Leading Through Innovation

SOLID CARBIDE

4G Mill END MILLS

4G Mill VHM - FRÄSER

- High Speed Cutting for Pre-Hardened Steels up to HRc55
- Hochgeschwindigkeitsbearbeitung für vorvergehärtete Stähle bis HRc55

SELECTION GUIDE

MILLING TOOLS

SOLID CARBIDE
4G Mill
END MILLS

High Speed Cutting
for Pre-Hardened Steels up to HRc55

Please visit globalyg1.com/mat for material search

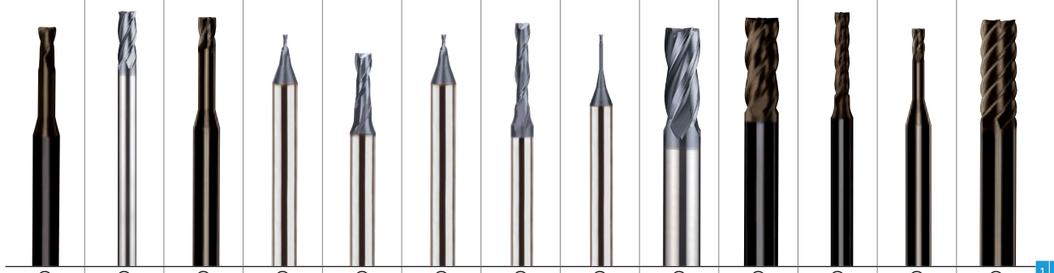
◎ : Excellent ○ : Good

Recommended cutting conditions : p. C300

SERIES	SEMD98	SEM846	SEM846	SEMD99
FLUTE	2	2	2	2
HELIX ANGLE	30°	30°	30°	30°
CUTTING EDGE SHAPE	BALL NOSE	BALL NOSE	BALL NOSE	CORNER RADIUS
SIZE MIN	R0.05	R0.05	R0.25	D0.2
SIZE MAX	R12.5	R6.0	R1.0	D20.0
PAGE	C204	C210	C219	C222
	-	EXTENDED NECK	EXTENDED NECK (6mm SHANK)	-
	Y-Coating	Y-Coating	Y-Coating	Y-Coating

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc				
P	1	Non-alloy steel	About 0.15% C	Annealed	125		○	○	○	○
	2		About 0.45% C	Annealed	190	13	○	○	○	○
	3		About 0.45% C	Quenched & Tempered	250	25	○	○	○	◎
	4		About 0.75% C	Annealed	270	28	◎	◎	◎	◎
	5		About 0.75% C	Quenched & Tempered	300	32	◎	◎	◎	◎
	6	Low alloy steel		Annealed	180	10	○	○	○	○
	7			Quenched & Tempered	275	29	◎	◎	◎	◎
	8			Quenched & Tempered	300	32	◎	◎	◎	◎
	9			Quenched & Tempered	350	38	◎	◎	◎	◎
	10	High alloyed steel, and tool steel		Annealed	200	15	○	○	○	○
	11			Quenched & Tempered	325	35	◎	◎	◎	◎
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15				
	13		Martensitic	Quenched & Tempered	240	23				
	14		Austenitic		180	10				
K	15	Grey cast iron	Pearlitic / ferritic		180	10	○	○	○	○
	16		Pearlitic (Martensitic)		260	26	○	○	○	○
	17	Nodular cast iron	Ferritic		160	3	○	○	○	○
	18		Pearlitic		250	25	○	○	○	○
	19	Malleable cast iron	Ferritic		130		○	○	○	○
	20		Pearlitic		230	21	○	○	○	○
N	21	Aluminum-wrought alloy	Not Curable		60					
	22		Curable	Hardened	100					
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75					
	24		≤ 12% Si, Curable	Hardened	90					
	25		> 12% Si, Not Curable		130					
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110					
	27		CuZn, CuSnZn (Brass)		90					
	28		CuSn, lead-free copper and electrolytic copper		100					
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic							
	30		Rubber, Wood, etc.							
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15				
	32			Cured	280	30				
	33		Ni or Co Based	Annealed	250	25				
	34			Cured	350	38				
	35			Cast	320	34				
	36	Titanium Alloys	Pure Titanium		400 Rm					
	37		Alpha + Beta Alloys	Hardened	1050 Rm					
H	38	Hardened steel		Hardened	550	55	○	○	○	○
	39			Hardened	630	60				
	40	Chilled Cast Iron		Cast	400	42	◎	◎	◎	◎
	41	Hardened Cast Iron		Hardened	550	55	○	○	○	○

