

SILVERLINE 2015



PR
MAX

80% increased production

60% more feed

Polished Flutes

No vibration

more productivity

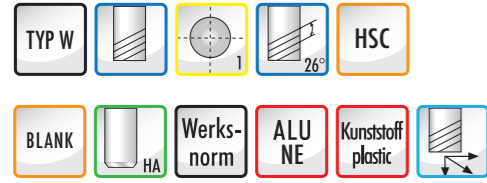
more quality

more precision

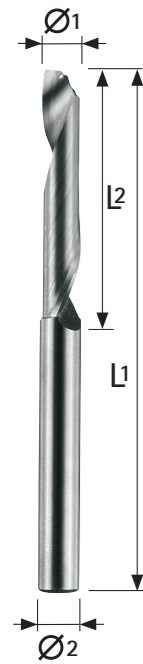
VHM 1-Schneidenfräser, 1 Schneide

Solid carbide end mills

M830



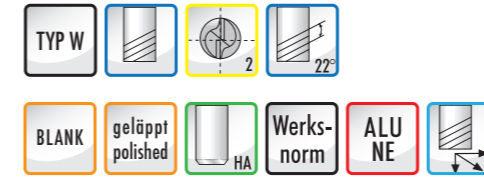
Ø 1 Schneiden- durchm.	Ø 2 Schaft- durchm.	L2 Schneiden- länge	L1 Gesamt- länge	Schnei- den	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	No of Flute	Article No.
1,5	3	6	50	1	M830.015
2,0	3	8	50	1	M830.020
3,0	3	12	50	1	M830.030
4,0	4	15	60	1	M830.040
5,0	5	17	60	1	M830.050
6,0	6	20	65	1	M830.060
8,0	8	22	65	1	M830.080
10,0	10	25	75	1	M830.100
12,0	12	30	80	1	M830.120



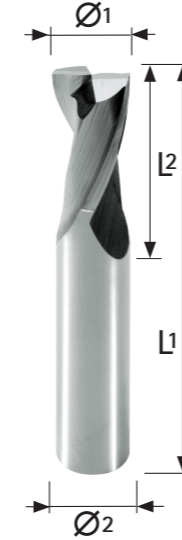
VHM Schlichtfräser

Solid carbide finishing mill

M156



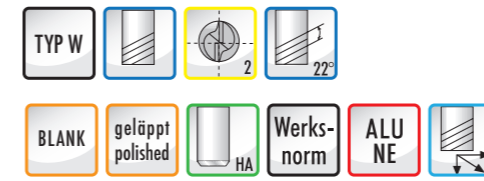
Ø 1 Schneiden- durchm.	Ø 2 Schaft- durchm.	L2 Schneiden- länge	L1 Gesamt- länge	Schnei- den	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	No of Flute	Article No.
1.5	6.0	3	57	2	M156.015
2.0	6.0	6	57	2	M156.020
2.5	6.0	7	57	2	M156.025
3.0	6.0	7	57	2	M156.030
4.0	6.0	8	57	2	M156.040
5.0	6.0	10	57	2	M156.050
6.0	6.0	10	57	2	M156.060
8.0	8.0	16	63	2	M156.080
10.0	10.0	19	72	2	M156.100
12.0	12.0	22	83	2	M156.120
16.0	16.0	26	92	2	M156.160
20.0	20.0	32	104	2	M156.200



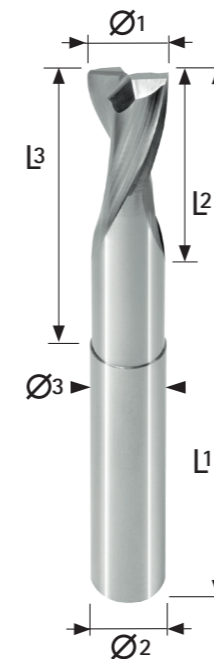
VHM Schlichtfräser

Solid carbide finishing mill

M157

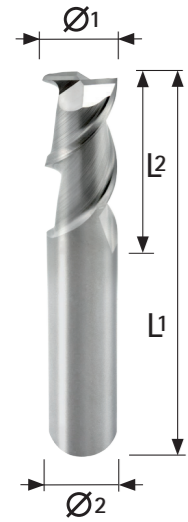
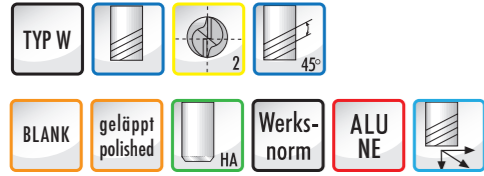


