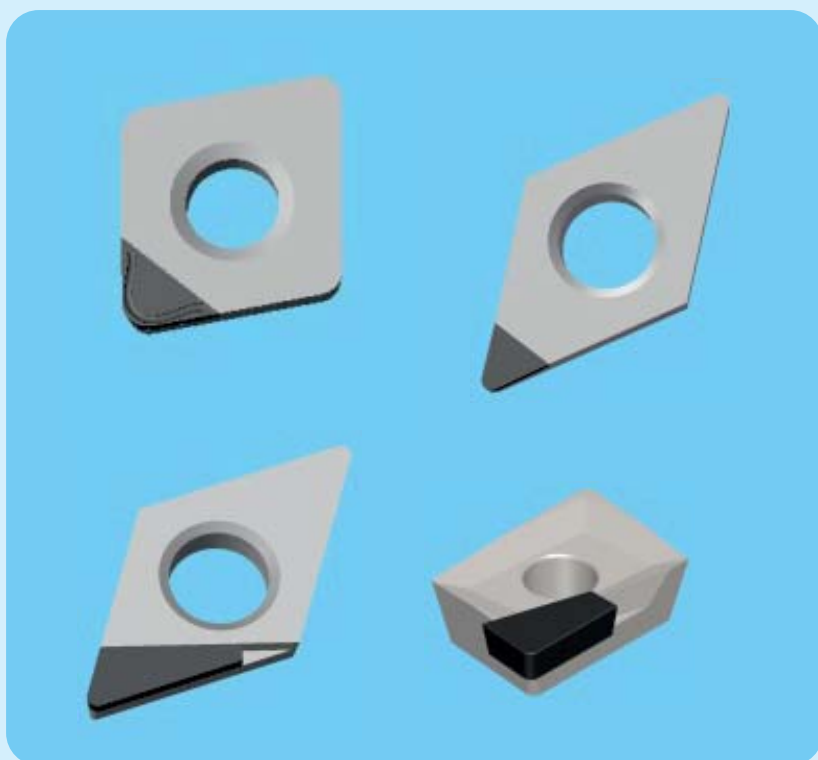


hofer

PCD REZNI ALATI
PCD CUTTING TOOLS
PKD WERKZEUGE



 **TOKARENJE-GLODANJE**
 **TURNING-MILLING**
 **DREHEN-FRAESEN**

PCD

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PCD

**O NAMA
ABOUT US/
UBER UNS**



Tvrtka HOFER PRECIZNI ALATI d.o.o. osnovana je 1991. godine u Jastrebarskom, Hrvatska. Ulaganjem u nabavu novih strojeva i uvođenjem novih tehnologija tvrtka HOFER je proširila proizvodnju PCBN i PCD reznih alata za tokarenje, glodanje, razvrtavanje i upuštanje. Cilj naše organizacije je isporučivanje proizvoda i usluga visoke kvalitete za ispunjavanje potreba i očekivanja naših kupaca.

Company HOFER PRECIZNI ALATI Ltd. was founded in 1991 in Jastrebarsko, Croatia. By investing in purchase of new machines and by implementing new technologies company HOFER has expanded production capacity of PCBN and PCD tools for turning, milling, reaming and countersinking. Company HOFER goal is delivering products and services of high quality to fulfill our customers demands and expectations.

Firma Hofer PRECIZNI ALATI GmbH wurde im Jahr 1991 in Jastrebarsko, Kroatien gegründet. Durch die Investition in den Kauf neuer Maschinen und durch der Einführung neuer Technologien hat das Unternehmen den Betrieb und die Herstellung von CBN-und PKD-Werkzeuge für Drehen, Fräsen, Reiben und Senken erweitert. Firma Hofer Ziel ist es, Produkten und Dienstleistungen von höchster Qualität liefern für unsere Kunden Anforderungen und Erwartungen zu erfüllen.

PCD

SKUPINE MATERIJALA PREMA DIN 513
MATERIAL GROUPS ACCORDING TO DIN ISO 513/
MATERIALIEN GRUPPEN NACH DIN 513

ISO	Glavne skupine materijala <i>Main materials groups/Haupt-Materialien Gruppen</i>	PRIMJENJIVE SORTE PCBN/PCD <i>APPLICABLE PCBN/PCD GRADES</i> <i>ANWENDBAR PCBN/PKD SORTEN</i>
N	Aluminijske slitine, bakar, grafit, tvrdi metal, keramika <i>Al-alloys, copper, graphite, carbides, ceramics/ Al-Legierungen, Kupfer, Graphit, Hartmetallen, Keramik</i>	001, 002, 302, EM80

PCD

PCD REZNI MATERIJALI I ZNAČAJKE PCD CUTTING MATERIALS AND CHARACTERISTICS PCD SCHNEIDSTOFFE UND LEISTUNGEN

Polikristalni dijamant, PCD, je umjetno dobiveni, iznimno tvrdi materijal dobiven sinteriranjem slučajno usmjerenih čestica dijamanta u metalnoj matrici pod visokim pritiscima i temperaturama.

PCD je pogodan rezni materijal za visokobrzinsku obradu neželjeznih materijala, aluminija, drva, umjetnih materijala, bakra, mjedi i tvrdog metala.

Polycrystalline diamond, PCD, is a synthetic, extreme hard material produced out of sintered, randomly oriented diamond particles bonded in metal matrix under high pressures and temperatures.

PCD is applicable for high speed machining of non-ferrous materials, aluminum alloys, wood, synthetic materials, copper, brass, carbide, etc.

Polykristalliner Diamant, PKD, ist eine synthetisch hergestellte, extrem harte, untereinander verwachsene Masse von Diamantpartikeln mit Zufallorientierung in einer Metallmatrix. Es wird durch Zusammensintern von ausgewählten Diamantpartikeln bei hohem Druck und hohen Temperaturen hergestellt.

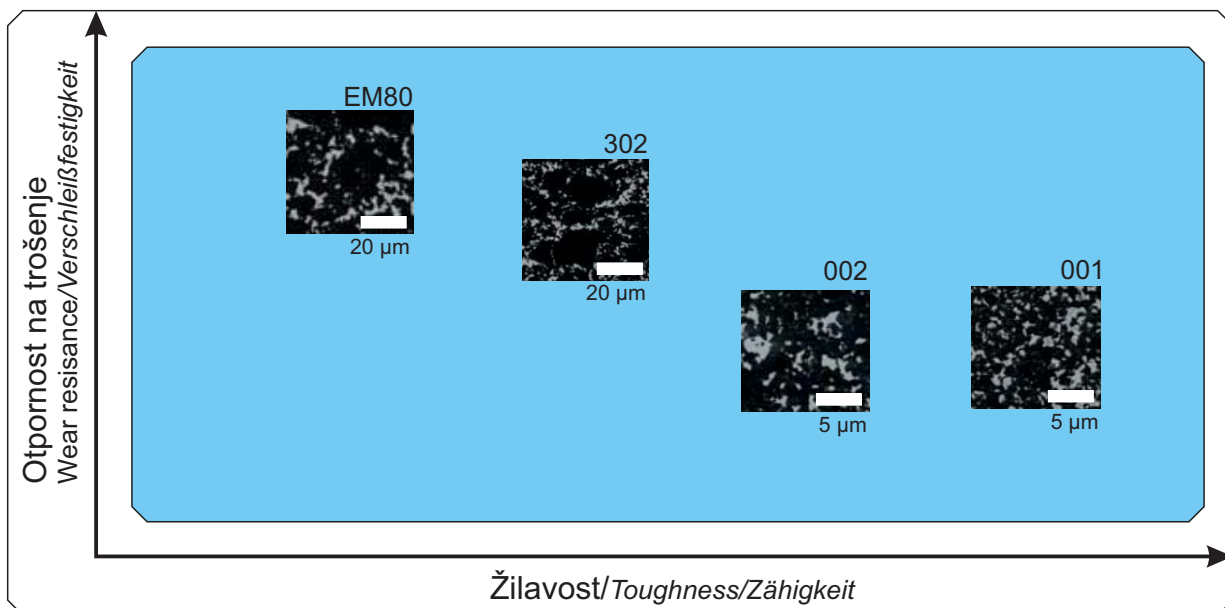
PKD kommt zum Einsatz als Schneidstoff in Zerspanungswerkzeugen der Holz, Kunststoff und Nichteisenmetall Bearbeitung.