SEME61	SEME01	SEME64	SEME35	SEME35	SEME35	SEME70	SEM845	SEME36	SEME71	SEME72	SEME73	SEME75
2	4	4	2	2	2	2	2	4	4	4	4	6
30°	27°/30° (MULTIPLE HELIX)	27°/30° (MULTIPLE HELIX)	30°	30°	30°	30°	30°	27°/30° (MULTIPLE HELIX)	35°/38° (MULTIPLE HELIX)	30°	30°	45°
CORNER RADIUS	CORNER RADIUS	CORNER RADIUS	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE
D0.2	D1.0	D1.0	D0.1	D0.1	D1.0	D1.0	D0.1	D0.8	D1.0	D1.0	D1.0	D6.0
D20.0	D20.0	D20.0	D25.0	D4.0	D3.0	D25.0	D12.0	D25.0	D20.0	D25.0	D12.0	D20.0
C228	C244	C250	C263	C266	C267	C268	C273	C281	C283	C286	C291	C296
EXTENDED NECK	-	EXTENDED NECK	-	4mm SHANK	3mm SHANK	LONG LENGTH	EXTENDED NECK	-	SHARP CORNER REMOVAL	LONG LENGTH	EXTENDED NECK	-
Y-Coating	Y-Coating	Y-Coating	Y-Coating	Y-Coating	Y-Coating	Y-Coating	Y-Coating	Y-Coating	Y-Coating	Y-Coating	Y-Coating	Y-Coating



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SELECTION GUIDE

MILLING TOOLS

SOLID CARBIDE 4G Mill END MILLS

X-SPEED ROUGHER

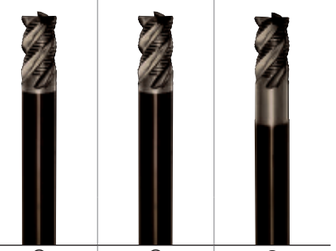
High Speed Cutting
for Pre-Hardened Steels up to HRc55

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : p. C368

SERIES	G9D75 G9D67	G9D76 G9D68	G9D77 G9D69
FLUTE	4&5	4&5	4&5
HELIX ANGLE	44°~45° (MULTIPLE HELIX)	44°~45° (MULTIPLE HELIX)	44°~45° (MULTIPLE HELIX)
CUTTING EDGE SHAPE	CORNER RADIUS ROUGHING	CORNER RADIUS ROUGHING	CORNER RADIUS ROUGHING
SIZE MIN	D6.0	D6.0	D6.0
SIZE MAX	D20.0	D20.0	D20.0
PAGE	C297	C298	C299
	SHORT LENGTH	LONG LENGTH	LONG REACH
	X-Coating	X-Coating	X-Coating



ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc			
P	1	Non-alloy steel	About 0.15% C	Annealed	125		○	○	○
	2		About 0.45% C	Annealed	190	13	○	○	○
	3		About 0.45% C	Quenched & Tempered	250	25	◎	◎	◎
	4		About 0.75% C	Annealed	270	28	◎	◎	◎
	5		About 0.75% C	Quenched & Tempered	300	32	◎	◎	◎
	6	Low alloy steel		Annealed	180	10	○	○	○
	7			Quenched & Tempered	275	29	◎	◎	◎
	8			Quenched & Tempered	300	32	◎	◎	◎
	9			Quenched & Tempered	350	38	◎	◎	◎
	10	High alloyed steel, and tool steel		Annealed	200	15	○	○	○
	11			Quenched & Tempered	325	35	◎	◎	◎
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	○	○	○
	13		Martensitic	Quenched & Tempered	240	23	○	○	○
	14		Austenitic		180	10	○	○	○
K	15	Grey cast iron	Pearlitic / ferritic		180	10	◎	◎	◎
	16		Pearlitic (Martensitic)		260	26	◎	◎	◎
	17	Nodular cast iron	Ferritic		160	3	◎	◎	◎
	18		Pearlitic		250	25	◎	◎	◎
	19	Malleable cast iron	Ferritic		130		◎	◎	◎
	20		Pearlitic		230	21	◎	◎	◎
N	21	Aluminum-wrought alloy	Not Curable		60				
	22		Curable	Hardened	100				
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75				
	24		≤ 12% Si, Curable	Hardened	90				
	25		> 12% Si, Not Curable		130				
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110		○	○	○
	27		CuZn, CuSnZn (Brass)		90		○	○	○
	28		CuSn, lead-free copper and electrolytic copper		100		○	○	○
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic						
	30		Rubber, Wood, etc.						
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15			
	32			Cured	280	30			
	33		Ni or Co Based	Annealed	250	25			
	34			Cured	350	38			
	35			Cast	320	34			
	36	Titanium Alloys	Pure Titanium		400 Rm				
	37		Alpha + Beta Alloys	Hardened	1050 Rm				
H	38	Hardened steel		Hardened	550	55			
	39			Hardened	630	60			
	40	Chilled Cast Iron		Cast	400	42			
	41	Hardened Cast Iron		Hardened	550	55			