Ø 1 Schneiden- durchm.	Ø 2 Schaft- durchm.	L2 Schneiden- länge	L1 Gesamt- länge	Ø 3	L3	Schnei- den	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	Ø 3	L3	No of Flute	Article No.
2.0	3.0	3	38	1.92	9	2	M157.020
3.0	3.0	4	38	2.90	12	2	M157.030
4.0	4.0	6	50	3.80	14	2	M157.040
5.0	6.0	8	57	4.75	16	2	M157.050
6.0	6.0	10	65	5.70	28	2	M157.060
8.0	8.0	12	80	7.60	35	2	M157.080
10.0	10.0	14	90	9.50	45	2	M157.100
12.0	12.0	16	100	11.40	55	2	M157.120
16.0	16.0	20	115	15.20	63	2	M157.160
20.0	20.0	20	125	19.00	70	2	M157.200



VHM Schlichtfräser Solid carbide finishing mill

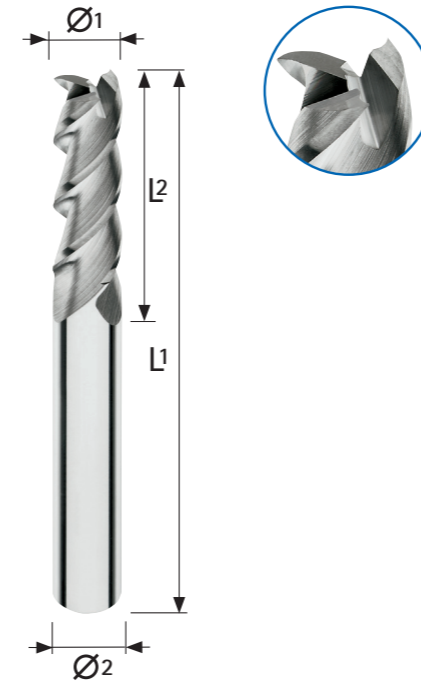
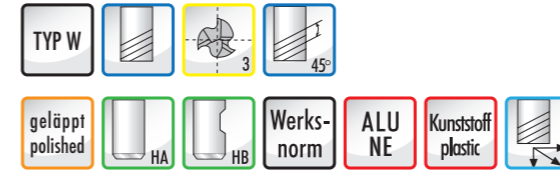
M158



Ø 1 Schneiden- durchmesser	Ø 2 Schaftdurch- messer	L2 Schneiden- länge	L1 Gesamt- länge	Schneiden	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	No of Flute	Article No,
1.5	6.0	3	57	2	M158.015
2.0	6.0	6	57	2	M158.020
2.5	6.0	7	57	2	M158.025
3.0	6.0	7	57	2	M158.030
4.0	6.0	8	57	2	M158.040
5.0	6.0	10	57	2	M158.050
6.0	6.0	10	57	2	M158.060
8.0	8.0	16	63	2	M158.080
10.0	10.0	19	72	2	M158.100
12.0	12.0	22	83	2	M158.120
16.0	16.0	26	92	2	M158.160
20.0	20.0	32	104	2	M158.200

VHM Schlichtfräser Solid carbide finishing mill

M804



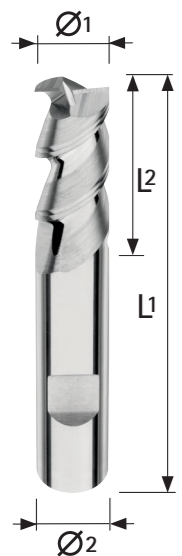
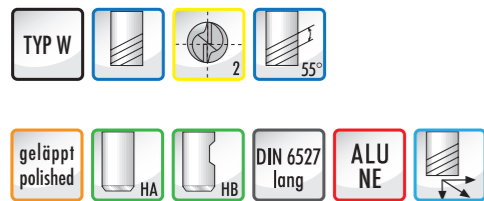
Ø 1 Schneiden- durchmesser	Ø 2 Schaftdurch- messer	L2 Schneiden- länge	L1 Gesamt- länge	Schneiden	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	No of Flute	Article No
6.0	6.0	16	60	3	M804.060
8.0	8.0	25	78	3	M804.080
10.0	10.0	28	78	3	M804.100
12.0	12.0	32	89	3	M804.120
14.0	14.0	32	89	3	M804.140
16.0	16.0	36	96	3	M804.160
20.0	20.0	45	111	3	M804.200
25.0	25.0	50	121	3	M804.250

Bitte fügen Sie bei Ihrer Bestellung folgende Codes hinzu: mit Weldon .HB ohne Weldon .HA
Please add the following code to your order: with weldon .HB without weldon .HA

Stirrwinkel x 2 für mehr Spanraum und weniger Schnittdruck.
Two Face angle for more chip space and less cutting pressure.