PREDNOSTI PRIMJENE PCD-a

- iznimna otpornost na trošenje
- visoka tvrdoća
- dugi vijek trajanja oštrice
- odlična kakvoća obrađene površine
- za preciznu i stabilnu obradu
- visokobrzinska obrada
- nema naljepljivanja materijala

PCD ADVANTAGES/PKD VORTEILE

- superior wear resistance/extreme Verschleißfestigkeit
- high hardness/hohe Härte
- long tool life/hohe Standzeit
- excellent surface finishing/Sehr gute Oberflächenveredelung
- precise and stable cutting possible/stabile und präzise Schnitte möglich
- high speed machining/Hochgeschwindigkeitsbearbeitung
- prevented built-up edge/verhindert Aufbauschneidenbildung



PCD

PCD VRSTE REZNIH MATERIJALA

PCD GRADES/

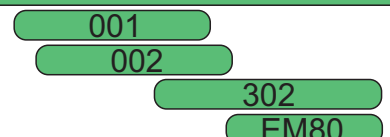


PKD SORTEN

	PCD tip/PCD GRADES/PKD SORTEN			
Tip Grade/Sorte	001	002	302	EM80
Veličina zrna(µm) Grain size/Körnung	0.5-1	2	30/2	36/16
Značajke Characteristics/ Eigenschaften	Odlična kvaliteta površine, odlična žilavost <i>Very good surface finishing, extreme chip resistance/ Sehr gute Oberflächenveredelung, sehr guter Zähigkeit</i>	Dobra kvaliteta površine i žilavost <i>Good surface finishing and chip resistance/ Gute Oberflächenveredelung und gute Zähigkeit</i>	Općenita primjena, iznimna tvrdoća i dobra toplinska stabilnost <i>General purposes, extreme hardness and good thermal stability/ Allgemeine Anwendung, extreme Härte und gute thermische Stabilität</i>	Iznimno visoka tvrdoća i otpornost na abraziju <i>Highest in the series in abrasion resistance/ Extrem Härte und hohe Abriebfestigkeit</i>

PODRUČJE PRIMJENE PCD-a

PCD APPLICATION AREA/

PKD ANWENDUNGSBEREICH

ISO	N	S	K
Materijal obrade Workpiece material/ Werkstückmaterial	Neželjezni materijali (Aluminijske legure)/ <i>Non-ferrous material(Al-alloys)/ Nichteisenmetall(Al-Legierungen)</i>	Ti superlegure <i>Ti superalloys/ Titan Superlegierungen</i>	Sivi lijev, nodularni lijev <i>Gray cast, nodular cast/ Grauguss, Sphäroguss</i>
Opseg obrade Cutting range/ Schnittbereich	←————→	←————→	←————→
	Fino <i>Finishing/ Schlichten</i>	Fino <i>Finishing/ Schlichten</i>	Fino <i>Finishing/ Schlichten</i>
	Grubo <i>Roughing/ Schruppen</i>	Grubo <i>Roughing/ Schruppen</i>	Grubo <i>Roughing/ Schruppen</i>
PCD tip PCD grade/ PKD Sorte			

PCD

PREPORUČENI PARAMETRI OBRADE ZA PCD ALATE PCD TOOLS RECOMMENDED CUTTING CONDITIONS/ PKD WERKZEUGE EMPFOHLENE SCHNITTWERTE

Materijal obratka <i>Workpiece material/ Werkstückmaterial</i>	Parametri obrade PCD <i>PCD Cutting conditions /PKD Bearbeitung Parameter</i>		
	v_c (m/min)	a_p (mm)	f(mm/rev)
Aluminijske legure <i>Aluminum alloys/ Aluminium Legierungen</i>	300-2000	0.1-10	0.03-0.6
Bakar, mjed, bronca <i>Copper, brass, bronze/ Kupfer, Messing, Bronze</i>	300-1000	0.1-5	0.03-0.5
Magnezijeve slitine <i>Magnesium alloy/ Magnesiumlegierung</i>	400-1200	0.1-5	0.03-0.5
Keramika <i>Ceramics/Keramik</i>	10-300	0.1-0.5	0.05-0.3
Grafit <i>Graphite/Graphit</i>	100-1000	0.2-3	0.1-0.2
Plastika ojačana ugličnim vlaknima <i>Carbon fibre reinforced plastics/ Kohlefaserverstärkten Kunststoffen</i>	100-600	0.1-5	0.05-0.5
Tvrđi metal(<17% Co) <i>Carbide/Hartmetallen</i>	10-50	<0.5	0.03-0.2
Titanove slitine <i>Titanium alloys/ Titanlegierungen</i>	100-300	<1.0	0.05-0.2
Sivi lijev, nodularni lijev <i>Gray cast iron, nodular cast iron/Grauguss, Sphäroguss</i>	100-300	0.2-1.0	0.08-0.2

*Napomena: kod obrade materijala PCD alatima obavezno koristiti sredstvo za hlađenje.

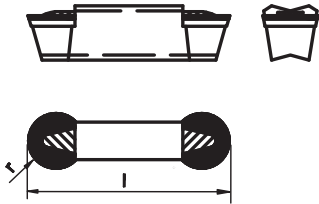
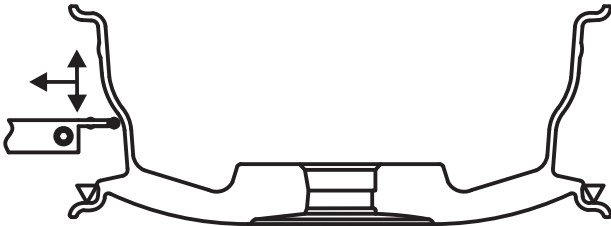
Note: use cooling fluid for machining with PCD tools.

Bemerkung: Kühlflüssigkeit notwendig für die Bearbeitung mit PKD-Werkzeugen.

