type circle	
Typ RP (11° Freiwinkel) Kreis	67
RP (11° clearance angle) type circle	
Typ SC (7° Freiwinkel) 90°	68
SC (7° clearance angle) type 90°	
Typ SN (0° Freiwinkel) 90°	71
SN (0° clearance angle) type 90°	
Typ SP (11° Freiwinkel) 90°	76
SP (11° clearance angle) type 90°	
Typ TB (5° Freiwinkel) 60°	78
TN (5° clearance angle) type 60°	
Typ TC (7° Freiwinkel) 60°	79
TC (7° clearance angle) type 60°	
Typ TN (0° Freiwinkel) 60°	83
TN (0° clearance angle) type 60°	
Typ TP (11° Freiwinkel) 60°	88
TP (11° clearance angle) type 60°	
Typ VB (5° Freiwinkel) 35°	93
VB (5° clearance angle) type 35°	
Typ VC (7° Freiwinkel) 35°	94
VC (7° clearance angle) type 35°	
Typ VN (0° Freiwinkel) 35°	96
VN (0° clearance angle) type 35°	
Typ VP (11° Freiwinkel) 35°	98
VP (11° clearance angle) type 35°	
Typ WB (5° Freiwinkel) Hexagon	99
WB (5° clearance angle) type hexagon	
Typ WC (7° Freiwinkel) Hexagon	100
WC (7° clearance angle) type hexagon	
Typ WN (0° Freiwinkel) Hexagon	101
WN (0° clearance angle) type hexagon	
0° Freiwinkel Solid-CBN	103
(0° clearance angle)	

PKD-/CBN-Schneidplatten bieten verschiedene Vorteile im Vergleich mit gewöhnlichen Schneidwerkzeugen.

Compared to ordinary solid brazed cutting tools, PCD/CBN cutting inserts have several advantages.

Sie können bequem fixiert und entfernt werden und sparen Zeit beim Austausch.

They are convenient to fasten and remove, can be positioned with high speed and accuracy, and save exchanging time.

Die hohe Verschleissfestigkeit der Schneidwerkzeuge verlängert ihre Standzeit.

The high wear resistance of the cutting tools prolongs their service life.

Sie ermöglichen hochpräzise Bearbeitung mit hoher Geschwindigkeit und Effizienz.

They can perform high-speed, high-efficiency, and high-precision processing.

PKD-Schneidplatten

PCD Inserts

Zu bearbeitendes Material <i>Workpiece Material</i>	Werkstoff-Code <i>Material code</i>	Anwendung <i>Application</i>
Nichteisenmetall <i>Non-ferrous metal</i>	D85 / D41	Hochgeschwindigkeitsbearbeitung für Messing, Kupfer, Aluminium, Titan und Titanlegierung <i>High speed finish machining for brass, copper, aluminium, titanium and titanium alloy</i>
	D13	CFK-Werkstoff / Verbundwerkstoff / Aluminium <i>CFRP material / composite material / aluminium</i>
	D10	Aluminiumlegierung (Si < 13%) <i>Aluminium alloy (Si < 13%)</i>
	D15 / D25	Aluminiumlegierung (Si > 13%) GFK Mischlegierungen <i>Aluminium alloy (Si > 13%) GFRP Mixed alloys</i>
	D20 (Mischkorn) <i>D20 (Mixed grain)</i>	Aluminiumlegierung (Si > 13%) Keramik und PVC Voll-Karbid <i>Aluminium alloy (Si > 13%) Ceramic and PVC Solid carbide</i>

Als Trägermaterial wird stets Vollhartmetall-Grundkörper verwendet.

Solid carbide is always used as the base material.

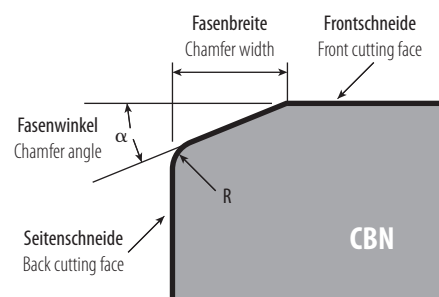
CBN-Schneidplatten

CBN Inserts

Zu bearbeitendes Material <i>Workpiece material</i>		Werkstoff-Code <i>Material code</i>	Eckenfase <i>Chamfer</i>	Anwendung <i>Application</i>
Gusseisen <i>Cast iron</i>	Grauguss (GG) <i>Grey cast iron</i>	B10	0,10 x 15°	Zylinderkopf und Zylinderblock <i>Cylinder head and cylinder block</i>
	Gusseisen mit hohem Nickelgehalt <i>High nickel cast iron</i>	B95	0,10 x 15°	Kolbenring <i>Piston Ring</i>
	Hochchromhaltiges Gusseisen <i>High chromium cast iron</i>	B91	0,10 x 15°	Pumpenteile <i>Pump parts</i>
	SG Eisen (GGG) <i>SG Iron</i>	B55	0,10 x 15°	Drehen <i>Turning</i>
		B71	0,10 x 15°	Fräsen <i>Milling</i>
Gesinterte Legierung <i>Sintered alloy</i>	Gesinterte Teile wie Ventilsitzringe <i>Sintered parts such as valve seat rings</i>	B50	0,10 x 15°	Härte / <i>Hardness</i> ≥ 300 HV
		B75*	0,10 x 15°	Härte / <i>Hardness</i> ≤ 300 HV
Hart schneidbares Material <i>Hard-to-cut material</i>	Carbide	B90*	0,15 x 20°	> Co17%
	HSS	B61	0,15 x 20°	> 5% Co
	Superlegierungen <i>Superalloys</i>	B96	0,15 x 20°	Ni Alloy
Lagerstahl <i>Bearing steel</i>		B97*	0,15 x 20°	Für Lagerbearbeitung <i>Bearing machining</i>
Gehärteter Stahl <i>Hardened steel</i>	Werkstoffgüteklasse: H01 <i>Material grade: H01</i>	B30	0,10 x 20°	Ununterbrochener Schnitt <i>Continuous cutting</i>
	Werkstoffgüteklasse: H10 <i>Material grade: H10</i>	B21*	0,10 x 20°	Ununterbrochener bis leicht unterbrochener Schnitt <i>Continuous to light interrupted cutting</i>
	Werkstoffgüteklasse: H20 <i>Material grade: H20</i>	B52	0,10 x 25°	Leicht unterbrochener Schnitt <i>Light interrupted cutting</i>
	Werkstoffgüteklasse: H30 <i>Material grade: H30</i>	B70	0,10 x 30°	Mittlerer unterbrochener Schnitt <i>Medium interrupted cutting</i>
	Werkstoffgüteklasse: H40 <i>Material grade: H40</i>	B94	0,10 x 30°	Stark unterbrochener Schnitt <i>Heavy interrupted cutting</i>

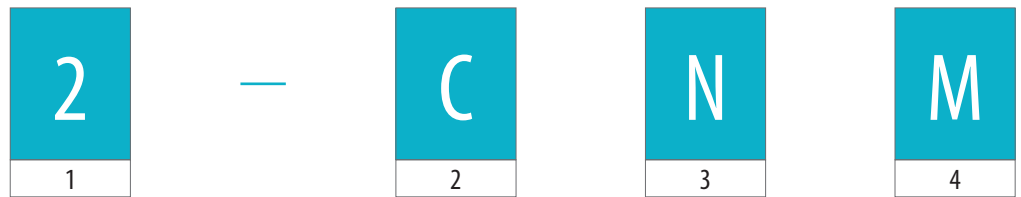
Als Trägermaterial wird stets Vollhartmetall-Grundkörper verwendet.
Solid carbide is always used as the base material.

* Auf Anfrage
* On request



Beispiel

Example



1	
Anzahl Schneidkanten Number of cutting edges	
Anzahl Schnitten Cutting tips	
1	1 Schneide 1 Tip
2	2 Schnitten 1 Tips
3	3 Schnitten 3 Tips
4	4 Schnitten 4 Tips
5	5 Schnitten 5 Tips
6	6 Schnitten 6 Tips
8	8 Schnitten 8 Tips

2	
Form Insert shape	
C	
D	
E	
M	
R	
S	
T	
V	
W	

3	
Freiwinkelbezeichnungen Clearance angle mark	
A	
B	
C	
D	
E	
F	
G	
N	
P	
O	Andere Other

4

Toleranzbezeichnungen

Precision mark

Toleranz (mm) Tolerance (mm)

	m	d	s
A	± 0.005	± 0.025	± 0.025
B	± 0.005	± 0.013	± 0.025
C	± 0.013	± 0.025	± 0.025
H	± 0.013	± 0.013	± 0.013
E	± 0.025	± 0.025	± 0.025
G	± 0.025	± 0.025	± 0.13
M*	± 0.08 - ± 0.2	± 0.05 - ± 0.15	± 0.13

Referenz

Reference

Präzision der M-Klasse gemäss den Details der Klassifikation nach Form und Massen

Grade M precision according to the details of classification regarding shape and dimension

M-Toleranzen (mm)

Tolerances according to M (mm)

Inkreistoleranzen Tolerance for inscribed circle	Dreieck Triangle	Viereck Square	80° Rhombus 80° Rhombus	55° Rhombus 55° Rhombus	35° Rhombus 35° Rhombus	Kreis Circle
6.35	± 0.08	± 0.08	± 0.08	± 0.11	± 0.16	—
9.525	± 0.08	± 0.08	± 0.08	± 0.11	± 0.16	
12.70	± 0.013	± 0.013	± 0.013	± 0.015		
15.875	± 0.015	± 0.015	± 0.015	± 0.018		
19.05	± 0.015	± 0.015	± 0.015	± 0.018		
25.40	± 0.18	± 0.18	± 0.18			
31.75	—	± 0.20				

Inkreistoleranz (mm)

(Inscribed circle tolerance)

Inkreistoleranzen Tolerance for inscribed circle	Dreieck Triangle	Viereck Square	80° Rhombus 80° Rhombus	55° Rhombus 55° Rhombus	35° Rhombus 35° Rhombus	Kreis Circle
6.35	± 0.08	± 0.08	± 0.08	± 0.11	—	—
9.525	± 0.05	± 0.05	± 0.05	± 0.05	± 0.05	± 0.05
12.70	± 0.08	± 0.08	± 0.08	± 0.08	—	± 0.08
15.875	± 0.10	± 0.10	± 0.10	± 0.10	—	± 0.10
19.05	± 0.10	± 0.10	± 0.10	± 0.10	—	± 0.10
25.40	± 0.13	± 0.13	± 0.13		—	± 0.13
31.75	—	± 0.15	—	—	—	± 0.15



5			
Bezeichnungen Bohrungsform Bore shape marks			
Bezeichnung Mark	Form Shape	Spanbrecher Ja/Nein Chip breaker Yes/No	Form Shape
A M G	Gerades Loch Straight hole	Nein (No)	
W T*	Gerades Loch + einseitige Fase (40° - 60°) Straight hole + single-side chamfer (40° - 60°)	Nein (No)	
Q U	Gerades Loch + doppelseitige Fase (40° - 60°) Straight hole + double-side chamfer (40° - 60°)	Nein (No)	
B D H	Gerades Loch + einseitige Fase (70° - 90°) Straight hole + single-side chamfer (70° - 90°)	Nein (No)	
N	Ohne Bohrung Without hole		

* mit Spanwinkel
with Rake angle

6															
Schneidlänge (bezeichnet das Mass ohne Radius) Cutting tip length (refers to the cutting length without radius)															
Form Shape	Bezeichnung Mark	Schneidlänge Cutting length	Inkreis Inscribed circle	Form Shape	Bezeichnung Mark	Schneidlänge Cutting length	Inkreis Inscribed circle	Form Shape	Bezeichnung Mark	Schneidlänge Cutting length	Inkreis Inscribed circle	Form Shape	Bezeichnung Mark	Schneidlänge Cutting length	Inkreis Inscribed circle
	03	3.625	3.57		07	7.7	6.35		02	2.716	3.97		02	2.716	3.97
	04	4.408	4.37		09	9.7	7.94		03	3.8	5.56		03	3.8	5.56
	05	5.646	5.56		11	11.6	9.525		04	4.3	6.35		04	4.3	6.35
	06	6.4	6.35		15	15.6	12.7		05	5.4	7.94		05	5.4	7.94
	08	8	7.94		19	19.4	15.875		06	6.5	9.525		06	6.5	9.525
	09	9.7	9.525		08	5.81	4.74		08	8.7	12.7		08	8.7	12.7
	12	12.9	12.7		09	9.7	5.66		10	10.9	15.876		10	10.9	15.876
	06	16.1	15.876		11	11.1	6.35		08	8.0	8.0		08	8.0	8.0
	19	19.3	19.05		16	16.6	9.525		10	10.0	10.0		10	10.0	10.0
	05	5.56	5.56		06	6.9	3.97		12	12.0	12.0		12	12.0	12.0
	06	6.35	6.35		08	8.2	4.76		15	15.875	15.875		15	15.875	15.875
	S7	7.14	7.14		09	9.6	5.56		16	16.0	16.0		16	16.0	16.0
	07	7.94	7.94		11	11.0	6.35		19	19.05	19.05		19	19.05	19.05
	09	9.525	9.525		13	13.77	7.95		25	25.0	25.0		25	25.0	25.0
	12	12.70	12.70		16	16.5	9.525		25	25.4	25.4		25	25.4	25.4
	15	15.875	15.875		22	22.0	12.70								
	19	19.05	19.05		27	27.5	15.876								
	25	25.4	25.4		33	33.0	19.05								
	31	31.75	31.75												

7	
Bezeichnungen Dicke Thickness mark	
Bezeichnung Mark	Dicke (mm) Thickness
S1	1.39
01	1.59
T0	1.79
T1	1.98
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
T4	4.96
05	5.56
06	6.35
07	7.94
09	9.52

8	
Radiusbezeichnungen Radius mark	
Bezeichnung Mark	Schneidlänge (mm) / R Cutting tip length (mm) / R
00	0
01	0.1
02	0.2
04	0.4
08	0.8
10	1.0
12	1.2
16	1.6
24	2.4

9	
Schneidrichtungsbezeichnungen Direction mark	
Bezeichnung Mark	Schneidrichtung Direction
R	Rechts Right-hand
L	Links Left-hand
N	Beide Richtungen Both directions

Aufbau der Artikelnummer zur Identifikation

Position der Stellen	ISO Norm (siehe Katalog Seiten 8-9)	Information	Auswahlmöglichkeiten	
1	0	Material	D = PCD; B = CBN; M = MCD; N = Naturdiamant; S = solide Wendeplatte; F = Full-Face Wendeplatte	
2	1	Anzahl Schneidkanten	1-2-3-4-6-8	
3	2	Form	C-D-E-M-R-S-T-V-W	
4	3	Freiwinkel	A-B-C-D-E-F-G-N-P-O	
5	4	Toleranz	A-F-C-H-E-G-M	
6	5	Bohrungsform	A-M-G-W-T-Q-U-B-D-H	
7 & 8	6	Schneidlänge	02 bis 33	
9 & 10	7	Dicke	S1-01-T0-T1-02-T2-03-T3-04-T4-05-06-07-09	
11 & 12	8	Radius	00-01-02-04-08-10-12-16-24	
13	9	Schneidrichtungsbezeichnung	N = neutral; R = rechts; L = links	
14 & 15 & 16		Materialcode PKD (D10 = Standard)	D25-D15-D20-D41-D10-D13-D85	
		Materialcode CBN (B52 = Standard)	B61-B52-B50-B30-B21-B10-B91-B95-B55	
Optionen				
17	siehe Seite 106	nur für CBN Schneidkanteigenschaften	S-T-E-F oder ohne weitere Optionen	
		für gehärtete Stähle	Gusseisen; gesinterte Legierungen; hochlegierte Stähle	für druckbeständige Stähle + Lagerstähle, HSS und Karbide
S = Standard	Abmessung Fase	Siehe Seite 7	Siehe Seite 7	Siehe Seite 7
	poliert	— " —	— " —	— " —
T-Typ	nur Fase	— " —	— " —	— " —
E-Typ	nur poliert	— " —	— " —	— " —
F-Typ	ohne Fase, nicht poliert	scharfe Schneide	scharfe Schneide	scharfe Schneide
18	siehe Seite 110	Spanbrecher (für CBN und PKD) A = kundenindividuell B = PF für CBN C = PM für CBN D = FG für PKD E = KG für PKD	A-B-C-D-E... 0 = ohne Spanbrecher	
19	siehe Seite 111	Wiper (optimierte Schneide für PKD und CBN)	W = mit Wiper; 0 = ohne Wiper	
20	siehe Seite 111	Beschichtung (für PKD und CBN) A = TiN B = TiAlN C = TiCN	A-B-C-D-E... 0 = Beschichtung	

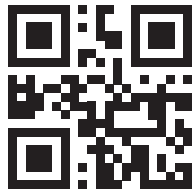
Etikettendesign

Bezeichnung	CNGA160612	Material	B52	 
Radius	R1,2	Schneidkante	E	
Spanbrecher	PF	Wiper	W	
PA Nummer	21-123456-22	Beschichtung	TIALN	
Artikelnummer	B1CNGA160612NB52EBWB			
Text				

Structure of the article number for identification

Position of digits	ISO standard see catalogue page 8-9	Information	Selection possibilities
1	0	Material	D=PCD, B=CBN, M=MCD, N=Natural diamond, S=Solid CBN, F=Fullface
2	1	Number of cutting tips according to catalogue	1-2-3-4-6-8
3	2	Insert shape	C-D-E-M-R-S-T-V-W
4	3	Clearance angle	A-B-C-D-E-F-G-N-P-O
5	4	Shape of bore	A-F-C-H-E-G-M
6	5	Hole shape	A-M-G-W-T-Q-U-B-D-H
7 & 8	6	Cutting length	02 to 33
9 & 10	7	Thickness	S1-01-T0-T1-02-T2-03-T3-04-T4-05-06-07-09
11 & 12	8	Radius	00-01-02-04-08-10-12-16-24
13	9	Cutting direction	N = Neutral; R = Right; L = Left
14 & 15 & 16		Material code PCD	D25-D15-D20-D41-D10-D13-D85
		Material code CBN	B61-B52-B50-B30-B21-B10-B91-B95-B55
Options			
17	See page 106	Applies to CBN Cutting tip properties	S-T-E-F or no additional options
		For hardened steel	For cast iron, sintered alloy, and super alloy
S = Standard	Chamfer size	See page 7	See page 7
	Edge honing	— " —	— " —
T-Typ	Only chamfer	— " —	— " —
E-Typ	Only honing	— " —	— " —
F-Typ	No chamfer No honing	Sharp tip	Sharp tip
18	See page 110	Chip Breaker (for CBN and PCD) A = Customized B = PF for CBN C = PM for CBN D = FG for PCD E = KG for PCD	A-B-C-D-E-... 0 = No chipbreaker
19	See page 111	Wiper (optimized cutting for PCD and CBN)	W = with Wiper; 0 = No wiper
20	See page 111	Coating (for PCD and CBN) A = TiN B = TiAlN C = TiCN	A-B-C-D-E-... 0 = No coating

Label Design

Description	CNGA160612	Material	B52	 
Radius	R1,2	Preparation	E	
Chip Breaker	PF	Wiper	W	
Lot Number	21-123456-22	Coating	TiAlN	
Item Number	B1CNGA160612NB52EBWB			
Text				

PKD-Material

Brief introduction to PCD material

Durch die richtige Kombination von Diamantstruktur, Korngrösse und Bindemittel, machen wir PKD geeignet für die Bearbeitung verschiedenster Materialien. Es verfügt über hohe Härte, hohe Druckfestigkeit, gute Wärmeleitfähigkeit und hohe Verschleissfestigkeit. Dies ermöglicht eine effiziente Präzisionsbearbeitung mit bester Oberflächengüte.

Using the best combination of diamond structure, grain size, and binding agent, we make PCD suitable for processing a wide range of materials. It has high hardness, high compressive strength, good thermal conductivity and high wear resistance. This enables efficient precision machining with the best surface quality.

Klassifizierung von PKD-Material

Classification of PCD material

Polykristalliner Diamant wird mit verschiedenen Diamantkörnern und Bindemitteln gesintert. Aufgrund seiner geringen Affinität mit Nichteisenmetallen und nichtmetallischen Materialien wird es üblicherweise für die Bearbeitung ebensolcher verwendet. Es kann wie folgt nach seiner Struktur klassifiziert werden:

- D 85 wird mit superfeinen Diamantkörnern gesintert, verfügt über hohe Verschleissfestigkeit und durchschnittliche Schlagfestigkeit.
- D 13 wird mit feinen Diamantkörnern gesintert, wodurch eine stabilere Schneidkante erreicht wird. Es verfügt über hohe Verschleissfestigkeit und ist geeignet für sehr hohe Oberflächengüten.
- D 10 wird mit Mischkorn (feine und mittlere Diamantkörner) gesintert und verfügt über hohe Verschleissfestigkeit.
- D 15 wird mit groben Diamantkörnern gesintert und verfügt über sehr hohe Verschleissfestigkeit sowie gute Schlagfestigkeit.

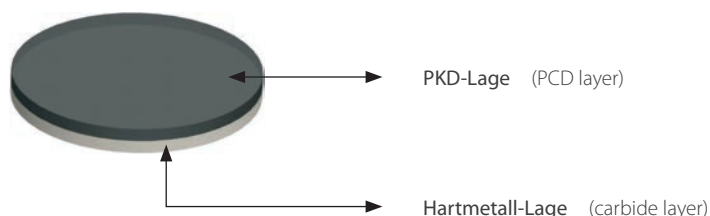
Polycrystalline Diamond is sintered with different diamond grains and binding agents. Due to its low affinity with non-ferrous metals and non-metallic materials, it is commonly used for the processing of such. As illustrated below, it can be classified according to its structure.

- D 85 is sintered with superfine diamond grains, has high wear resistance and average impact strength.
- D 13 is sintered with fine diamond grains, resulting in more stable cutting tips. It has high wear resistance and is suitable for very high surface qualities.
- D 10 is sintered with mixed fine and medium grain and has high wear resistance.
- D 15 is sintered with coarse diamond grains and has very high wear resistance as well as good impact strength.