VHM-Alucutter, 2 Schneiden Solid carbide alucutter

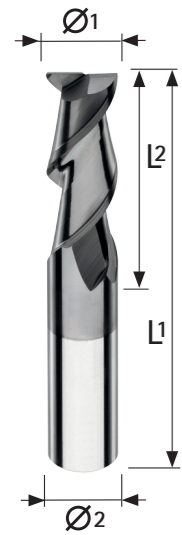
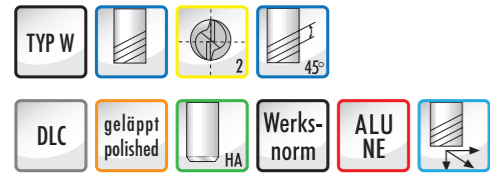
M840



Ø 1 Schneiden- durchm.	Ø 2 Schaft- durchm.	L2 Schneiden- länge	L1 Gesamt- länge	Schnei- den	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	No of Flute	Article No.
3,0	6	8	57	2	M840.030
4,0	6	11	57	2	M840.040
5,0	6	13	57	2	M840.050
6,0	6	13	57	2	M840.060
8,0	8	19	63	2	M840.080
10,0	10	22	72	2	M840.100
12,0	12	26	83	2	M840.120
14,0	14	26	83	2	M840.140
16,0	16	32	92	2	M840.160
18,0	18	32	92	2	M840.180
20,0	20	38	104	2	M840.200

VHM-Schlichtfräser - DLC
Solid carbide finishing mill - DLC

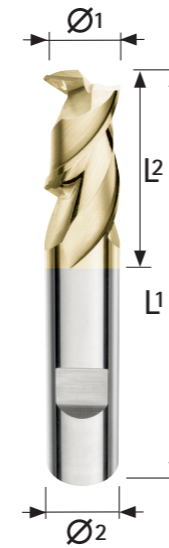
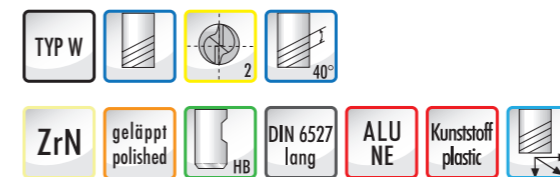
M848



Ø1 Schneiden- durchm.	Ø2 Schaft- durchm.	L2 Schneiden- länge	L1 Gesamt- länge	Schneiden	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	No of Flute	Article No.
0.5	4	1.5	50	2	M848.005
0.6	4	1.5	50	2	M848.006
0.8	4	2	50	2	M848.008
1.0	6	3	50	2	M848.010
1.2	6	4	50	2	M848.012
1.5	6	4	50	2	M848.015
1.8	6	5	50	2	M848.018
2.0	6	6	50	2	M848.020
3.0	6	8	50	2	M848.030
4.0	6	10	50	2	M848.040
5.0	6	13	50	2	M848.050
6.0	6	15	50	2	M848.060
8.0	8	20	60	2	M848.080
10.0	10	25	75	2	M848.100
12.0	12	30	75	2	M848.120
16.0	16	42	104	2	M848.160
20.0	20	52	104	2	M848.200

VHM-Schafffräser - Alu-Cutter 40°
Solid carbide end mills - Alu-Cutter 40°

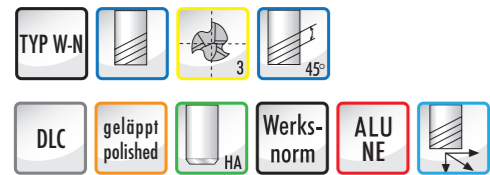
M807



Ø1 Schneiden- durchm.	Ø2 Schaft- durchm.	L2 Schneiden- länge	L1 Gesamt- länge	Schneiden	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	No of Flute	Article No.
6	6	13	57	2	M807.060
8	8	19	63	2	M807.080
10	10	22	72	2	M807.100
12	12	26	83	2	M807.120
16	16	32	92	2	M807.160
20	20	42	104	2	M807.200
25	25	42	110	2	M807.250

VHM-Schlichtfräser - DLC
Solid carbide finishing mill - DLC

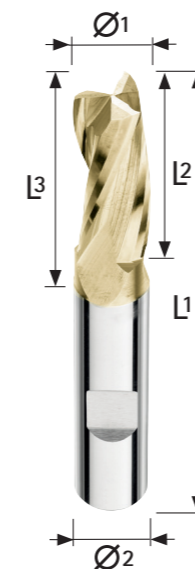
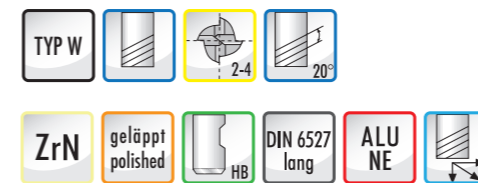
M849



