



NEUE HPC-VOLLHARTMETALLFRÄSER

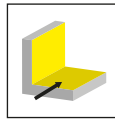
DYNAMISCHES HPC-FRÄSEN MIT
DEM HORN-SYSTEM DS

NEW HPC SOLID CARBIDE END MILLS

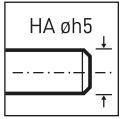
DYNAMIC HPC MILLING WITH THE
HORN SYSTEM DS



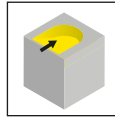
Zähnezahl
Number of teeth



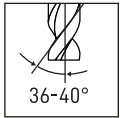
Eckfräsen
Corner milling



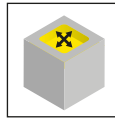
Schaft DIN 6535 HA
Shank DIN 6535 HA



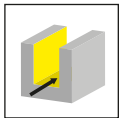
Eintauchen Rampe
Ramping



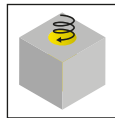
Drallwinkel
Helix angle



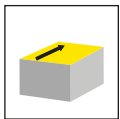
Taschenfräsen
Pocket milling



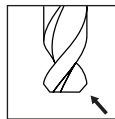
Vollnut
Slot milling



Eintauchen zirkular
Circular diving



Planfräsen
Face milling



Eckfase
Chamfer

Alle Abmessungen sind in mm angegeben,
sofern nicht anders vermerkt.

Unsere Lieferzeiten: Einsatz für Werkstoffgruppen:

- | | |
|------------|----------------------|
| ▲ ab Lager | ● empfohlen |
| Δ 4 Wochen | o bedingt einsetzbar |
| | - nicht geeignet |

All dimensions are in mm,
unless otherwise stated.

- | | |
|-----------------|------------------------------|
| Delivery times: | Use for material groups: |
| ▲ on stock | ● recommended |
| Δ 4 weeks | o alternative recommendation |
| | - not suitable |

DER UNTERSCHIED: MEHR MÖGLICHKEITEN

THE DIFFERENCE:
MORE POSSIBILITIES

- **Hohe Laufruhe durch abgestimmte Drallwinkel und Zahnteilung**

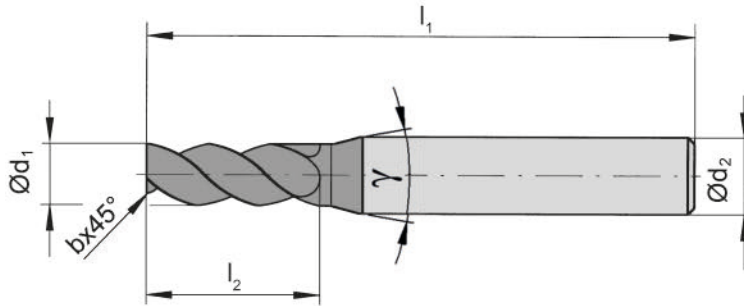
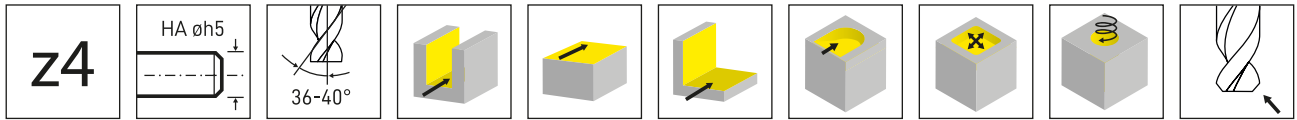
Quiet operation due to matched helix angle and tooth pitch

- **Große Zeitspanvolumen durch spezielle HPC-Geometrie**

High metal removal rates due to special HPC geometry

- **Optimierte Geometrie zum Bohrzirkularfräsen**

Optimised geometry for circular ramp milling



HM-Sorten
Carbide grades

▲ ab Lager
on stock

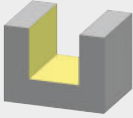
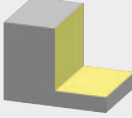
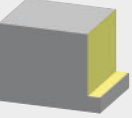
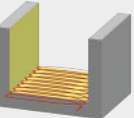
△ 4 Wochen
4 weeks






Bestellnummer Part number	d ₁	b	l ₂	d ₂	l ₁	Z	γ	ES3P
DSHPC.4.020.008.25	2	0,07	5	6	50	4	40°	▲
DSHPC.4.030.010.23	3	0,1	7	6	50	4	40°	▲
DSHPC.4.040.010.22	4	0,1	9	6	50	4	40°	▲
DSHPC.4.050.010.22	5	0,1	11	6	54	4	40°	▲
DSHPC.4.060.015.21	6	0,15	13	6	54	4	-	▲
DSHPC.4.080.015.21	8	0,15	17	8	63	4	-	▲
DSHPC.4.100.020.21	10	0,2	21	10	66	4	-	▲
DSHPC.4.120.030.21	12	0,3	26	12	83	4	-	▲
DSHPC.4.160.050.21	16	0,5	34	16	92	4	-	▲
DSHPC.4.200.050.21	20	0,5	42	20	104	4	-	▲
								P ●
								M ●
								K ●
								N -
								S o
								H -

