

Solid carbide end mills - short version with unequal helix

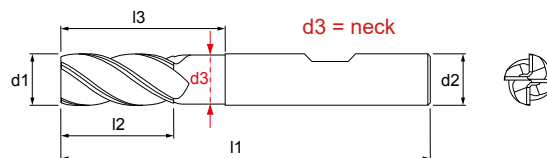
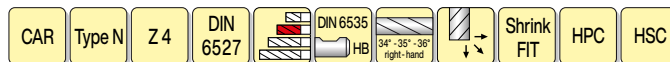
Catalogue No.: FEM1579VS

Features:

- vibration-free machining
- low deflection
- neck for longer cutting depths
- 45° chamfer

Application:

For slot and periphery milling, especially for finishing machining. High contour and profile accuracy, as well as an excellent surface finishing.



Material	Alu	Alu > 9% Si	Steel < 800 N/mm²	Steel < 1200 N/mm²	Steel < 1600 N/mm²	Steel < 55 HRC	Steel < 60 HRC	Steel < 66 HRC	INOX < 800 N/mm²	INOX > 800 N/mm²	GG	GGG	High temperature alloys	Titanium	Non-ferrous metals, copper all.	Graphite, fibre composite	MQL	max.	without	AIR
FEM1579VS	○	○	●	●	●				●	●	●	●	○	●	○		●	●	○	○

● optimal ○ suitable

d1 h10 mm		d2 h6 mm	d3 - 0.1 mm	I1 mm	I2 mm	I3 mm	Z	FEM1579VS ID-No.	Price 2022 CHF net
4	0.06	6	3.8	57	11	15	4	182557	17.40
5	0.08	6	4.8	57	13	20	4	182558	17.40
6	0.09	6	5.8	57	13	21	4	182559	17.40
7	0.1	8	6.5	63	19	27	4	182560	23.10
8	0.12	8	7.5	63	19	27	4	182561	23.10
9	0.14	10	8.5	72	22	31	4	182562	31.90
10	0.15	10	9.5	72	22	32	4	182563	31.90
11	0.17	12	10.5	83	26	38	4	182564	40.30
12	0.18	12	11.5	83	26	38	4	182565	40.30
13	0.2	14	12.5	83	26	38	4	182566	53.00
14	0.21	14	13.5	83	26	38	4	182567	53.00
16	0.24	16	15.5	92	32	44	4	182568	62.00
18	0.27	18	17.5	92	32	44	4	182569	107.00
20	0.3	20	19.5	104	38	54	4	182570	118.00

Solid carbide end mills - long version with unequal helix

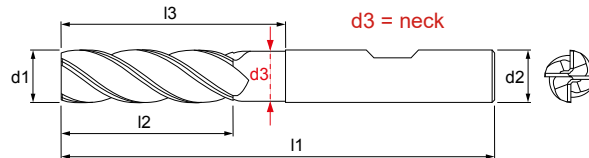
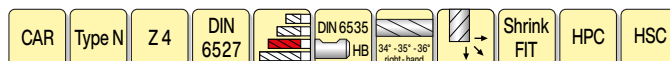
Catalogue No.: FEM1589VS

Features:

- vibration-free machining
- low deflection
- neck for longer cutting depths
- 45° chamfer

Application:

For slot and periphery milling, especially for finishing machining. High contour and profile accuracy, as well as an excellent surface finishing.



Material	Alu	Alu > 9% Si	Steel < 800 N/mm²	Steel < 1200 N/mm²	Steel < 1600 N/mm²	Steel < 55 HRC	Steel < 60 HRC	Steel < 66 HRC	INOX < 800 N/mm²	INOX > 800 N/mm²	GG	GGG	High temperature alloys	Titanium	Non-ferrous metals, copper all.	Graphite, fibre composite	MQL	max.	without	AIR
FEM1589VS	○	○	●	●	●				●	●	●	●	○	●	○		●	●	○	○

● optimal ○ suitable

d1 h10 mm		d2 h6 mm	d3 - 0.1 mm	I1 mm	I2 mm	I3 mm	Z	FEM1589VS ID-No.	Price 2022 CHF net
6	0.09	6	5.8	63	20	27	4	182571	31.90
8	0.12	8	7.5	80	38	44	4	182572	37.50
10	0.15	10	9.5	95	45	55	4	182573	53.50
12	0.18	12	11.5	100	50	55	4	182574	67.00
16	0.24	16	15.5	123	63	75	4	182575	106.00
20	0.3	20	19.5	125	65	75	4	182576	150.00