PCD

PRIMJERI IZ PRIMJENE PCD-a PCD APPLICATION EXAMPLES/ PKD ANWENDUNGSBEISPIELE

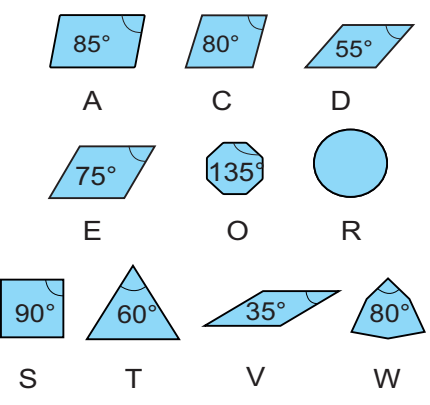
OBRADA ALUMINIJSKIH NAPLATAKA ALUMINUM WHEEL MACHINING/ALUMINIUM FELGEN BEARBEITUNG

Materijal <i>Material/Material</i>	AlSi10Mg		 <p>LOMAČ STRUGOTINE CHIPBREAKER GEOMETRY SPANBRECHER GEOMETRIE</p>
Tip zahvata <i>Operation/Betrieb</i>	Vanjsko tokarenje <i>External turning/ Außendrehen</i>		
Mjerilo vrednovanja <i>Criterion/Kriterium</i>	Trajnost alata <i>Tool life/Standzeit</i>		
Držač alata <i>Toolholder/Werkzeughalter</i>	CZAPR2525M40		
Rezna pločica <i>Insert/Wendepalte</i>	GXGP254.0 PCD 302/2R4		
Parametri obrade <i>Cutting conditions/ Bearbeitungsparameter</i>	Vc, m/min	1800	
	f, mm/rev	0.4	
	ap, mm	2	
Rezultati(kom/rezni vrh) <i>Results (pieces/edge)/ Ergebnisse(Stück/Schneid)</i>	3.500		

PCD

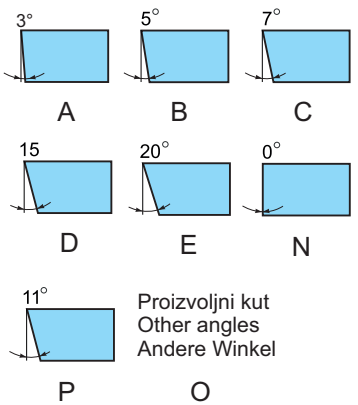
ISO SUSTAV OZNAČAVANJA REZNIH PLOČICA INDEXABLE INSERT ISO IDENTIFICATION SYSTEM/ ISO WENDEPLATTEN BEZEICHNUNGSSYSTEM

1 OBLIK
SHAPE/PLATTENFORM



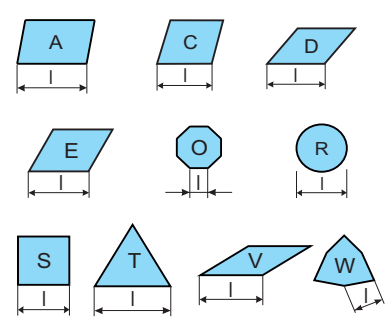
A 85° C 80° D 55°
E 75° O 135° R
S 90° T 60° V 35° W 80°

2 SLOBODNI KUT
CLEARANCE ANGLE/FREIWINKEL



A 3° B 5° C 7°
D 15° E 20° N 0°
P 11° O Proizvoljni kut
Other angles
Andere Winkel

5 DULJINA REZNOG RUBA
CUTTING EDGE LENGTH/
SCHNEIDELANGE

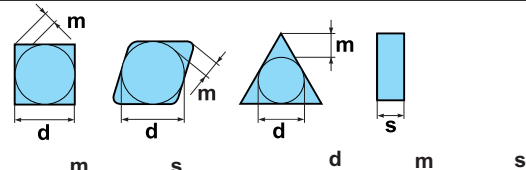


A C D
E O R
S T V W

1 **2** **3** **4** **5** **6** **7**

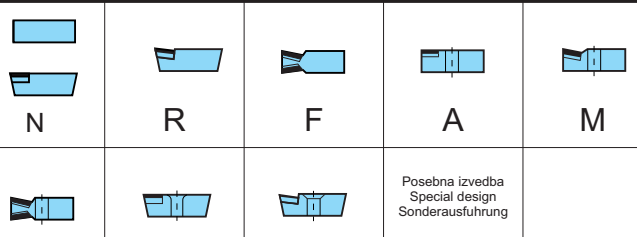
D N M A 15 06 08

3 DOPUŠTENA ODPUSTAPANJA
TOLERANCES/TOLERANZEN



	d	m	s		d	m	s
A	±0.025	±0.005	±0.025	J	±0.05 - ±0.15	±0.005	±0.025
F	±0.013			K		±0.013	
C	±0.025	L		±0.025			
H	±0.013	M		±0.08		±0.013	
E	±0.025	N		±0.20		±0.025	
G		±0.13	U	±0.08- ±0.25	±0.013	±0.013	

4 TIP REZNE PLOČICE
INSERTS TYPE/PLATTENTYP

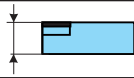


N	R	F	A	M
G	W	T	X	

Posebna izvedba
Special design
Sonderausführung

PCD

6 DEBLJINA PLOČICE INSERT THICKNESS/ PLATTENDICKE

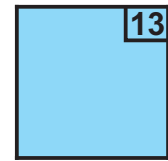
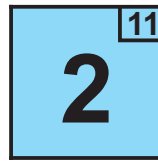
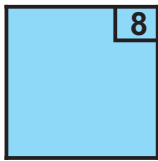


ISO	mm
02	2.38
03	3.18
T3	3.97
04	4.76
06	6.35
07	7.94
08	8.00
09	9.52

7 POLUMJER VRHA ALATA CORNER RADIUS/ECKENRADIUS



ISO	mm
00	0
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0



8 GEOMETRIJA REZNOG VRHA CORNER CNFIGURATION/ WIPER SCHNEIDEKANT

W

fazeta za zaglađivanje
wiper edge for higher feed/
WIPER Schneide für höhere Vorschübe

KUT GLAVNE OŠTRICE KOD GLODANJA MAJOR CUTTING EDGE ANGLE FOR MILLING/ FRÄSWENDEPLATTEN GROßEN SCHNEIDENWINKEL

A – 45° F – 85°
D – 60° P – 90°
E – 75°

SLOBODNI KUT FAZE ZA ZAGLAĐIVANJE KOD GLODANJA MILLING INSERTS CLEARANCE OF WIPER EDGE/FRÄSWENDEPLATTEN FREIWINKEL VON WIPER SCHNEIDEKANTE

A – 3° F – 25°
B – 5° G – 30°
C – 7° N – 0°
D – 15° P – 11°
E – 20°

9 FAZETA CHAMFER/SCHNEIDEKANTE

za detaljan pregled fazete
provjeriti slijedeću stranu
detailed edge preparation on the next
page/detaillierte Vorbereitung der
Schneidekante auf der nächsten Seite

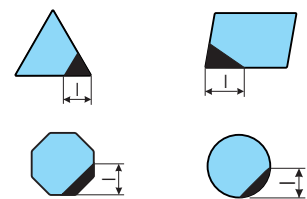
10 PCD/PCBN TIP GRADE/SORTE

odrediti prema materijalu obrade
determine by machined material/
wählen von bearbeiteten Material

11 BROJ REZNIH VRHOVA NUMBER OF CUTTING EDGES/ ANZAHL DER SCHNEIDEN

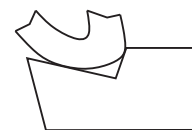
1-8

12 DULJINA REZNOG DIJELA CUTTING EDGE LENGTH/ SCHNEIDEKANTENLÄNGE C, D, S, T, V, XL



13 TIP LOMAČA CHIPBREAKER DESIGN/ SPANLEITSTUFE TYP

odrediti prema tipu obrade
determine by machining type/
wählen nach Bearbeitung Typ



