

SCHNITTDATENEMPFEHLUNGEN:

DCMB				
Work Material	Cemented Carbide			
(R) Radius	Effective Length	Spindle Speed	Feed	Depth of Cut
		min ⁻¹	mm/min	ap mm ae mm
R0.1	0.5	30.000	30	0.002 0.003
		30.000	150	0.008 0.03
R0.2	1	30.000	100	0.006 0.025
		30.000	200	0.01 0.05
R0.3	1.5	30.000	200	0.01 0.05
		30.000	300	0.02 0.1
R0.5	2.5	30.000	300	0.03 0.15
		30.000	300	0.03 0.15
R0.75	3.8	20.000	300	0.04 0.15
		20.000	300	0.04 0.15

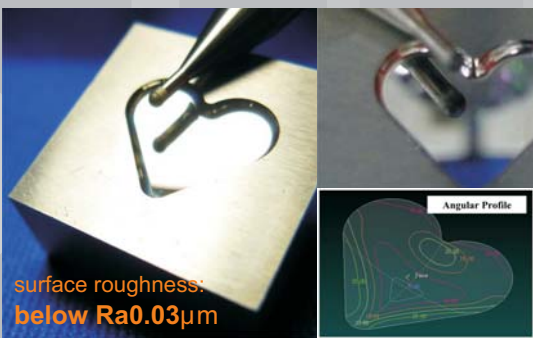
PCDRS				
D	R	l1	Cemented Carbide	
Dia.	Corner Radius	Effective Length	Spindle Speed	Depth of Cut for Finish
			min ⁻¹	ap mm ae mm
0.3	R0.05	0.3	50.000	0.001 0.005
			50.000	100 0.001 0.01
0.4	R0.05	0.4	50.000	0.001 0.01
			50.000	100 0.001 0.01
0.5	R0.05	0.5	50.000	0.001 0.015
			50.000	150 0.001 0.015
0.6	R0.05	0.6	50.000	0.001 0.015
			50.000	150 0.001 0.015
0.8	R0.05	0.8	50.000	0.001 0.015
			50.000	200 0.001 0.03
1	R0.05	1	50.000	0.001 0.015
			50.000	200 0.001 0.03

DCMS													
Work Material	Cemented Carbide			Al2O3			Heat-resistance Glass						
	Dia.	Spindle Speed	Depth of Cut	Dia.	Spindle Speed	Depth of Cut	Dia.	Spindle Speed	Depth of Cut				
		min ⁻¹	ap mm			min ⁻¹	ap mm			min ⁻¹	ap mm		
0.3	0.6	40.000	50	0.001	0.15	40.000	80	0.002	0.15	40.000	80	0.002	0.15
		30.000	50	0.001	0.25	30.000	80	0.002	0.25	30.000	80	0.002	0.25
0.4	0.5	30.000	50	0.001	0.25	30.000	80	0.002	0.25	30.000	80	0.002	0.25
		30.000	50	0.001	0.25	30.000	80	0.002	0.25	30.000	80	0.002	0.25
0.5	1	20.000	80	0.001	0.3	20.000	120	0.002	0.3	20.000	120	0.002	0.3
		20.000	80	0.001	0.3	20.000	120	0.002	0.3	20.000	120	0.002	0.3
0.8	1.6	20.000	80	0.001	0.5	20.000	120	0.002	0.5	20.000	120	0.002	0.5
		20.000	80	0.001	0.5	20.000	120	0.002	0.5	20.000	120	0.002	0.5
1	2	20.000	100	0.001	0.6	20.000	150	0.002	0.6	20.000	150	0.002	0.6
		20.000	100	0.001	0.6	20.000	150	0.002	0.6	20.000	150	0.002	0.6
1.5	3	20.000	100	0.001	0.9	20.000	150	0.002	0.9	20.000	150	0.002	0.9
		15.000	100	0.001	0.9	15.000	150	0.002	0.9	15.000	150	0.002	0.9
2	4	20.000	100	0.001	1.2	20.000	150	0.002	1.2	20.000	150	0.002	1.2
		15.000	100	0.001	1.2	15.000	150	0.002	1.2	15.000	150	0.002	1.2