Schnittdaten DSHPC Ø 2 - 20 mm

Cutting Data DSHPC Ø 2 - 20 mm



	 vc = m/min	 vc = m/min	 vc = m/min	 vc = m/min
P1.1	130	160	180	210
P1.2	130	160	180	210
P1.3	120	150	170	200
P2.1	110	140	150	180
P2.2	110	140	150	180
P2.3	110	140	150	180
P3.1	100	120	130	160
P3.2	100	120	130	160
M1.1	80	100	110	130
M2.1	70	90	100	120
M3.1	60	80	90	100
K1.1	110	140	150	180
K1.2	100	130	140	170
K2.1	100	120	130	160
K2.2	90	110	120	140
K3.1	70	90	100	120
K3.2	60	80	90	100
S1.1	50	60	70	80
S2.1	40	50	60	70
S3.1	30	40	40	50

d ₁	l ₂													
			fz	ae	ap	fz	ae	ap	fz	ae	ap	fz	ae	ap
2	5	3°	0,010	2	2	0,013	0,50	4	0,008	0,05	5	0,019	0,26	5
3	7	3°	0,016	3	3	0,022	0,75	6	0,011	0,08	7	0,03	0,39	7
4	9	3°	0,022	4	4	0,030	1,00	8	0,015	0,10	9	0,041	0,52	9
5	11	4°	0,029	5	5	0,038	1,25	10	0,019	0,13	11	0,053	0,65	11
6	13	4°	0,035	6	6	0,047	1,50	12	0,023	0,15	13	0,065	0,78	13
8	17	5°	0,047	8	8	0,063	2,00	16	0,030	0,20	17	0,088	1,04	17
10	21	5°	0,060	10	10	0,080	2,50	20	0,038	0,25	21	0,111	1,30	21
12	26	5°	0,070	12	12	0,093	3,00	24	0,046	0,30	26	0,129	1,56	26
16	34	5°	0,095	16	16	0,126	4,00	32	0,061	0,40	34	0,175	2,08	34
20	42	5°	0,120	20	20	0,160	5,00	40	0,076	0,50	42	0,222	2,60	42

Abmessungen in mm
Dimensions in mm

	Werkstoff	Material			Härte / Hardness
P1.1	Kohlenstoffstahl	Carbon steel	0,2% C		140 HB
P1.2	Kohlenstoffstahl	Carbon steel	0,4% C		180 HB
P1.3	Kohlenstoffstahl	Carbon steel	0,6% C		200 HB
P2.1	Legierter Stahl	Alloyed steel	geglüht	annealed	180 HB
P2.2	Legierter Stahl	Alloyed steel	vergütet	quenched	280 HB
P2.3	Legierter Stahl	Alloyed steel	vergütet	quenched	350 HB
P3.1	hochlegierter Stahl	High alloyed steel	geglüht	annealed	200 HB
P3.2	hochlegierter Stahl	High alloyed steel	vergütet	quenched	325 HB
M1.1	Rostfreier Stahl	Stainless steel	martensitisch, ferritisch	martensitic, ferritic	200 HB
M2.1	Rostfreier Stahl	Stainless steel	austenitisch	austenitic	180 HB
M3.1	Rostfreier Stahl	Stainless steel	austenitisch, ferritisch	austenitic, ferritic	260 HB
K1.1	Grauguss	Grey cast iron	niedrige Festigkeit	low tensile strength	180 HB
K1.2	Grauguss	Grey cast iron	hohe Festigkeit	high tensile strength	250 HB
K2.1	Kugelgraphitguss	Spheroidal graphite cast iron	ferritisch	ferritic	160 HB
K2.2	Kugelgraphitguss	Spheroidal graphite cast iron	perlitisches	perlitic	250 HB
K3.1	Temperguss	Malleable cast iron	ferritisch	ferritic	125 HB
K3.2	Temperguss	Malleable cast iron	perlitisches	perlitic	225 HB
N1.1	Aluminium-Legierungen	Aluminum alloys	nicht vergütbar	not heat treatable	80 HB
N1.2	Aluminium-Legierungen	Aluminum alloys	vergütbar	heat treatable	120 HB
N2.1	Aluminiumguss	Cast Aluminum	< 6% Si	< 6% Si	
N2.2	Aluminiumguss	Cast Aluminum	6 - 10% Si	6 - 10% Si	
N2.3	Aluminiumguss	Cast Aluminum	10 - 15% Si	10 - 15% Si	
N3.1	Kupfer-Legierungen	Copper alloys	nicht vergütbar	not heat treatable	90 HB
N3.2	Kupfer-Legierungen	Copper alloys	vergütbar	heat treatable	100 HB
N4.1	Kunststoffe	Synthetics			
S1.1	Titan-Legierungen	Titanium alloys			280 HB
S2.1	Nickel-Basis-Legierung	Nickel-base alloys			450 HB
S3.1	Cobalt-Basis-Legierung	Cobalt-base alloys			450 HB
H1.1	Gehärtete Stähle	Hardened steels			50-55 HRC
H1.2	Gehärtete Stähle	Hardened steels			56-59 HRC
H1.3	Gehärtete Stähle	Hardened steels			60-63 HRC
H1.4	Gehärtete Stähle	Hardened steels			> 63 HRC





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