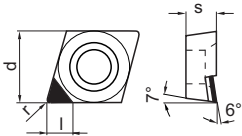
PCD

PCD TOKARENJE PCD TURNING/ PCD DREHEN

■ CCMT

pločice s 1 reznim vrhom
*tipped inserts, 1 cutting edge/
Wendepplatten mit Einsatz, 1 Schneide*

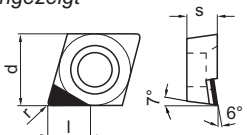
*Primjer narudžbe/Order example/Bestellungsbeispiel
CCMT 09T304 302/C4*

	ISO CCMT	mm				PCD			
		d	s	l	r	001	002	302	EM80
	060202	6.35	2.38	3	0.2	●			
	060204	6.35	2.38	3	0.4	●			
	09T304	9.525	3.97	4	0.4	●		●	
	09T308	9.525	3.97	4	0.8	●		●	
	120404	12.7	4.76	5	0.4	●		●	
	120408	12.7	4.76	5	0.8	●		●	

■ CCMT L/R

pločice s 1 reznim vrhom
*tipped inserts, 1 cutting edge/
Wendepplatten mit Einsatz, 1 Schneide*

*Primjer narudžbe/Order example/Bestellungsbeispiel
CCMTR 09T304 302/C5*

	ISO CCMT L/R	mm				PCD			
		d	s	l	r	001	002	302	EM80
<p><i>desnorezna pločica prikazana right hand shown rechts angezeigt</i></p> 	060202	6.35	2.38	4	0.2	●			
	060204	6.35	2.38	4	0.4	●			
	09T304	9.525	3.97	5	0.4	●		●	
	09T308	9.525	3.97	5	0.8	●		●	
	120404	12.7	4.76	6	0.4	●		●	
	120408	12.7	4.76	6	0.8	●		●	

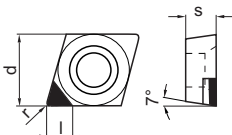
PCD

PCD TOKARENJE PCD TURNING/ PCD DREHEN

■ CCMW

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendepplatten mit Einsatz, 1 Schneide

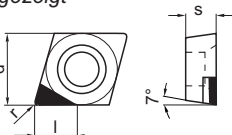
Primjer narudžbe/Order example/Bestellungsbeispiel
CCMW 09T304 302/C4

	ISO CCMW	mm				PCD			
		d	s	l	r	001	002	302	EM80
	060202	6.35	2.38	3	0.2	●			
	060204	6.35	2.38	3	0.4	●			
	09T304	9.525	3.97	4	0.4	●		●	
	09T308	9.525	3.97	4	0.8	●		●	
	120404	12.7	4.76	5	0.4	●		●	
	120408	12.7	4.76	5	0.8	●		●	

■ CCMW L/R

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendepplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungsbeispiel
CCMWR 09T304 302/C5

	ISO CCMW L/R	mm				PCD			
		d	s	l	r	001	002	302	EM80
<p>desnorezna pločica prikazana right hand shown rechts angezeigt</p> 	060202	6.35	2.38	4	0.2	●			
	060204	6.35	2.38	4	0.4	●			
	09T304	9.525	3.97	5	0.4	●		●	
	09T308	9.525	3.97	5	0.8	●		●	
	120404	12.7	4.76	6	0.4	●		●	
	120408	12.7	4.76	6	0.8	●		●	

PCD

PCD TOKARENJE

PCD TURNING/

PCD DREHEN

■ CNMA

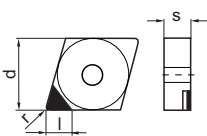
pločice s 1 reznim vrhom

tipped inserts, 1 cutting edge/

Wendepplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungsbeispiel

CNMA 120408 302/C5

	ISO CNMA	mm				PCD			
		d	s	l	r	001	002	302	EM80
	120404	12.7	4.76	5	0.4			●	
	120408	12.7	4.76	5	0.8			●	
	120412	12.7	4.76	5	1.2			●	

■ CNMX

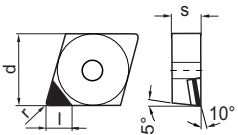
pločice s 1 reznim vrhom

tipped inserts, 1 cutting edge/

Wendepplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungsbeispiel

CNMX 120408 302/C5

	ISO CNMX	mm				PCD			
		d	s	l	r	001	002	302	EM80
	120404	12.7	4.76	5	0.4			●	
	120408	12.7	4.76	5	0.8			●	
	120412	12.7	4.76	5	1.2			●	

■ DCMT

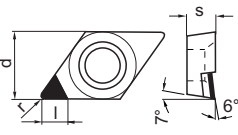
pločice s 1 reznim vrhom

tipped inserts, 1 cutting edge/

Wendepplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungsbeispiel

DCMT 11T308 001/D4

	ISO DCMT	mm				PCD			
		d	s	l	r	001	002	302	EM80
	070202	6.35	2.38	4	0.2	●			
	070204	6.35	2.38	4	0.4	●			
	11T302	9.525	3.97	4	0.2	●		●	
	11T304	9.525	3.97	4	0.4	●		●	
	11T308	9.525	3.97	4	0.8	●		●	
	150404	12.7	4.76	5	0.4	●		●	
	150408	12.7	4.76	5	0.8	●		●	

PCD

PCD TOKARENJE

PCD TURNING/

PCD DREHEN

■ DCMT L/R

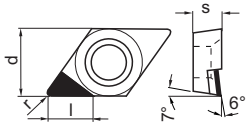
pločice s 1 reznim vrhom

tipped inserts, 1 cutting edge/

Wendepplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungbeispiel

DCMTL 070204 001/D5

	ISO DCMT L/R	mm				PCD			
		d	s	l	r	001	002	302	EM80
<p>desnorezna pločica prikazana right hand shown rechts angezeigt</p> 	070202	6.35	2.38	5	0.2	●			
	070204	6.35	2.38	5	0.4	●			
	11T302	9.525	3.97	7	0.2	●		●	
	11T304	9.525	3.97	7	0.4	●		●	
	11T308	9.525	3.97	7	0.8	●		●	
	150404	12.7	4.76	9	0.4			●	
	150408	12.7	4.76	9	0.8			●	

■ DCMW

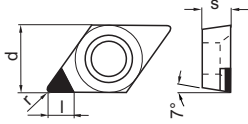
pločice s 1 reznim vrhom

tipped inserts, 1 cutting edge/

Wendepplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungbeispiel

DCMW 070204 001/D4

	ISO DCMW	mm				PCD			
		d	s	l	r	001	002	302	EM80
	070202	6.35	2.38	4	0.2	●			
	070204	6.35	2.38	4	0.4	●			
	11T302	9.525	3.97	4	0.2	●		●	
	11T304	9.525	3.97	4	0.4	●		●	
	11T308	9.525	3.97	4	0.8	●		●	
	150404	12.7	4.76	5	0.4			●	
	150408	12.7	4.76	5	0.8			●	

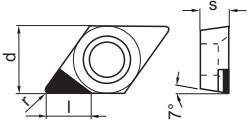
PCD

PCD TOKARENJE PCD TURNING/ PCD DREHEN

DCMW L/R

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendepplatten mit Einsatz, 1 Schneide


Primjer narudžbe/Order example/Bestellungsbeispiel
DCMWL 070204 001/D5

	ISO DCMW L/R	mm				PCD			
		d	s	l	r	001	002	302	EM80
<p>desnorezna pločica prikazana right hand shown rechts angezeigt</p> 	070202	6.35	2.38	5	0.2	●			
	070204	6.35	2.38	5	0.4	●			
	11T302	9.525	3.97	7	0.2	●		●	
	11T304	9.525	3.97	7	0.4	●		●	
	11T308	9.525	3.97	7	0.8	●		●	
	150404	12.7	4.76	9	0.4			●	
	150408	12.7	4.76	9	0.8			●	