PCDSE			
Work Material	Cemented Carbide		
Dia.	Spindle Speed	Feed	Depth of cut
		mm/min	ap mm
0.1	40.000	2525	0.002
0.2	40.000	25	0.002
0.3	40.000	50	0.002
0.4	40.000	50	0.002
0.5	40.000	50	0.002
0.6	40.000	50	0.002
0.8	40.000	50	0.002
1.0	40.000	50	0.002

PCDRB				
Work Material	Cemented Carbide			
Radius	Effective Length	Spindle Speed	Feed	Depth of cut
		min ⁻¹	mm/min	ap mm ae mm
0.05	0.15	40.000	50	0.0005 0.0005
		40.000	25	0.0005 0.0005
0.075	0.23	40.000	100	0.0005 0.001
		40.000	50	0.0005 0.001
0.1	0.5	40.000	100	0.001 0.001
		40.000	100	0.001 0.001
0.3	1.5	40.000	150	0.001 0.001
		40.000	200	0.001 0.001
0.5	2.5	40.000	200	0.001 0.001
		40.000	300	0.001 0.001
0.75	3.8	40.000	300	0.001 0.001
		40.000	300	0.001 0.001

BEARBEITUNGSBEISPIELE:

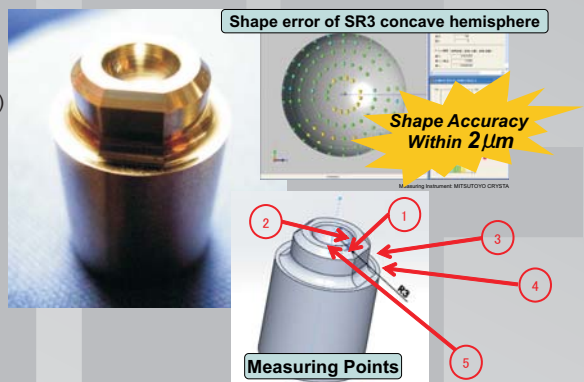


Work Material: Cemented Carbide (92.5HRA)
 Time: 5hr40min (Finishing)
 Cutting Distance: 51m (Finishing)
 Coolant: Water-insoluble cutting fluid
 Work Size: 15mm 15mm (Depth 1.3mm)
 by finishing process for 5hr40min.

Measuring Points	Rz µm	Ra µm
Around 5°	0.132	0.012
Around 10°	0.195	0.029
Around 20°	0.251	0.030

Work Material: Cemented Carbide (89HRA)
 Tool: PCDRB R0,75 x 3,8 mm
 Time: 2hr 30min (Finishing)
 Cutting Distance: 70m (Finishing)
 Coolant: Water-insoluble cutting fluid (Kinetic viscosity: 4.8)
 Work Size: D15x20mm (Depth 3.0mm)

Measuring Points	Rz µm	Ra µm	
SR3 Concave Hemisphere (Spiral)	①Around Center	1.074	0.158
	②Around 45°	1.618	0.257
③C face (Offset Cutting)	0.849	0.099	
④Periphery (Waterline)	1.168	0.162	
⑤Top Face (Scanning Line)	0.341	0.045	



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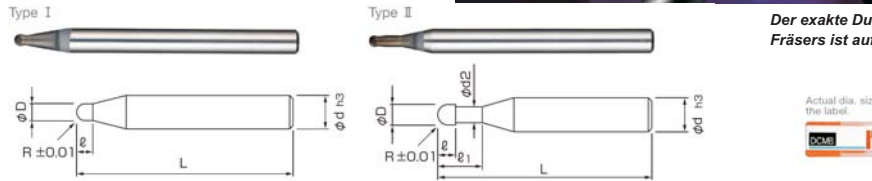
ULTRA HART-FRÄSKATALOG VHM - FRÄSEN MILLING CARBIDE



DCMB Kugelfräser zur Hartmetallbearbeitung

- Der Kugelfräser ist die für das direkte Bearbeiten von extrem harten und spröden Materialien geeignet!
- Realisiert höchste Oberflächenqualitäten
- Der Anschlag zeichnet sich durch ein ausgewogenes Verhältnis von Stärke und Schärfe der Schneidkanten aus

DCMB Ball End Mill for Hard Brittle Materials
It is the most appropriate for the use of direct cutting of cemented carbide!
Realized the high quality cutting surface on the curved surface shape.
Spiral ball shape with balanced strength and sharpness of cutting edges
Adopted newly-developed diamond coating with enhanced sticking force.