Struktur der PKD-Scheibe

PCD Disk Structure

Gesinteter Körper aus PKD und VHM
Sintered body made of PCD and carbide



Schnittdaten von PKD-Schneidplatten

Standard cutting parameters of PCD inserts

Bearbeitungsprozess <i>Machining process</i>	Zu bearbeitendes Material <i>Part material</i>	VC (m/min)	Vorschub (mm/r) <i>Feed (mm/r)</i>	ap. (mm)
Drehen <i>Turning</i>	Aluminium <i>Aluminium</i>	300 – 2000	0.05 – 0.5	0.05 – 3.0
	Kupferlegierung <i>Copper alloy</i>	300 – 1000	0.05 – 0.5	0.05 – 2.0
	Karbid <i>Carbide</i>	50 – 150	0.1 – 0.2	0.05 – 0.5
	Keramik <i>Ceramic</i>	100 – 600	0.0 – 0.2	0.05 – 2.0
	Glasfaser / verstärkter Kunststoff <i>Fiber glass / reinforced plastic</i>	100 – 600	0.05 – 0.5	0.05 – 4.0
	Titan <i>Titanium</i>	70 – 180	0.05 – 0.2	0.05 – 1.5
Fräsen <i>Milling</i>	Aluminium <i>Aluminium</i>	450 – 3000	0.1 – 0.5	0.05 – 3.0
	Kupferlegierung <i>Copper alloy</i>	210 – 1000	0.1 – 0.5	0.05 – 3.0
	Pappe / Faserplatte <i>Paper board / fiber board</i>	1800 – 3000	1.6 – 2.0	0.05 – 5.0

Details zum PKD-Material

PCD Material Details

Zu bearbeitendes Material <i>Part material</i>	Werkstoff-Code <i>Material code</i>	Durchschnittliche Korngröße <i>Average grain size</i>	Biegeverstärkung (Gpa) <i>Reinforcement (Gpa)</i>	Anwendung <i>Application</i>
Nichteisenhaltiges Material <i>Non-ferrous material</i>	D85 / D41	> 0.001 mm	2,5	Hochgeschwindigkeitsbearbeitung für Messing, Kupfer, Aluminium, Titan und Titanlegierung <i>High speed finish machining for brass, copper, aluminium, titanium and titanium alloy</i>
	D13	0.006 mm	1,7	CFK-Werkstoff / Verbundwerkstoff / Aluminium <i>CFRP material / composite material / aluminium</i>
	D10	0.01 mm	1,4	Aluminiumlegierung (Si < 13%) <i>Aluminium alloy (Si < 13%)</i>
	D15/D25	0.025 mm	1,2	Aluminiumlegierung (Si > 13%) GFK Mischlegierungen <i>Aluminium alloy (Si > 13%) GFRP Mixed alloys</i>
	D20 (Mischkorn) <i>D20 (Mixed grain)</i>	0.002-0.03 mm	0,95	Aluminiumlegierung (Si > 13%) Keramik und PVC Voll-Karbid <i>Aluminium alloy (Si > 13%) Ceramic and PVC Solid carbide</i>

Typ CC (7° Freiwinkel) 80°

CC (7° clearance angle) type 80°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15						
	CCMW03S102								3.57	1.39	2.2	2	0.2
	CCMW03S104								3.57	1.39	2.0	2	0.4
	CCMW04T002								4.37	1.79	2.2	2	0.2
	CCMW04T004								4.37	1.79	2.0	2	0.4
	CCGW050202								5.56	2.38	2.2	2.4	0.2
	CCGW050204								5.56	2.38	2.0	2.4	0.4
	CCGW050206								5.56	2.38	2.0	2.4	0.6
	CCGT050202							3°~5°	5.56	2.38	2.2	2.4	0.2
	CCGT050204							3°~5°	5.56	2.38	2.0	2.4	0.4
	CCGT050206							3°~5°	5.56	2.38	2.0	2.4	0.6
	CCGW060202								6.35	2.38	2.2	2.8	0.2
	CCGW060204								6.35	2.38	2.0	2.8	0.4
	CCGW060206								6.35	2.38	2.0	2.8	0.6
	CCGW060208								6.35	2.38	2.0	2.8	0.8
	CCGT060202							3°~5°	6.35	2.38	2.2	2.8	0.2
	CCGT060204							3°~5°	6.35	2.38	2.0	2.8	0.4
	CCGT060206							3°~5°	6.35	2.38	2.0	2.8	0.6
	CCGT060208							3°~5°	6.35	2.38	2.0	2.8	0.8
	CCMW080202								7.94	2.38	2.2	3.4	0.2
	CCMW080204								7.94	2.38	2.0	3.4	0.4
	CCMW080206								7.94	2.38	2.0	3.4	0.6
	CCMW080208								7.94	2.38	2.0	3.4	0.8
	CCMT080202							3°~5°	7.94	2.38	2.2	3.4	0.2
	CCMT080204							3°~5°	7.94	2.38	2.0	3.4	0.4
	CCMT080206							3°~5°	7.94	2.38	2.0	3.4	0.6
	CCMT080208							3°~5°	7.94	2.38	2.0	3.4	0.8

Typ CC (7° Freiwinkel) 80°

CC (7° clearance angle) type 80°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D085	D13	D10	D41	D20	D15						
	CCGW09T302								9.525	3.97	2.2	4.4	0.2
	CCGW09T304								9.525	3.97	2.0	4.4	0.4
	CCGW09T306								9.525	3.97	2.0	4.4	0.6
	CCGW09T308								9.525	3.97	2.0	4.4	0.8
	CCGT09T302							5°~10°	9.525	3.97	2.2	4.4	0.2
	CCGT09T304							5°~10°	9.525	3.97	2.0	4.4	0.4
	CCGT09T306							5°~10°	9.525	3.97	2.0	4.4	0.6
	CCGT09T308							5°~10°	9.525	3.97	2.0	4.4	0.8
	CCGW120402								12.7	4.76	2.2	5.5	0.2
	CCGW120404								12.7	4.76	2.0	5.5	0.4
	CCGW120406								12.7	4.76	2.0	5.5	0.6
	CCGW120408								12.7	4.76	2.0	5.5	0.8
	CCGW120412								12.7	4.76	2.0	5.5	1.2
	CCGT120402							5°~10°	12.7	4.76	2.2	5.5	0.2
	CCGT120404							5°~10°	12.7	4.76	2.0	5.5	0.4
	CCGT120406							5°~10°	12.7	4.76	2.0	5.5	0.6
	CCGT120408							5°~10°	12.7	4.76	2.0	5.5	0.8
	CCGT120412							5°~10°	12.7	4.76	2.0	5.5	1.2

Typ CN (0° Freiwinkel) 80°

CN (0° clearance angle) type 80°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)							Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15	D25						
	CNGA090302									9.525	3.18	2.2	3.18	0.2
	CNGA090304									9.525	3.18	2.0	3.18	0.4
	CNGA090306									9.525	3.18	2.0	3.18	0.6
	CNGA090308									9.525	3.18	2.0	3.18	0.8
	CNGA09T302									9.525	3.97	2.2	3.81	0.2
	CNGA09T304									9.525	3.97	2.0	3.81	0.4
	CNGA09T306									9.525	3.97	2.0	3.81	0.6
	CNGA09T308									9.525	9.97	2.0	3.81	0.8
	CNGA120402									12.7	4.76	2.2	5.16	0.2
	CNGA120404									12.7	4.76	2.0	5.16	0.4
	CNGA120408									12.7	4.76	2.0	5.16	0.8
	CNGA120412									12.7	4.76	1.8	5.16	1.2

Typ CN (0° Freiwinkel) 80°

CN (0° clearance angle) type 80°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)							Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15	D25						
	WNGN120404									12.7	4.76	2.0	–	0.4
	WNGN120408									12.7	4.76	2.0	–	0.8
	WNGN120412									12.7	4.76	1.8	–	1.2

Typ CP (11° Freiwinkel) 80°

CP (11° clearance angle) type 80°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D085	D13	D10	D41	D20	D15						
	CPGW050202								5.56	2.38	2.5	2.4	0.2
	CPGW050204								5.56	2.38	2.2	2.4	0.4
	CPGW050206								5.56	2.38	2.2	2.4	0.6
	CPGT050202							3°~5°	5.56	2.38	2.5	2.4	0.2
	CPGT050204							3°~5°	5.56	2.38	2.2	2.4	0.4
	CPGT050206							3°~5°	5.56	2.38	2.2	2.4	0.6
	CPGW060202								6.35	2.38	2.5	2.8	0.2
	CPGW060204								6.35	2.38	2.2	2.8	0.4
	CPGW060208								6.35	2.38	2.2	2.8	0.8
	CPGT060202							3°~5°	6.35	2.38	2.5	2.8	0.2
	CPGT060204							3°~5°	6.35	2.38	2.2	2.8	0.4
	CPGT060208							3°~5°	6.35	2.38	2.2	2.8	0.8
	CPGW080202								7.94	2.38	2.5	2.8	0.2
	CPGW080204								7.94	2.38	2.2	2.8	0.4
	CPGW080206								7.94	2.38	2.2	2.8	0.6
	CPGW080208								7.94	2.38	2.2	2.8	0.8
	CPGT080202							3°~5°	7.94	2.38	2.5	2.8	0.2
	CPGT080204							3°~5°	7.94	2.38	2.2	2.8	0.4
	CPGT080206							3°~5°	7.94	2.38	2.2	2.8	0.6
	CPGT080208							3°~5°	7.94	2.38	2.2	2.8	0.8
	CPGW090302								9.525	3.18	2.5	4.4	0.2
	CPGW090304								9.525	3.18	2.2	4.4	0.4
	CPGW090306								9.525	3.18	2.2	4.4	0.6
	CPGW090308								9.525	3.18	2.2	4.4	0.8

Typ CP (11° Freiwinkel) 80°

CP (11° clearance angle) type 80°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D085	D13	D10	D41	D20	D15						
	CPGT090302							5°~10°	9.525	3.18	2.5	4.4	0.2
	CPGT090304							5°~10°	9.525	3.18	2.2	4.4	0.4
	CPGT090306							5°~10°	9.525	3.18	2.2	4.4	0.6
	CPGT090308							5°~10°	9.525	3.18	2.2	4.4	0.8
	CPGW09T302								9.525	3.97	2.5	4.4	0.2
	CPGW09T304								9.525	3.97	2.2	4.4	0.4
	CPGW09T306								9.525	3.97	2.2	4.4	0.6
	CPGW09T308								9.525	3.97	2.2	4.4	0.8
	CPGT09T302							5°~10°	9.525	3.97	2.5	4.4	0.2
	CPGT09T304							5°~10°	9.525	3.97	2.2	4.4	0.4
	CPGT09T306							5°~10°	9.525	3.97	2.2	4.4	0.6
	CPGT09T308							5°~10°	9.525	3.97	2.2	4.4	0.8
	CPGW120402								12.7	4.76	2.5	5.5	0.2
	CPGW120404								12.7	4.76	2.2	5.5	0.4
	CPGW120408								12.7	4.76	2.2	5.5	0.8
	CPGW120410								12.7	4.76	2.2	5.5	1.0
	CPGW120412								12.7	4.76	2.2	5.5	1.2
	CPGT120402							5°~10°	12.7	4.76	2.5	5.5	0.2
	CPGT120404							5°~10°	12.7	4.76	2.2	5.5	0.4
	CPGT120408							5°~10°	12.7	4.76	2.2	5.5	0.8
	CPGT120410							5°~10°	12.7	4.76	2.2	5.5	1.0
	CPGT120412							5°~10°	12.7	4.76	2.2	5.5	1.2

Typ DC (7° Freiwinkel) 55°

DC (7° clearance angle) type 55°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15						
	DCGW070202								6.35	2.38	2.2	2.8	0.2
	DCGW070204								6.35	2.38	2.2	2.8	0.4
	DCGW070206								6.35	2.38	2.0	2.8	0.6
	DCGW070208								6.35	2.38	2.0	2.8	0.8
	DCGT070202							3°~5°	6.35	2.38	2.2	2.8	0.2
	DCGT070204							3°~5°	6.35	2.38	2.2	2.8	0.4
	DCGT070206							3°~5°	6.35	2.38	2.0	2.8	0.6
	DCGT070208							3°~5°	6.35	2.38	2.0	2.8	0.8
	DCGW090202								7.94	2.38	2.2	3.4	0.2
	DCGW090204								7.94	2.38	2.0	3.4	0.4
	DCGW090206								7.94	2.38	2.0	3.4	0.6
	DCGW090208								7.94	2.38	2.0	3.4	0.8
	DCGT090202							3°~5°	7.94	2.38	2.2	3.4	0.2
	DCGT090204							3°~5°	7.94	2.38	2.0	3.4	0.4
	DCGT090206							3°~5°	7.94	2.38	2.0	3.4	0.6
	DCGT090208							3°~5°	7.94	2.38	2.0	3.4	0.8
	DCGW110302								9.525	3.18	2.2	3.4	0.2
	DCGW110304								9.525	3.18	2.2	3.4	0.4
	DCGW110308								9.525	3.18	2.0	3.4	0.8
	DCGT110302							5°~10°	9.525	3.18	2.2	3.4	0.2
	DCGT110304							5°~10°	9.525	3.18	2.2	3.4	0.4
	DCGT110308							5°~10°	9.525	3.18	2.0	3.4	0.8
	DCGW11T302								9.525	3.97	2.2	4.4	0.2
	DCGW11T304								9.525	3.97	2.2	4.4	0.4
	DCGW11T306								9.525	3.97	2.0	4.4	0.6
	DCGW11T308								9.525	3.97	2.0	4.4	0.8

Typ DC (7° Freiwinkel) 55°

DC (7° clearance angle) type 55°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15						
	DCGT11T302							5°~10°	9.525	3.97	2.2	4.4	0.2
	DCGT11T304							5°~10°	9.525	3.97	2.2	4.4	0.4
	DCGT11T306							5°~10°	9.525	3.97	2.0	4.4	0.6
	DCGT11T308							5°~10°	9.525	3.97	2.0	4.4	0.8
	DCGW110402								9.525	4.76	2.2	4.5	0.2
	DCGW110404								9.525	4.76	2.0	4.5	0.4
	DCGW110406								9.525	4.76	2.0	4.5	0.6
	DCGT110402							5°~10°	9.525	4.76	2.2	4.5	0.2
	DCGT110404							5°~10°	9.525	4.76	2.0	4.5	0.4
	DCGT110406							5°~10°	9.525	4.76	2.0	4.5	0.6
	DCGW110408							5°~10°	9.525	4.76	2.0	4.5	0.8
	DCGW150404								12.7	4.76	2.0	5.5	0.4
	DCGW150406								12.7	4.76	2.0	5.5	0.6
	DCGW150408								12.7	4.76	2.0	5.5	0.8
	DCGW150410								12.7	4.76	2.0	5.5	1.0
	DCGW150412								12.7	4.76	1.8	5.5	1.2
	DCGW150416								12.7	4.76	1.8	5.5	1.6
	DCGT150404							5°~10°	12.7	4.76	2.0	5.5	0.4
	DCGT150406							5°~10°	12.7	4.76	2.0	5.5	0.6
	DCGT150408							5°~10°	12.7	4.76	2.0	5.5	0.8
	DCGT150410							5°~10°	12.7	4.76	2.0	5.5	1.0
	DCGT150412							5°~10°	12.7	4.76	1.8	5.5	1.2
	DCGT150416							5°~10°	12.7	4.76	1.8	5.5	1.6

Typ DN (0° Freiwinkel) 55°

DN (0° clearance angle) type 55°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)							Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D085	D13	D10	D41	D20	D15	D25						
	DNMA110402									9.525	4.76	2.2	3.8	0.2
	DNMA110404									9.525	4.76	2.0	3.8	0.4
	DNMA110406									9.525	4.76	2.0	3.8	0.6
	DNMA110408									9.525	4.76	2.0	3.8	0.8
	DNMA150402									12.7	4.76	2.2	5.16	0.2
	DNMA150404									12.7	4.76	2.0	5.16	0.4
	DNMA150408									12.7	4.76	2.0	5.16	0.8
	DNMA150410									12.7	4.76	2.0	5.16	1.0
	DNMA150412									12.7	4.76	1.8	5.16	1.2
	DNMA150604									12.7	6.35	2.0	5.16	0.4
	DNMA150608									12.7	6.35	2.0	5.16	0.8
	DNMA150610									12.7	6.35	2.0	5.16	1.0
	DNMA150612									12.7	6.35	1.8	5.16	1.2

Typ DP (11° Freiwinkel) 55°

DP (11° clearance angle) type 55°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15						
	DPGW070202								6.35	2.38	2.5	2.8	0.2
	DPGW070204								6.35	2.38	2.2	2.8	0.4
	DPGW070206								6.35	2.38	2.2	2.8	0.6
	DPGW070208								6.35	2.38	2.2	2.8	0.8
	DPGT070202							3°~5°	6.35	2.38	2.5	2.8	0.2
	DPGT070204							3°~5°	6.35	2.38	2.2	2.8	0.4
	DPGT070206							3°~5°	6.35	2.38	2.2	2.8	0.6
	DPGT070208							3°~5°	6.35	2.38	2.2	2.8	0.8
	DPGW090202								7.94	2.38	2.5	3.4	0.2
	DPGW090204								7.94	2.38	2.2	3.4	0.4
	DPGW090206								7.94	2.38	2.2	3.4	0.6
	DPGW090208								7.94	2.38	2.2	3.4	0.8
	DPGT090202							3°~5°	7.94	2.38	2.5	3.4	0.2
	DPGT090204							3°~5°	7.94	2.38	2.2	3.4	0.4
	DPGT090206							3°~5°	7.94	2.38	2.2	3.4	0.6
	DPGT090208							3°~5°	7.94	2.38	2.2	3.4	0.8
	DPGW110302								9.525	3.18	2.5	3.4	0.2
	DPGW110304								9.525	3.18	2.2	3.4	0.4
	DPGW110306								9.525	3.18	2.2	3.4	0.6
	DPGW110308								9.525	3.18	2.2	3.4	0.8
	DPGT110302							5°~10°	9.525	3.18	2.5	3.4	0.2
	DPGT110304							5°~10°	9.525	3.18	2.2	3.4	0.4
	DPGT110306							5°~10°	9.525	3.18	2.2	3.4	0.6
	DPGT110308							5°~10°	9.525	3.18	2.2	3.4	0.8

Typ DP (11° Freiwinkel) 55°

DP (11° clearance angle) type 55°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15						
	DPGW11T302								9.525	3.97	2.5	4.4	0.2
	DPGW11T304								9.525	3.97	2.2	4.4	0.4
	DPGW11T306								9.525	3.97	2.2	4.4	0.6
	DPGW11T308								9.525	3.97	2.2	4.4	0.8
	DPGT11T302							5°~10°	9.525	3.97	2.5	4.4	0.2
	DPGT11T304							5°~10°	9.525	3.97	2.2	4.4	0.4
	DPGT11T306							5°~10°	9.525	3.97	2.2	4.4	0.6
	DPGT11T308							5°~10°	9.525	3.97	2.2	4.4	0.8
	DPGW110402								9.525	4.76	2.5	4.4	0.2
	DPGW110404								9.525	4.76	2.2	4.4	0.4
	DPGW110406								9.525	4.76	2.2	4.4	0.6
	DPGW110408								9.525	4.76	2.2	4.4	0.8
	DPGT110402							5°~10°	9.525	4.76	2.5	4.5	0.2
	DPGT110404							5°~10°	9.525	4.76	2.2	4.5	0.4
	DPGT110406							5°~10°	9.525	4.76	2.2	4.5	0.6
	DPGT110408							5°~10°	9.525	4.76	2.2	4.5	0.8
	DPGW150404								12.7	4.76	2.2	5.5	0.4
	DPGW150406								12.7	4.76	2.2	5.5	0.6
	DPGW150408								12.7	4.76	2.2	5.5	0.8
	DPGW150410								12.7	4.76	2.2	5.5	1.0
	DPGW150412								12.7	4.76	2.0	5.5	1.2
	DPGT150404							5°~10°	12.7	4.76	2.2	5.5	0.4
	DPGT150406							5°~10°	12.7	4.76	2.2	5.5	0.6
	DPGT150408							5°~10°	12.7	4.76	2.2	5.5	0.8
	DPGT150410							5°~10°	12.7	4.76	2.2	5.5	1.0
	DPGT150412							5°~10°	12.7	4.76	2.0	5.5	1.2

Typ RC (7° Freiwinkel) Kreis

RC (7° clearance angle) type circle



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)							Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15	D25						
	RCGW060200									6	2.38	–	2.8	3
	RCGW080300									8	3.18	–	3.4	4
	RCGW100300									10	3.18	–	3.6	5
	RCGW120400									12	4.76	–	4.2	6
	RCGW160600									16	6.35	–	5.2	8

Typ RP (11° Freiwinkel) Kreis

RP (11° clearance angle) type circle



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)							Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15	D25						
	RPGW080300									8	3.18	–	3.4	4
	RPGW100400									10	4.76	–	3.8	5
	RPGW120400									12	4.76	–	4.2	6
	RPGW160400									16	4.76	–	5.2	8

Typ SC (7° Freiwinkel) 90°

SC (7° clearance angle) type 90°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15						
	SCGW050202								5.56	2.38	2.2	2.2	0.2
	SCGW050204								5.56	2.38	2.0	2.2	0.4
	SCGT050202							3°~5°	5.56	2.38	2.2	2.2	0.2
	SCGT050204							3°~5°	5.56	2.38	2.0	2.2	0.4
	SCGW060202								6.35	2.38	2.2	2.2	0.2
	SCGW060204								6.35	2.38	2.0	2.2	0.4
	SCGW060208								6.35	2.38	2.0	2.2	0.8
	SCGT060202							3°~5°	6.35	2.38	2.2	2.2	0.2
	SCGT060204							3°~5°	6.35	2.38	2.0	2.2	0.4
	SCGT060208							3°~5°	6.35	2.38	2.0	2.2	0.8
	SCGW070202								7.94	2.38	2.2	3.4	0.2
	SCGW070204								7.94	2.38	2.0	3.4	0.4
	SCGW070208								7.94	2.38	2.0	3.4	0.8
	SCGT070202							3°~5°	7.94	2.38	2.2	3.4	0.2
	SCGT070204							3°~5°	7.94	2.38	2.0	3.4	0.4
	SCGT070208							3°~5°	7.94	2.38	2.0	3.4	0.8
	SCGW090302								9.525	3.18	2.2	4.4	0.2
	SCGW090304								9.525	3.18	2.0	4.4	0.4
	SCGW090308								9.525	3.18	2.0	4.4	0.8
	SCGT090302							3°~5°	9.525	3.18	2.2	4.4	0.2
	SCGT090304							3°~5°	9.525	3.18	2.0	4.4	0.4
	SCGT090308							3°~5°	9.525	3.18	2.0	4.4	0.8

Typ SC (7° Freiwinkel) 90°

SC (7° clearance angle) type 90°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15						
	SCGW09T302								9.525	3.97	2.2	4.4	0.2
	SCGW09T304								9.525	3.97	2.0	4.4	0.4
	SCGW09T308								9.525	3.97	2.0	4.4	0.8
	SCGT09T302							3°~5°	9.525	3.97	2.2	4.4	0.2
	SCGT09T304							3°~5°	9.525	3.97	2.0	4.4	0.4
	SCGT09T308							3°~5°	9.525	3.97	2.0	4.4	0.8
	SCGW120404								12.7	4.76	2.0	5.5	0.4
	SCGW120408								12.7	4.76	2.0	5.5	0.8
	SCGW120412								12.7	4.76	1.8	5.5	1.2
	SCGT120404							5°~10°	12.7	4.76	2.0	5.5	0.4
	SCGT120408							5°~10°	12.7	4.76	2.0	5.5	0.8
	SCGT120412							5°~10°	12.7	4.76	1.8	5.5	1.2

Typ SN (0° Freiwinkel) 90°

SN (0° clearance angle) type 90°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)							Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15	D25						
	SNGA090304									9.525	3.18	2.0	3.8	0.4
	SNGA090308									9.525	3.18	2.0	3.8	0.8
	SNGA090312									9.525	3.18	1.8	3.8	1.2
	SNGA120404									12.7	4.76	2.0	5.16	0.4
	SNGA120408									12.7	4.76	2.0	5.16	0.8
	SNGA120412									12.7	4.76	1.8	5.16	1.2
	SNGA150604									15.875	6.35	2.0	6.35	0.4
	SNGA150608									15.875	6.35	2.0	6.35	0.8
	SNGA150612									15.875	6.35	1.8	6.35	1.2
	SNGA150616									15.875	6.35	1.8	6.35	1.6

Typ SN (0° Freiwinkel) 90°

SN (0° clearance angle) type 90°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)							Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15	D25						
	SNGN090302									9.525	3.18	2.2	–	0.2
	SNGN090304									9.525	3.18	2.0	–	0.4
	SNGN090308									9.525	3.18	2.0	–	0.8
	SNGN120404									12.7	4.76	2.0	–	0.4
	SNGN120408									12.7	4.76	2.0	–	0.8
	SNGN120412									12.7	4.76	1.8	–	1.2

Typ SP (11° Freiwinkel) 90°

SP (11° clearance angle) type 90°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D085	D13	D10	D41	D20	D15						
	SPGW060202								6.35	2.38	2.5	2.8	0.2
	SPGW060204								6.35	2.38	2.2	2.8	0.4
	SPGT060202							3°~5°	6.35	2.38	2.5	2.8	0.2
	SPGT060204							3°~5°	6.35	2.38	2.2	2.8	0.4
	SPGW070202								7.97	2.38	2.5	3.4	0.2
	SPGW070204								7.97	2.38	2.2	3.4	0.4
	SPGW070208								7.97	2.38	2.2	3.4	0.8
	SPGT070202							3°~5°	7.97	2.38	2.5	3.4	0.2
	SPGT070204							3°~5°	7.97	2.38	2.2	3.4	0.4
	SPGT070208							3°~5°	7.97	2.38	2.2	3.4	0.8
	SPGW070302								7.97	3.18	2.5	3.4	0.2
	SPGW070304								7.97	3.18	2.2	3.4	0.4
	SPGW070308								7.97	3.18	2.2	3.4	0.8
	SPGT070302							3°~5°	7.97	3.18	2.5	3.4	0.2
	SPGT070304							3°~5°	7.97	3.18	2.2	3.4	0.4
	SPGT070308							3°~5°	7.97	3.18	2.2	3.4	0.8
	SPGW090302								9.525	3.18	2.5	3.4	0.2
	SPGW090304								9.525	3.18	2.2	3.4	0.4
	SPGW090308								9.525	3.18	2.2	3.4	0.8
	SPGT090302							3°~5°	9.525	3.18	2.2	3.4	0.2
	SPGT090304							3°~5°	9.525	3.18	2.0	3.4	0.4
	SPGT090308							3°~5°	9.525	3.18	2.2	3.4	0.8

Typ SP (11° Freiwinkel) 90°

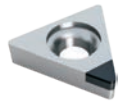
SP (11° clearance angle) type 90°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15						
	SPGW09T304								9.525	3.97	2.0	4.4	0.4
	SPGW09T306								9.525	3.97	2.2	4.4	0.6
	SPGW09T308								9.525	3.97	2.0	4.4	0.8
	SPGT09T304							5°~10°	9.525	3.97	2.0	4.4	0.4
	SPGT09T306							5°~10°	9.525	3.97	2.2	4.4	0.6
	SPGT09T308							5°~10°	9.525	3.97	2.0	4.4	0.8
	SPGW120404								12.7	4.76	2.2	5.5	0.4
	SPGW120408								12.7	4.76	2.2	5.5	0.8
	SPGW120412								12.7	4.76	2.0	5.5	1.2
	SPGT120404							5°~10°	12.7	4.76	2.2	5.5	0.4
	SPGT120408							5°~10°	12.7	4.76	2.2	5.5	0.8
	SPGT120412							5°~10°	12.7	4.76	2.0	5.5	1.2