DNMA

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendepplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungsbeispiel
DNMA 150408 302/D5

	ISO DNMA	mm				PCD			
		d	s	l	r	001	002	302	EM80
	150404	12.7	4.76	5	0.4			●	
	150408	12.7	4.76	5	0.8			●	
	150412	12.7	4.76	6	1.2			●	
	150604	12.7	6.35	5	0.4			●	
	150608	12.7	6.35	5	0.8			●	
	150612	12.7	6.35	6	1.2			●	


PCD

PCD TOKARENJE PCD TURNING/ PCD DREHEN

■ DNMX

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendeplatten mit Einsatz, 1 Schneide


Primjer narudžbe/Order example/Bestellungbeispiel
DNMX 150612 302/D6

	ISO DNMX	mm				PCD			
		d	s	l	r	001	002	302	EM80
	150404	12.7	4.76	5	0.4			●	
	150408	12.7	4.76	5	0.8			●	
	150412	12.7	4.76	6	1.2			●	
	150604	12.7	6.35	5	0.4			●	
	150608	12.7	6.35	5	0.8			●	
	150612	12.7	6.35	6	1.2			●	

■ SCMT

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendeplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungbeispiel
SCMT 09T308 302/S4

	ISO SCMT	mm				PCD			
		d	s	l	r	001	002	302	EM80
	09T304	9.525	3.97	4	0.4			●	
	09T308	9.525	3.97	4	0.8			●	
	120404	12.7	4.76	4	0.4			●	
	120408	12.7	4.76	4	0.8			●	
	120412	12.7	4.76	5	1.2			●	

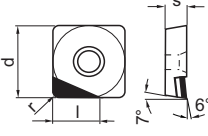
PCD

PCD TOKARENJE PCD TURNING/ PCD DREHEN

■ SCMT L/R

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendepplatten mit Einsatz, 1 Schneide

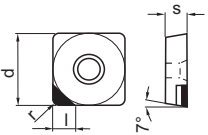
Primjer narudžbe/Order example/Bestellungsbeispiel
SCMTR 120408 302/S9

	ISO SCMT L/R	mm				PCD			
		d	s	l	r	001	002	302	EM80
<p>desnorezna pločica prikazana right hand shown rechts angezeigt</p> 	09T304	9.525	3.97	7	0.4			●	
	09T308	9.525	3.97	7	0.8			●	
	120404	12.7	4.76	7	0.4			●	
	120408	12.7	4.76	9	0.8			●	
	120412	12.7	4.76	9	1.2			●	

■ SCMW

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendepplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungsbeispiel
SCMW 09T304 302/S4

	ISO SCMW	mm				PCD			
		d	s	l	r	001	002	302	EM80
	09T304	9.525	3.97	4	0.4			●	
	09T308	9.525	3.97	4	0.8			●	
	120404	12.7	4.76	4	0.4			●	
	120408	12.7	4.76	4	0.8			●	
	120412	12.7	4.76	5	1.2			●	

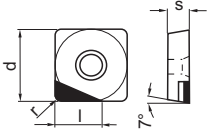
PCD

PCD TOKARENJE PCD TURNING/ PCD DREHEN

■ SCMW L/R

pločice s 1 reznim vrhom
*tipped inserts, 1 cutting edge/
Wendepplatten mit Einsatz, 1 Schneide*

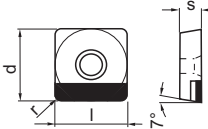
*Primjer narudžbe/Order example/Bestellungbeispiel
SCMWR 09T308 302/S7*

	ISO SCMW L/R	mm				PCD			
		d	s	l	r	001	002	302	EM80
<p><i>desnorezna pločica prikazana right hand shown rechts angezeigt</i></p> 	09T304	9.525	3.97	7	0.4			●	
	09T308	9.525	3.97	7	0.8			●	
	120404	12.7	4.76	7	0.4			●	
	120408	12.7	4.76	9	0.8			●	
	120412	12.7	4.76	9	1.2			●	

■ SCMW

pločice sa segmentom uzduž rezne oštrice
*tipped inserts, whole cutting edge/
Wendepplatten mit Einsätze, ganze Schneide*

*Primjer narudžbe/Order example/Bestellungbeispiel
SCMW 120404 302/L12*

	ISO SCMW	mm				PCD			
		d	s	l	r	001	002	302	EM80
	09T304	9.525	3.97	9.52	0.4			●	
	09T308	9.525	3.97	9.52	0.8			●	
	120404	12.7	4.76	12.7	0.4			●	
	120408	12.7	4.76	12.7	0.8			●	
	120412	12.7	4.76	12.7	1.2			●	

PCD

PCD TOKARENJE

PCD TURNING/

PCD DREHEN

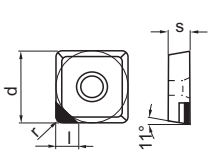
■ SPMW

pločice s 1 reznim vrhom

tipped inserts, 1 cutting edge/

Wendepplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungbeispiel
SPMW 090304 302/S4

	ISO SPMW	mm				PCD			
		d	s	l	r	001	002	302	EM80
	090304	9.525	3.18	4	0.4			●	
	090308	9.525	3.18	4	0.8			●	
	120404	12.7	4.76	4	0.4			●	
	120408	12.7	4.76	4	0.8			●	
	120412	12.7	4.76	5	1.2			●	

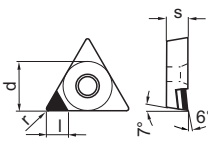
■ TCMT

pločice s 1 reznim vrhom

tipped inserts, 1 cutting edge/

Wendepplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungbeispiel
TCMT 16T304 001/T4

	ISO TCMT	mm				PCD			
		d	s	l	r	001	002	302	EM80
	090204	5.56	2.38	3	0.4	●		●	
	110204	6.35	2.38	3	0.4	●		●	
	110208	6.35	2.38	4	0.8	●		●	
	16T304	9.525	3.97	4	0.4			●	
	16T308	9.525	3.97	4	0.8			●	

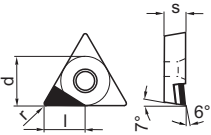
PCD

PCD TOKARENJE PCD TURNING/ PCD DREHEN

TCMT L/R

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendeplatten mit Einsatz, 1 Schneide

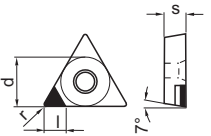
Primjer narudžbe/Order example/Bestellungbeispiel
TCMTL 110208 001/T6

	ISO TCMT L/R	mm				PCD			
		d	s	l	r	001	002	302	EM80
<p>desnorezna pločica prikazana right hand shown rechts angezeigt</p> 	090204	5.56	2.38	5	0.4	●		●	
	110204	6.35	2.38	6	0.4	●		●	
	110208	6.35	2.38	6	0.8	●		●	
	16T304	9.525	3.97	6	0.4			●	
	16T308	9.525	3.97	7	0.8			●	

TCMW

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendeplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungbeispiel
TCMW 16T304 302/T4

