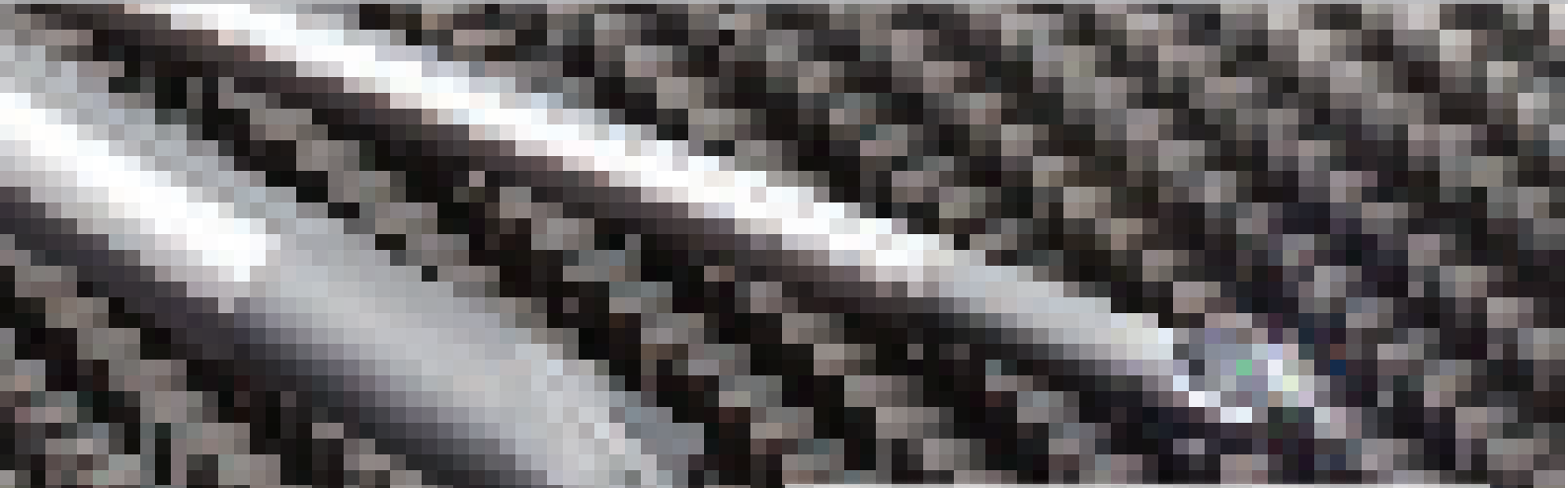


„CVD“ FOR MILLING NON-FERROUS MATERIALS

Solid carbide end mills with sharpest CVD-cutting edges and highest tool life





SUPERHARD CUTTING MATERIALS CVD

Ball nose end mills | CVD | 2 flutes

2 flutes, plain shank, right hand

- center cutting end mill
- ball nose
- with clearance between shank and flute up to 5 x d
- high precise: r = +/- 0.005 mm ; d1 = h7

Ball nose end mills	catalogue no.	Effective working length at X° of draft													γ (chip angle)	λ (helix angle)	Features	Q/C
		d ₁ *	l ₂	l ₃	d ₃	l ₁	r	d ₂	z	0.5°	1°	1.5°	2°	3°				

wd. long																		
	B2NC-020-100-100-01	2	2.5	10	1.9	50	1	4	2	10.50	10.62	10.72	10.79	10.91	0	0		CVD
	B2NC-020-100-100-02	2	2.5	10	1.9	75	1	6	2	10.50	10.62	10.72	10.79	10.91	0	0		CVD
	B2NC-030-150-100-01	3	2.5	10	2.8	75	1.5	6	2	10.57	10.67	10.75	10.82	10.92	0	0		CVD
	B2NC-040-200-200-01	4	2.5	20	3.8	75	2	6	2	10.57	10.67	10.75	10.82	10.92	0	0		CVD
	B2NC-060-300-200-01	6	6	20	5.6	100	3	6	2	-	-	-	-	-	0	0		CVD
	B2NC-080-400-200-01	8	6	20	7.6	100	4	8	2	-	-	-	-	-	0	0		CVD
	B2NC-100-500-300-01	10	8	30	9.6	100	5	10	2	-	-	-	-	-	0	0		CVD
	B2NC-120-600-350-01	12	9	35	11.6	107	6	12	2	-	-	-	-	-	0	0		CVD

* further diameters on request

Cutting speed (V_c in m/min) | Feed per tooth (f_z) | d.o.c. (a_p) | w.o.c. (a_e)

Material	V _c (m/min)	a _p x d ₁ (mm)	a _e x d ₁ (mm)	Feed per tooth f _z (mm)							Cooling	Direction of feed
				Ø 2	Ø 3	Ø 4	Ø 6	Ø 8	Ø 10	Ø 12		
AlSi <12% Si	1800	0.2	0.1	0.01	0.02	0.02	0.04	0.06	0.08	0.1	Emulsion / MQL	climb milling
AlSi >12% Si	800	0.15	0.1	0.01	0.01	0.02	0.03	0.05	0.06	0.08		
Glass ceramic	250	0.1	0.15	0.025	0.035	-	-	-	-	-		
PMMA Acryl	1100	0.15	0.15	0.01	0.015	0.02	0.03	0.05	0.07	0.09	Emulsion recommended	climb milling
PF66 – GF30	700	0.15	0.1	0.008	0.01	0.015	0.025	0.04	0.06	0.08		
PEEK – GF30	700	0.15	0.1	0.007	0.008	0.01	0.02	0.03	0.05	0.07		
POM – GF30	800	0.15	0.15	0.008	0.01	0.015	0.025	0.04	0.06	0.08		
PTFE – GF30	700	0.15	0.1	0.01	0.015	0.02	0.03	0.05	0.07	0.09		
CFK	250	0.15	0.1	0.008	0.01	0.015	0.025	0.04	0.06	0.08	optionally air / MQL	climb milling / conventional milling
GFK	500	0.15	0.1	0.01	0.015	0.02	0.03	0.05	0.07	0.09		
AFK Aramid	300	0.15	0.1	0.01	0.015	0.02	0.03	0.05	0.07	0.09		
Zirkon	150	0.15	0.15	0.01	0.02	0.02	0.04	0.06	0.08	0.10		