Typ TC (7° Freiwinkel) 60°

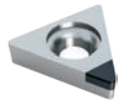
TC (7° clearance angle) type 60°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)							Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15	D25						
	TCGW060102									3.97	1.59	2.2	2.2	0.2
	TCGW060104									3.97	1.59	2.0	2.2	0.4
	TCGW06T102									3.97	1.98	2.2	2.2	0.2
	TCGW06T104									3.97	1.98	2.0	2.2	0.4
	TCGW060202									3.97	2.38	2.2	2.2	0.2
	TCGW060204									3.97	2.38	2.0	2.2	0.4
	TCGT060202								3°~5°	3.97	2.38	2.2	2.2	0.2
	TCGT060204								3°~5°	3.97	2.38	2.0	2.2	0.4
	TCGW080202									4.76	2.38	2.0	2.3	0.2
	TCGW080204									4.76	2.38	2.0	2.3	0.4
	TCGW080206									4.76	2.38	2.0	2.3	0.6
	TCGT080202								3°~5°	4.76	2.38	2.0	2.3	0.2
	TCGT080204								3°~5°	4.76	2.38	2.0	2.3	0.4
	TCGT080206								3°~5°	4.76	2.38	2.0	2.3	0.6
	TCGW090202									5.56	2.38	2.2	2.3	0.2
	TCGW090204									5.56	2.38	2.0	2.3	0.4
	TCGW090208									5.56	2.38	2.0	2.3	0.8
	TCGT090202								3°~5°	5.56	2.38	2.2	2.3	0.2
	TCGT090204								3°~5°	5.56	2.38	2.0	2.3	0.4
	TCGT090208								3°~5°	5.56	2.38	2.0	2.3	0.8
	TCGW110202									6.35	2.38	2.2	2.3	0.2
	TCGW110204									6.35	2.38	2.0	2.3	0.4
	TCGW110208									6.35	2.38	2.2	2.3	0.8

Typ TC (7° Freiwinkel) 60°

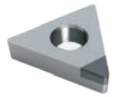
TC (7° clearance angle) type 60°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)							Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15	D25						
	TCGT110202								3°~5°	6.35	2.38	2.2	2.8	0.2
	TCGT110204								3°~5°	6.35	2.38	2.0	2.8	0.4
	TCGT110208								3°~5°	6.35	2.38	2.2	2.8	0.8
	TCGW110302									6.35	3.18	2.2	2.8	0.2
	TCGW110304									6.35	3.18	2.0	2.8	0.4
	TCGW110308									6.35	3.18	2.0	2.8	0.8
	TCGT110302								3°~5°	6.35	3.18	2.2	2.8	0.2
	TCGT110304								3°~5°	6.35	3.18	2.0	2.8	0.4
	TCGT110308								3°~5°	6.35	3.18	2.0	2.8	0.8
	TCGW11T304									6.35	3.97	2.0	2.8	0.4
	TCGW11T306									6.35	3.97	2.0	2.8	0.6
	TCGW11T308									6.35	3.97	2.0	2.8	0.8
	TCGT11T304								5°~10°	6.35	3.97	2.0	2.8	0.4
	TCGT11T306								5°~10°	6.35	3.97	2.0	2.8	0.6
	TCGT11T308								5°~10°	6.35	3.97	2.0	2.8	0.8
	TCGW16T304									9.525	3.97	2.0	4.4	0.4
	TCGW16T308									9.525	3.97	2.2	4.4	0.8
	TCGW16T312									9.525	3.97	1.8	4.4	1.2
	TCGT16T304								5°~10°	9.525	3.97	2.0	4.4	0.4
	TCGT16T308								5°~10°	9.525	3.97	2.2	4.4	0.8
	TCGT16T312								5°~10°	9.525	3.97	1.8	4.4	1.2
	TCGW160404									9.525	4.76	2.0	4.4	0.4
	TCGW160408									9.525	4.76	2.0	4.4	0.8
	TCGW160412									9.525	4.76	1.8	4.4	1.2
	TCGT160404								5°~10°	9.525	4.76	2.0	4.4	0.4
	TCGT160408								5°~10°	9.525	4.76	2.0	4.4	0.8
	TCGT160412								5°~10°	9.525	4.76	1.8	4.4	1.2

Typ TN (0° Freiwinkel) 60°

TN (0° clearance angle) type 60°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D085	D13	D10	D41	D20	D15						
	TNGA110302								6.35	3.18	2.2	2.3	0.2
	TNGA110304								6.35	3.18	2.0	2.3	0.4
	TNGA110308								6.35	3.18	2.0	2.3	0.8
	TNGA160404								9.525	4.76	2.0	3.8	0.4
	TNGA160408								9.525	4.76	2.0	3.8	0.8
	TNGA160412								9.525	4.76	1.8	3.8	1.2
	TNGA160416								9.525	4.76	1.8	3.8	1.6
	TNGA220408								12.7	4.76	2.0	5.16	0.8
	TNGA220412								12.7	4.76	1.8	5.16	1.2
	TNGA220416								12.7	4.76	1.8	5.16	1.6
	TNGA270608								15.875	6.35	2.0	6.35	0.8
	TNGA270612								15.875	6.35	1.8	6.35	1.2
	TNGA270616								15.875	6.35	1.8	6.35	1.6

Typ TN (0° Freiwinkel) 60°

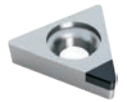
TN (0° clearance angle) type 60°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15						
	TNGN110302								6.35	3.18	2.2	–	0.2
	TNGN110304								6.35	3.18	2.0	–	0.4
	TNGN110308								6.35	3.18	2.0	–	0.8
	TNGN160304								9.525	3.18	2.0	–	0.4
	TNGN160308								9.525	3.18	2.0	–	0.8
	TNGN160312								9.525	3.18	1.8	–	1.2
	TNGN160404								9.525	4.76	2.0	–	0.4
	TNGN160408								9.525	4.76	2.0	–	0.8
	TNGN160412								9.525	4.76	1.8	–	1.2
	TNGN160416								9.525	4.76	1.8	–	1.6

Typ TP (11° Freiwinkel) 60°

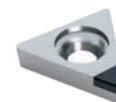
TP (11° clearance angle) type 60°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)							Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D085	D13	D10	D41	D20	D15	D25						
	TPGW080202									4.76	2.38	2.2	2.4	0.2
	TPGW080204									4.76	2.38	2.0	2.4	0.4
	TPGW080206									4.76	2.38	2.2	2.4	0.6
	TPGT080202								3°~5°	4.76	2.38	2.2	2.4	0.2
	TPGT080204								3°~5°	4.76	2.38	2.0	2.4	0.4
	TPGT080206								3°~5°	4.76	2.38	2.2	2.4	0.6
	TPGW090202									5.56	2.38	2.2	2.8	0.2
	TPGW090204									5.56	2.38	2.0	2.8	0.4
	TPGW090208									5.56	2.38	2.0	2.8	0.8
	TPGT090202								3°~5°	5.56	2.38	2.2	2.8	0.2
	TPGT090204								3°~5°	5.56	2.38	2.0	2.8	0.4
	TPGT090208								3°~5°	5.56	2.38	2.0	2.8	0.8
	TPGW110202									6.35	2.38	2.2	2.8	0.2
	TPGW110204									6.35	2.38	2.0	2.8	0.4
	TPGW110208									6.35	2.38	2.2	2.8	0.8
	TPGT110202								3°~5°	6.35	2.38	2.2	2.8	0.2
	TPGT110204								3°~5°	6.35	2.38	2.0	2.8	0.4
	TPGT110208								3°~5°	6.35	2.38	2.2	2.8	0.8
	TPGW110302									6.35	3.18	2.2	2.8	0.2
	TPGW110304									6.35	3.18	2.0	2.8	0.4
	TPGW110308									6.35	3.18	2.2	2.8	0.8
	TPGT110302								3°~5°	6.35	3.18	2.2	3.4	0.2
	TPGT110304								3°~5°	6.35	3.18	2.0	3.4	0.4
	TPGT110308								3°~5°	6.35	3.18	2.2	3.4	0.8

Typ TP (11° Freiwinkel) 60°

TP (11° clearance angle) type 60°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D085	D13	D10	D41	D20	D15						
	TPGW160304								9.525	3.18	2.0	4.4	0.4
	TPGW160308								9.525	3.18	2.2	4.4	0.8
	TPGW160312								9.525	3.18	2.2	4.4	1.2
	TPGT160304							3°~5°	9.525	3.18	2.0	4.4	0.4
	TPGT160308							3°~5°	9.525	3.18	2.2	4.4	0.8
	TPGT160312							3°~5°	9.525	3.18	2.2	4.4	1.2
	TPGW16T304								9.525	3.97	2.2	4.4	0.4
	TPGW16T308								9.525	3.97	2.2	4.4	0.8
	TPGW16T312								9.525	3.97	2.0	4.4	1.2
	TPGT16T304							5°~10°	9.525	3.97	2.2	4.4	0.4
	TPGT16T308							5°~10°	9.525	3.97	2.2	4.4	0.8
	TPGT16T312							5°~10°	9.525	3.97	2.0	4.4	1.2
	TPGW160402								9.525	4.76	2.2	4.4	0.2
	TPGW160404								9.525	4.76	2.0	4.4	0.4
	TPGW160408								9.525	4.76	2.0	4.4	0.8
	TPGW160412								9.525	4.76	2.0	4.4	1.2
	TPGT160402							5°~10°	9.525	4.76	2.2	4.4	0.2
	TPGT160404							5°~10°	9.525	4.76	2.0	4.4	0.4
	TPGT160408							5°~10°	9.525	4.76	2.0	4.4	0.8
	TPGT160412							5°~10°	9.525	4.76	2.0	4.4	1.2

Typ TP (11° Freiwinkel) 60°

TP (11° clearance angle) type 60°

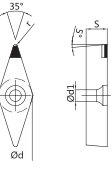
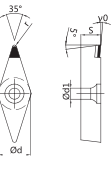
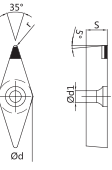
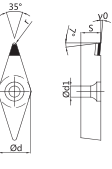


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D085	D13	D10	D41	D20	D15						
	TPGN090202								5.56	2.38	2.2	–	0.2
	TPGN090204								5.56	2.38	2.0	–	0.4
	TPGN090208								5.56	2.38	2.0	–	0.8
	TPGN110302								6.35	3.18	2.2	–	0.2
	TPGN110304								6.35	3.18	2.0	–	0.4
	TPGN110308								6.35	3.18	2.2	–	0.8
	TPGN160304								9.525	3.18	2.0	–	0.4
	TPGN160308								9.525	3.18	2.2	–	0.8
	TPGN160312								9.525	3.18	2.2	–	1.2
	TPGN160404								9.525	4.76	2.0	–	0.4
	TPGN160408								9.525	4.76	2.0	–	0.8
	TPGN160412								9.525	4.76	2.0	–	1.2
	TPGN160416								9.525	4.76	2.0	–	1.6

Typ VB (5° Freiwinkel) 35°

VB (5° clearance angle) type 35°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D085	D13	D10	D41	D20	D15						
	VBMW110302								6.35	3.18	2.5	2.8	0.2
	VBMW110304								6.35	3.18	2.5	2.8	0.4
	VBMW110306								6.35	3.18	2.5	2.8	0.6
	VBMW110308								6.35	3.18	2.5	2.8	0.8
	VBMT110302							3°~5°	6.35	3.18	2.5	2.8	0.2
	VBMT110304							3°~5°	6.35	3.18	2.5	2.8	0.4
	VBMT110306							3°~5°	6.35	3.18	2.5	2.8	0.6
	VBMT110308							3°~5°	6.35	3.18	2.5	2.8	0.8
	VBMW160404								9.525	4.76	2.5	4.4	0.4
	VBMW160406								9.525	4.76	2.5	4.4	0.6
	VBMW160408								9.525	4.76	2.5	4.4	0.8
	VBMW160410								9.525	4.76	2.5	4.4	1.0
	VBMW160412								9.525	4.76	2.2	4.4	1.2
	VBMT160404							5°~10°	9.525	4.76	2.5	4.4	0.4
	VBMT160406							5°~10°	9.525	4.76	2.5	4.4	0.6
	VBMT160408							5°~10°	9.525	4.76	2.5	4.4	0.8
	VBMT160410							5°~10°	9.525	4.76	2.5	4.4	1.0
	VBMT160412							5°~10°	9.525	4.76	2.2	4.4	1.2

Typ VC (7° Freiwinkel) 35°

VC (7° clearance angle) type 35°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D085	D13	D10	D41	D20	D15						
	VCGW080202								4.76	2.38	2.5	2.3	0.2
	VCGW080204								4.76	2.38	2.5	2.3	0.4
	VCGW080208								4.76	2.38	2.5	2.3	0.8
	VCGT080202							3°~5°	4.76	2.38	2.5	2.3	0.2
	VCGT080204							3°~5°	4.76	2.38	2.5	2.3	0.4
	VCGT080208							3°~5°	4.76	2.38	2.5	2.3	0.8
	VCGW110302								6.35	3.18	2.5	2.8	0.2
	VCGW110304								6.35	3.18	2.5	2.8	0.4
	VCGW110308								6.35	3.18	2.5	2.8	0.8
	VCGT110302							3°~5°	6.35	3.18	2.5	2.8	0.2
	VCGT110304							3°~5°	6.35	3.18	2.5	2.8	0.4
	VCGT110308							3°~5°	6.35	3.18	2.5	2.8	0.8
	VCGW160404								9.525	4.76	2.5	4.4	0.4
	VCGW160408								9.525	4.76	2.5	4.4	0.8
	VCGW160410								9.525	4.76	2.5	4.4	1.0
	VCGW160412								9.525	4.76	2.5	4.4	1.2
	VCGT160404							5°~10°	9.525	4.76	2.5	4.4	0.4
	VCGT160408							5°~10°	9.525	4.76	2.5	4.4	0.8
	VCGT160410							5°~10°	9.525	4.76	2.5	4.4	1.0
	VCGT160412							5°~10°	9.525	4.76	2.5	4.4	1.2

Typ VN (0° Freiwinkel) 35°

VN (0° clearance angle) type 35°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D085	D113	D110	D141	D120	D115						
	VNMA160402								9.525	4.76	2.5	3.8	0.2
	VNMA160404								9.525	4.76	2.2	3.8	0.4
	VNMA160408								9.525	4.76	2.2	3.8	0.8
	VNMA160410								9.525	4.76	2.2	3.8	1.0
	VNMA160412								9.525	4.76	2.0	3.8	1.2

Typ VP (11° Freiwinkel) 35°

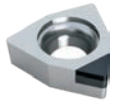
VP (11° clearance angle) type 35°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D085	D113	D110	D141	D120	D115						
	VPGW080202								4.76	2.38	2.5	2.3	0.2
	VPGW080204								4.76	2.38	2.5	2.3	0.4
	VPGW080208								4.76	2.38	2.5	2.3	0.8
	VPGT080202							3°~5°	4.76	2.38	2.5	2.3	0.2
	VPGT080204							3°~5°	4.76	2.38	2.5	2.3	0.4
	VPGT080208							3°~5°	4.76	2.38	2.5	2.3	0.8
	VPGW110302								6.35	3.18	2.5	2.8	0.2
	VPGW110304								6.35	3.18	2.5	2.8	0.4
	VPGW110308								6.35	3.18	2.5	2.8	0.8
	VPGT110302							3°~5°	6.35	3.18	2.5	2.8	0.2
	VPGT110304							3°~5°	6.35	3.18	2.5	2.8	0.4
	VPGT110308							3°~5°	6.35	3.18	2.5	2.8	0.8

Typ WB (5° Freiwinkel) Hexagon

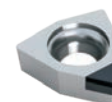
WB (5° clearance angle) type hexagon



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15						
	WBGW060102								3.97	1.59	2.2	2.2	0.2
	WBGW060104								3.97	1.59	2.0	2.2	0.4
	WBGW080202								4.76	2.38	2.2	2.4	0.2
	WBGW080204								4.76	2.38	2.0	2.4	0.4
	WBGT080202							3°~5°	4.76	2.38	2.2	2.4	0.2
	WBGT080204							3°~5°	4.76	2.38	2.0	2.4	0.4

Typ WC (7° Freiwinkel) Hexagon

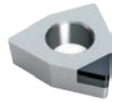
WC (7° clearance angle) type hexagon

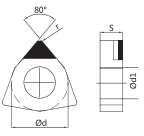


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (Rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D085	D13	D10	D41	D20	D15						
	WCGW020102								3.97	1.59	2.2	2.3	0.2
	WCGW020104								3.97	1.59	2.0	2.3	0.4
	WCGW050302								7.94	3.18	2.2	3.5	0.2
	WCGW050304								7.94	3.18	2.0	3.5	0.4
	WCGW050308								7.94	3.18	2.0	3.5	0.8
	WCGT050302							5°~10°	7.94	3.18	2.2	3.5	0.2
	WCGT050304							5°~10°	7.94	3.18	2.0	3.5	0.4
	WCGT050308							5°~10°	7.94	3.18	2.0	3.5	0.8
	WCGW06T302								9.525	3.97	2.2	4.4	0.2
	WCGW06T304								9.525	3.97	2.0	4.4	0.4
	WCGW06T308								9.525	3.97	2.0	4.4	0.8
	WCGT06T302							5°~10°	9.525	3.97	2.2	4.4	0.2
	WCGT06T304							5°~10°	9.525	3.97	2.0	4.4	0.4
	WCGT06T308							5°~10°	9.525	3.97	2.0	4.4	0.8

Typ WN (0° Freiwinkel) Hexagon

WN (0° clearance angle) type hexagon



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)						Spanwinkel (γ ₀) (rake angle)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	PKD Länge (PCD length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		D85	D13	D10	D41	D20	D15						
	WNGA080404								12.7	4.76	2.0	5.16	0.4
	WNGA080408								12.7	4.76	2.0	5.16	0.8
	WNGA080412								12.7	4.76	1.8	5.16	1.2

CBN-Schneidplatten

CBN Inserts

CBN-/Solid-CBN-Typen (Full-Face)
Types of CBN/solid CBN



CBN-Material

CBN material

Polykristallines kubisches Bornitrid (CBN) wird mit CBN-Körnern, verbunden mit Metall und Keramik, gesintert. Verglichen mit Vollhartmetall ist es härter und verfügt über eine höhere Hitze- und Verschleißfestigkeit. Aufgrund dieser Eigenschaften werden CBN-ISO-Normplatten nicht nur für die Bearbeitung von Gusseisen, sondern auch für Hartbearbeitungen von gehärteten Stählen, HSS und hitzebeständigen Legierungen verwendet.

Polycrystalline Cubic Boron Nitride (CBN) is sintered using CBN grains combined with metal and ceramic. Compared to carbide tool material, it is harder and has higher heat and wear resistance. Due to these properties, CBN inserts are not only used for machining cast iron but also for hard machining of hardened steels, high speed steel, and heat resistant alloys.

Klassifizierung von CBN-Material

Classification of CBN material

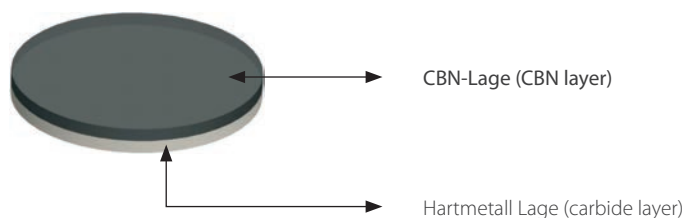
Polykristallines kubisches Bornitrid wird mit CBN-Körnern und Bindemittel gesintert. Aufgrund seiner geringen Affinität mit Eisenmetall wird es gerne für dessen Bearbeitung verwendet. Es kann wie folgt nach seiner Struktur klassifiziert werden:

- B55, B10 und B95 werden mit CBN-Micrograin gesintert. Aufgrund dessen verfügen sie über hohe Verschleißfestigkeit und sind besonders gut geeignet für die Bearbeitung von Gusseisen.
- B94, B70 und B97 werden aus CBN-Körnern und Keramik hergestellt, was den Materialverbund verbessert und Beschädigungen durch stark unterbrochene Schnitte verringert. Aufgrund ihrer hohen Verschleißfestigkeit und Schlagfestigkeit werden sie besonders für die Bearbeitung von gehärtetem Stahl verwendet.

Polycrystalline cubic boron nitride is sintered with CBN grains and binding agents. Due to its low affinity with ferrous metal, it is often used for the processing of such. As illustrated below, it can be classified according to its structure.

- B55, B10, and B95 are sintered with CBN micro powder. As a result, they have a high wear resistance and are particularly suitable for machining cast iron.
- B94, B70, and B97 are manufactured from CBN grains and ceramic, which improves material bonding and reduces damage during heavily interrupted machining. Due to their high resistance to wear and impact, they are particularly suitable for machining hardened steel, cast iron, etc.

Gesinterter Körper aus CBN und VHM
Sintered body made of CBN and carbide



Details zum CBN - Material

CBN material details

Klassifikation <i>Classification</i>	Zu bearbeitendes Material <i>Part material</i>	Werkstoff - Code <i>Material code</i>	Durchschnittliche Korngröße <i>Average grain size</i>	CBN - Inhalt <i>CBN Content</i>	Anwendung <i>Application</i>
Gusseisen <i>Cast iron</i>	Grauguss (GG) <i>Grey cast iron</i>	B10	0.002 mm	90% – 95%	Zylinderkopf und Zylinderblock <i>Cylinder head and cylinder block</i>
	Gusseisen mit hohem Nickelgehalt <i>High nickel cast iron</i>	B95	0.001 mm	90% – 95%	Kolbenring <i>Piston ring</i>
	Hochchromhaltiges Gusseisen <i>High chromium cast iron</i>	B91	0.008 mm	85% – 90%	Pumpenteile <i>Pump parts</i>
	SG Eisen (GGG) <i>SG Iron</i>	B55	0.002 mm – 0.004 mm	75% – 80%	Drehen: B55 <i>Turning: B55</i>
		B71		80% – 85%	Fräsen: B70 <i>Milling: B70</i>
Gesinterte Legierung <i>Sintered alloy</i>	Gesinterte Teile wie Ventilsitzring <i>Sintered parts like valve seat ring</i>	B50	0.001 – 0.002 mm	90% – 95%	Härte ≥ 300 HV <i>Hardness ≥ 300 HV</i>
		B75*		60% – 65%	Härte ≤ 300 HV <i>Hardness ≤ 300 HV</i>
Hart schneidbares Material <i>Material which is hard for cutting</i>	Carbide	B90*	0.008 mm	85% – 90%	> Co 17%
	HSS	B61	0.001 mm	90% – 95%	Zum Beispiel: M42 <i>For example: M42</i>
	Superlegierungen <i>Superalloys</i>	B96*	0.004 mm	90% – 95%	Ni-Legierung <i>Ni Alloy</i>
Lagerstahl <i>Bearing steel</i>		B97*	0,008 mm	85% – 90%	Für Lagerbearbeitung <i>Bearing machining</i>
Gehärteter Stahl <i>Hardened steel</i>	Werkstoff-Güteklasse: H01 <i>Material Grade: H01</i>	B30	0.001 – 0.002 mm	40% – 45%	Härte ≥ 45 HRC <i>Hardness ≥ 45 HRC</i>
	Werkstoff-Güteklasse: H10 <i>Material Grade: H10</i>	B21*	0.003 mm	50% – 55%	
	Werkstoff-Güteklasse: H20 <i>Material Grade: H20</i>	B52	0.002 mm	60% – 65%	
	Werkstoff-Güteklasse: H30 <i>Material Grade: H30</i>	B70	0.002 – 0.003 mm	70% – 75%	
	Werkstoff-Güteklasse: H40 <i>Material Grade: H40</i>	B94	0.001 – 0.004 mm	85% – 90%	

Schnittdaten von CBN-ISO-Normplatten

Cutting parameters for CBN standard inserts

* Auf Anfrage

* On request

Bearbeitungsprozess <i>Machining process</i>	Zu bearbeitendes Material <i>Part material</i>	VC (m / min)	Vorschub (mm / r) <i>Feed (mm / r)</i>	ap. (mm)
Drehen <i>Turning</i>	Grauguss <i>Grey cast iron</i>	200 – 1500	0.1 – 0.5	≤ 2.0
	Legiertes Gusseisen <i>Alloyed cast iron</i>	200 – 1000	0.1 – 0.6	≤ 1.0
	SG Eisen <i>SG Iron</i>	80 – 500	0.1 – 0.4	≤ 0.5
	Gehärteter Stahl (ununterbrochen) <i>Hardened steel (uninterrupted)</i>	80 – 250	0.03 – 0.35	0.03 – 0.5
	Stahl gehärtet (unterbrochen) <i>Hardened steel (interrupted)</i>	90 – 200	0.03 – 0.35	0.03 – 0.5
	Pulver-Metallurgie <i>Powder metallurgy</i>	50 – 125	0.03 – 0.2	0.05 – 0.5
Fräsen <i>Milling</i>	Grauguss <i>Grey cast iron</i>	800 – 2000	0.1 – 1.0	≤ 2.5

CBN-Schneidplatten für gehärteten Stahl

CBN inserts for hardened steel

Vorteile von CBN-Schneidplatten für die Bearbeitung von gehärteten Stählen

Advantages of CBN inserts for cutting hardened steel

- Kosten: Die Anwendung von Drehen anstelle von Schleifen kann die Kosten von Investitionen in Schleifmaschinen senken.
- Arbeitskräfte: Die Produktionszeiten (und damit die Arbeitskosten) werden verringert.
- Qualität: Eine einmalige Einspannung kann schwierige Verarbeitungen komplett durchführen und kann so die Bearbeitungspräzision verbessern.
- Umwelt: CBN kann für Trockenschnitte verwendet werden, was die Umwelt schont und eine ökologischere Produktion ermöglicht.
- Cost: Using turning instead of grinding can reduce the cost of investing in grinding machines.
- Work force: Production time and thus labour costs are reduced.
- Quality: A single clamping operation can complete difficult finishing processes and thus improve machining precision.
- Environment: CBN can be used for dry cutting, which protects the environment and enables more ecological production.