Der exakte Durchmesser jedes einzelnen Fräasers ist auf das μ genau vermessen.



Code	R	l ₁	l	Type	d2	d	L
550.000100	R0.1	-	0.15	I	-	4	45
550.000101	R0.1	0.5	0.12	II	0.18	4	45
550.000200	R0.2	-	0.3	I	-	4	45
550.000201	R0.2	1	0.25	II	0.37	4	45
550.000300	R0.3	-	0.45	I	-	4	45
550.000301	R0.3	1.5	0.35	II	0.56	4	45
550.000500	R0.5	-	0.75	I	-	4	45
550.000501	R0.5	2.5	0.6	II	0.95	4	45
550.000750	R0.75	-	1.1	I	-	4	45
550.000751	R0.75	3.8	0.9	II	1.45	4	45
550.001000	R1.0	-	1.5	I	-	4	45
550.001001	R1.0	5	1.2	II	1.94	4	45

DCMS

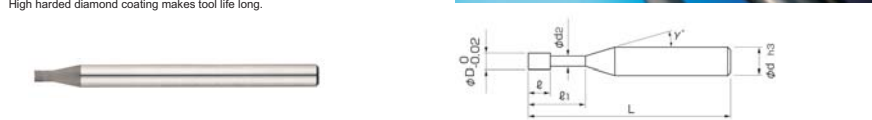
Schafffräser für hartes, sprödes Material

- Geeignet für extrem harte, spröde Materialien wie Hartmetall und Keramik.
- Extrem lange Standzeiten.

DCMS End Mill for Hard Brittle Materials

Machinable on hard brittle materials such as cemented carbide and ceramic.

High hardened diamond coating makes tool life long.



Code	D	l ₁	l	d2	γ	d	L	Flutes
510.003006	0.3	0.6	0.15	0.28	12°	4	45	6
510.003012	0.3	1.2	0.15	0.28	12°	4	45	6
510.004008	0.4	0.8	0.2	0.38	12°	4	45	6
510.004016	0.4	1.6	0.2	0.38	12°	4	45	6
510.005010	0.5	1	0.25	0.46	12°	4	45	8
510.005020	0.5	2	0.25	0.46	12°	4	45	8
510.008016	0.8	1.6	0.4	0.76	12°	4	45	8
510.008032	0.8	3.2	0.4	0.76	12°	4	45	8
510.010020	1.0	2	0.5	0.95	12°	4	45	10
510.010040	1.0	4	0.5	0.95	12°	4	45	10
510.015030	1.5	3	0.75	1.45	12°	4	45	10
510.015060	1.5	6	0.75	1.45	12°	4	45	10
510.020040	2.0	4	1	1.94	12°	4	45	10
510.020080	2.0	8	1	1.94	12°	4	45	10

Material: VHM (Carbide) 89 HRA
Maße: 20x20x10mm
Tool: **DCMB R1,0mm**
Spindle Speed: 20.000min-1
feed: 200mm/min
apxae: 0,005x0,01mm
Time: 3h 55min
coolant: oil mist

Surface Roughness:
Rz:0.51µm~1.04µm

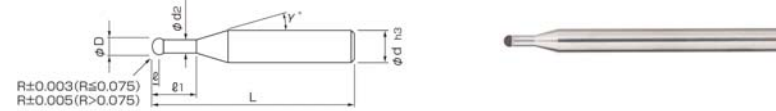
Material: VHM (Carbide) 92.5 HRA
Maße: 15x15mm Tiefe: 0,924mm
Tool: **PCDRS Ø0,3xR0,05x0,3mm**
Spindle Speed: 40.000min-1
feed: 70 mm/min
coolant: water-insoluble Cutting oil
Counter Line Milling:
apxae: 0,002~0,006 x0,002 mm
Cutting Length: 28m
Time: 6h 23min
Scanning Line Milling:
apxae: 0,001~0,005 x0,01 mm
Cutting Length: 12m
Time: 3h 25min

Surface Roughness:
Rz:0.0192 µm

Work Material: VHM (Carbide) 92.5HRA
Work Size: D 6 mm (Depth 0.4mm)
Spindle Speed: 40.000min-1
Roughing:
DCMS Ø 0,5x1 mm
Feed: 150 mm/min
apxae: 0,002x0,27mm
Time: 2h 40min
Finish bottom:
DCMS Ø 1,0x2 mm
Feed: 30~70 mm/min
apxae: 0,002x0,005~0,05mm
Time: 2h 41min