Ø1 Schneiden- durchm.	Ø2 Schaft- durchm.	L2 Schneiden- länge	L1 Gesamt- länge	Schneiden	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	No of Flute	Article No.
1.0	4	3	50	3	M849.010
1.2	4	4	50	3	M849.012
1.5	4	4	50	3	M849.015
1.8	4	5	50	3	M849.018
2.0	4	6	50	3	M849.020
3.0	6	8	50	3	M849.030
4.0	6	10	50	3	M849.040
5.0	6	13	50	3	M849.050
6.0	6	15	50	3	M849.060
8.0	8	20	60	3	M849.080
10.0	10	25	75	3	M849.100
12.0	12	30	75	3	M849.120
16.0	16	42	104	3	M849.160
20.0	20	52	104	3	M849.200
25.0	25	62	104	3	M849.250

VHM-Schafffräser - Alu
Solid carbide end mills - Alu

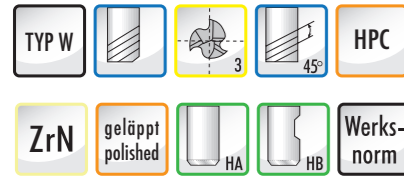
M806



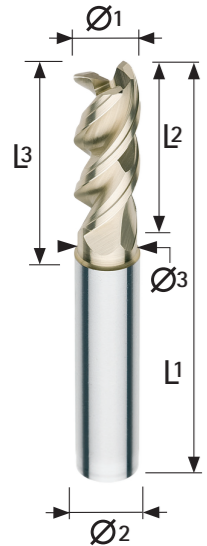
Ø1 Schneiden- durchm.	Ø2 Schaft- durchm.	L2 Schneiden- länge	L1 Gesamt- länge	AP	Schnei- den	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length		No of Flute	Article No.
4	4	13	54	16	2	M806.040
5	5	15	54	18	2	M806.050
6	6	16	64	21	2	M806.060
8	8	22	70	27	2	M806.080
10	10	22	72	32	2	M806.100
12	12	28	83	38	3	M806.120
14	14	30	83	42	3	M806.140
16	16	36	92	44	3	M806.160
18	18	36	92	50	3	M806.180
20	20	41	104	54	4	M806.200
25	25	43	110	63	4	M806.250

VHM-Schafffräser
Solid carbide end mills

M844



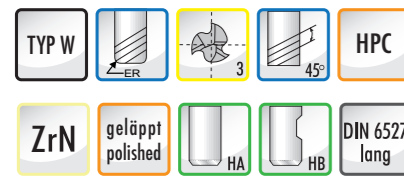
Ø1 Schneiden- durchm,	Ø2 Schaft- durchm,	L2 Schneiden- länge	L1 Gesamt- länge	Ø3	L3	Eckfase	Z	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	Ø3	L3	Chamfer	Z	Article No,
3.0	6	8	57	2.80	12	0.10	3	M844.030
4.0	6	11	57	3.80	18	0.10	3	M844.040
5.0	6	13	57	4.80	18	0.10	3	M844.050
6.0	6	13	57	5.80	18	0.20	3	M844.060
6.0	6	13	80	5.80	42	0.20	3	M844.061
8.0	6	21	63	7.80	25	0.20	3	M844.080
8.0	6	21	100	7.80	62	0.20	3	M844.081
10.0	6	22	72	9.70	30	0.20	3	M844.100
10.0	10	22	100	9.70	58	0.20	3	M844.101
12.0	12	26	83	11.70	36	0.20	3	M844.120
12.0	12	26	120	11.70	73	0.20	3	M844.121
16.0	16	36	92	15.70	42	0.20	3	M844.160
16.0	16	36	150	15.70	100	0.20	3	M844.161
18.0	18	36	92	17.60	42	0.20	3	M844.180
18.0	18	36	150	17.60	100	0.20	3	M844.181
20.0	20	41	104	19.50	52	0.20	3	M844.200
20.0	20	41	150	19.50	98	0.20	3	M844.201
25.0	25	50	121	24.50	65	0.30	3	M844.250



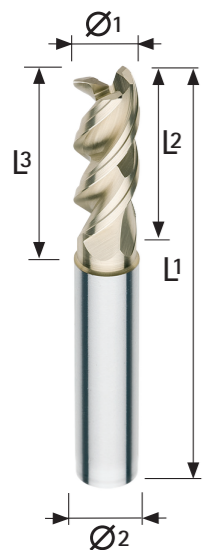
Bitte fügen Sie bei Ihrer Bestellung folgende Codes hinzu: mit Weldon .HB ohne Weldon .HA
Please add the following code to your order: with weldon .HB without weldon .HA