Schnittbeispiele: Zahnräder

Cutting examples: Gears

CBN kann unter bestimmten Bedingungen den Schleifprozess ersetzen und die Oberflächengüte gewährleisten, was Kosten reduzieren kann.

CBN can, under certain conditions, replace the grinding process and ensure surface finish, which can reduce costs.

Schneidplattentyp (Insert type): CCGT120404

Werkstückhärte (Workpiece hardness): 58-62HRC

Bearbeitungsparameter (Machining parameters): $V_s=150-200\text{mm/min}$ $f=0.1-0.2\text{mm/r}$ $a_p=0.1-0.5\text{mm}$

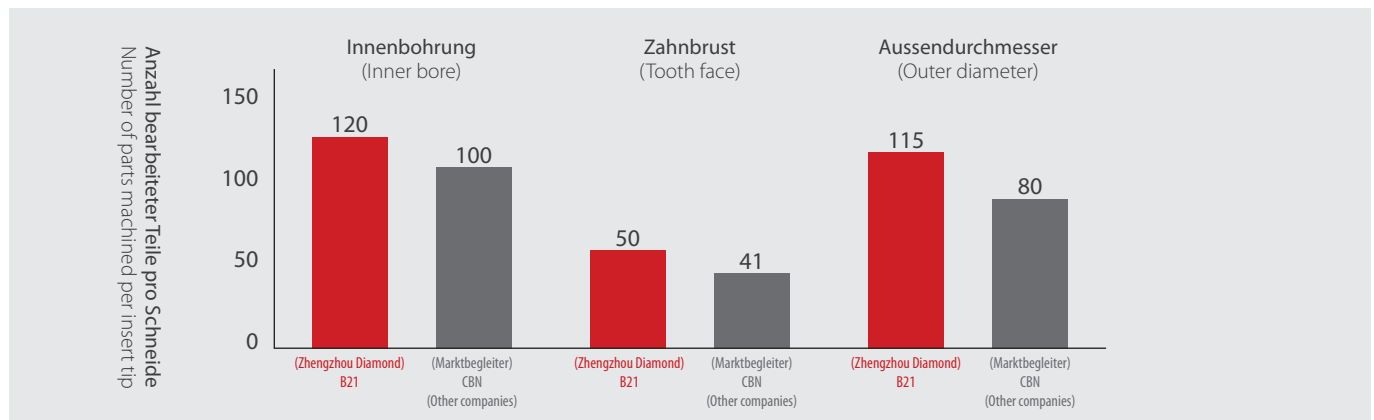


(Marktbegleiter) CBN
(Other companies) CBN

(Zhengzhou Diamond) B21

Gedrehte Zahnräder

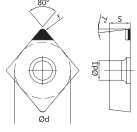
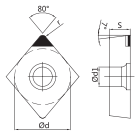
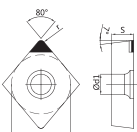
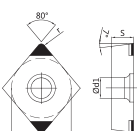
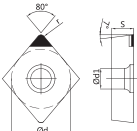
Turning gear



Typ CC (7° Freiwinkel) 80°

CC (7° clearance angle) type 80°

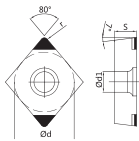
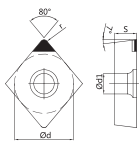
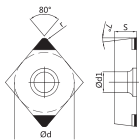
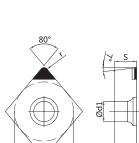


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	CCMW03S102													1	3.57	1.39	2.2	2.0	0.2
	CCMW03S104													1	3.57	1.39	2.0	2.0	0.4
	CCMW04T002													1	4.37	1.79	2.2	2.4	0.2
	CCMW04T004													1	4.37	1.79	2.0	2.4	0.4
Einschneidewendeplatte (Single-tip insert)																			
	CCGW050202													1	5.56	2.38	2.2	2.4	0.2
	CCGW050204													1	5.56	2.38	2.0	2.4	0.4
	CCGW050206													1	5.56	2.38	2.0	2.4	0.6
Einschneidewendeplatte (Single-tip insert)																			
	CCGW060202													1	6.35	2.38	2.2	2.8	0.2
	CCGW060204													1	6.35	2.38	2.0	2.8	0.4
	CCGW060206													1	6.35	2.38	2.0	2.8	0.6
	CCGW060208													1	6.35	2.38	2.0	2.8	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-CCGW060202													2	6.35	2.38	2.2	2.8	0.2
	2-CCGW060204													2	6.35	2.38	2.0	2.8	0.4
	2-CCGW060206													2	6.35	2.38	2.0	2.8	0.6
	2-CCGW060208													2	6.35	2.38	2.0	2.8	0.8
Einschneidewendeplatte (Single-tip insert)																			
	CCMW080202													1	7.94	2.38	2.2	3.4	0.2
	CCMW080204													1	7.94	2.38	2.0	3.4	0.4
	CCMW080206													1	7.94	2.38	2.0	3.4	0.6
	CCMW080208													1	7.94	2.38	2.0	3.4	0.8

Typ CC (7° Freiwinkel) 80°

CC (7° clearance angle) type 80°

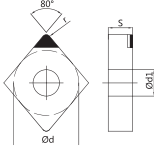
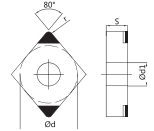
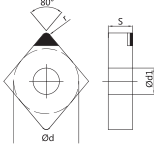
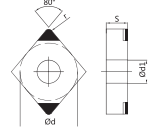
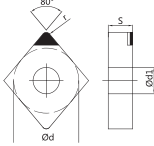


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-CCMW080202													2	7.94	2.38	2.2	3.4	0.2
	2-CCMW080204													2	7.94	2.38	2.0	3.4	0.4
	2-CCMW080206													2	7.94	2.38	2.0	3.4	0.6
	2-CCMW080208													2	7.94	2.38	2.0	3.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	CCGW09T302													1	9.525	3.97	2.2	4.4	0.2
	CCGW09T304													1	9.525	3.97	2.0	4.4	0.4
	CCGW09T306													1	9.525	3.97	2.0	4.4	0.6
	CCGW09T308													1	9.525	3.97	2.0	4.4	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-CCGW09T302													2	9.525	3.97	2.2	4.4	0.2
	2-CCGW09T304													2	9.525	3.97	2.0	4.4	0.4
	2-CCGW09T306													2	9.525	3.97	2.0	4.4	0.6
	2-CCGW09T308													2	9.525	3.97	2.0	4.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	CCGW120402													1	12.7	4.76	2.2	5.5	0.2
	CCGW120404													1	12.7	4.76	2.0	5.5	0.4
	CCGW120406													1	12.7	4.76	2.0	5.5	0.6
	CCGW120408													1	12.7	4.76	2.0	5.5	0.8
	CCGW120412													1	12.7	4.76	2.0	5.5	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-CCGW120402													2	12.7	4.76	2.2	5.5	0.2
	2-CCGW120404													2	12.7	4.76	2.0	5.5	0.4
	2-CCGW120406													2	12.7	4.76	2.0	5.5	0.6
	2-CCGW120408													2	12.7	4.76	2.0	5.5	0.8
	2-CCGW120412													2	12.7	4.76	2.0	5.5	1.2

Typ CN (0° Freiwinkel) 80°

CN (0° clearance angle) type 80°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	CNGA090302													1	9.525	3.18	2.2	3.81	0.2
	CNGA090304													1	9.525	3.18	2.0	3.81	0.4
	CNGA090306													1	9.525	3.18	2.0	3.81	0.6
	CNGA090308													1	9.525	3.18	2.0	3.81	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-CNGA090302													2	9.525	3.18	2.2	3.81	0.2
	2-CNGA090304													2	9.525	3.18	2.0	3.81	0.4
	2-CNGA090306													2	9.525	3.18	2.0	3.81	0.6
	2-CNGA090308													2	9.525	3.18	2.0	3.81	0.8
Einschneidewendeplatte (Single-tip insert)																			
	CNGA09T302													1	9.525	3.97	2.2	3.81	0.2
	CNGA09T304													1	9.525	3.97	2.0	3.81	0.4
	CNGA09T306													1	9.525	3.97	2.0	3.81	0.6
	CNGA09T308													1	9.525	3.97	2.0	3.81	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-CNGA09T302													2	9.525	3.97	2.2	3.81	0.2
	2-CNGA09T304													2	9.525	3.97	2.0	3.81	0.4
	2-CNGA09T306													2	9.525	3.97	2.0	3.81	0.6
	2-CNGA09T308													2	9.525	3.97	2.0	3.81	0.8
Einschneidewendeplatte (Single-tip insert)																			
	CNGA090402													1	9.525	4.76	2.2	3.81	0.2
	CNGA090404													1	9.525	4.76	2.0	3.81	0.4
	CNGA090408													1	9.525	4.76	2.0	3.81	0.8
	CNGA0904012													1	9.525	4.76	1.8	3.81	1.2

Typ CN (0° Freiwinkel) 80°

CN (0° clearance angle) type 80°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						

Mehrschneidenwendeplatte (Multi-tip insert)

	2-CNGA090402													2	9.525	4.76	2.2	3.81	0.2
	2-CNGA090404													2	9.525	4.76	2.0	3.81	0.4
	2-CNGA090408													2	9.525	4.76	2.0	3.81	0.8
	2-CNGA090412													2	9.525	4.76	1.8	3.81	1.2
	4-CNGA090402													4	9.525	4.76	2.2	3.81	0.2
	4-CNGA090404													4	9.525	4.76	2.0	3.81	0.4
	4-CNGA090408													4	9.525	4.76	2.0	3.81	0.8
	4-CNGA090412													4	9.525	4.76	1.8	3.81	1.2

Einschneidewendeplatte (Single-tip insert)

	CNGA120402													1	12.7	4.76	2.2	5.16	0.2
	CNGA120404													1	12.7	4.76	2.0	5.16	0.4
	CNGA120408													1	12.7	4.76	2.0	5.16	0.8
	CNGA120412													1	12.7	4.76	1.8	5.16	1.2

Mehrschneidenwendeplatte (Multi-tip insert)

	2-CNGA120402													2	12.7	4.76	2.2	5.16	0.2
	2-CNGA120404													2	12.7	4.76	2.0	5.16	0.4
	2-CNGA120408													2	12.7	4.76	2.0	5.16	0.8
	2-CNGA120412													2	12.7	4.76	1.8	5.16	1.2
	4-CNGA120402													4	12.7	4.76	2.2	5.16	0.2
	4-CNGA120404													4	12.7	4.76	2.0	5.16	0.4
	4-CNGA120408													4	12.7	4.76	2.0	5.16	0.8
	4-CNGA120412													4	12.7	4.76	1.8	5.16	1.2

Typ CN (0° Freiwinkel) 80°

CN (0° clearance angle) type 80°

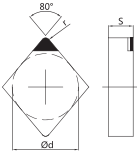
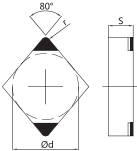
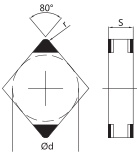


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	CNGA160602													1	15.875	6.35	2.2	6.35	0.2
	CNGA160604													1	15.875	6.35	2.0	6.35	0.4
	CNGA160608													1	15.875	6.35	2.0	6.35	0.8
	CNGA160612													1	15.875	6.35	1.8	6.35	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-CNGA160602													2	15.875	6.35	2.2	6.35	0.2
	2-CNGA160604													2	15.875	6.35	2.0	6.35	0.4
	2-CNGA160608													2	15.875	6.35	2.0	6.35	0.8
	2-CNGA160612													2	15.875	6.35	1.8	6.35	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	4-CNGA160602													4	15.875	6.35	2.2	6.35	0.2
	4-CNGA160604													4	15.875	6.35	2.0	6.35	0.4
	4-CNGA160608													4	15.875	6.35	2.0	6.35	0.8
	4-CNGA160612													4	15.875	6.35	1.8	6.35	1.2
Einschneidewendeplatte (Single-tip insert)																			
	CNGA190604													1	19.05	6.35	2.0	7.94	0.4
	CNGA190608													1	19.05	6.35	2.0	7.94	0.8
	CNGA190610													1	19.05	6.35	2.0	7.94	1.0
	CNGA190612													1	19.05	6.35	1.8	7.94	1.2
	CNGA190616													1	19.05	6.35	1.8	7.94	1.6
	CNGA190624													1	19.05	6.35	1.8	7.94	2.4

Typ CN (0° Freiwinkel) 80°

CN (0° clearance angle) type 80°

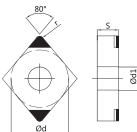
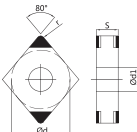


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	CNGN120404													1	12.7	4.76	2.0	–	0.4
	CNGN120408													1	12.7	4.76	2.0	–	0.8
	CNGN120412													1	12.7	4.76	1.8	–	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-CNGN120404													2	12.7	4.76	2.0	–	0.4
	2-CNGN120408													2	12.7	4.76	2.0	–	0.8
	2-CNGN120412													2	12.7	4.76	1.8	–	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	4-CNGN120404													4	12.7	4.76	2.0	–	0.4
	4-CNGN120408													4	12.7	4.76	2.0	–	0.8
	4-CNGN120412													4	12.7	4.76	1.8	–	1.2

Typ CN (0° Freiwinkel) 80°

CN (0° clearance angle) type 80°

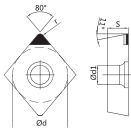
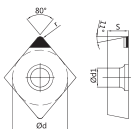
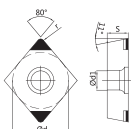
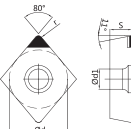
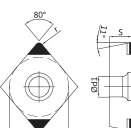
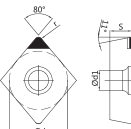


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-CNGA190604													2	19.05	6.35	2.0	7.94	0.4
	2-CNGA190608													2	19.05	6.35	2.0	7.94	0.8
	2-CNGA190610													2	19.05	6.35	2.0	7.94	1.0
	2-CNGA190612													2	19.05	6.35	1.8	7.94	1.2
	2-CNGA190616													2	19.05	6.35	1.8	7.94	1.6
	2-CNGA190624													2	19.05	6.35	1.8	7.94	2.4
	4-CNGA190604													4	19.05	6.35	2.0	7.94	0.4
	4-CNGA190608													4	19.05	6.35	2.0	7.94	0.8
	4-CNGA190610													4	19.05	6.35	2.0	7.94	1.0
	4-CNGA190612													4	19.05	6.35	1.8	7.94	1.2
	4-CNGA190616													4	19.05	6.35	1.8	7.94	1.6
	4-CNGA190624													4	19.05	6.35	1.8	7.94	2.4

Typ CP (11° Freiwinkel) 80°

CP (11° clearance angle) type 80°

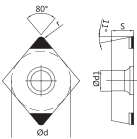


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B30	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	CPGW050202													1	5.56	2.38	2.5	2.4	0.2
	CPGW050204													1	5.56	2.38	2.2	2.4	0.4
	CPGW050206													1	5.56	2.38	2.2	2.4	0.6
Einschneidewendeplatte (Single-tip insert)																			
	CPGW060202													1	6.35	2.38	2,5	2.8	0.2
	CPGW060204													1	6.35	2.38	2,2	2.8	0.4
	CPGW060208													1	6.35	2.38	2,2	2.8	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-CPGW060202													2	6.35	2.38	2,5	2.8	0.2
	2-CPGW060204													2	6.35	2.38	2,2	2.8	0.4
	2-CPGW060208													2	6.35	2.38	2,2	2.8	0.8
Einschneidewendeplatte (Single-tip insert)																			
	CPGW080202													1	7.94	2.38	2.5	2.8	0.2
	CPGW080204													1	7.94	2.38	2.2	2.8	0.4
	CPGW080206													1	7.94	2.38	2.2	2.8	0.6
	CPGW080208													1	7.94	2.38	2.2	2.8	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-CPGW080202													2	7.94	2.38	2.5	2.8	0.2
	2-CPGW080204													2	7.94	2.38	2.2	2.8	0.4
	2-CPGW080206													2	7.94	2.38	2.2	2.8	0.6
	2-CPGW080208													2	7.94	2.38	2.2	2.8	0.8
Einschneidewendeplatte (Single-tip insert)																			
	CPGW090302													1	9.525	3.18	2.5	4.4	0.2
	CPGW090304													1	9.525	3.18	2.2	4.4	0.4
	CPGW090306													1	9.525	3.18	2.2	4.4	0.6
	CPGW090308													1	9.525	3.18	2.2	4.4	0.8

Typ CP (11° Freiwinkel) 80°

CP (11° clearance angle) type 80°

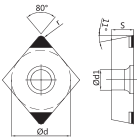
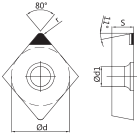
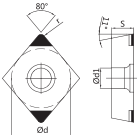
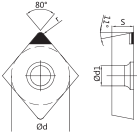


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-CPGW120402													2	12.7	4.76	2.5	5.5	0.2
	2-CPGW120404													2	12.7	4.76	2.2	5.5	0.4
	2-CPGW120406													2	12.7	4.76	2.2	5.5	0.6
	2-CPGW120408													2	12.7	4.76	2.2	5.5	0.8
	2-CPGW120410													2	12.7	4.76	2.0	5.5	1.0
	2-CPGW120412													2	12.7	4.76	2.0	5.5	1.2

Typ CP (11° Freiwinkel) 80°

CP (11° clearance angle) type 80°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-CPGW090302													2	9.525	3.18	2.5	4.4	0.2
	2-CPGW090304													2	9.525	3.18	2.2	4.4	0.4
	2-CPGW090306													2	9.525	3.18	2.2	4.4	0.6
	2-CPGW090308													2	9.525	3.18	2.2	4.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	CPGW09T302													1	9.525	3.97	2.5	4.4	0.2
	CPGW09T304													1	9.525	3.97	2.2	4.4	0.4
	CPGW09T306													1	9.525	3.97	2.2	4.4	0.6
	CPGW09T308													1	9.525	3.97	2.2	4.4	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-CPGW09T302													2	9.525	3.97	2.5	4.4	0.2
	2-CPGW09T304													2	9.525	3.97	2.2	4.4	0.4
	2-CPGW09T306													2	9.525	3.97	2.2	4.4	0.6
	2-CPGW09T308													2	9.525	3.97	2.2	4.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	CPGW120402													1	12.7	4.76	2.5	5.5	0.2
	CPGW120404													1	12.7	4.76	2.2	5.5	0.4
	CPGW120406													1	12.7	4.76	2.2	5.5	0.6
	CPGW120408													1	12.7	4.76	2.2	5.5	0.8
	CPGW120410													1	12.7	4.76	2.0	5.5	1.0
	CPGW120412													1	12.7	4.76	2.0	5.5	1.2

Typ DC (7° Freiwinkel) 55°

DC (7° clearance angle) type 55°

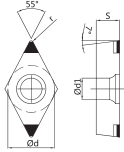
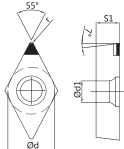
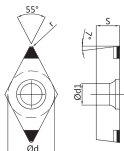
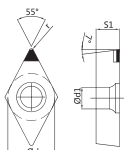
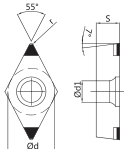


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	DCGW070202													1	6.35	2.38	2.2	2.8	0.2
	DCGW070204													1	6.35	2.38	2.2	2.8	0.4
	DCGW070206													1	6.35	2.38	2.0	2.8	0.6
	DCGW070208													1	6.35	2.3	2.0	2.8	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DCGW070202													2	6.35	2.38	2.2	2.8	0.2
	2-DCGW070204													2	6.35	2.38	2.2	2.8	0.4
	2-DCGW070206													2	6.35	2.38	2.0	2.8	0.6
	2-DCGW070208													2	6.35	2.38	2.0	2.8	0.8
Einschneidewendeplatte (Single-tip insert)																			
	DCGW090202													1	7.94	2.38	2.2	3.4	0.2
	DCGW090204													1	7.94	2.38	2.0	3.4	0.4
	DCGW090206													1	7.94	2.38	2.0	3.4	0.6
	DCGW090208													1	7.94	2.38	2.0	3.4	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DCGW090202													2	7.94	2.38	2.2	3.4	0.2
	2-DCGW090204													2	7.94	2.38	2.0	3.4	0.4
	2-DCGW090206													2	7.94	2.38	2.0	3.4	0.6
	2-DCGW090208													2	7.94	2.38	2.0	3.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	DCGW110302													1	9.525	3.18	2.2	3.4	0.2
	DCGW110304													1	9.525	3.18	2.2	3.4	0.4
	DCGW110306													1	9.525	3.18	2.0	3.4	0.6
	DCGW110308													1	9.525	3.18	2.0	3.4	0.8

Typ DC (7° Freiwinkel) 55°

DC (7° clearance angle) type 55°

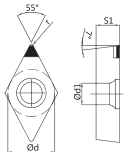
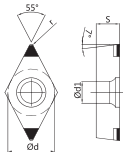


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DCGW110302													2	9.525	3.18	2.2	3.4	0.2
	2-DCGW110304													2	9.525	3.18	2.2	3.4	0.4
	2-DCGW110306													2	9.525	3.18	2.0	3.4	0.6
	2-DCGW110308													2	9.525	3.18	2.0	3.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	DCGW11T302													1	9.525	3.97	2.2	4.4	0.2
	DCGW11T304													1	9.525	3.97	2.2	4.4	0.4
	DCGW11T306													1	9.525	3.97	2.0	4.4	0.6
	DCGW11T308													1	9.525	3.97	2.0	4.4	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DCGW11T302													2	9.525	3.97	2.2	4.4	0.2
	2-DCGW11T304													2	9.525	3.97	2.2	4.4	0.4
	2-DCGW11T306													2	9.525	3.97	2.0	4.4	0.6
	2-DCGW11T308													2	9.525	3.97	2.0	4.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	DCGW110402													1	9.525	4.76	2.2	4.5	0.2
	DCGW110404													1	9.525	4.76	2.0	4.5	0.4
	DCGW110406													1	9.525	4.76	2.0	4.5	0.6
	DCGW110408													1	9.525	4.76	2.0	4.5	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DCGW110402													2	9.525	4.76	2.2	3.4	0.2
	2-DCGW110404													2	9.525	4.76	2.0	4.5	0.4
	2-DCGW110406													2	9.525	4.76	2.0	4.5	0.6
	2-DCGW110408													2	9.525	4.76	2.0	4.5	0.8

Typ DC (7° Freiwinkel) 55°

DC (7° clearance angle) type 55°

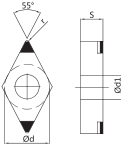
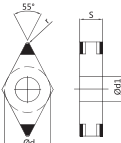
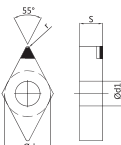


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	DCGW150404													1	12.7	4.76	2.0	5.5	0.4
	DCGW150406													1	12.7	4.76	2.0	5.5	0.6
	DCGW150408													1	12.7	4.76	2.0	5.5	0.8
	DCGW150410													1	12.7	4.76	2.0	5.5	1.0
	DCGW150412													1	12.7	4.76	1.8	5.5	1.2
	DCGW150416													1	12.7	4.76	1.8	5.5	1.6
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DCGW150404													2	12.7	4.76	2.0	5.5	0.4
	2-DCGW150406													2	12.7	4.76	2.0	5.5	0.6
	2-DCGW150408													2	12.7	4.76	2.0	5.5	0.8
	2-DCGW150410													2	12.7	4.76	2.0	5.5	1.0
	2-DCGW150412													2	12.7	4.76	1.8	5.5	1.2
	2-DCGW150416													2	12.7	4.76	1.8	5.5	1.6

Typ DN (0° Freiwinkel) 55°

DN (0° clearance angle) type 55°

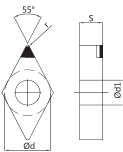
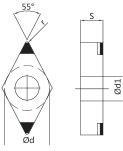
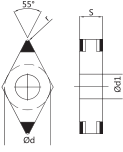
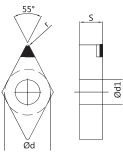


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DNMA150402													2	12.7	4.76	2.2	5.16	0.2
	2-DNMA150404													2	12.7	4.76	2.0	5.16	0.4
	2-DNMA150406													2	12.7	4.76	2.0	5.16	0.6
	2-DNMA150408													2	12.7	4.76	2.0	5.16	0.8
	2-DNMA150410													2	12.7	4.76	2.0	5.16	1.0
	2-DNMA150412													2	12.7	4.76	1.8	5.16	1.2
	2-DNMA150416													2	12.7	4.76	1.8	5.16	1.6
	4-DNMA150402													4	12.7	4.76	2.2	5.16	0.2
	4-DNMA150404													4	12.7	4.76	2.0	5.16	0.4
	4-DNMA150406													4	12.7	4.76	2.0	5.16	0.6
	4-DNMA150408													4	12.7	4.76	2.0	5.16	0.8
	4-DNMA150410													4	12.7	4.76	2.0	5.16	1.0
	4-DNMA150412													4	12.7	4.76	1.8	5.16	1.2
	4-DNMA150416													4	12.7	4.76	1.8	5.16	1.6
Einschneidewendeplatte (Single-tip insert)																			
	DNMA150604													1	12.7	6.35	2.0	5.16	0.4
	DNMA150606													1	12.7	6.35	2.0	5.16	0.6
	DNMA150608													1	12.7	6.35	2.0	5.16	0.8
	DNMA150610													1	12.7	6.35	2.0	5.16	1.0
	DNMA150612													1	12.7	6.35	1.8	5.16	1.2
	DNMA150616													1	12.7	6.35	1.8	5.16	1.6