Surface Roughness:
Rz:0,12µm

PCDRB PCD Ball End Mill



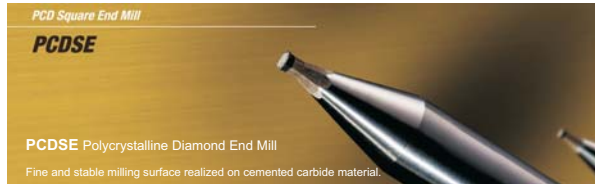
Code	R	l ₁	l	D	d2	γ	d	L
450.000501	0.05	0.15	0.05	0.1	0.09	15°	4	48
450.000502	0.05	0.25	0.05	0.1	0.09	15°	4	48
450.000751	0.075	0.23	0.075	0.15	0.14	15°	4	48
450.000752	0.075	0.38	0.075	0.15	0.14	15°	4	48
450.001001	0.1	0.5	0.1	0.2	0.18	15°	4	48
450.002001	0.2	1.0	0.2	0.4	0.37	15°	4	48
450.003001	0.3	1.5	0.3	0.6	0.56	15°	4	48
450.005001	0.5	2.5	0.5	1.0	0.95	15°	4	48
450.007501	0.75	3.8	0.75	1.5	1.45	15°	4	48
450.010001	1.0	5.0	1.0	2.0	1.94	15°	4	48

PCDRS PCD Radius End Mill



Code	D	R	l ₁	l	d2	fA	d	L	Flute
470.003050	0.3	R0.05	0.3	0.09	0.27	15°	4	48	2
470.004050	0.4	R0.05	0.4	0.12	0.36	15°	4	48	4
470.005050	0.5	R0.05	0.5	0.15	0.45	15°	4	48	4
470.005100	0.5	R0.1	0.5	0.15	0.45	15°	4	48	4
470.006050	0.6	R0.05	0.6	0.18	0.54	15°	4	48	6
470.006100	0.6	R0.1	0.6	0.18	0.54	15°	4	48	6
470.008050	0.8	R0.05	0.8	0.24	0.72	15°	4	48	6
470.008100	0.8	R0.1	0.8	0.24	0.72	15°	4	48	6
470.010050	1.0	R0.05	1.0	0.3	0.9	15°	4	48	6
470.010100	1.0	R0.1	1.0	0.3	0.9	15°	4	48	6

PCDSE PCD Square End Mill



Code	D	l	l ₁	d2	γ	d	L	Flutes
430.000100	0.1	0.02	0.1	0.09	15°	4	48	2
430.000200	0.2	0.04	0.2	0.18	15°	4	48	2
430.000300	0.3	0.06	0.3	0.27	15°	4	48	2
430.000400	0.4	0.08	0.4	0.36	15°	4	48	6
430.000500	0.5	0.1	0.5	0.45	15°	4	48	6
430.000600	0.6	0.12	0.6	0.54	15°	4	48	6
430.000800	0.8	0.16	0.8	0.72	15°	4	48	6
430.001000	1.0	0.2	1	0.9	15°	4	48	6

PCDRB

- Polykristalline Diamantkugelfräser
- Realisiert **Nano**-Oberflächenrauigkeiten
- Geeignet für Hartmetall, Elmax, etc.

PCDRB Polycrystalline Diamond Ball End Mill
Realizes nano-level surface roughness
suitable for Carbide, Elmax, etc.

PCDRS

PCD Torusfräser

- Lange Bearbeitungszeiten bei der Hartmetallbearbeitung
- Extreme Maßhaltigkeit
- Eckenradius-Typ in der PCD-Reihe
- Ultimative hochwertige Oberflächen
- hervorragende Schneidleistung auf Konturen und ebenen Flächen

Der exakte Durchmesser jedes einzelnen Fräasers ist auf das μ genau vermessen.



PCDSE Polykristalline Diamantfräser

- Realisiert eine stabile Ultrahochpräzisionsbearbeitung in Hartmetall.
- Ermöglicht eine **Nano**-genaue Oberflächenrauigkeit
- innovative Schneidengestaltung ermöglicht extrem lange Standzeiten mit geringstem Verschleiß.