CUTTING SPEEDS AND FEED RATES

Cutting data	FEM1579VS & FEM1589VS*	CAR	Type N	Z 4	DIN 6527				HPC	HSC
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Material group		Ø 4 - 6	Ø 7 - 8	Ø 9 - 10	Ø 11 - 12	Ø 13 - 14	Ø 16	Ø 18	Ø 20
Alu	v_c [m/min]	350	350	350	350	350	350	350	350
	f_z [mm]	0.080	0.110	0.140	0.180	0.220	0.260	0.300	0.350
	v_f [mm/min]	5900	6100	6240	6700	7000	7200	7400	7800
	n [1/min]	18500	14000	11140	9300	8000	7000	6200	5600
Alu > 9% Si	v_c [m/min]	300	300	300	300	300	300	300	300
	f_z [mm]	0.068	0.094	0.119	0.153	0.190	0.220	0.250	0.306
	v_f [mm/min]	4300	4500	4500	4900	5200	5200	5300	5800
	n [1/min]	16000	12000	9600	8000	6800	6000	5300	4800
Steel < 800 N/mm ²	v_c [m/min]	150	150	150	150	150	150	150	150
	f_z [mm]	0.044	0.060	0.077	0.100	0.120	0.143	0.170	0.200
	v_f [mm/min]	1400	1430	1470	1600	1600	1700	1800	1900
	n [1/min]	8000	6000	4800	4000	3400	3000	2650	2400
Steel < 1200 N/mm ²	v_c [m/min]	140	140	140	140	140	140	140	140
	f_z [mm]	0.040	0.055	0.070	0.090	0.110	0.130	0.150	0.180
	v_f [mm/min]	1200	1220	1250	1340	1400	1500	1500	1600
	n [1/min]	7400	5600	4500	3720	3200	2800	2500	2200
Steel < 1600 N/mm ²	v_c [m/min]	110	110	110	110	110	110	110	110
	f_z [mm]	0.034	0.047	0.060	0.077	0.095	0.110	0.130	0.155
	v_f [mm/min]	800	820	840	900	950	960	1000	1080
	n [1/min]	5800	4400	3500	3000	2500	2200	2000	1750
INOX < 800 N/mm ²	v_c [m/min]	85	85	85	85	85	85	85	85
	f_z [mm]	0.032	0.044	0.056	0.070	0.090	0.105	0.120	0.145
	v_f [mm/min]	580	600	610	630	700	710	720	780
	n [1/min]	4500	3400	2700	2200	1950	1700	1500	1350
INOX > 800 N/mm ²	v_c [m/min]	75	75	75	75	75	75	75	75
	f_z [mm]	0.027	0.037	0.047	0.060	0.075	0.090	0.100	0.120
	v_f [mm/min]	430	440	450	480	510	540	530	580
	n [1/min]	4000	3000	2400	2000	1700	1500	1300	1200
GG	v_c [m/min]	150	150	150	150	150	150	150	150
	f_z [mm]	0.044	0.060	0.077	0.100	0.120	0.145	0.165	0.200
	v_f [mm/min]	1400	1430	1470	1600	1640	1730	1750	1900
	n [1/min]	8000	6000	4800	4000	3400	3000	2650	2400
GGG	v_c [m/min]	140	140	140	140	140	140	140	140
	f_z [mm]	0.040	0.055	0.070	0.090	0.110	0.130	0.150	0.180
	v_f [mm/min]	1200	1200	1250	1340	1400	1450	1500	1600
	n [1/min]	7400	5600	4500	3700	3200	2800	2500	2250
High temperature alloys	v_c [m/min]	40	40	40	40	40	40	40	40
	f_z [mm]	0.026	0.036	0.046	0.060	0.070	0.085	0.100	0.120
	v_f [mm/min]	220	230	230	250	250	270	280	300
	n [1/min]	2100	1600	1300	1080	900	800	700	640
Titanium	v_c [m/min]	70	70	70	70	70	70	70	70
	f_z [mm]	0.027	0.037	0.047	0.060	0.070	0.085	0.100	0.120
	v_f [mm/min]	400	410	420	450	450	480	500	530
	n [1/min]	3700	2800	2200	1850	1600	1400	1200	1120
Non-ferrous metals	v_c [m/min]	260	260	260	260	260	260	260	260
	f_z [mm]	0.080	0.110	0.140	0.180	0.220	0.260	0.300	0.360
	v_f [mm/min]	4400	4550	4600	5000	5200	5400	5500	6000
	n [1/min]	13800	10400	8300	6900	5900	5200	4600	4150

* Recommendations FEM1589VS

				
Machining	▽▽	▽	▽	▽
a_p	1.50 x D	1.50 x D	1.00 x D	1.00 x D
a_e	0.04 x D	0.50 x D	1.00 x D	1.00 x D
v_c	x 1.00	x 0.90	x 0.85	x 0.85
f_z	x 1.00	x 0.85	x 0.85	x 0.50

L/D	v_c	f_z
< 3 x D	1.0	1.0
< 5 x D	0.8	0.8
> 5 x D	0.55	0.5

d1 Cutting diameter (mm)

Z Number of teeth

a_p Axial depth (mm)

a_e Radial depth (mm)

v_c Cutting speed (m/min)

f_z Feed rate per tooth (mm/tooth)

n Speed (min⁻¹)

v_f Feed (mm/min)