Typ DN (0° Freiwinkel) 55°

DN (0° clearance angle) type 55°

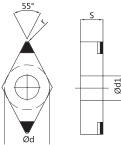
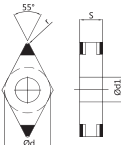
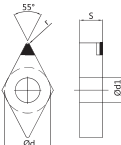


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	DNMA110402													1	9.525	4.76	2.2	3.8	0.2
	DNMA110404													1	9.525	4.76	2.0	3.8	0.4
	DNMA110406													1	9.525	4.76	2.0	3.8	0.6
	DNMA110408													1	9.525	4.76	2.0	3.8	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DNMA110402													2	9.525	4.76	2.2	3.8	0.2
	2-DNMA110404													2	9.525	4.76	2.0	3.8	0.4
	2-DNMA110406													2	9.525	4.76	2.0	3.8	0.6
	2-DNMA110408													2	9.525	4.76	2.0	3.8	0.8
	4-DNMA110402													4	9.525	4.76	2.2	3.8	0.2
	4-DNMA110404													4	9.525	4.76	2.0	3.8	0.4
	4-DNMA110406													4	9.525	4.76	2.0	3.8	0.6
	4-DNMA110408													4	9.525	4.76	2.0	3.8	0.8
Einschneidewendeplatte (Single-tip insert)																			
	DNMA150402													1	12.7	4.76	2.2	5.16	0.2
	DNMA150404													1	12.7	4.76	2.0	5.16	0.4
	DNMA150406													1	12.7	4.76	2.0	5.16	0.6
	DNMA150408													1	12.7	4.76	2.0	5.16	0.8
	DNMA150410													1	12.7	4.76	2.0	5.16	1.0
	DNMA150412													1	12.7	4.76	1.8	5.16	1.2
	DNMA150416													1	12.7	4.76	1.8	5.16	1.6

Typ DN (0° Freiwinkel) 55°

DN (0° clearance angle) type 55°

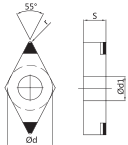
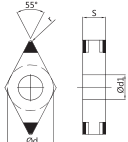


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DNMA150604													2	12.7	6.35	2.0	5.16	0.4
	2-DNMA150606													2	12.7	6.35	2.0	5.16	0.6
	2-DNMA150608													2	12.7	6.35	2.0	5.16	0.8
	2-DNMA150610													2	12.7	6.35	2.0	5.16	1.0
	2-DNMA150612													2	12.7	6.35	1.8	5.16	1.2
	2-DNMA150616													2	12.7	6.35	1.8	5.16	1.6
Mehrschneidenwendeplatte (Multi-tip insert)																			
	4-DNMA150604													4	12.7	6.35	2.0	5.16	0.4
	4-DNMA150606													4	12.7	6.35	2.0	5.16	0.6
	4-DNMA150608													4	12.7	6.35	2.0	5.16	0.8
	4-DNMA150610													4	12.7	6.35	2.0	5.16	1.0
	4-DNMA150612													4	12.7	6.35	1.8	5.16	1.2
	4-DNMA150616													4	12.7	6.35	1.8	5.16	1.6
Einschneidewendeplatte (Single-tip insert)																			
	DNMA190606													1	15.875	6.35	2.0	6.35	0.6
	DNMA190608													1	15.875	6.35	2.0	6.35	0.8
	DNMA190610													1	15.875	6.35	2.0	6.35	1.0
	DNMA190612													1	15.875	6.35	1.8	6.35	1.2
	DNMA190616													1	15.875	6.35	1.8	6.35	1.6

Typ DN (0° Freiwinkel) 55°

DN (0° clearance angle) type 55°

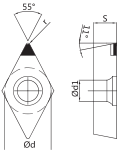
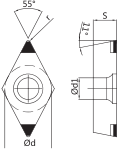
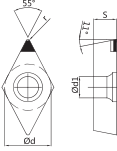
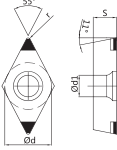
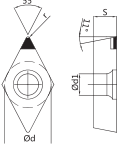


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DNMA190606													2	15.875	6.35	2.0	6.35	0.6
	2-DNMA190608													2	15.875	6.35	2.0	6.35	0.8
	2-DNMA190610													2	15.875	6.35	2.0	6.35	1.0
	2-DNMA190612													2	15.875	6.35	1.8	6.35	1.2
	2-DNMA190616													4	15.875	6.35	1.8	6.35	1.6
	4-DNMA190606													4	15.875	6.35	2.0	6.35	0.6
	4-DNMA190608													4	15.875	6.35	2.0	6.35	0.8
	4-DNMA190610													4	15.875	6.35	2.0	6.35	1.0
	4-DNMA190612													4	15.875	6.35	1.8	6.35	1.2
	4-DNMA190616													4	15.875	6.35	1.8	6.35	1.6

Typ DP (11° Freiwinkel) 55°

DP (11° clearance angle) type 55°

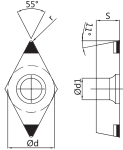
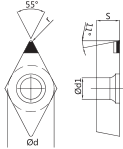
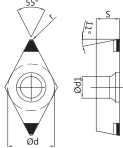
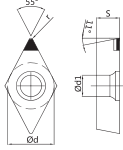


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	DPGW070202													1	6.35	2.38	2.5	2.8	0.2
	DPGW070204													1	6.35	2.38	2.2	2.8	0.4
	DPGW070206													1	6.35	2.38	2.2	2.8	0.6
	DPGW070208													1	6.35	2.38	2.2	2.8	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DPGW070202													2	6.35	2.38	2.5	2.8	0.2
	2-DPGW070204													2	6.35	2.38	2.2	2.8	0.4
	2-DPGW070206													2	6.35	2.38	2.2	2.8	0.6
	2-DPGW070208													2	6.35	2.38	2.2	2.8	0.8
Einschneidewendeplatte (Single-tip insert)																			
	DPGW090202													1	7.94	2.38	2.5	3.4	0.2
	DPGW090204													1	7.94	2.38	2.2	3.4	0.4
	DPGW090206													1	7.94	2.38	2.2	3.4	0.6
	DPGW090208													1	7.94	2.38	2.2	3.4	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DPGW090202													2	7.94	2.38	2.5	3.4	0.2
	2-DPGW090204													2	7.94	2.38	2.2	3.4	0.4
	2-DPGW090206													2	7.94	2.38	2.2	3.4	0.6
	2-DPGW090208													2	7.94	2.38	2.2	3.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	DPGW110302													1	9.525	3.18	2.5	3.4	0.2
	DPGW110304													1	9.525	3.18	2.2	3.4	0.4
	DPGW110306													1	9.525	3.18	2.2	3.4	0.6
	DPGW110308													1	9.525	3.18	2.2	3.4	0.8

Typ DP (11° Freiwinkel) 55°

DP (11° clearance angle) type 55°

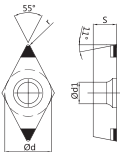
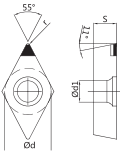
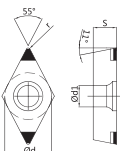


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DPGW110302													2	9.525	3.18	2.5	3.4	0.2
	2-DPGW110304													2	9.525	3.18	2.2	3.4	0.4
	2-DPGW110306													2	9.525	3.18	2.2	3.4	0.6
	2-DPGW110308													2	9.525	3.18	2.2	3.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	DPGW11T302													1	9.525	3.97	2.5	4.4	0.2
	DPGW11T304													1	9.525	3.97	2.2	4.4	0.4
	DPGW11T306													1	9.525	3.97	2.2	4.4	0.6
	DPGW11T308													1	9.525	3.97	2.2	4.4	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DPGW11T302													2	9.525	3.97	2.5	4.4	0.2
	2-DPGW11T304													2	9.525	3.97	2.2	4.4	0.4
	2-DPGW11T306													2	9.525	3.97	2.2	4.4	0.6
	2-DPGW11T308													2	9.525	3.97	2.2	4.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	DPGW110402													1	9.525	4.76	2.5	4.5	0.2
	DPGW110404													1	9.525	4.76	2.2	4.5	0.4
	DPGW110406													1	9.525	4.76	2.2	4.5	0.6
	DPGW110408													1	9.525	4.76	2.2	4.5	0.8

Typ DP (11° Freiwinkel) 55°

DP (11° clearance angle) type 55°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DPGW110402													2	9.525	4.76	2.5	3.4	0.2
	2-DPGW110404													2	9.525	4.76	2.2	3.4	0.4
	2-DPGW110406													2	9.525	4.76	2.2	3.4	0.6
	2-DPGW110408													2	9.525	4.76	2.2	3.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	DPGW150404													1	12.7	4.76	2.2	5.5	0.4
	DPGW150406													1	12.7	4.76	2.2	5.5	0.6
	DPGW150408													1	12.7	4.76	2.2	5.5	0.8
	DPGW150410													1	12.7	4.76	2.2	5.5	1.0
	DPGW150412													1	12.7	4.76	2.0	5.5	1.2
	DPGW150416													1	12.7	4.76	2.0	5.5	1.6
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-DPGW150404													2	12.7	4.76	2.2	5.5	0.4
	2-DPGW150406													2	12.7	4.76	2.2	5.5	0.6
	2-DPGW150408													2	12.7	4.76	2.2	5.5	0.8
	2-DPGW150410													2	12.7	4.76	2.2	5.5	1.0
	2-DPGW150412													2	12.7	4.76	2.0	5.5	1.2
	2-DPGW150416													2	12.7	4.76	2.0	5.5	1.6

Typ RC (7° Freiwinkel) Kreis

RC (7° clearance angle) type circle



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)								Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94		
	RCGW060200														
	RCGW080300														
	RCGW100300														
	RCGW120400														
	RCGW160600														

Typ RP (11° Freiwinkel) Kreis

RP (11° clearance angle) type circle



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)								Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94		
	RPGW080300														
	RPGW100400														
	RPGW120400														
	RPGW160400														

Typ SC (7° Freiwinkel) 90°

SC (7° clearance angle) type 90°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	SCGW050202													1	5.56	2.38	2.2	2.2	0.2
	SCGW050204													1	5.56	2.38	2.0	2.2	0.4
Einschneidewendeplatte (Single-tip insert)																			
	SCGW060202													1	6.35	2.38	2.2	2.2	0.2
	SCGW060204													1	6.35	2.38	2.0	2.2	0.4
	SCGW060208													1	6.35	2.38	2.0	2.2	0.8
Einschneidewendeplatte (Single-tip insert)																			
	SCGW070202													1	7.94	2.38	2.2	3.4	0.2
	SCGW070204													1	7.94	2.38	2.0	3.4	0.4
	SCGW070206													1	7.94	2.38	2.0	3.4	0.6
	SCGW070208													1	7.94	2.38	2.0	3.4	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-SCGW070202													2	7.94	2.38	2.2	3.4	0.2
	2-SCGW070204													2	7.94	2.38	2.0	3.4	0.4
	2-SCGW070206													2	7.94	2.38	2.0	3.4	0.6
	2-SCGW070208													2	7.94	2.38	2.0	3.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	SCGW090302													1	9.525	3.18	2.2	4.4	0.2
	SCGW090304													1	9.525	3.18	2.0	4.4	0.4
	SCGW090306													1	9.525	3.18	2.0	4.4	0.6
	SCGW090308													1	9.525	3.18	2.0	4.4	0.8

Typ SC (7° Freiwinkel) 90°

SC (7° clearance angle) type 90°

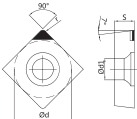
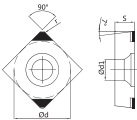
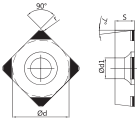


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-SCGW090302													2	9.525	3.18	2.2	4.4	0.2
	2-SCGW090304													2	9.525	3.18	2.0	4.4	0.4
	2-SCGW090306													2	9.525	3.18	2.0	4.4	0.6
	2-SCGW090308													2	9.525	3.18	2.0	4.4	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	4-SCGW090302													4	9.525	3.18	2.2	4.4	0.2
	4-SCGW090304													4	9.525	3.18	2.0	4.4	0.4
	4-SCGW090306													4	9.525	3.18	2.0	4.4	0.6
	4-SCGW090308													4	9.525	3.18	2.0	4.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	SCGW09T302													1	9.525	3.97	2.2	4.4	0.2
	SCGW09T304													1	9.525	3.97	2.0	4.4	0.4
	SCGW09T306													1	9.525	3.97	2.0	4.4	0.6
	SCGW09T308													1	9.525	3.97	2.0	4.4	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-SCGW09T302													2	9.525	3.97	2.2	4.4	0.2
	2-SCGW09T304													2	9.525	3.97	2.0	4.4	0.4
	2-SCGW09T306													2	9.525	3.97	2.0	4.4	0.6
	2-SCGW09T308													2	9.525	3.97	2.0	4.4	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	4-SCGW09T302													4	9.525	3.97	2.2	4.4	0.2
	4-SCGW09T304													4	9.525	3.97	2.0	4.4	0.4
	4-SCGW09T306													4	9.525	3.97	2.0	4.4	0.6
	4-SCGW09T308													4	9.525	3.97	2.0	4.4	0.8

Typ SC (7° Freiwinkel) 90°

SC (7° clearance angle) type 90°

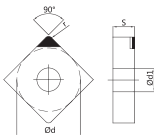
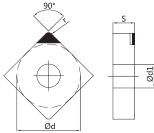
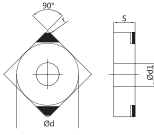
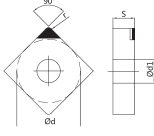


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	SCGW120404													1	12.7	4.76	2.0	5.5	0.4
	SCGW120406													1	12.7	4.76	2.0	5.5	0.6
	SCGW120408													1	12.7	4.76	2.0	5.5	0.8
	SCGW120410													1	12.7	4.76	2.0	5.5	1.0
	SCGW120412													1	12.7	4.76	1.8	5.5	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-SCGW120404													2	12.7	4.76	2.0	5.5	0.4
	2-SCGW120406													2	12.7	4.76	2.0	5.5	0.6
	2-SCGW120408													2	12.7	4.76	2.0	5.5	0.8
	2-SCGW120410													2	12.7	4.76	2.0	5.5	1.0
	2-SCGW120412													2	12.7	4.76	1.8	5.5	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	4-SCGW120404													4	12.7	4.76	2.0	5.5	0.4
	4-SCGW120406													4	12.7	4.76	2.0	5.5	0.6
	4-SCGW120408													4	12.7	4.76	2.0	5.5	0.8
	4-SCGW120410													4	12.7	4.76	2.0	5.5	1.0
	4-SCGW120412													4	12.7	4.76	1.8	5.5	1.2

Typ SN (0° Freiwinkel) 90°

SN (0° clearance angle) type 90°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	SNGA07T204													1	7.94	2.78	2.0	3.15	0.4
	SNGA07T206													1	7.94	2.78	2.0	3.15	0.6
	SNGA07T208													1	7.94	2.78	2.0	3.15	0.8
Einschneidewendeplatte (Single-tip insert)																			
	SNGA090304													1	9.525	3.18	2.0	3.8	0.4
	SNGA090306													1	9.525	3.18	2.0	3.8	0.6
	SNGA090308													1	9.525	3.18	2.0	3.8	0.8
	SNGA090310													1	9.525	3.18	2.0	3.8	1.0
	SNGA090312													1	9.525	3.18	1.8	3.8	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-SNGA090304													2	9.525	3.18	2.0	3.8	0.4
	2-SNGA090306													2	9.525	3.18	2.0	3.8	0.6
	2-SNGA090308													2	9.525	3.18	2.0	3.8	0.8
	2-SNGA090310													2	9.525	3.18	2.0	3.8	1.0
	2-SNGA090312													2	9.525	3.18	1.8	3.8	1.2
Einschneidewendeplatte (Single-tip insert)																			
	SNGA120404													1	12.7	4.76	2.0	5.16	0.4
	SNGA120406													1	12.7	4.76	2.0	5.16	0.6
	SNGA120408													1	12.7	4.76	2.0	5.16	0.8
	SNGA120410													1	12.7	4.76	2.0	5.16	1.0
	SNGA120412													1	12.7	4.76	1.8	5.16	1.2

Typ SN (0° Freiwinkel) 90°

SN (0° clearance angle) type 90°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						

Mehrschneidenwendeplatte (Multi-tip insert)

	2-SNGA120404													2	12.7	4.76	2.0	5.16	0.4
	2-SNGA120406													2	12.7	4.76	2.0	5.16	0.6
	2-SNGA120408													2	12.7	4.76	2.0	5.16	0.8
	2-SNGA120410													2	12.7	4.76	2.0	5.16	1.0
	2-SNGA120412													2	12.7	4.76	1.8	5.16	1.2

Mehrschneidenwendeplatte (Multi-tip insert)

	4-SNGA120404													4	12.7	4.76	2.0	5.16	0.4
	4-SNGA120406													4	12.7	4.76	2.0	5.16	0.6
	4-SNGA120408													4	12.7	4.76	2.0	5.16	0.8
	4-SNGA120410													4	12.7	4.76	2.0	5.16	1.0
	4-SNGA120412													4	12.7	4.76	1.8	5.16	1.2
	4-SNGA120416													4	12.7	4.76	1.8	5.16	1.6

Mehrschneidenwendeplatte (Multi-tip insert)

	8-SNGA120404													8	12.7	4.76	2.0	5.16	0.4
	8-SNGA120406													8	12.7	4.76	2.0	5.16	0.6
	8-SNGA120408													8	12.7	4.76	2.0	5.16	0.8
	8-SNGA120410													8	12.7	4.76	2.0	5.16	1.0
	8-SNGA120412													8	12.7	4.76	1.8	5.16	1.2
	8-SNGA120416													8	12.7	4.76	1.8	5.16	1.6

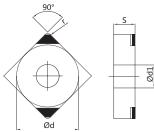
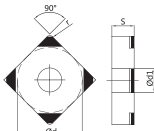
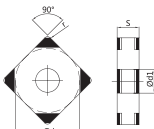
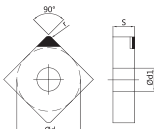
Einschneidewendeplatte (Single-tip insert)

	SNGA150604													1	15.875	6.35	2.0	6.35	0.4
	SNGA150608													1	15.875	6.35	2.0	6.35	0.6
	SNGA150610													1	15.875	6.35	2.0	6.35	0.8
	SNGA150612													1	15.875	6.35	1.8	6.35	1.2
	SNGA150616													1	15.875	6.35	1.8	6.35	1.6

Typ SN (0° Freiwinkel) 90°

SN (0° clearance angle) type 90°

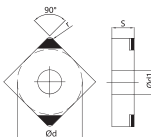
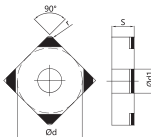
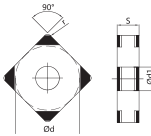


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		810	895	891	855	871	850	861	896	830	852	870	894						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-SNGA150604													2	15.875	6.35	2.0	6.35	0.4
	2-SNGA150608													2	15.875	6.35	2.0	6.35	0.8
	2-SNGA150610													2	15.875	6.35	2.0	6.35	1.0
	2-SNGA150612													2	15.875	6.35	1.8	6.35	1.2
	2-SNGA150616													2	15.875	6.35	1.8	6.35	1.6
Mehrschneidenwendeplatte (Multi-tip insert)																			
	4-SNGA150604													4	15.875	6.35	2.0	6.35	0.4
	4-SNGA150608													4	15.875	6.35	2.0	6.35	0.8
	4-SNGA150610													4	15.875	6.35	2.0	6.35	1.0
	4-SNGA150612													4	15.875	6.35	1.8	6.35	1.2
	4-SNGA150616													4	15.875	6.35	1.8	6.35	1.6
Mehrschneidenwendeplatte (Multi-tip insert)																			
	8-SNGA150604													8	15.875	6.35	2.0	6.35	0.4
	8-SNGA150608													8	15.875	6.35	2.0	6.35	0.8
	8-SNGA150610													8	15.875	6.35	2.0	6.35	1.0
	8-SNGA150612													8	15.875	6.35	1.8	6.35	1.2
	8-SNGA150616													8	15.875	6.35	1.8	6.35	1.6
Einschneidewendeplatte (Single-tip insert)																			
	SNGA190608													1	19.05	6.35	2.0	7.94	0.8
	SNGA190612													1	19.05	6.35	1.8	7.94	1.2
	SNGA190616													1	19.05	6.35	1.8	7.94	1.6

Typ SN (0° Freiwinkel) 90°

SN (0° clearance angle) type 90°

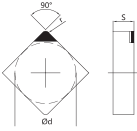
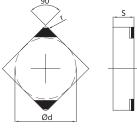
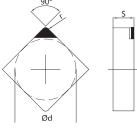
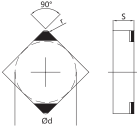
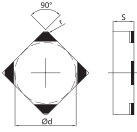
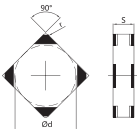


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-SNGA190608													2	19.05	6.35	2.0	7.94	0.8
	2-SNGA190612													2	19.05	6.35	1.8	7.94	1.2
	2-SNGA190616													2	19.05	6.35	1.8	7.94	1.6
Mehrschneidenwendeplatte (Multi-tip insert)																			
	4-SNGA190608													4	19.05	6.35	2.0	7.94	0.8
	4-SNGA190612													4	19.05	6.35	1.8	7.94	1.2
	4-SNGA190616													4	19.05	6.35	1.8	7.94	1.6
Mehrschneidenwendeplatte (Multi-tip insert)																			
	8-SNGA190608													8	19.05	6.35	2.0	7.94	0.8
	8-SNGA190612													8	19.05	6.35	1.8	7.94	1.2
	8-SNGA190616													8	19.05	6.35	1.8	7.94	1.6

Typ SN (0° Freiwinkel) 90°

SN (0° clearance angle) type 90°

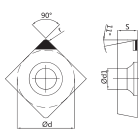
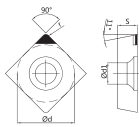
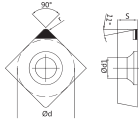
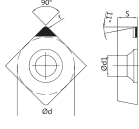
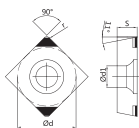


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	SNGN090302													1	9.525	3.18	2.2	–	0.2
	SNGN090304													1	9.525	3.18	2.0	–	0.4
	SNGN090308													1	9.525	3.18	2.0	–	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-SNGN090302													2	9.525	3.18	2.2	–	0.2
	2-SNGN090304													2	9.525	3.18	2.0	–	0.4
	2-SNGN090308													2	9.525	3.18	2.0	–	0.8
Einschneidewendeplatte (Single-tip insert)																			
	SNGN120404													1	12.7	4.76	2.0	–	0.4
	SNGN120408													1	12.7	4.76	2.0	–	0.8
	SNGN120412													1	12.7	4.76	1.8	–	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-SNGN120404													2	12.7	4.76	2.0	–	0.4
	2-SNGN120408													2	12.7	4.76	2.0	–	0.8
	2-SNGN120412													2	12.7	4.76	1.8	–	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	4-SNGN120404													4	12.7	4.76	2.0	–	0.4
	4-SNGN120408													4	12.7	4.76	2.0	–	0.8
	4-SNGN120412													4	12.7	4.76	1.8	–	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	8-SNGN120404													8	12.7	4.76	2.0	–	0.4
	8-SNGN120408													8	12.7	4.76	2.0	–	0.8
	8-SNGN120412													8	12.7	4.76	1.8	–	1.2

Typ SP (11° Freiwinkel) 90°

SP (11° clearance angle) type 90°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	SPGW060202													1	6.35	2.38	2.5	2.8	0.2
	SPGW060204													1	6.35	2.38	2.2	2.8	0.4
Einschneidewendeplatte (Single-tip insert)																			
	SPGW070202													1	7.94	2.38	2.5	3.4	0.2
	SPGW070204													1	7.94	2.38	2.2	3.4	0.4
	SPGW070208													1	7.94	2.38	2.2	3.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	SPGW070302													1	7.94	3.18	2.5	3.4	0.2
	SPGW070304													1	7.94	3.18	2.2	3.4	0.4
	SPGW070308													1	7.94	3.18	2.2	3.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	SPGW090302													1	9.525	3.18	2.5	3.4	0.2
	SPGW090304													1	9.525	3.18	2.2	3.4	0.4
	SPGW090306													1	9.525	3.18	2.2	3.4	0.6
	SPGW090308													1	9.525	3.18	2.2	3.4	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-SPGW090302													2	9.525	3.18	2.5	3.4	0.2
	2-SPGW090304													2	9.525	3.18	2.0	3.4	0.4
	2-SPGW090306													2	9.525	3.18	2.2	3.4	0.6
	2-SPGW090308													2	9.525	3.18	2.2	3.4	0.8