	ISO TCMW	mm				PCD			
		d	s	l	r	001	002	302	EM80
	090204	5.56	2.38	3	0.4	●		●	
	110204	6.35	2.38	3	0.4	●		●	
	110208	6.35	2.38	3	0.8	●		●	
	16T304	9.525	3.97	4	0.4			●	
	16T308	9.525	3.97	4	0.8			●	

PCD

PCD TOKARENJE

PCD TURNING/

PCD DREHEN

TCMW L/R

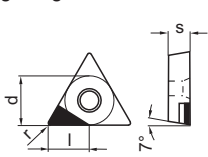
pločice s 1 reznim vrhom

tipped inserts, 1 cutting edge/

Wendeplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungbeispiel

TCMWR 16T304 302/T6

	ISO TCMW L/R	mm				PCD			
		d	s	l	r	001	002	302	EM80
<p>desnorezna pločica prikazana right hand shown rechts angezeigt</p> 	090204	5.56	2.38	5	0.4	●		●	
	110204	6.35	2.38	6	0.4	●		●	
	110208	6.35	2.38	6	0.8	●		●	
	16T304	9.525	3.97	6	0.4			●	
	16T308	9.525	3.97	7	0.8			●	

TNMA

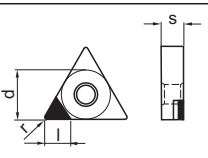
pločice s 1 reznim vrhom

tipped inserts, 1 cutting edge/

Wendeplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungbeispiel

TNMA 160412 302/T6

	ISO TNMA	mm				PCD			
		d	s	l	r	001	002	302	EM80
	160404	9.525	4.76	5	0.4			●	
	160408	9.525	4.76	5	0.8			●	
	160412	9.525	4.76	6	1.2			●	

TNMX

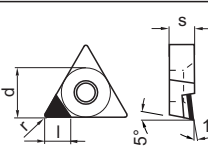
pločice s 1 reznim vrhom

tipped inserts, 1 cutting edge/

Wendeplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungbeispiel

TNMX 160408 302/T5

	ISO TNMX	mm				PCD			
		d	s	l	r	001	002	302	EM80
	160404	9.525	4.76	5	0.4			●	
	160408	9.525	4.76	5	0.8			●	
	160412	9.525	4.76	6	1.2			●	

PCD

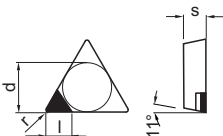
PCD TOKARENJE

PCD TURNING/
PCD DREHEN

TPMN

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendepplatten mit Einsatz, 1 Schneide

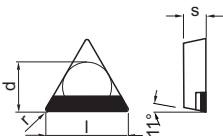
Primjer narudžbe/Order example/Bestellungbeispiel
TPMN 160308 302/T5

	ISO TPMN	mm				PCD			
		d	s	l	r	001	002	302	EM80
	160304	9.525	3.18	5	0.4			●	
	160308	9.525	3.18	5	0.8			●	
	160312	9.525	3.18	6	1.2			●	

TPMN

pločice sa segmentom uzduž rezne oštrice
tipped inserts, whole cutting edge/
Wendepplatten mit Einsatz, ganze Schneide

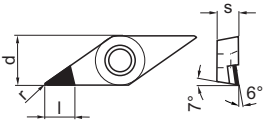
Primjer narudžbe/Order example/Bestellungbeispiel
TPMN 160308 002/L16

	ISO TPMN	mm				PCD			
		d	s	l	r	001	002	302	EM80
	160304	9.525	3.18	16.5	0.4		●	●	
	160308	9.525	3.18	16.5	0.8		●	●	
	160312	9.525	3.18	16.5	1.2		●	●	

VCMT

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendepplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungbeispiel
VCMT 160408 302/V5

	ISO VCMT	mm				PCD			
		d	s	l	r	001	002	302	EM80
	110302	6.35	3.18	4	0.2	●		●	
	110304	6.35	3.18	4	0.4	●		●	
	130304	7.94	3.18	5	0.4	●		●	
	160404	9.525	4.76	5	0.4	●		●	●
	160408	9.525	4.76	5	0.8	●		●	●
	160412	9.525	4.76	5	1.2	●		●	●

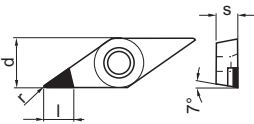
PCD

PCD TOKARENJE PCD TURNING/ PCD DREHEN

■ VCMW

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendeplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungbeispiel
VCMW 110304 302/V4

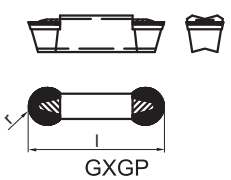
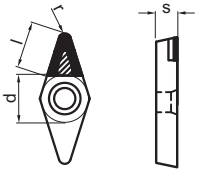
	ISO VCMW	mm				PCD			
		d	s	l	r	001	002	302	EM80
	110302	6.35	3.18	4	0.2	●		●	
	110304	6.35	3.18	4	0.4	●		●	
	130304	7.94	3.18	5	0.4	●		●	
	160404	9.525	4.76	5	0.4	●		●	●
	160408	9.525	4.76	5	0.8	●		●	●
	160412	9.525	4.76	5	1.2	●		●	●

PCD TOKARENJE ALUMINIJSKIH NAPLATAKA PCD ALUMINUM WHEELS TURNING/ PCD ALUMINIUMFELGEN DREHEN

■ GXGP; VCMT

pločice s ugrađenim tvrdometalnim lomačima strugotine
tipped inserts with integrated carbide chipbreaker for better chipcontrol/
Wendeplatten mit integriertem Hartmetall Spanbrecher
für bessere Spankontrolle

Primjer narudžbe
Order example/Bestellungbeispiel
GXGP 254.0 302/2R4
VCMT 160412 302/V9

	ISO	mm				PCD			
		d	s	l	r	001	002	302	EM80
	GXGP 253.0			31	3.0			●	●
	GXGP 254.0			31	4.0			●	●
	VCMT 160412 V9	9.525	4.76	9	1.2			●	●
	VCMT 220512 V9	12.7	5.56	9	1.2			●	●

PCD

PCD TOKARENJE

PCD TURNING/

PCD DREHEN

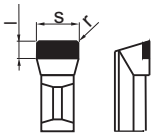
MRCN

pločice sa segmentima, 1 rezni vrh

tipped inserts, 1 cutting edge/

Wendepplatten mit Einsätze, 1 Schneide

Primjer narudžbe/Order example/Bestellungbeispiel
MRCN2.2 302

	ISO MRCN	mm				PCD			
		d	s	l	r	001	002	302	EM80
	1.6		1.60	2.5	0.2			●	
	2.2		2.20	2.5	0.2			●	
	3.0		3.0	3	0.2			●	
	4.0		4.0	3	0.2			●	
	5.0		5.0	4	0.3			●	
	6.0		6.6	4	0.4			●	

*Pripadajući držač CZCB/Belonging toolholder CZCB/Entsprechenden Werkzeughalter CZCB

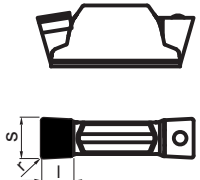
MTC

pločice sa segmentima, 1 rezni vrh

tipped inserts, 1 cutting edge/

Wendepplatten mit Einsätze, 1 Schneide

Primjer narudžbe/Order example/Bestellungbeispiel
MTC3.0 302

	ISO MTC	mm				PCD			
		d	s	l	r	001	002	302	EM80
	3.0		3.0	3.5	0.2			●	
	4.0		4.0	3.5	0.2			●	