VHM-Schafffräser - ER
Solid carbide end mills - Corner Radius

M845



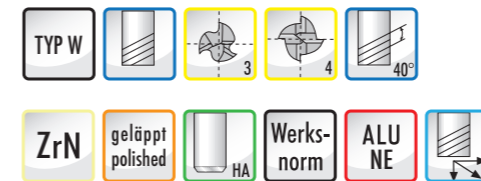
Ø1 Schneiden- durchm,	Ø2 Schaft- durchm,	L2 Schneiden- länge	L1 Gesamt- länge	Ø3	L3	R	Z	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	Ø3	L3	R	Z	Article No,
5.0	6	13	57		18	0.50	3	M845.050
5.0	6	13	57		18	1.00	3	M845.051
6.0	6	13	57		18	0.50	3	M845.060
6.0	6	13	57		18	1.00	3	M845.061
8.0	8	21	63		25	0.50	3	M845.080
8.0	8	21	63		25	1.00	3	M845.081
10.0	10	22	72		30	0.50	3	M845.100
10.0	10	22	72		30	1.00	3	M845.101
12.0	12	26	83		36	0.50	3	M845.120
12.0	12	26	83		36	1.00	3	M845.121
16.0	16	36	92		42	2.00	3	M845.160
16.0	16	36	92		42	4.00	3	M845.161
20.0	20	41	104		52	4.00	3	M845.200
25.0	25	50	121		65	5.00	3	M845.250



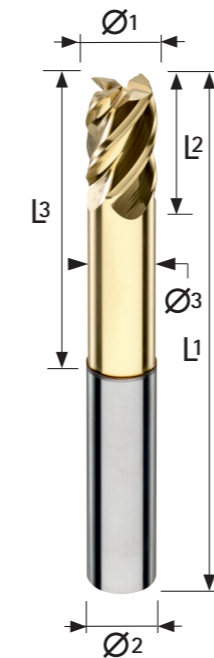
Bitte fügen Sie bei Ihrer Bestellung folgende Codes hinzu: mit Weldon .HB ohne Weldon .HA
Please add the following code to your order: with weldon .HB without weldon .HA

VHM-Schafffräser - lang ALU, 4 Schneiden
Solid carbide end mills - long ALU

M812

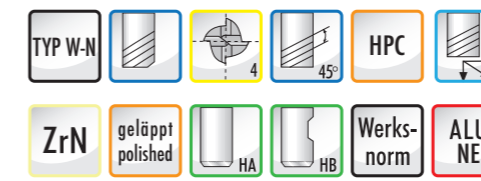


Ø1 Schneiden- durchm,	Ø2 Schaft- durchm,	L2 Schneiden- länge	L1 Gesamt- länge	Ø3	AP	Schnei- den	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	d3	AP	No of Flute	Article No.
6	6	12	70	5,7	30	3	M812.060
8	8	14	80	7,7	35	3	M812.080
10	10	16	90	9,7	45	3	M812.100
12	12	18	100	11,5	55	4	M812.120
16	16	20	115	15,5	65	4	M812.160
20	20	22	125	19,5	75	4	M812.200

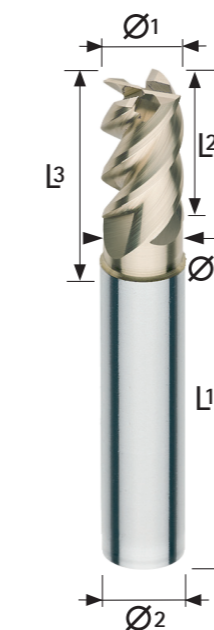


VHM-Schafffräser
Solid carbide end mills

M814



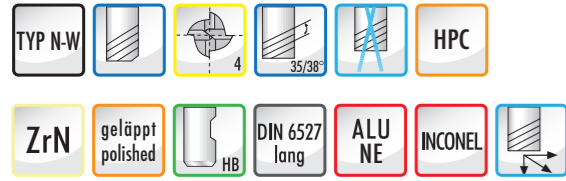
Ø1 Schneiden- durchm,	Ø2 Schaft- durchm,	L2 Schneiden- länge	L1 Gesamt- länge	Ø3	L3	Eckfase	Z	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	Ø3	L3	Chamfer	Z	Article No,
3.0	6	8	57	2.80	12	0.10	4	M814.030
4.0	6	11	57	3.80	18	0.10	4	M814.040
5.0	6	13	57	4.80	18	0.10	4	M814.050
6.0	6	13	57	5.80	18	0.20	4	M814.060
6.0	6	13	80	5.80	42	0.20	4	M814.061
8.0	8	21	63	7.80	25	0.20	4	M814.080
8.0	8	21	100	7.80	62	0.20	4	M814.081
10.0	10	22	72	7.80	30	0.20	4	M814.100
10.0	10	22	100	9.70	58	0.20	4	M814.101
12.0	12	26	83	11.70	36	0.20	4	M814.120
12.0	12	26	120	11.70	73	0.20	4	M814.121
16.0	16	36	92	15.70	42	0.20	4	M814.160
16.0	16	36	150	15.70	100	0.20	4	M814.161
18.0	18	36	92	17.60	42	0.20	4	M814.180
18.0	18	36	150	17.60	100	0.20	4	M814.181
20.0	20	41	104	19.50	52	0.20	4	M814.200
20.0	20	41	150	19.50	98	0.20	4	M814.201
25.0	25	50	121	24.50	65	0.30	4	M814.250