Typ SP (11° Freiwinkel) 90°

SP (11° clearance angle) type 90°

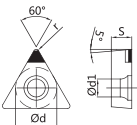


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	SPGW09T304													1	9.525	3.97	2.2	4.4	0.4
	SPGW09T306													1	9.525	3.97	2.2	4.4	0.6
	SPGW09T308													1	9.525	3.97	2.2	4.4	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-SPGW09T304													2	9.525	3.97	2.2	4.4	0.4
	2-SPGW09T306													2	9.525	3.97	2.2	4.4	0.6
	2-SPGW09T308													2	9.525	3.97	2.2	4.4	0.8
Einschneidewendeplatte (Single-tip insert)																			
	SPGW120404													1	12.7	4.76	2.2	5.5	0.4
	SPGW120406													1	12.7	4.76	2.2	5.5	0.6
	SPGW120408													1	12.7	4.76	2.2	5.5	0.8
	SPGW120410													1	12.7	4.76	2.0	5.5	1.0
	SPGW120412													1	12.7	4.76	2.0	5.5	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-SPGW120404													2	12.7	4.76	2.2	5.5	0.4
	2-SPGW120406													2	12.7	4.76	2.2	5.5	0.6
	2-SPGW120408													2	12.7	4.76	2.2	5.5	0.8
	2-SPGW120410													2	12.7	4.76	2.0	5.5	1.0
	2-SPGW120412													2	12.7	4.76	2.0	5.5	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	4-SPGW120404													4	12.7	4.76	2.2	5.5	0.4
	4-SPGW120406													4	12.7	4.76	2.2	5.5	0.6
	4-SPGW120408													4	12.7	4.76	2.2	5.5	0.8
	4-SPGW120410													4	12.7	4.76	2.0	5.5	1.0
	4-SPGW120412													4	12.7	4.76	2.0	5.5	1.2

Typ TB (5° Freiwinkel) 60°

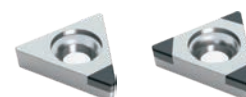
TN (5° clearance angle) type 60°

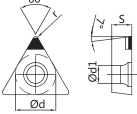
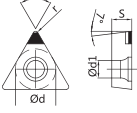
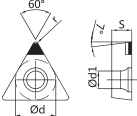
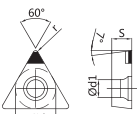
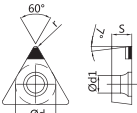


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm	
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94							
Einschneidewendeplatte (Single-tip insert)																				
	TBGW060102													1	3.97	1.59	2.2	2.2	0.2	
	TBGW060104													1	3.97	1.59	2.0	2.2	0.4	

Typ TC (7° Freiwinkel) 60°

TC (7° clearance angle) type 60°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	TCGW060102													1	3.97	1.59	2.2	2.2	0.2
	TCGW060104													1	3.97	1.59	2.0	2.2	0.4
Einschneidewendeplatte (Single-tip insert)																			
	TCGW06T102													1	3.97	1.98	2.2	2.2	0.2
	TCGW06T104													1	3.97	1.98	2.0	2.2	0.4
Einschneidewendeplatte (Single-tip insert)																			
	TCGW060202													1	3.97	2.38	2.2	2.2	0.2
	TCGW060204													1	3.97	2.38	2.0	2.2	0.4
Einschneidewendeplatte (Single-tip insert)																			
	TCGW080202													1	4.76	2.38	2.2	2.3	0.4
	TCGW080204													1	4.76	2.38	2.0	2.3	0.6
	TCGW080206													1	4.76	2.38	2.0	2.3	0.8
Einschneidewendeplatte (Single-tip insert)																			
	TCGW090202													1	5.56	2.38	2.2	2.5	0.2
	TCGW090204													1	5.56	2.38	2.0	2.5	0.4
	TCGW090206													1	5.56	2.38	2.0	2.5	0.6
	TCGW090208													1	5.56	2.38	2.0	2.5	0.8

Typ TC (7° Freiwinkel) 60°

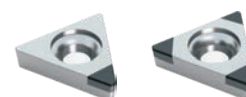
TC (7° clearance angle) type 60°

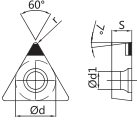
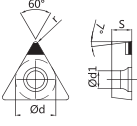
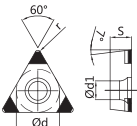
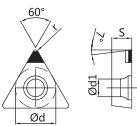


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)								Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm					
		B10	B95	B91	B55	B71	B90	B61	B96							B30	B52	B70	B94	
Mehrschneidenwendeplatte (Multi-tip insert)																				
	3-TCGW090202														3	5.56	2.38	2.2	2.5	0.2
	3-TCGW090204														3	5.56	2.38	2.0	2.5	0.4
	3-TCGW090206														3	5.56	2.38	2.0	2.5	0.6
	3-TCGW090208														3	5.56	2.38	2.0	2.5	0.8
Einschneidewendeplatte (Single-tip insert)																				
	TCGW110202														1	6.35	2.38	2.2	2.8	0.2
	TCGW110204														1	6.35	2.38	2.0	2.8	0.4
	TCGW110206														1	6.35	2.38	2.0	2.8	0.6
	TCGW110208														1	6.35	2.38	2.2	2.8	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																				
	3-TCGW110202														3	6.35	2.38	2.2	2.8	0.2
	3-TCGW110204														3	6.35	2.38	2.0	2.8	0.4
	3-TCGW110206														3	6.35	2.38	2.0	2.8	0.6
	3-TCGW110208														3	6.35	2.38	2.2	2.8	0.8
Einschneidewendeplatte (Single-tip insert)																				
	TCGW110302														1	6.35	3.18	2.2	2.8	0.2
	TCGW110304														1	6.35	3.18	2.0	2.8	0.4
	TCGW110306														1	6.35	3.18	2.0	2.8	0.6
	TCGW110308														1	6.35	3.18	2.0	2.8	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																				
	3-TCGW110302														3	6.35	3.18	2.2	2.8	0.2
	3-TCGW110304														3	6.35	3.18	2.0	2.8	0.4
	3-TCGW110306														3	6.35	3.18	2.0	2.8	0.6
	3-TCGW110308														3	6.35	3.18	2.0	2.8	0.8

Typ TC (7° Freiwinkel) 60°

TC (7° clearance angle) type 60°

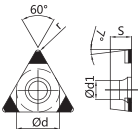


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	TCGW11T304													1	6.35	3.97	2.0	2.8	0.4
	TCGW11T306													1	6.35	3.97	2.0	2.8	0.6
	TCGW11T308													1	6.35	3.97	2.0	2.8	0.8
Einschneidewendeplatte (Single-tip insert)																			
	TCGW16T304													1	9.525	3.97	2.0	4.4	0.4
	TCGW16T306													1	9.525	3.97	2.0	4.4	0.6
	TCGW16T308													1	9.525	3.97	2.0	4.4	0.8
	TCGW16T310													1	9.525	3.97	2.0	4.4	1.0
	TCGW16T312													1	9.525	3.97	1.8	4.4	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TCGW16T304													3	9.525	3.97	2.0	4.4	0.4
	3-TCGW16T306													3	9.525	3.97	2.0	4.4	0.6
	3-TCGW16T308													3	9.525	3.97	2.0	4.4	0.8
	3-TCGW16T310													3	9.525	3.97	2.0	4.4	1.0
	3-TCGW16T312													3	9.525	3.97	1.8	4.4	1.2
Einschneidewendeplatte (Single-tip insert)																			
	TCGW160404													1	9.525	4.76	2.0	4.4	0.4
	TCGW160406													1	9.525	4.76	2.0	4.4	0.6
	TCGW160408													1	9.525	4.76	2.0	4.4	0.8
	TCGW160410													1	9.525	4.76	2.0	4.4	1.0
	TCGW160412													1	9.525	4.76	1.8	4.4	1.2

Typ TC (7° Freiwinkel) 60°

TC (7° clearance angle) type 60°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TCGW160404													3	9.525	4.76	2.0	4.4	0.4
	3-TCGW160406													3	9.525	4.76	2.0	4.4	0.6
	3-TCGW160408													3	9.525	4.76	2.0	4.4	0.8
	3-TCGW160410													3	9.525	4.76	2.0	4.4	1.0
	3-TCGW160412													3	9.525	4.76	1.8	4.4	1.2

Typ TN (0° Freiwinkel) 60°

TN (0° clearance angle) type 60°

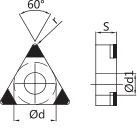
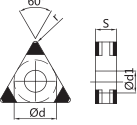
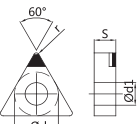
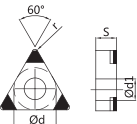
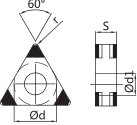


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	TNGA110302													1	6.35	3.18	2.2	2.3	0.2
	TNGA110304													1	6.35	3.18	2.0	2.3	0.4
	TNGA110306													1	6.35	3.18	2.0	2.3	0.6
	TNGA110308													1	6.35	3.18	2.0	2.3	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TNGA110302													3	6.35	3.18	2.2	2.3	0.2
	3-TNGA110304													3	6.35	3.18	2.0	2.3	0.4
	3-TNGA110306													3	6.35	3.18	2.0	2.3	0.6
	3-TNGA110308													3	6.35	3.18	2.0	2.3	0.8
Einschneidewendeplatte (Single-tip insert)																			
	TNGA130304													1	7.95	3.18	2.0	3.15	0.4
	TNGA130306													1	7.95	3.18	2.0	3.15	0.6
	TNGA130308													1	7.95	3.18	2.0	3.15	0.8
	TNGA130312													1	7.95	3.18	1.8	3.15	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TNGA130304													3	7.95	3.18	2.0	3.15	0.4
	3-TNGA130306													3	7.95	3.18	2.0	3.15	0.6
	3-TNGA130308													3	7.95	3.18	2.0	3.15	0.8
	3-TNGA130312													3	7.95	3.18	1.8	3.15	1.2
Einschneidewendeplatte (Single-tip insert)																			
	TNGA160404													1	9.525	4.46	2.0	3.8	0.4
	TNGA160406													1	9.525	4.76	2.0	3.8	0.6
	TNGA160408													1	9.525	4.76	2.0	3.8	0.8
	TNGA160410													1	9.525	4.76	2.0	3.8	1.0
	TNGA160412													1	9.525	4.76	1.8	3.8	1.2
	TNGA160416													1	9.525	4.76	1.8	3.8	1.6

Typ TN (0° Freiwinkel) 60°

TN (0° clearance angle) type 60°

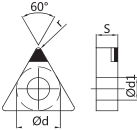
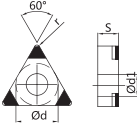
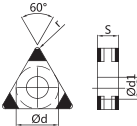


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TNGA160404													3	9.525	4.76	2.0	3.8	0.4
	3-TNGA160406													3	9.525	4.76	2.0	3.8	0.6
	3-TNGA160408													3	9.525	4.76	2.0	3.8	0.8
	3-TNGA160410													3	9.525	4.76	2.0	3.8	1.0
	3-TNGA160412													3	9.525	4.76	1.8	3.8	1.2
	3-TNGA160416													3	9.525	4.76	1.8	3.8	1.6
Mehrschneidenwendeplatte (Multi-tip insert)																			
	6-TNGA160404													6	9.525	4.76	2.0	3.8	0.4
	6-TNGA160406													6	9.525	4.76	2.0	3.8	0.6
	6-TNGA160408													6	9.525	4.76	2.0	3.8	0.8
	6-TNGA160410													6	9.525	4.76	2.0	3.8	1.0
	6-TNGA160412													6	9.525	4.76	1.8	3.8	1.2
	6-TNGA160416													6	9.525	4.76	1.8	3.8	1.6
Einschneidewendeplatte (Single-tip insert)																			
	TNGA220408													1	12.7	4.76	2.0	5.16	0.8
	TNGA220412													1	12.7	4.76	1.8	5.16	1.2
	TNGA220416													1	12.7	4.76	1.8	5.16	1.6
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TNGA220408													3	12.7	4.76	2.0	5.16	0.8
	3-TNGA220412													3	12.7	4.76	1.8	5.16	1.2
	3-TNGA220416													3	12.7	4.76	1.8	5.16	1.6
Mehrschneidenwendeplatte (Multi-tip insert)																			
	6-TNGA220408													6	12.7	4.76	2.0	5.16	0.8
	6-TNGA220412													6	12.7	4.76	1.8	5.16	1.2
	6-TNGA220416													6	12.7	4.76	1.8	5.16	1.6

Typ TN (0° Freiwinkel) 60°

TN (0° clearance angle) type 60°

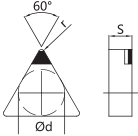
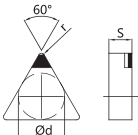
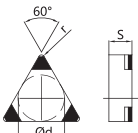
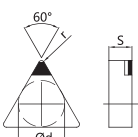
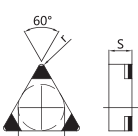


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	TNGA270608													1	15.875	6.35	2.0	6.35	0.8
	TNGA270610													1	15.875	6.35	2.0	6.35	1.0
	TNGA270612													1	15.875	6.35	1.8	6.35	1.2
	TNGA270616													1	15.875	6.35	1.8	6.35	1.6
	TNGA270620													1	15.875	6.35	1.8	6.35	2.0
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TNGA270608													3	15.875	6.35	2.0	6.35	0.8
	3-TNGA270610													3	15.875	6.35	2.0	6.35	1.0
	3-TNGA270612													3	15.875	6.35	1.8	6.35	1.2
	3-TNGA270616													3	15.875	6.35	1.8	6.35	1.6
	3-TNGA270620													3	15.875	6.35	1.8	6.35	2.0
Mehrschneidenwendeplatte (Multi-tip insert)																			
	6-TNGA270608													6	15.875	6.35	2.0	6.35	0.8
	6-TNGA270610													6	15.875	6.35	2.0	6.35	1.0
	6-TNGA270612													6	15.875	6.35	1.8	6.35	1.2
	6-TNGA270616													6	15.875	6.35	1.8	6.35	1.6
	6-TNGA270620													6	15.875	6.35	1.8	6.35	2.0

Typ TN (0° Freiwinkel) 60°

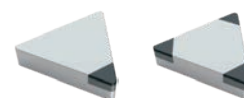
TN (0° clearance angle) type 60°

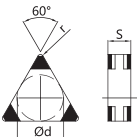


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	TNGN110302													1	6.35	3.18	2.2	–	0.4
	TNGN110304													1	6.35	3.18	2.0	–	0.8
	TNGN110306													1	6.35	3.18	2.0	–	1.2
Einschneidewendeplatte (Single-tip insert)																			
	TNGN160304													1	9.525	3.18	2.0	–	0.4
	TNGN160308													1	9.525	3.18	2.0	–	0.8
	TNGN160312													1	9.525	3.18	1.8	–	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TNGN160304													3	9.525	3.18	2.0	–	0.4
	3-TNGN160308													3	9.525	3.18	2.0	–	0.8
	3-TNGN160312													3	9.525	3.18	1.8	–	1.2
Einschneidewendeplatte (Single-tip insert)																			
	TNGN160404													1	9.525	4.76	2.0	–	0.4
	TNGN160408													1	9.525	4.76	2.0	–	0.8
	TNGN160412													1	9.525	4.76	1.8	–	1.2
	TNGN160416													1	9.525	4.76	1.8	–	1.6
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TNGN160404													3	9.525	4.76	2.0	–	0.4
	3-TNGN160408													3	9.525	4.76	2.0	–	0.8
	3-TNGN160412													3	9.525	4.76	1.8	–	1.2
	3-TNGN160416													3	9.525	4.76	1.8	–	1.6

Typ TN (0° Freiwinkel) 60°

TN (0° clearance angle) type 60°

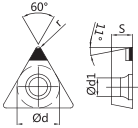
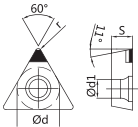
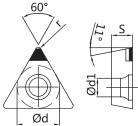
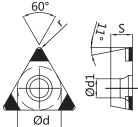
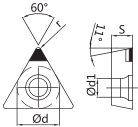


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	6-TNGN160404													6	9.525	4.76	2.0	–	0.4
	6-TNGN160408													6	9.525	4.76	2.0	–	0.8
	6-TNGN160412													6	9.525	4.76	1.8	–	1.2
	6-TNGN160416													6	9.525	4.76	1.8	–	1.6

Typ TP (11° Freiwinkel) 60°

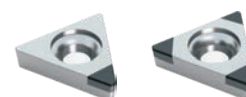
TP (11° clearance angle) type 60°

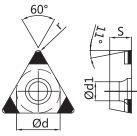
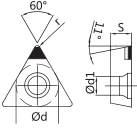
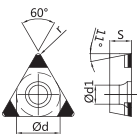
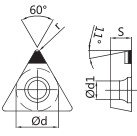
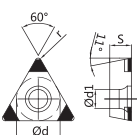


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	TPGW080202													1	4.76	2.38	2.2	2.4	0.2
	TPGW080204													1	4.76	2.38	2.2	2.4	0.4
	TPGW080206													1	4.76	2.38	2.2	2.4	0.6
Einschneidewendeplatte (Single-tip insert)																			
	TPGW090202													1	5.56	2.38	2.2	2.8	0.2
	TPGW090204													1	5.56	2.38	2.2	2.8	0.4
	TPGW090206													1	5.56	2.38	2.2	2.8	0.6
	TPGW090208													1	5.56	2.38	2.2	2.8	0.8
Einschneidewendeplatte (Single-tip insert)																			
	TPGW110202													1	6.35	2.38	2.2	2.8	0.2
	TPGW110204													1	6.35	2.38	2.2	2.8	0.4
	TPGW110206													1	6.35	2.38	2.2	2.8	0.6
	TPGW110208													1	6.35	2.38	2.2	2.8	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TPGW110202													3	6.35	2.38	2.2	2.8	0.2
	3-TPGW110204													3	6.35	2.38	2.2	2.8	0.4
	3-TPGW110206													3	6.35	2.38	2.2	2.8	0.6
	3-TPGW110208													3	6.35	2.38	2.2	2.8	0.8
Einschneidewendeplatte (Single-tip insert)																			
	TPGW110302													1	6.35	3.18	2.2	2.8	0.2
	TPGW110304													1	6.35	3.18	2.2	2.8	0.4
	TPGW110306													1	6.35	3.18	2.2	2.8	0.6
	TPGW110308													1	6.35	3.18	2.2	2.8	0.8

Typ TP (11° Freiwinkel) 60°

TP (11° clearance angle) type 60°

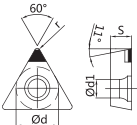
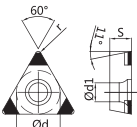


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TPGW110302													3	6.35	3.18	2.2	2.8	0.2
	3-TPGW110304													3	6.35	3.18	2.2	2.8	0.4
	3-TPGW110306													3	6.35	3.18	2.2	2.8	0.6
	3-TPGW110308													3	6.35	3.18	2.2	2.8	0.8
Einschneidewendeplatte (Single-tip insert)																			
	TPGW160304													1	9.525	3.18	2.2	4.4	0.4
	TPGW160306													1	9.525	3.18	2.2	4.4	0.6
	TPGW160308													1	9.525	3.18	2.2	4.4	0.8
	TPGW160312													1	9.525	3.18	2.2	4.4	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TPGW160304													3	9.525	3.18	2.2	4.4	0.4
	3-TPGW160306													3	9.525	3.18	2.2	4.4	0.6
	3-TPGW160308													3	9.525	3.18	2.2	4.4	0.8
	3-TPGW160312													3	9.525	3.18	2.2	4.4	1.2
Einschneidewendeplatte (Single-tip insert)																			
	TPGW16T304													1	9.525	3.97	2.2	4.4	0.4
	TPGW16T306													1	9.525	3.97	2.2	4.4	0.6
	TPGW16T308													1	9.525	3.97	2.2	4.4	0.8
	TPGW16T312													1	9.525	3.97	2.0	4.4	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TPGW16T304													3	9.525	3.97	2.2	4.4	0.4
	3-TPGW16T306													3	9.525	3.97	2.2	4.4	0.6
	3-TPGW16T308													3	9.525	3.97	2.2	4.4	0.8
	3-TPGW16T312													3	9.525	3.97	2.0	4.4	1.2

Typ TP (11° Freiwinkel) 60°

TP (11° clearance angle) type 60°

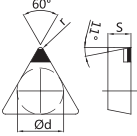
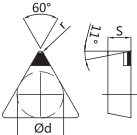
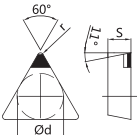
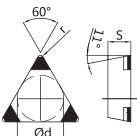
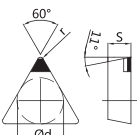


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	TPGW160402													1	9.525	4.76	2.5	4.4	0.2
	TPGW160404													1	9.525	4.76	2.2	4.4	0.4
	TPGW160406													1	9.525	4.76	2.2	4.4	0.6
	TPGW160408													1	9.525	4.76	2.2	4.4	0.8
	TPGW160412													1	9.525	4.76	2.0	4.4	1.2
Mehrschneidewendeplatte (Multi-tip insert)																			
	3-TPGW160402													3	9.525	4.76	2.5	4.4	0.2
	3-TPGW160404													3	9.525	4.76	2.2	4.4	0.4
	3-TPGW160406													3	9.525	4.76	2.2	4.4	0.6
	3-TPGW160408													3	9.525	4.76	2.2	4.4	0.8
	3-TPGW160412													3	9.525	4.76	2.0	4.4	1.2

Typ TP (11° Freiwinkel) 60°

TP (11° clearance angle) type 60°

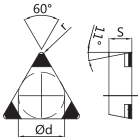
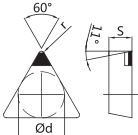
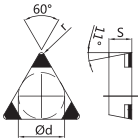


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	TPGN090202													1	5.56	2.38	2.5	–	0.2
	TPGN090204													1	5.56	2.38	2.2	–	0.4
	TPGN090208													1	5.56	2.38	2.2	–	0.8
Einschneidewendeplatte (Single-tip insert)																			
	TPGN110302													1	6.35	3.18	2.5	–	0.2
	TPGN110304													1	6.35	3.18	2.2	–	0.4
	TPGN110308													1	6.35	3.18	2.2	–	0.8
Einschneidewendeplatte (Single-tip insert)																			
	TPGN160304													1	9.525	3.18	2.5	–	0.4
	TPGN160308													1	9.525	3.18	2.2	–	0.8
	TPGN160312													1	9.525	3.18	2.0	–	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TPGN160304													3	9.525	3.18	.22	–	0.4
	3-TPGN160308													3	9.525	3.18	2.2	–	0.8
	3-TPGN160312													3	9.525	3.18	2.0	–	1.2
Einschneidewendeplatte (Single-tip insert)																			
	TPGN160404													1	9.525	4.76	2.2	–	0.4
	TPGN160408													1	9.525	4.76	2.2	–	0.8
	TPGN160412													1	9.525	4.76	2.0	–	1.2
	TPGN160416													1	9.525	4.76	2.0	–	1.6

Typ TP (11° Freiwinkel) 60°

TP (0° clearance angle) type 60°

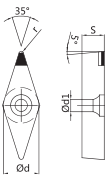
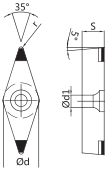
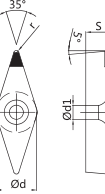
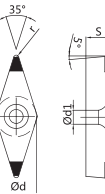


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TPGN160404													3	9.525	4.76	2.2	–	0.4
	3-TPGN160408													3	9.525	4.76	2.2	–	0.8
	3-TPGN160412													3	9.525	4.76	2.0	–	1.2
	3-TPGN160416													3	9.525	4.76	2.0	–	1.6
Einschneidewendeplatte (Single-tip insert)																			
	TPGN220408													1	12.7	4.76	2.2	–	0.8
	TPGN220412													1	12.7	4.76	2.0	–	1.2
	TPGN220416													1	12.7	4.76	2.0	–	1.6
Mehrschneidenwendeplatte (Multi-tip insert)																			
	3-TPGN220408													3	12.7	4.76	2.2	–	0.8
	3-TPGN220412													3	12.7	4.76	2.0	–	1.2
	3-TPGN220416													3	12.7	4.76	2.0	–	1.6

Typ VB (5° Freiwinkel) 35°

VB (5° clearance angle) type 35°

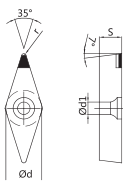
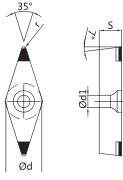
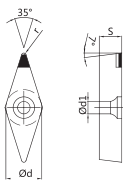
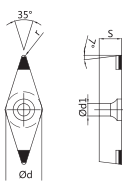
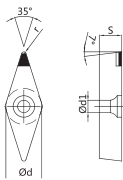


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	VBMW110302													1	6.35	3.18	2.5	2.8	0.2
	VBMW110304													1	6.35	3.18	2.5	2.8	0.4
	VBMW110306													1	6.35	3.18	2.5	2.8	0.6
	VBMW110308													1	6.35	3.18	2.5	2.8	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-VBMW110302													2	6.35	3.18	2.5	2.8	0.2
	2-VBMW110304													2	6.35	3.18	2.5	2.8	0.4
	2-VBMW110306													2	6.35	3.18	2.5	2.8	0.6
	2-VBMW110308													2	6.35	3.18	2.5	2.8	0.8
Einschneidewendeplatte (Single-tip insert)																			
	VBMW160404													1	9.525	4.76	2.5	4.4	0.4
	VBMW160406													1	9.525	4.76	2.5	4.4	0.6
	VBMW160408													1	9.525	4.76	2.5	4.4	0.8
	VBMW160410													1	9.525	4.76	2.5	4.4	1.0
	VBMW160412													1	9.525	4.76	2.2	4.4	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-VBMW160404													2	9.525	4.76	2.5	4.4	0.4
	2-VBMW160406													2	9.525	4.76	2.5	4.4	0.6
	2-VBMW160408													2	9.525	4.76	2.5	4.4	0.8
	2-VBMW160410													2	9.525	4.76	2.5	4.4	1.0
	2-VBMW160412													2	9.525	4.76	2.2	4.4	1.2