*Pripadajući držač CZCF, CZCP, CZGF/
Belonging toolholder CZCF, CZCP, CZGF/
Entsprechenden Werkzeughalter CZCF, CZCP, CZGF

PCD

PCD LOMAČI STRUGOTINE

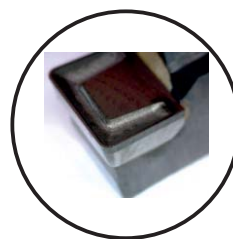
*PCD CHIPBREAKERS/
PCD SPANLEITSTUFEN*

PREDNOSTI

- odvođenje strugotine, smanjeni otpor rezanja, niža temperatura obrade
- bolja kvaliteta površine i povećana trajnost alata
- smanjenje vremena obrade, sniženje troškova

Advantages/Vorteile

- *maximum chip control, soft cut, lower cutting temperature/
kontrollierter Spanbruch, weicher Schnitt, minimierte Wärmeentwicklung,*
- *better surface and increased tool life/ bessere Oberflächengüten und erhöhte Standzeit*
- *reduced cycle time and cost saving/ reduzierte Zykluszeit und Kostenersparnis*



CBHM:

- pozitivna geometrija za grubu i finu obradu za dubine rezanja ap 0.5-2 mm
- *positive geometry for roughing and finishing for depth of cut range ap 0.5-2 mm/*
- *positive Geometrie zum Schrappen und Schlichten für Schnittiefe Bereich ap 0.5-2 mm*

CBHF:

- pozitivna geometrija za finu i superfinu obradu za dubine rezanja ap 0.05-1 mm
- *positive geometry for finishing and superfinishing for depth of cut range ap 0.05-1 mm/*
- *positive Geometrie zum Schrappen und Schlichten für Schnittiefe Bereich ap 0.05-1 mm*



Strugotina odrezana bez lomača
Chip cut without chipbreaker/
Späne ohne Spanleitstufe



Strugotina odrezana s lomačem
Chip cut with chipbreaker/
Späne mit Spanleitstufe

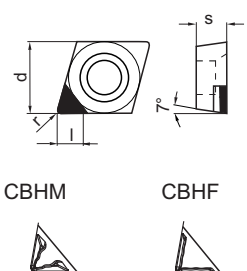
PCD

PCD TOKARENJE- PLOČICE S LOMAČEM STRUGOTINE PCD TURNING- INSERTS WITH CHIPBREAKER/ PCD DREHEN- WENDEPLATTEN MIT SPANLEITSTUFEN

■ CCMT CB..

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendepplatten mit Einsatz, 1 Schneide

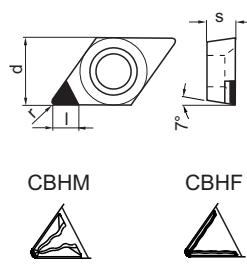
Primjer narudžbe/Order example/Bestellungsbeispiel
CCMT 09T304 302/C4 CBHF

 CBHM CBHF	ISO CCMT CB	mm				PCD			
		d	s	l	r	001	002	302	EM80
	060204	6.35	2.38	3	0.4			○	
	09T304	9.525	3.97	4	0.4			○	
	09T308	9.525	3.97	4	0.8			○	
	120404	12.7	4.76	5	0.4			○	
	120408	12.7	4.76	5	0.8			○	

■ DCMT CB..

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendepplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungsbeispiel
DCMT 11T304 302/D4 CBHM

 CBHM CBHF	ISO DCMT CB	mm				PCD			
		d	s	l	r	001	002	302	EM80
	070204	6.35	2.38	4	0.4			○	
	070208	6.35	2.38	4	0.8			○	
	11T304	9.525	3.97	4	0.4			○	
	11T308	9.525	3.97	4	0.8			○	

○ Dostupno na upit/Available on request/Auf Anfrage

PCD

PCD TOKARENJE- PLOČICE S LOMAČEM STRUGOTINE PCD TURNING- INSERTS WITH CHIPBREAKER/ PCD DREHEN- WENDEPLATTEN MIT SPANLEITSTUFEN

TCMT CB..

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendeplatten mit Einsatz, 1 Schneide

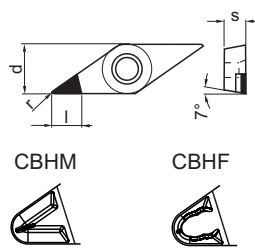
Primjer narudžbe/Order example/Bestellungbeispiel
TCMT 16T308 302/T5 CBHF

	ISO TCMT CB	mm				PCD			
		d	s	l	r	001	002	302	EM80
	090204	5.56	2.38	4	0.4			○	
	110204	6.35	2.38	4	0.4			○	
	16T304	9.525	3.97	4	0.4			○	
	16T308	9.525	3.97	5	0.8			○	

VCMT CB..

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
Wendeplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungbeispiel
VCMT 160412 302/V5 CBHF

	ISO VCMT CB	mm				PCD			
		d	s	l	r	001	002	302	EM80
	110304	6.35	3.18	4	0.4			○	
	160404	9.525	4.76	5	0.4			○	
	160408	9.525	4.76	5	0.8			○	
	160412	9.525	4.76	5	1.2			○	

○ Dostupno na upit/Available on request/Auf Anfrage

PCD

PCD GLODANJE

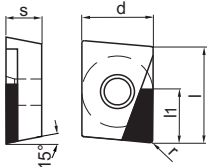
PCD MILLING/

PCD FRÄSEN

ADMW

pločice s 1 reznim vrhom, mogućnost brušenja
tipped inserts, 1 cutting edge, regrinding optional/
 Wendeplatten mit Einsatz, 1 Schneide, Nachschleifen möglich

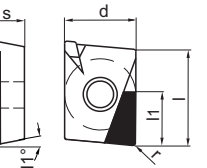
Primjer narudžbe
 Orderexample/Bestellungsbeispiel
 ADMW 1503PDR 302/X7L

	ISO ADMW PDR	mm					PCD			
		d	s	l ₁	l	r	001	002	302	EM80
	1503PDR X7L	9.525	3.18	7	15	0.8			●	
	1503PDR X9L	9.525	3.18	9	15	0.8			●	

APKT

pločice s 1 reznim vrhom, mogućnost brušenja
tipped inserts, 1 cutting edge, regrinding optional/
 Wendeplatten mit Einsatz, 1 Schneide, Nachschleifen möglich

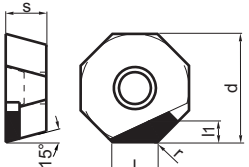
Primjer narudžbe
 Orderexample/Bestellungsbeispiel
 APKT 1604PDR 302/X7L

	ISO APKT PDR	mm					PCD			
		d	s	l ₁	l	r	001	002	302	EM80
	1003PDR X5L	6.35	3.18	5	9.52	0.2			●	
	1003PDR X7L	6.35	3.18	7	9.52	0.4			●	
	1604PDR X7L	9.525	4.76	7	16	0.4			●	
	1604PDR X9L	9.525	4.76	9	16	1.8			●	

ODMW

pločice s 1 reznim vrhom
tipped inserts, 1 cutting edge/
 Wendeplatten mit Einsatz, 1 Schneide

Primjer narudžbe/Order example/Bestellungsbeispiel
 ODMW 040408 302/X5L

	ISO ODMW	mm					PCD			
		d	s	l ₁	l	r	001	002	302	EM80
	040404 X5L	12.7	4.76	4	5	0.4			●	
	040408 X5L	12.7	4.76	4	5	0.8			●	