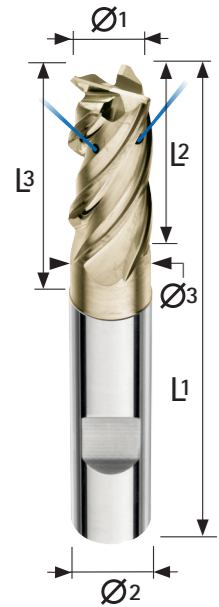
Bitte fügen Sie bei Ihrer Bestellung folgende Codes hinzu: mit Weldon .HB ohne Weldon .HA
Please add the following code to your order: with weldon .HB without weldon .HA

VHM-Schafffräser - Vario-Helix0 NE IK
Solid carbide end mill - Vario-Helix non-ferrous

M408



Ø 1 Schneiden- durchm.	Ø 2 Schaft- durchm.	L2 Schneiden- länge	L1 Gesamt- länge	AP	Ø 3	Zähne	Art-Nr.
Mill dia- meter	Shank diameter	Length of cut	Overall Length	AP	Ø 3	Z	Article No.
3	6	11	57	18	2,8	4	M408.030
4	6	12	57	21	3,6	4	M408.040
5	6	15	57	21	4,5	4	M408.050
6	6	15	57	21	5,5	4	M408.060
8	8	21	63	28	7,5	4	M408.080
10	10	22	72	32	9,5	4	M408.100
12	12	28	83	38	11,5	4	M408.120
14	14	30	83	42	13,5	4	M408.140
16	16	35	92	45	15,5	4	M408.160
20	20	41	104	55	19,5	4	M408.200
25	25	51	110	65	24,0	4	M408.250

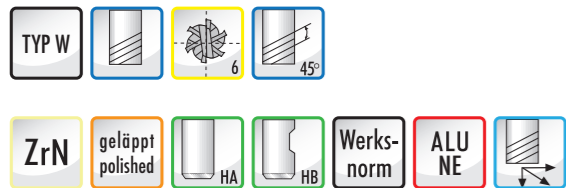


Schaftausführung | Toleranz h5
Rundlaufgenauigkeit 0,005 mm
Polierte Ausführung
erhöhte Radiustoleranz

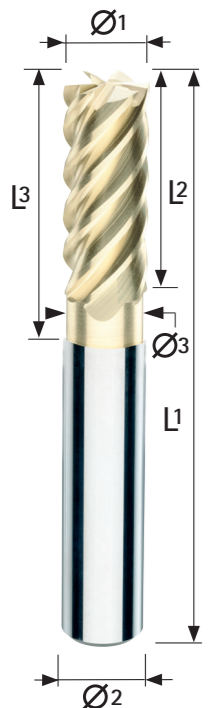
Shank design | tolerance h5
rotation accuracy 0,005 mm
polished design
increased radius tolerance

VHM-Schlichtfräser Multicut
Solid carbide finishing mill

M846



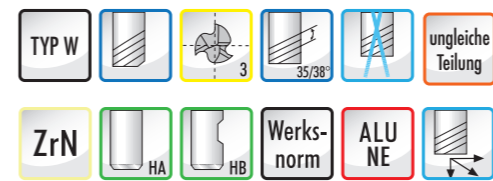
Ø 1 Schneiden- durchm.	Ø 2 Schaft- durchm.	L2 Schneiden- länge	L1 Gesamt- länge	Ø 3	L3	Z	Artikel- nummer
Mill dia- meter	Shank diameter	Length of cut	Overall Length	Ø 3	L3	Z	Article No.
6.0	6	15	57	5.70	20	6	M846.060
6.0	6	15	80	5.70	43	6	M846.061
8.0	8	20	63	7.40	26	6	M846.080
8.0	8	20	100	7.40	62	6	M846.081
10.0	10	25	73	9.20	32	6	M846.100
10.0	10	25	100	9.20	58	6	M846.101
12.0	12	30	83	11.00	37	6	M846.120
12.0	12	30	120	11.00	73	6	M846.121
16.0	16	40	93	15.00	45	6	M846.060
16.0	16	40	150	15.00	100	6	M846.061
20.0	20	50	104	19.00	53	6	M846.080
20.0	20	50	150	19.00	100	6	M846.081
25.0	25	56	150	24.00	92	6	M846.100