Typ VC (7° Freiwinkel) 35°

VC (7° clearance angle) type 35°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)										Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm		
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52							B70	B94
Einschneidewendeplatte (Single-tip insert)																			
	VCGW080202													1	4.76	2.38	2.5	2.3	0.2
	VCGW080204													1	4.76	2.38	2.5	2.3	0.4
	VCGW080206													1	4.76	2.38	2.5	2.3	0.6
	VCGW080208													1	4.76	2.38	2.5	2.3	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-VCGW080202													2	4.76	2.38	2.5	2.3	0.2
	2-VCGW080204													2	4.76	2.38	2.5	2.3	0.4
	2-VCGW080206													2	4.76	2.38	2.5	2.3	0.6
	2-VCGW080208													2	4.76	2.38	2.5	2.3	0.8
Einschneidewendeplatte (Single-tip insert)																			
	VCGW110302													1	6.35	3.18	2.5	2.8	0.2
	VCGW110304													1	6.35	3.18	2.5	2.8	0.4
	VCGW110306													1	6.35	3.18	2.5	2.8	0.6
	VCGW110308													1	6.35	3.18	2.5	2.8	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-VCGW110302													2	6.35	3.18	2.5	2.8	0.2
	2-VCGW110304													2	6.35	3.18	2.5	2.8	0.4
	2-VCGW110306													2	6.35	3.18	2.5	2.8	0.6
	2-VCGW110308													2	6.35	3.18	2.5	2.8	0.8
Einschneidewendeplatte (Single-tip insert)																			
	VCGW160404													1	9.525	4.67	2.5	4.4	0.4
	VCGW160406													1	9.525	4.67	2.5	4.4	0.6
	VCGW160408													1	9.525	4.67	2.5	4.4	0.8
	VCGW160410													1	9.525	4.67	2.5	4.4	1.0
	VCGW160412													1	9.525	4.67	2.5	4.4	1.2

Typ VC (7° Freiwinkel) 35°

VC (7° clearance angle) type 35°



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						

Mehrschneidenwendeplatte (Multi-tip insert)

	2-VCGW160404													2	9.525	4.76	2.5	4.4	0.4
	2-VCGW160406													2	9.525	4.76	2.5	4.4	0.6
	2-VCGW160408													2	9.525	4.76	2.5	4.4	0.8
	2-VCGW160410													2	9.525	4.76	2.5	4.4	1.0
	2-VCGW160412													2	9.525	4.76	2.5	4.4	1.2

Einschneidewendeplatte (Single-tip insert)

	VCMW220512													1	12.7	5.56	2.2	5.5	1.2
	VCMW220516													1	12.7	5.56	2.2	5.5	1.6
	VCMW220520													1	12.7	5.56	2.2	5.5	2.0

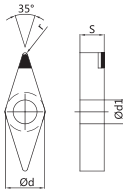
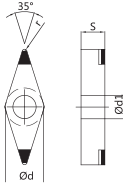
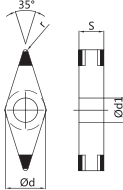
Mehrschneidenwendeplatte (Multi-tip insert)

	2-VCMW220512													2	12.7	5.56	2.2	5.5	1.2
	2-VCMW220516													2	12.7	5.56	2.2	5.5	1.6
	2-VCMW220520													2	12.7	5.56	2.2	5.5	2.0

Typ VN (0° Freiwinkel) 35°

VN (0° clearance angle) type 35°

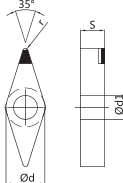
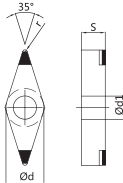
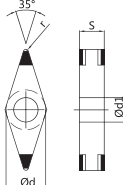


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	VNMA160402													1	9.525	4.76	2.5	3.8	0.2
	VNMA160404													1	9.525	4.76	2.2	3.8	0.4
	VNMA160406													1	9.525	4.76	2.2	3.8	0.6
	VNMA160408													1	9.525	4.76	2.2	3.8	0.8
	VNMA160410													1	9.525	4.76	2.2	3.8	1.0
	VNMA160412													1	9.525	4.76	2.0	3.8	1.2
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-VNMA160402													2	9.525	4.76	2.5	3.8	0.2
	2-VNMA160404													2	9.525	4.76	2.2	3.8	0.4
	2-VNMA160406													2	9.525	4.76	2.2	3.8	0.6
	2-VNMA160408													2	9.525	4.76	2.2	3.8	0.8
	2-VNMA160410													2	9.525	4.76	2.2	3.8	1.0
	2-VNMA160412													2	9.525	4.76	2.0	3.8	1.2
	4-VNMA160402													4	9.525	4.76	2.5	3.8	0.2
	4-VNMA160404													4	9.525	4.76	2.2	3.8	0.4
	4-VNMA160406													4	9.525	4.76	2.2	3.8	0.6
	4-VNMA160408													4	9.525	4.76	2.2	3.8	0.8
	4-VNMA160410													4	9.525	4.76	2.2	3.8	1.0
	4-VNMA160412													4	9.525	4.76	2.0	3.8	1.2

Typ VN (0° Freiwinkel) 35°

VN (0° clearance angle) type 35°

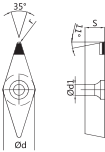
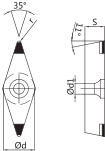
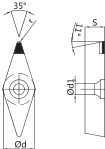
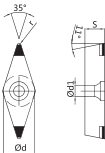


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	VNMA220404													1	12.7	4.76	2.2	5.16	0.4
	VNMA220408													1	12.7	4.76	2.2	5.16	0.8
	VNMA220410													1	12.7	4.76	2.2	5.16	1.0
	VNMA220412													1	12.7	4.76	2.0	5.16	1.2
	VNMA220416													1	12.7	4.76	2.0	5.16	1.6
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-VNMA220404													2	12.7	4.76	2.2	5.16	0.4
	2-VNMA220408													2	12.7	4.76	2.2	5.16	0.8
	2-VNMA220410													2	12.7	4.76	2.2	5.16	1.0
	2-VNMA220412													2	12.7	4.76	2.0	5.16	1.2
	2-VNMA220416													2	12.7	4.76	2.0	5.16	1.6
	4-VNMA220404													4	12.7	4.76	2.2	5.16	0.4
	4-VNMA220408													4	12.7	4.76	2.2	5.16	0.8
	4-VNMA220410													4	12.7	4.76	2.2	5.16	1.0
	4-VNMA220412													4	12.7	4.76	2.0	5.16	1.2
	4-VNMA220416													4	12.7	4.76	2.0	5.16	1.6

Typ VP (11° Freiwinkel) 35°

VP (11° clearance angle) type 35°

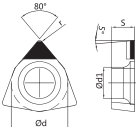
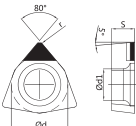


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	VPGW080202													1	4.76	2.38	2.5	2.3	0.2
	VPGW080204													1	4.76	2.38	2.5	2.3	0.4
	VPGW080208													1	4.76	2.38	2.5	2.3	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-VPGW080204													2	4.76	2.38	2.5	2.3	0.4
	2-VPGW080208													2	4.76	2.38	2.5	2.3	0.8
Einschneidewendeplatte (Single-tip insert)																			
	VPGW110302													1	6.35	3.18	2.5	2.8	0.2
	VPGW110304													1	6.35	3.18	2.5	2.8	0.4
	VPGW110306													1	6.35	3.18	2.5	2.8	0.6
	VPGW110308													1	6.35	3.18	2.5	2.8	0.8
Mehrschneidenwendeplatte (Multi-tip insert)																			
	2-VPGW110302													2	6.35	3.18	2.5	2.8	0.2
	2-VPGW110304													2	6.35	3.18	2.5	2.8	0.4
	2-VPGW110306													2	6.35	3.18	2.5	2.8	0.6
	2-VPGW110308													2	6.35	3.18	2.5	2.8	0.8

Typ WB (5° Freiwinkel) Hexagon

WB (5° clearance angle) type hexagon

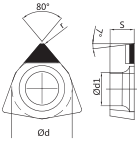
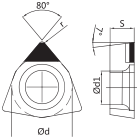
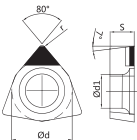
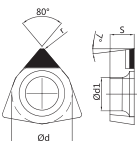


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	WBGW060102													1	3.97	1.59	2.2	2.2	0.2
	WBGW060104													1	3.97	1.59	2.0	2.2	0.4
Einschneidewendeplatte (Single-tip insert)																			
	WBGW080202													1	4.76	2.38	2.2	2.4	0.2
	WBGW080204													1	4.76	2.38	2.0	2.4	0.4

Typ WC (7° Freiwinkel) Hexagon

WC (7° clearance angle) type hexagon



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B90	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	WCGW020102													1	3.97	1.59	2.2	2.3	0.2
	WCGW020104													1	3.97	1.59	2.0	2.3	0.4
Einschneidewendeplatte (Single-tip insert)																			
	WCGW040202													1	6.35	2.38	2.2	2.8	0.2
	WCGW040204													1	6.35	2.38	2.0	2.8	0.4
Einschneidewendeplatte (Single-tip insert)																			
	WCGW050302													1	7.94	3.18	2.2	3.5	0.2
	WCGW050304													1	7.94	3.18	2.0	3.5	0.4
	WCGW050308													1	7.94	3.18	2.0	3.5	0.8
Einschneidewendeplatte (Single-tip insert)																			
	WCGW06T302													1	9.525	3.97	2.2	4.4	0.2
	WCGW06T304													1	9.525	3.97	2.0	4.4	0.4
	WCGW06T308													1	9.525	3.97	2.0	4.4	0.8

Typ WN (0° Freiwinkel) Hexagon

WN (0° clearance angle) type hexagon

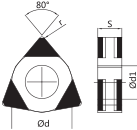


Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Einschneidewendeplatte (Single-tip insert)																			
	WNGA06T302													1	9.525	3.97	2.2	3.8	0.2
	WNGA06T304													1	9.525	3.97	2.0	3.8	0.4
	WNGA06T306													1	9.525	3.97	2.0	3.8	0.6
	WNGA06T308													1	9.525	3.97	2.0	3.8	0.8
Einschneidewendeplatte (Single-tip insert)																			
	WNGA060404													1	9.525	4.76	2.0	3.8	0.4
	WNGA060406													1	9.525	4.76	2.0	3.8	0.6
	WNGA060408													1	9.525	4.76	2.0	3.8	0.8
Einschneidewendeplatte (Single-tip insert)																			
	WNGA080404													1	12.7	4.76	2.0	5.16	0.4
	WNGA080406													1	12.7	4.76	2.0	5.16	0.6
	WNGA080408													1	12.7	4.76	2.0	5.16	0.8
	WNGA080410													1	12.7	4.76	2.0	5.16	1.0
	WNGA080412													1	12.7	4.76	1.8	5.16	1.2
Mehrschneidewendeplatte (Multi-tip insert)																			
	3-WNGA080404													3	12.7	4.76	2.0	5.16	0.4
	3-WNGA080406													3	12.7	4.76	2.0	5.16	0.6
	3-WNGA080408													3	12.7	4.76	2.0	5.16	0.8
	3-WNGA080410													3	12.7	4.76	2.0	5.16	1.0
	3-WNGA080412													3	12.7	4.76	1.8	5.16	1.2

Typ WN (0° Freiwinkel) Hexagon

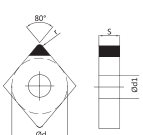
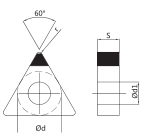
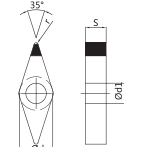
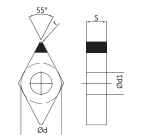
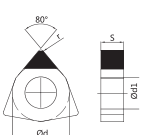
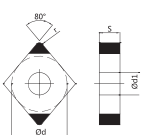
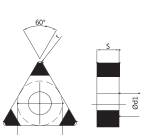
WN (0° clearance angle) type hexagon



Profil (Insert profile)	Typ (Insert type)	Materialschlüssel (Material code)												Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		B10	B95	B91	B55	B71	B50	B61	B96	B30	B52	B70	B94						
Mehrschneidenwendeplatte (Multi-tip insert)																			
	6-WNGA080404													6	12.7	4.76	2.0	5.16	0.4
	6-WNGA080406													6	12.7	4.76	2.0	5.16	0.6
	6-WNGA080408													6	12.7	4.76	2.0	5.16	0.8
	6-WNGA080410													6	12.7	4.76	2.0	5.16	1.0
	6-WNGA080412													6	12.7	4.76	1.8	5.16	1.2

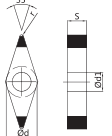
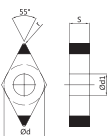
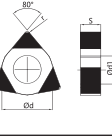
0° Freiwinkel Solid-CBN

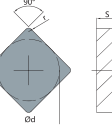
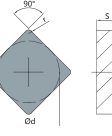
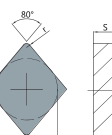
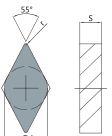
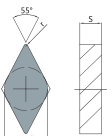
(0° clearance angle)

Profil (Insert profile)	Typ (Type)	Materialschlüssel (Material code)						Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		S11	S45	S90	S93								
Einschneidewendeplatte (Single-tip insert)													
	CNGA120408							2	12.7	4.76	2.0	5.16	0.8
	CNGA120410							2	12.7	4.76	2.0	5.16	1.0
	CNGA120412								2	12.7	4.76	1.8	5.16
	TNGA160404							2	9.525	4.76	2.0	3.8	0.4
	TNGA160408							2	9.525	4.76	2.0	3.8	0.8
	TNGA160410							2	9.525	4.76	2.0	3.8	1.0
	TNGA160412							2	9.525	4.76	1.8	3.8	1.2
	VNGA160408							2	9.525	4.76	2.2	3.8	0.8
	VNGA160410							2	9.525	4.76	2.0	3.8	1.0
	VNGA160412							2	9.525	4.76	2.0	3.8	0.2
	DNGA150408							2	12.7	4.76	2.0	5.16	0.8
	DNGA150410							2	12.7	4.76	2.0	5.16	1.0
	DNGA150412							2	12.7	4.76	1.8	5.16	1.2
	DNGA150416							2	12.7	4.76	1.8	5.16	1.6
	WNGA080408							2	12.7	4.76	1.8	5.16	0.8
	WNGA080410							2	12.7	4.76	2.0	5.16	1.0
	WNGA080412							2	12.7	4.76	1.8	5.16	1.2
Mehrschneidenwendeplatte (Multi-tip insert)													
	2-CNGA120408							4	12.7	4.76	2.0	5.16	0.8
	2-CNGA120410							4	12.7	4.76	2.0	5.16	1.0
	2-CNGA120412							4	12.7	4.76	1.8	5.16	1.2
	3-TNGA160404							6	9.525	4.76	2.0	3.8	0.4
	3-TNGA160408							6	9.525	4.76	2.0	3.8	0.8
	3-TNGA160410							6	9.525	4.76	2.0	3.8	1.0
	3-TNGA160412							6	9.525	4.76	1.8	3.8	1.2

0° Freiwinkel Solid-CBN

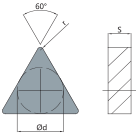
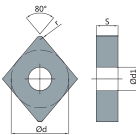
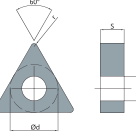
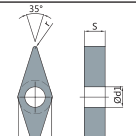
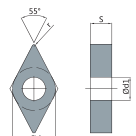
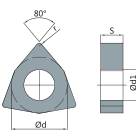
(0° clearance angle)

Profil (Insert profile)	Typ (Type)	Materialschlüssel (Material code)					Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		S11	S45	S90	S93							
	2-VNGA160408						4	9.525	4.76	2.2	3.8	0.8
	2-VNGA160410						4	9.525	4.76	2.2	3.8	1.0
	2-VNGA160412						4	9.525	4.76	2.0	3.8	1.2
	2-DNGA150408						4	12.7	4.76	2.0	5.16	0.8
	2-DNGA150410						4	12.7	4.76	2.2	5.16	1.0
	2-DNGA150412						4	12.7	4.76	1.8	5.16	1.2
	2-DNGA150416						4	12.7	4.76	1.8	5.16	1.6
	3-WNGA080408						6	12.7	4.76	1.8	5.16	0.8
	3-WNGA080410						6	12.7	4.76	2.2	5.16	1.0
	3-WNGA080412						6	12.7	4.76	1.8	5.16	1.2

	SNMN090308							9.525	3.18	–	–	0.8
	SNMN090310							9.525	3.18	–	–	1.0
	SNMN090312							9.525	3.18	–	–	1.2
	SNMN120410							12.7	4.76	–	–	1.0
	SNMN120412							12.7	4.76	–	–	1.2
	SNMN120416							12.7	4.76	–	–	1.6
	CNMN120408							12.7	4.76	–	–	0.8
	CNMN120410							12.7	4.76	–	–	1.0
	CNMN120412							12.7	4.76	–	–	1.2
	CNMN120416							12.7	4.76	–	–	1.6
	DNMN110408							9.525	4.76	–	–	0.8
	DNMN110410							9.525	4.76	–	–	1.0
	DNMN110412							9.525	4.76	–	–	1.2
	DNMN150612							12.7	6.35	–	–	1.2
	DNMN150616							12.7	6.35	–	–	1.6
										–		

0° Freiwinkel Solid-CBN

(0° clearance angle)

Profil (Insert profile)	Typ (Type)	Materialschlüssel (Material code)					Anzahl Schneiden (Number of tips)	Inkreis (Inscribed circle) Ø d mm	Dicke (s) (Thickness) mm	CBN Länge (CBN length) mm	Bohrungsdurchmesser (Inner hole diameter) Ø d1 mm	Radius (r) (Radius) mm
		S11	S45	S90	S93							
	TNMN110304							6.35	3.18	–	–	0.4
	TNMN110308							6.35	3.18	–	–	0.8
	TNMN160408							9.525	4.76	–	–	0.8
	TNMN160410							9.525	4.76	–	–	1.0
	TNMN160412							9.525	4.76	–	–	1.2
	TNMN160416							9.525	4.76	–	–	1.6
	CNGA120408							12.7	4.76	–	5.16	0.8
	CNGA120410							12.7	4.76	–	5.16	1.0
	CNGA120412							12.7	4.76	–	5.16	1.2
	TNGA160404							9.525	4.76	–	3.8	0.4
	TNGA160408							9.525	4.76	–	3.8	0.8
	TNGA160410							9.525	4.76	–	3.8	1.0
	TNGA160412							9.525	4.76	–	3.8	1.2
	VNGA160408							9.525	4.76	–	3.8	0.8
	VNGA160410							9.525	4.76	–	3.8	1.0
	VNGA160412							9.525	4.76	–	3.8	1.2
	DNGA150408							12.7	4.76	–	5.16	0.8
	DNGA150410							12.7	4.76	–	5.16	1.0
	DNGA150412							12.7	4.76	–	5.16	1.2
	DNGA150416							12.7	4.76	–	5.16	1.6
	WNGA080408							12.7	4.76	–	5.16	0.8
	WNGA080410							12.7	4.76	–	5.16	1.0
	WNGA080412							12.7	4.76	–	5.16	1.2

Beispiel: Bearbeitung von Bremsscheiben mit Solid-CBN-Schneidplatten

Example: Machining brake discs with solid CBN inserts

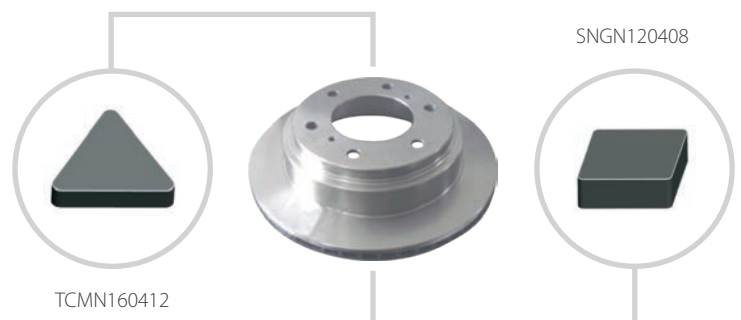
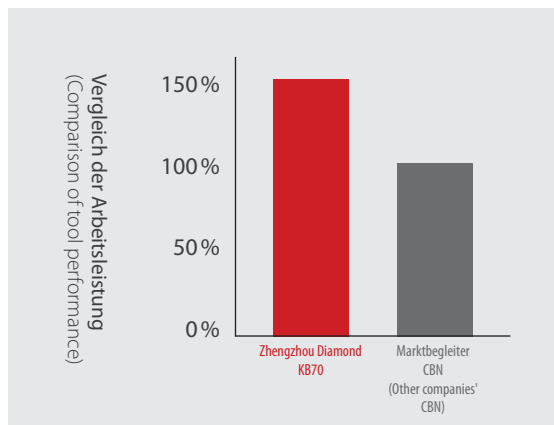
CBN-Schneidplatten sind hervorragend geeignet für HSC, haben eine lange Standzeit und verbessern die Produktionseffizienz deutlich.

CBN inserts are excellently suited for high speed cutting, have a long service life, and significantly improve production efficiency.

Typ (Type): TCMN160412 SNGN120408

Werkstückhärte (Workpiece hardness): 120-240HB

Bearbeitungsparameter (Machining parameters): $V_s=180-400\text{mm/min}$ $f=0.1-0.2\text{mm/r}$ $a_p=0.5-3.0\text{mm}$



Gesinterter Körper aus CBN

Sintered CBN body



Vorteile von Solid-CBN-Schneidplatten

Advantages of solid CBN inserts

Solid-CBN-Schneidplatten sind besonders geeignet für grosse Schnitttiefen wie bei Schruppbearbeitungen und können so die Bearbeitungseffizienz verbessern.

Solid CBN inserts are particularly suitable for large cutting depths, such as in roughing operations, and can therefore improve machining efficiency.

Da sie über keinerlei gelötete Teile verfügen, sind sie eine hervorragende Wahl für jede Art der Schruppbearbeitung. Darüber hinaus sind Ausbrüche und Plattenbrüche leichter vermeidbar als bei gelöteten Schneidplatten.

Since they do not have any brazed parts, they are an excellent choice for any type of roughing operation. In addition, breakages and plate fractures are more easily avoided than with brazed inserts.

Sie verfügen über hohe Verschleiss- und Bruchfestigkeit.

They have high wear resistance and breaking strength.

Sie senken die Totalkosten.

They lower the total cost.

Alle Schneiden und Kanten können als Schneidkanten verwendet werden, was die Schneidplatten besonders ökonomisch macht.

All the tips and edges can be used as cutting edges, making the inserts highly economical.

Gütegrade von Solid-CBN

Quality grades of solid CBN

Durch unterschiedliche Gütegrade von Solid-CBN, verschiedene Korngrößen und die richtige Wahl des Bindemittels kann die Leistungsfähigkeit der Schneidplatten an verschiedene Be- und Verarbeitungsbedingungen angepasst werden.

By using different grades of solid CBN, different grain sizes, and a selection of binding agents, the performance of the inserts can be adapted to different machining and processing conditions.

Bearbeitung von gehärtetem Stahl Hardened steel machining

S93

Niedriger CBN-Gehalt, gute
Verschleißfestigkeit und Stoßfestigkeit

Low CBN content, good wear
resistance and impact resistance

S45

Niedriger CBN-Gehalt, hohe
Verschleißfestigkeit, gute Stoßfestigkeit

Low CBN content, high wear
resistance, good impact resistance

Bearbeitung von Gusseisen Cast iron machining

S11

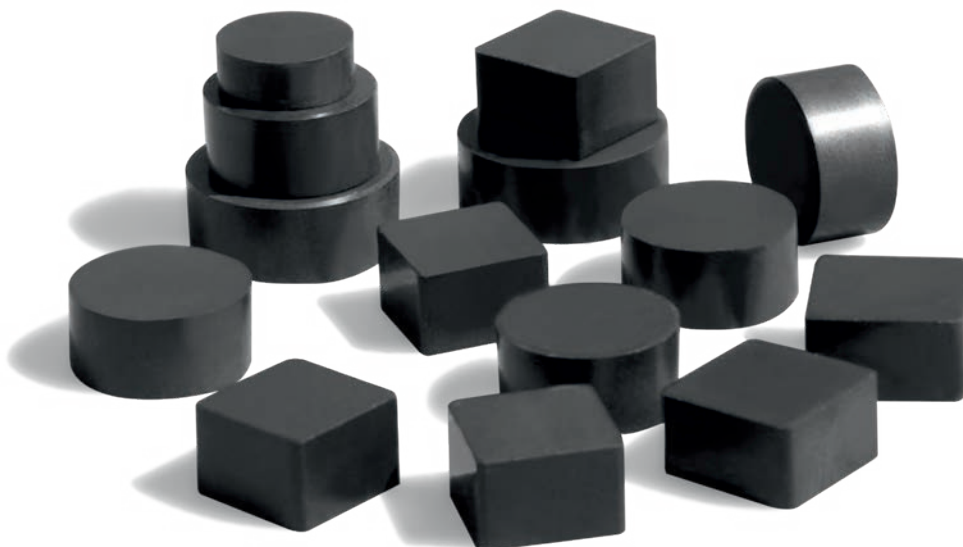
Hoher CBN-Gehalt, gute
Verschleißfestigkeit und Stoßfestigkeit

High CBN content, good wear
resistance and impact resistance

S90

Super Stoßfestigkeit und gute
Verschleißfestigkeit

Super impact resistance
and good wear resistance



Schneidkanteneigenschaften von CBN-/Solid-CBN-Wendepplatten

Cutting tip properties of CBN/solid CBN inserts

Die Schneidkantenverrundung ist ein Schlüsselfaktor in der Arbeitsleistung von Schneidwerkzeugen, da Ausbrüche an den Schneidkanten unter schweren Belastungen der Bearbeitung von extraharten Materialien so vermieden werden können. Dies führt zu höherer Effizienz, besserer Oberflächengüte und höherer Standzeit.