PCD

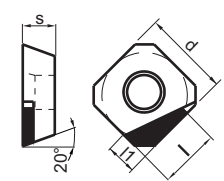
PCD GLODANJE

**PCD MILLING/
PCD FRÄSEN**

■ SEKW

pločice s 1 reznim vrhom
*tipped inserts, 1 cutting edge/
Wendeplatten mit Einsatz, 1 Schneide*

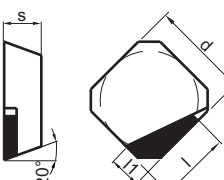
*Primjer narudžbe/Order example/Bestellungbeispiel
SEKW 1204AFN 302/X7L*

	ISO SEKW	mm					PCD			
		d	s	l ₁	l	r	001	002	302	EM80
	1204 AFN X7L	12.7	4.76	4	7				●	
	1204 AFN X9L	12.7	4.76	4	9				●	

■ SEKN

pločice s 1 reznim vrhom
*tipped inserts, 1 cutting edge/
Wendeplatten mit Einsatz, 1 Schneide*

*Primjer narudžbe/Order example/Bestellungbeispiel
SEKN 1204AFN 302/X9L*

	ISO SEKN	mm					PCD			
		d	s	l ₁	l	r	001	002	302	EM80
	1203 AFN X9L	12.7	3.18	5	9				●	
	1204 AFN X9L	12.7	4.76	5	9				●	
	1504 AFN X12L	15.9	4.76	5	12				●	

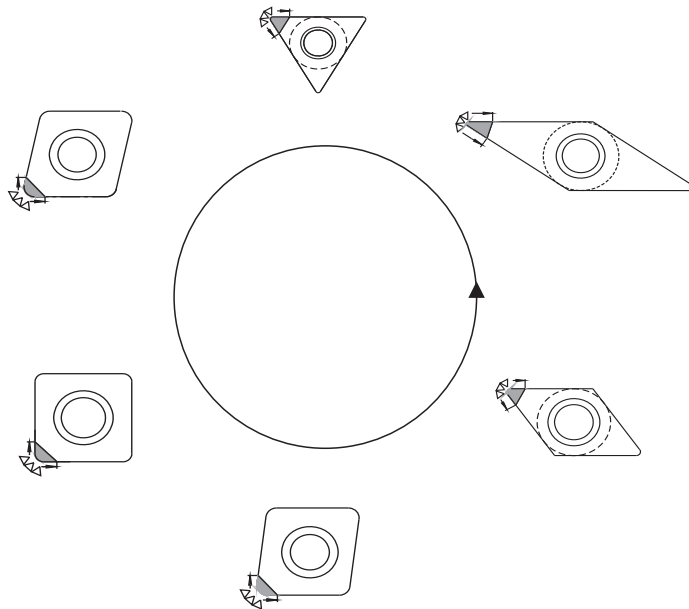
PCD

PCD BRUŠENJE I OBNOVA ALATA PCD RE-GRINDING AND TOOL RENEWAL SERVICE/ PCD NACHSCHLEIFEN UND WERKZEUGVERLÄNGERUNG SERVIS

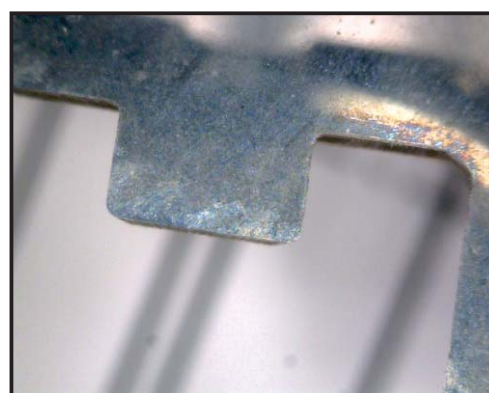
Tvrtka HOFER nudi usluge brušenja i obnove PCD alata. Razvrstavanjem i brušenjem alata postiže se kvaliteta rezne oštrice istovjetna kvaliteti novog alata. Za sva pitanja u vezi brušenja i prijedloga za smanjenje troškova obratite nam se s punim povjerenjem.

*Company HOFER offers grinding service of PCD tools.
By sorting and grinding worn tools, same cutting edge quality is achieved as with new tools.
For all further questions about grinding service, please contact us with full trust.*

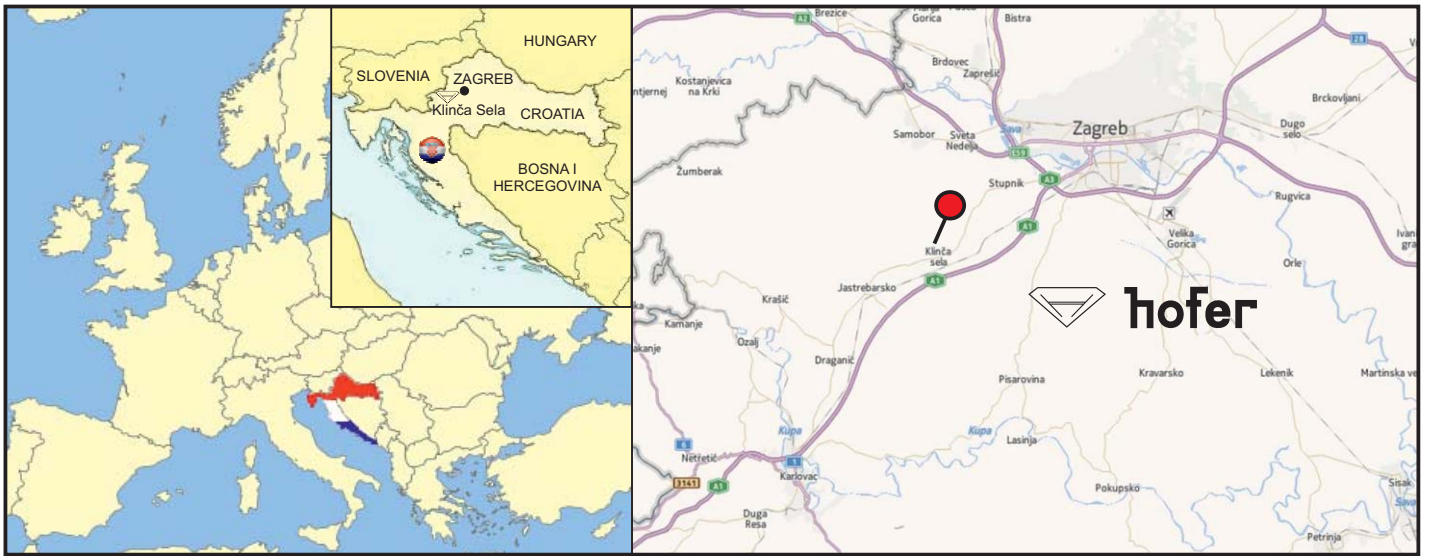
*Firma HOFER bietet Nachschleifservice von PKD Werkzeuge.
Durch das Sortieren und Schleifen verschlissene Werkzeuge dieselbe Schneide Qualität als mit neuen Werkzeugen erreicht.
Für alle weiteren Fragen um Schleifen Service, kontaktieren Sie uns bitte mit vollem Vertrauen.*



Alat prije obnove
Tool before renewal/
Werkzeug vorher Verlängerung



Alat nakon obnove
Tool after renewal/
Werkzeug nach Verlängerung



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