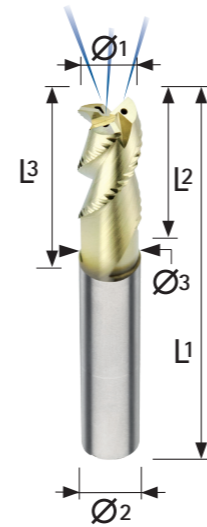
Bitte fügen Sie bei Ihrer Bestellung folgende Codes hinzu: mit Weldon .HB ohne Weldon .HA
Please add the following code to your order: with weldon .HB without weldon .HA

VHM-Schrupfräser NE Typ WF
Solid carbide end mill - NE Type WF

M852

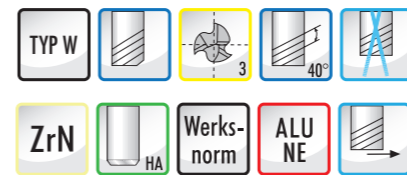


Ø 1 Schneiden- durchm.	Ø 2 Schaft- durchm.	L2 Schneiden- länge	L1 Gesamt- länge	L3	Ø 3	Eckfase	Zähne	Art-Nr.
Mill dia- meter	Shank diameter	Length of cut	Overall Length	L3	Ø 3	Cham- fer	Z	Article No.
6.0	6	13	70	18	5.7	0.4	3	M852.060
8.0	8	21	80	25	7.4	0.4	3	M852.080
10.0	10	22	80	30	9.2	0.4	3	M852.100
12.0	12	26	90	36	11.0	0.4	3	M852.120
16.0	16	36	100	42	15.0	0.4	3	M852.160
20.0	20	41	120	52	19.0	0.4	3	M852.200
25.0	25	50	150	75	24.0	0.5	3	M852.250

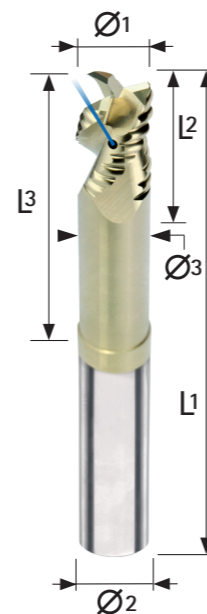


VHM-Schrupfräser NE Typ WR
Solid carbide end mill - NE Type WR

M853

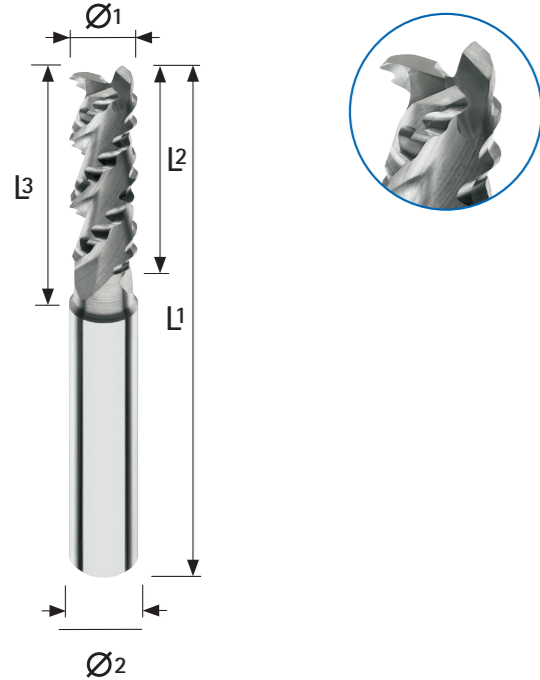
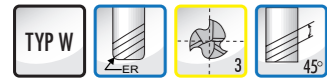


Ø 1 Schneiden- durchm.	Ø 2 Schaft- durchm.	L2 Schneiden- länge	L1 Gesamt- länge	L3	Ø 3	Eckfase	Zähne	Art-Nr.
Mill dia- meter	Shank diameter	Length of cut	Overall Length	L3	Ø 3	Cham- fer	Z	Article No.
6.0	6	10	63	24	5.5	0.3	3	M853.060
8.0	8	12	72	29	7.5	0.4	3	M853.080
10.0	10	14	83	35	9.5	0.5	3	M853.100
12.0	12	16	100	50	11.4	0.6	3	M853.120
16.0	16	20	115	63	15.2	0.8	3	M853.160
20.0	20	20	125	70	19.9	1.0	3	M853.200
25.0	25	25	135	75	22.8	1.25	3	M853.250