Cutting edge processing is a key factor in the performance of cutting tools that can avoid chipping of cutting edges under heavy loads when processing extra-hard materials. This leads to higher efficiency, better surface quality, and longer tool life.

Schneidkraft Cutting force Schneidkantenfestigkeit Cutting edge strength	1. S-Typ (Standardausführung) mit Kantenverrundung S-Type (Standard Version) Chamfer + Edge Preparation Der S-Typ hat eine stabile Oberflächenrauigkeit. Der Vorschub muss grösser sein als das Fasenmass der Schneide. Geeignet für grosse Eingriffstiefen und stark unterbrochenen Schnitt. Verglichen mit Schneidkanten des Typs T, verfügt der S-Typ über eine höhere Standzeit. The S-type has a stable surface roughness. The feed rate must be greater than the chamfer dimension of the cutting edge. Suitable for large cutting depths and heavily interrupted cutting conditions. Compared to cutting edges of type T, the S-type has a longer service life.	
	2. T-Typ (Fase) T-Type (Chamfer) Der T-Typ ist der gebräuchliche Schneidkantentyp. Verglichen mit dem S-Typ hat die Schneidkante des T-Typs einen niedrigeren Schneidkantenverschleiss, hohe Dimensionsgenauigkeit und ist geeignet für die Einhaltung von engen Toleranzen. Er ist die erste Wahl für die Bearbeitung von Gusseisen. The T-type is the common cutting edge type. Compared to the S-type, the cutting edge of the T-type has lower cutting edge wear, high dimensional accuracy and is suitable for maintaining strict tolerances. It is the first choice for machining cast iron.	
	3. E-Typ (Kantenverrundung) E-Type (Edge Preparation) Durch die Schneidkantenverrundung werden Ausbrüche an der Schneidkante reduziert. Um einen reibungslosen Schnitvorgang zu ermöglichen und das Ausbrechen von Schneidkanten zu verhindern, muss der Vorschub grösser sein als das Fasenmass der Schneide. Dieser Typ ist die erste Wahl für die Fertigbearbeitung von Hochtemperaturlegierungen. The polished cutting edge preparation reduces chipping at the cutting edge. The feed rate must be greater than the chamfer dimension of the cutting edge to ensure a smooth cutting process and to prevent cutting edges from breaking. This type is the first choice for finishing high temperature alloys.	
	4. F-Typ (ohne Fase + unpoliert) F-Type (no Chamfer + without Polish) Der F-Typ verfügt über eine geringere Schneidkraft, die sich gut für reduzierte Oberflächenrauigkeit und Fertigbearbeitungen eignet. The F-type has a lower cutting force, which is well suited for reduced surface roughness and finishing operations.	

Schneidkanteneigenschaften von CBN-/Solid-CBN-Wendeplatten

Cutting tip properties of CBN/solid CBN inserts

5. Spanbrechertyp

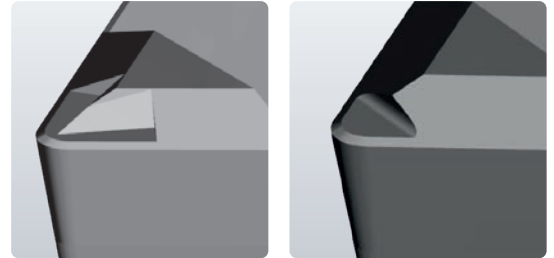
Chip breaker type

Dieser Typ hat eine ausgezeichnete Späneabfuhr.

Durch eine Auswahl von verschiedenen Spanbrechern kann die Späneabfuhr optimal gelenkt werden.

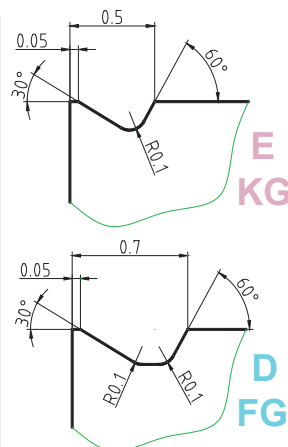
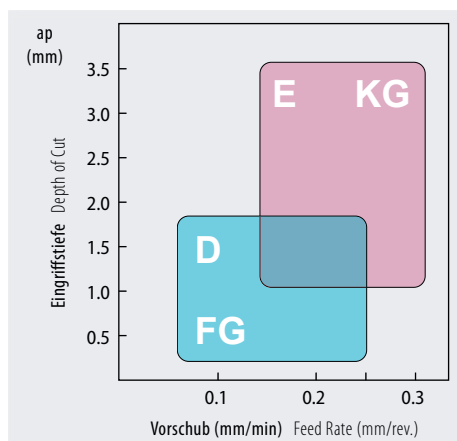
This type has excellent chip disposal.

The chip disposal can be optimally controlled by a selection of different chip breakers.



Anwendungsbereich von PKD-Wendescheidplatten

Scope of application of PCD Inserts

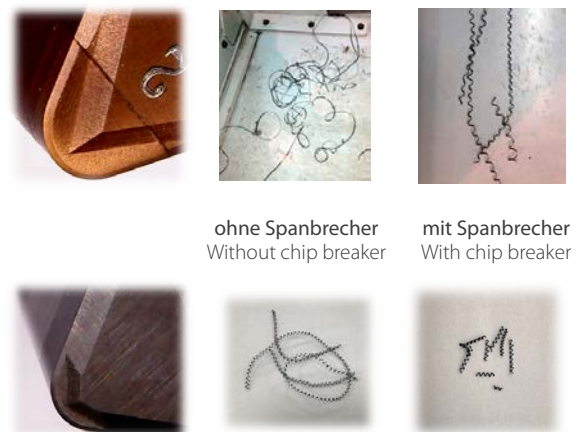
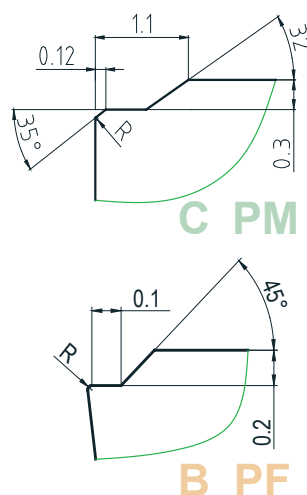
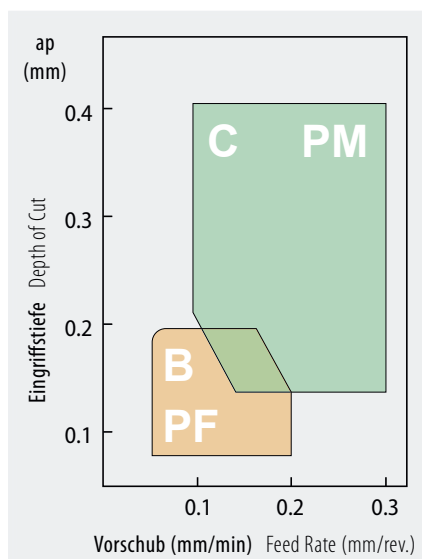


ohne Spanbrecher
Without chip breaker

mit Spanbrecher
With chip breaker

Anwendungsbereich von CBN-Wendescheidplatten

Scope of application of CBN Inserts



ohne Spanbrecher
Without chip breaker

mit Spanbrecher
With chip breaker

Schneidkantenpräparierung bei CBN-/Solid-CBN-Schneidplatten

CBN/Solid CBN insert cutting edge processing

Die Schneidkantenverrundung ist ein Schlüsselfaktor in der Arbeitsleistung von Schneidwerkzeugen, da Ausbrüche an den Schneidkanten unter schweren Belastungen der Bearbeitung von extraharten Materialien so vermieden werden können. Dies führt zu höherer Effizienz, besserer Oberflächengüte und höherer Standzeit.

Cutting edge processing is a key factor in the performance of cutting tools that can avoid chipping of cutting edges under heavy loads when processing extra-hard materials. This leads to higher efficiency, better surface quality, and longer tool life.

6. Wiper-Typ

Wiper

Die hervorragende Oberflächenqualität dieses Typs lässt sich mit geschliffenen Oberflächen vergleichen.

Dies ermöglicht eine bessere Oberflächenqualität bei gleichem Vorschub.

Durch grösseren Vorschub bei gleicher Oberflächenqualität kann die Arbeitseffizienz deutlich verbessert werden.

The excellent surface quality of this type can be compared with ground surfaces.

This allows better surface quality at the same feed rate.

By increasing the feed rate while maintaining the same surface quality, the work efficiency can be significantly improved.

Es wird empfohlen, diesen Typ unter gleichbleibenden Bearbeitungsbedingungen zu verwenden.

Hinweis: Dieser Typ ist geeignet für hochstabile Maschinen und starr fixierte Aufspannungen. Er ist nicht geeignet für Konturbearbeitungen.

It is recommended to use this type under constant machining conditions.

Note: This type is suitable for highly stable machines and rigid fixtures. It is not suitable for contour machining.



7. Spezialbeschichtete Schneidplatten

Special coated inserts

Die glatte Beschichtung in perfekter Kombination mit CBN-Material ermöglicht eine hervorragende Schneidleistung, verbessert die Schneidpräzision und verlängert die Standzeit.

The smooth coating in perfect combination with CBN material provides excellent cutting performance, improves cutting precision and extends tool life.

Mögliche Beschichtungen

A = TiN

B = TiAlN

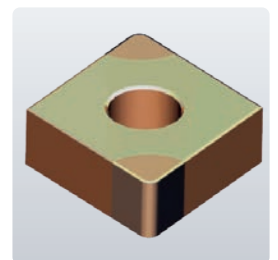
C = TiCN

Variations of Coating

A = TiN

B = TiAlN

C = TiCN



Häufige Verschleissformen von CBN-Schneidplatten und Hinweise zur Verschleissreduktion

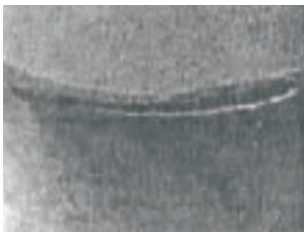
Frequent wear forms of CBN inserts and notes on wear reduction

Verschleiss Einflussfaktoren von CBN-Wendeschneidplatten sind Werkstückmaterial, CBN-Korngrösse und Bindemittel, Schnittparameter, Schneidkantenbearbeitungsarten und Maschinensteifigkeit.

Bei der Bearbeitung von CBN-Schneidplatten tritt normaler und abnormaler Verschleiss auf. Normaler Verschleiss beinhaltet hauptsächlich Kraterverschleiss, Flankenverschleiss, Mikrobruch, Bruchverschleiss, etc. Verschleissfaktoren können interagieren und sich gegenseitig fördern.

Factors influencing the wear of CBN inserts are the workpiece material, CBN grain size and binding agent, cutting parameters, types of cutting edge machining, and machine rigidity.

When machining with CBN inserts, normal and abnormal wear occurs. Normal wear mainly includes crater wear, flank wear, microbreakages, fracture wear, etc. Different wear factors can interact and promote each other.



○ Kraterverschleiss

Crater wear

Chemischer Verschleiss und Diffusionsverschleiss können bei der Bearbeitung von gehärtetem Stahl leicht vorkommen. Gründe sind übermässige Schnittgeschwindigkeit und ein zu geringer Vorschub.

Lösung: Schnittgeschwindigkeit reduzieren, Vorschub erhöhen, flüssiges Kühlmittel verwenden.

Chemical wear and diffusion wear can easily occur when machining hardened steel. Reasons are excessive cutting speed and an insufficient feed rate.

Solution: Reduce cutting speed, increase feed rate, use liquid coolant.



○ Flankenverschleiss

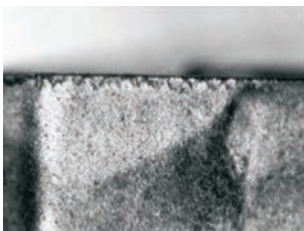
Flank wear

Flankenverschleiss wird bedingt durch eine niedrige Schnittgeschwindigkeit, kleine Freiwinkel und einen zu geringen Vorschub.

Lösung: Schnittgeschwindigkeit erhöhen, Vorschub erhöhen, Freiwinkel vergrössern.

Flank wear is caused by low cutting speed, small clearance angles and an insufficient feed rate.

Solution: Increase cutting speed, increase feed rate, enlarge clearance angle.



○ Mikroausbrüche

Microbreakages

Gründe für Mikrobrüche sind schlechte Umgebungsparameter und schlechtgefilterte Kühlmittel.

Lösung: Schneideinsätze mit Spanleitstufen, Fasen oder Spanbrecher verwenden.

Reasons for microbreakages are poor operating parameters and poorly filtered coolants.

Solution: Use cutting inserts with chip grooves, chamfers, or chip breakers.



○ Bruchverschleiss

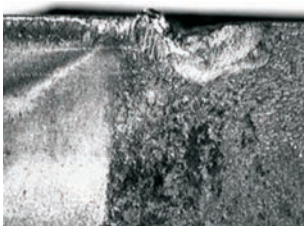
Fracture wear

Bruchverschleiss ergibt sich aus schlechter Systemsteifigkeit, grossem Werkzeugauslauf und schwacher Schneidkantenfestigkeit.

Lösung: Systemsteifigkeit verbessern, Vorschub verringern, Schnitttiefe verringern, Schneideinsätze mit Spanleitstufen, Fasen oder Spanbrecher verwenden.

Fracture wear results from poor system rigidity, large tool runout, and weak cutting edge strength.

Solution: Improve system rigidity, reduce feed, reduce cutting depth, use cutting inserts with chip grooves, chamfers or chip breakers.



○ Rillenverschleiss

Groove wear

Gründe für Rillenverschleiss sind eine zu geringe Schnittgeschwindigkeit, zu grosser Vorschub und zu grosse Schnitttiefe.

Lösung: Schnittgeschwindigkeit erhöhen, den Vorschub verringern, die Schnitttiefe verringern, Schneidplatten mit negativen Fasen verwenden.

Reasons for groove wear are insufficient cutting speed, excessive feed rate, and excessive cutting depth.

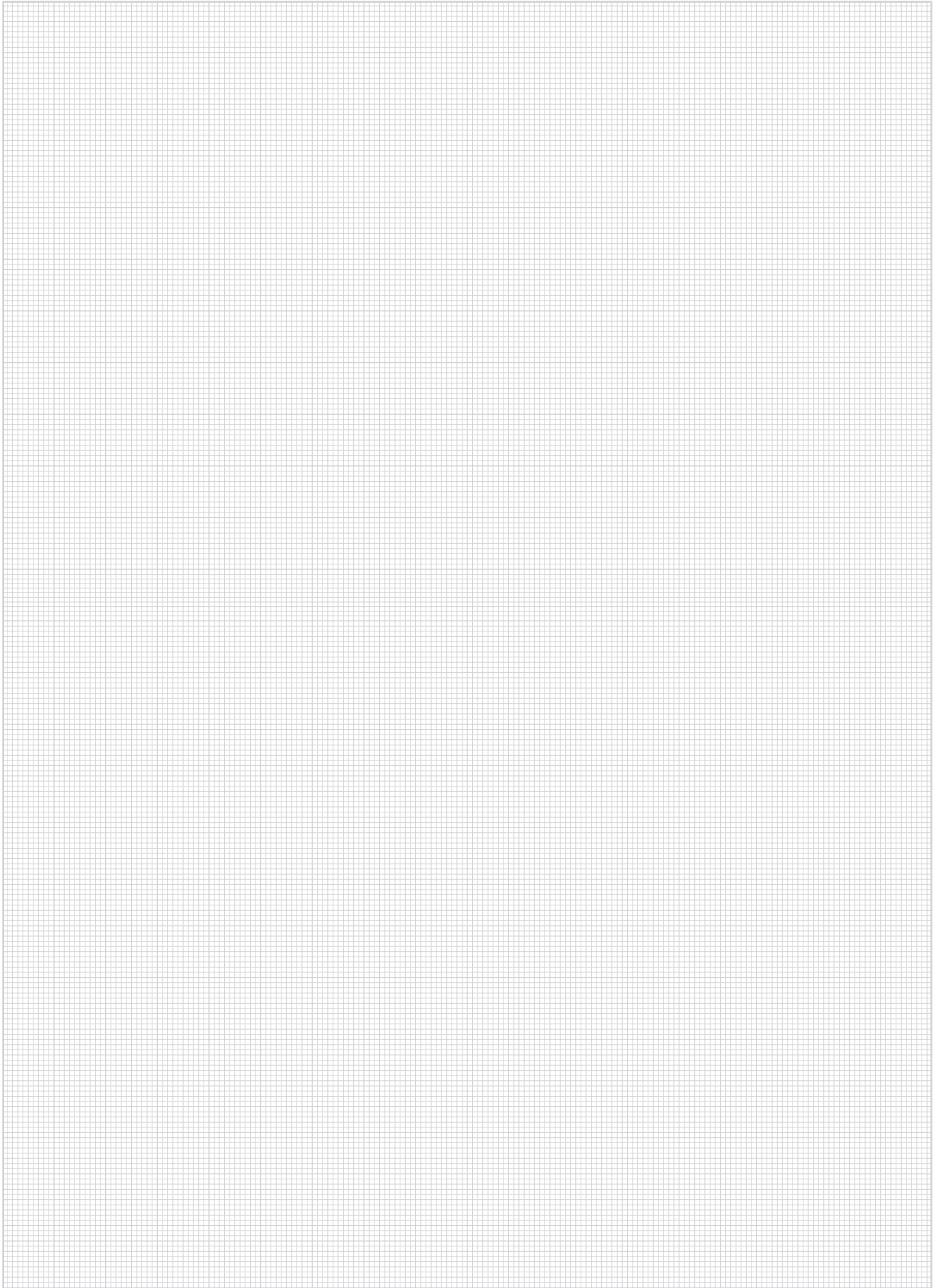
Solution: Increase the cutting speed, reduce the feed rate, reduce the cutting depth, use inserts with negative chamfers.

Hinweise		
Kategorien	Mögliche Gefahren	Lösungen
Alle Schneidwerkzeuge	Aufgrund von scharfen Kanten kann es durch direktes Anfassen der Werkzeuge leicht zu Verletzungen kommen.	Benutzen Sie Schutzvorrichtungen wie Schutzhandschuhe, besonders bei der Entnahme von Werkzeugen oder bei deren Befestigung an der Maschine.
	Bedienungsfehler oder unsachgemässe Nutzungsbedingungen können dazu führen, dass Werkzeuge beschädigt oder zersplittert werden.	Benutzen Sie Schutzvorrichtungen wie Sicherheitsabdeckungen und Schutzbrillen. Stellen Sie sicher, dass die Werkzeuge innerhalb ihres Anwendungsspektrums genutzt werden.
	Erhöhter Schnittdruck, verursacht durch Stossbelastung und übermässige Abnutzung, kann Werkzeuge beschädigen oder zerstören.	Benutzen Sie Schutzvorrichtungen wie Sicherheitsabdeckungen und Schutzbrillen. Tauschen Sie die Werkzeuge so schnell wie möglich aus.
	Ausbrüche von erhitzten Spänen oder das Entfernen von langen Spänen kann zu Verletzungen oder Verbrennungen führen.	Benutzen Sie Schutzvorrichtungen wie Sicherheitsabdeckungen und Schutzbrillen. Stellen Sie sicher, dass die Maschine angehalten wurde, bevor Sie Späne entfernen. Tragen Sie Schutzhandschuhe und benutzen Sie geeignete Werkzeuge.
	Funken während des Schneidvorgangs sowie Hitze, die durch Beschädigungen oder Späne entsteht, können Feuer verursachen.	Arbeiten Sie nicht an Orten an welchen Brand- oder Explosionsgefahr besteht. Falls Sie nicht-wasserlösliches Schneidöl verwenden, beachten Sie die entsprechenden Brandschutzmassnahmen.
	Vibrationen durch nicht korrekt ausgewuchtete Aufnahmen können dazu führen, dass Werkzeuge bei hohen Drehzahlen Schaden nehmen und Verletzungen verursachen.	Benutzen Sie Schutzvorrichtungen wie Schutzhandschuhe. Achten Sie darauf, dass es während solchen Prozessen nicht zu Vibrationen oder ungewöhnlichen Geräuschen kommt.
	Aufgrund von Gratbildung am Werkstück kann es durch direktes Anfassen leicht zu Verletzungen kommen.	Es wird davon abgeraten, die Werkzeuge mit baren Händen anzufassen.
Geklemmte Platten	Wenn Werkzeuge oder Komponenten nicht fest an der Maschine fixiert werden, können sie sich während der Bearbeitung lösen und so Verletzungen verursachen.	Um die Werkzeugkomponenten zu installieren, reinigen Sie den Werkzeugsitz und befestigen Sie die Komponenten an der Maschine. Richten Sie dann die Schneidplatten ein. Stellen Sie sicher, dass Sie den vorgegebenen Schlüssel verwenden, um die Schneidplatten und ihre Komponenten zu fixieren. Benutzen Sie keine anderen Werkzeuge.
	Verwenden Sie kein Mantelrohr, um die Schneidplatten oder Werkzeuge zu fixieren. Zu starkes Befestigen kann Schäden und Zersplitterung verursachen.	Benutzen Sie keine Hilfswerkzeuge wie Mantelrohre. Benutzen Sie nur den vorgegebenen Schlüssel.
	Schneidplatten oder Komponenten können während Hochgeschwindigkeitsrotationen aufgrund der Zentripetalkraft explodieren. Um Unfälle zu vermeiden ist eine sorgfältige Bedienung erforderlich.	Stellen Sie sicher, dass die Werkzeuge innerhalb ihres Anwendungsspektrums genutzt werden und folgen Sie den Benutzungsanleitungen sowie den Produktmustern.
Andere	Anderweitige Verwendungen der Werkzeuge können Maschinen und Werkzeuge beschädigen.	Folgen Sie strikt den Anweisungen in der Anleitung.
Abschliessend: Diese Hinweise vermerken sicherheitstechnische Grundsätze. Beachten Sie die Bedienungsanleitung für Werkzeuge sowie die Produktmuster oder kontaktieren Sie Ihren Fachberater. Wir haften nicht für Unfälle, die durch Änderungen an den Werkzeugen verursacht wurden.		

Warnings

Categories	Potential Dangers	Solutions
All cutting tools	Due to sharp edges, direct contact with the tools can easily result in injuries.	Use protective appliances such as protective gloves, especially when removing tools or fastening tools to the machine.
	Operating errors or improper conditions of use can lead to tools being damaged or shattered.	Use protective appliances such as safety covers and goggles. Ensure that the tools are used within their range of applications.
	Increased cutting pressure caused by impact loading and excessive wear can damage or destroy tools.	Use protective appliances such as safety covers and goggles. Replace tools as soon as possible.
	Splintering of heated chips or removal of long chips may result in injury or burns.	Use protective appliances such as safety covers and goggles. Ensure that the machine has stopped before removing chips. Wear protective gloves and use appropriate tools.
	Sparks during the cutting process as well as heat created by damages or cutting chips can cause fire.	Do not work in places where there is a risk of fire or explosion. If using non-water soluble cutting oil, take appropriate fire precautions.
	Vibrations caused by inappropriately balanced fixtures can lead to tools taking damage during high-speed rotations, which can cause injuries.	Use protective appliances such as protective gloves. Ensure that there are no vibrations or unusual noises during such processes.
	Injuries can easily result from direct contact with burr on the workpiece.	It is not recommended to touch the tools with bare hands.
All clamp-on type tools	If tools or components are not fixed firmly to the machine, they may loosen during machining and cause injury.	To install the tool components, clean the tool seat and attach the components to the machine. Then set up the inserts. Make sure you use the provided wrench to secure the inserts and their components. Do not use any other tools.
	Do not use casing pipes to fasten inserts or tools. Over-fastening can cause damage and splintering.	Do not use auxiliary tools such as casing pipes. Only use the specified wrench.
	Cutting plates or components may explode during high-speed rotations due to centripetal force. Careful operation is required to prevent accidents.	Ensure that the tools are used within their range of applications and follow the instructions as well as the product samples.
Others	Any other use of the tools may damage machines and tools.	Strictly follow the instructions in the manual.

Finally: These notes specify safety principles. Follow the operating instructions for tools and consider the product samples or contact your technical advisor. We are not liable for accidents caused by changes to the tools.



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