SUPERHARD CUTTING MATERIALS CVD

Corner radius end mills | CVD | 2 flutes



2 flutes, plain shank, right hand

- center cutting end mill
- with clearance between shank and flute up to 5 x d
- high precise: $r = \pm 0.005 \text{ mm}$; $d_1 = h_7$

corner radius end mill	catalogue no.	Effective working length at X° of draft										γ (chip angle)	λ (helix angle)	Features	QC
		d ₁ *	l ₂	l ₃	d ₃	l ₁	r	d ₂	z	0.5°	1°				

wd. long																	
	C2NC-020-020-100-01	2	2.5	10	1.9	50	0.2	4	2	10.66	11.02	11.41	11.83	12.78	0	0	CVD
	C2NC-030-020-100-01	3	2.5	10	2.8	75	0.2	6	2	10.85	11.22	11.62	12.05	13.01	0	0	CVD
	C2NC-030-050-100-01	3	2.5	10	2.8	75	0.5	6	2	10.84	11.22	11.62	12.01	12.94	0	0	CVD
	C2NC-040-020-200-01	4	2.5	20	3.8	75	0.2	6	2	21.19	21.92	22.70	23.50	-	0	0	CVD
	C2NC-040-050-200-01	4	2.5	20	3.8	75	0.5	6	2	21.18	21.90	22.67	23.50	-	0	0	CVD
	C2NC-060-020-200-01	6	6	20	5.6	100	0.2	6	2	-	-	-	-	-	0	0	CVD
	C2NC-060-050-200-01	6	6	20	5.6	100	0.5	6	2	-	-	-	-	-	0	0	CVD
	C2NC-060-100-200-01	6	6	20	5.6	100	1	6	2	-	-	-	-	-	0	0	CVD
	C2NC-080-020-200-01	8	6	20	7.6	100	0.2	8	2	-	-	-	-	-	0	0	CVD
	C2NC-080-050-200-01	8	6	20	7.6	100	0.5	8	2	-	-	-	-	-	0	0	CVD
	C2NC-080-100-200-01	8	6	20	7.6	100	1	8	2	-	-	-	-	-	0	0	CVD
	C2NC-100-020-300-01	10	8	30	9.6	100	0.2	10	2	-	-	-	-	-	0	0	CVD
	C2NC-100-050-300-01	10	8	30	9.6	100	0.5	10	2	-	-	-	-	-	0	0	CVD
	C2NC-100-100-300-01	10	8	30	9.6	100	1	10	2	-	-	-	-	-	0	0	CVD
	C2NC-120-020-350-01	12	9	35	11.6	107	0.2	12	2	-	-	-	-	-	0	0	CVD
C2NC-120-050-350-01	12	9	35	11.6	107	0.5	12	2	-	-	-	-	-	0	0	CVD	
C2NC-120-100-350-01	12	9	35	11.6	107	1	12	2	-	-	-	-	-	0	0	CVD	

* further diameters on request

Cutting speed (V_c in m/min) | Feed per tooth (f_z) | d.o.c. (a_p) | w.o.c. (a_e)

Material	V_c (m/min)	$a_p \times d_1$ (mm)	$a_e \times d_1$ (mm)	Feed per tooth f_z (mm)							Cooling	Direction of feed
				Ø 2	Ø 3	Ø 4	Ø 6	Ø 8	Ø 10	Ø 12		
AlSi <12% Si	1800	0.6	0.3	0.01	0.02	0.02	0.04	0.06	0.08	0.1	Emulsion / MQL	climb milling
AlSi >12% Si	800	0.5	0.25	0.01	0.01	0.02	0.03	0.05	0.06	0.08		
Glass ceramic	250	0.2	0.3	0.025	0.035	-	-	-	-	-		
PMMA Acryl	1100	0.5	0.5	0.01	0.015	0.02	0.03	0.05	0.07	0.09	Emulsion recommended	climb milling
PF66 – GF30	700	0.5	0.3	0.008	0.01	0.015	0.025	0.04	0.06	0.08		
PEEK – GF30	700	0.5	0.25	0.007	0.008	0.01	0.02	0.03	0.05	0.07		
POM – GF30	800	0.5	0.5	0.008	0.01	0.015	0.025	0.04	0.06	0.08		
PTFE – GF30	700	0.5	0.3	0.01	0.015	0.02	0.03	0.05	0.07	0.09		
CFK	250	0.4	0.25	0.008	0.01	0.015	0.025	0.04	0.06	0.08	optionally air / MQL	climb milling / conventional milling
GFK	500	0.5	0.3	0.01	0.015	0.02	0.03	0.05	0.07	0.09		
AFK Aramid	300	0.45	0.3	0.01	0.015	0.02	0.03	0.05	0.07	0.09		
Zirkon	150	0.5	0.4	0.01	0.02	0.02	0.04	0.06	0.08	0.10		



PL-317-EN-08/2016

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