VHM-Schaftfräser - Alu-Cutter schrupp
Solid carbide end mills - Alu-Cutter roughing

M805

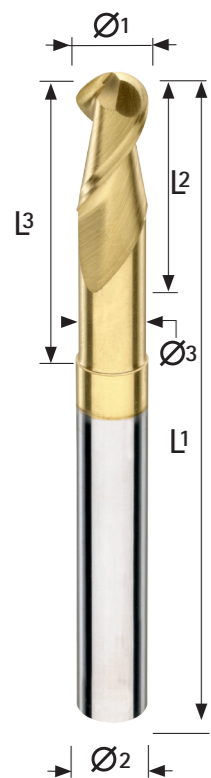
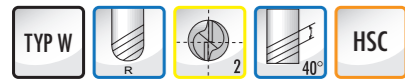


Ø1 Schneiden- durchm.	Ø2 Schaft- durchm.	L2 Schneiden- länge	L1 Gesamt- länge	d3	AP	Ecken-ra- dius	Schneiden	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	d3	AP	corner radius	No of Flute	Article No.
6	6	16	60	4,7	25	0,4	3	M805.060
8	8	25	78	6,3	33	0,5	3	M805.080
10	10	28	78	8,2	35	0,6	3	M805.100
12	12	32	89	10,2	40	0,8	3	M805.120
14	14	32	89	12,0	40	1,0	3	M805.140
16	16	36	96	14,0	45	1,0	3	M805.160
20	20	45	111	17,5	60	1,2	3	M805.200
25	25	50	126	21,8	65	1,5	3	M805.250

Bitte fügen Sie bei Ihrer Bestellung folgende Codes hinzu: mit Weldon .HB ohne Weldon .HA
Please add the following code to your order: with weldon .HB without weldon .HA

VHM-Radiusfräser - lang ALU, 2 Schneiden
Solid carbide ball nose end mills - long ALU

M820



Ø1 Schneiden- durchm.	Ø2 Schaft- durchm.	L2 Schneiden- länge	L1 Gesamt- länge	d3	AP	Schnei- den	Artikel- nummer
Mill diameter	Shank diameter	Length of cut	Overall Length	d3	AP	No of Flute	Article No.
1	6	2	60	0,9	15	2	M820.010
2	6	4	60	1,8	20	2	M820.020
3	6	6	70	2,8	25	2	M820.030
4	6	8	70	3,7	25	2	M820.040
5	6	10	70	4,6	25	2	M820.050
6	6	12	80	5,5	35	2	M820.060
8	8	16	80	7,4	35	2	M820.080
10	10	20	90	9,2	45	2	M820.100
12	12	24	100	11,0	50	2	M820.120

Schnittdatenempfehlung für VHM, Alu-Highspeed, Fräser HSC

Recommended cutting data for solid carbide, alu highspeed, end mills HSC

Werkstoff material	Schnittge- schwindigkeit cutting speed Vc m/min	Vorschub fz (mm pro Schneide) feed fz (mm per teeth) Fräser Ø in mm mill Ø in mm						
		3 - 4	5 - 6	8	10	12	16	20
		Aluminium (Knetlegierung nicht gehärtet, Magnesium Knetlegierung) aluminium (unalloyed, wrought alloy, unhardened, magnesium wrought alloy)	500 - 2000	0,04	0,06	0,08	0,1	0,12
Aluminium (Knetlegierung ausgehärtet, Gußlegierung bis 6% Si) aluminium (wrought alloy, hardened, casting alloy up to 6% Si)	300 - 1000	0,04	0,06	0,08	0,1	0,12	0,15	0,18
Aluminium (Gußlegierung über 6% Si) aluminium (casting alloy over 6% Si)	200 - 600	0,03	0,045	0,06	0,08	0,1	0,11	0,15
Kupfer (unlegiert, Knetlegierung nicht ausgehärtet, Knetlegierung ausgehärtet) chopper (unalloyed, wrought alloy, unhardened, wrought ally, hardened)	120 - 300	0,03	0,045	0,06	0,08	0,1	0,11	0,15
Messing (Cu/Zn, Bronze CuSn - kurz- und langspanend) Faserverstärkte Kunststoffe z. B. Kohlefaser brass (CuZn, bronze CuSn - short and long chipping) fiber reinforced plastic e.g. carbon	100 - 600	0,03	0,045	0,06	0,08	0,1	0,11	0,15
Kunststoffe (Thermoplast, Duroplast) plastics (thermoplastic, duroplastic)	160 - 500	0,03	0,045	0,06	0,08	0,1	0,11	0,15