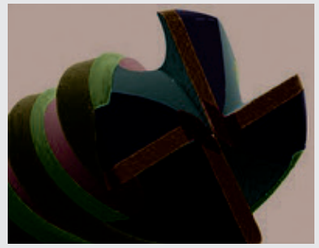
CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X1-EH END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
JET-POWER END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-POWER END MILLS
D-POWER GRAPHITE END MILLS
CRX S END MILLS
K-2 END MILLS
ONLY ONE COATED PM60 END MILLS
TANK POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS

X-SPEED ROUGHER

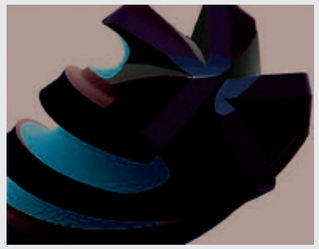
CHARACTERISTICS

Unique flute design for excellent chip evacuation and vibration reduction.
Optimal roughing tooth profile to reduce cutting forces.
Special tool geometry for high feed rate and heavy cutting.
Strong end tooth design for plunge and pocket milling.
Custom engineered coating to allow long tool life and excellent chip evacuation.

▶ 4 FLUTE



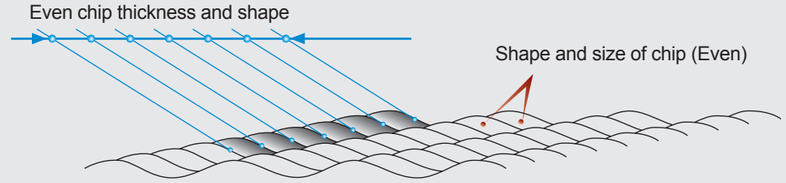
▶ 5 FLUTE



CHIP THICKNESS AND SHAPE

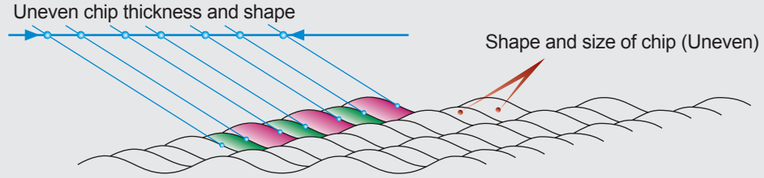
▶ **Conventional Roughing End Mills**

Even chip thickness and shape



▶ **X-SPEED Rougher**

Uneven chip thickness and shape



4G MILL END MILLS

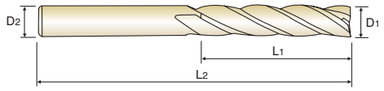
PLAIN SHANK **SEME72** SERIES

CARBIDE, 4 FLUTE LONG LENGTH

VOLLHARTMETALL, 4 SCHNEIDEN LANG
Fraise carbure, 4 dents, longue
MD, 4 TAGLIENTI, SPIGOLO VIVO, SERIE LUNGA

- New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- Available in short, regular and long shank end mills.

- Aufgrund einer neuartigen Beschichtung und neuer Werkzeuggeometrien hervorragende Schnittleistung und Verschleißfestigkeit
- Hervorragende Leistung bei der Zerspanung von vorvergüteten Stählen bis HRc55, welche im Werkzeug- und Formenbau Verwendung finden.
- Erhältlich in verschiebenen Schneiden- und Gesamtlängen.



CARBIDE | 4 | 30° | PLAIN | Y Coating | p.C354~C359

Unit : mm

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
SEME7201003E	1.0	6	3	60
SEME7201005E	1.0	6	5	60
SEME7201006E	1.0	6	6	60
SEME7201008E	1.0	6	8	60
SEME7201010E	1.0	6	10	60
SEME7201012E	1.0	6	12	60
SEME7201208E	1.2	6	8	60
SEME7201210E	1.2	6	10	60
SEME7201506E	1.5	6	6	60
SEME7201508E	1.5	6	8	60
SEME7201510E	1.5	6	10	60
SEME7201512E	1.5	6	12	60
SEME7201514E	1.5	6	14	60
SEME7201516E	1.5	6	16	60
SEME7202008E	2.0	6	8	60
SEME7202010E	2.0	6	10	60
SEME7202012E	2.0	6	12	60
SEME7202014E	2.0	6	14	60
SEME7202016E	2.0	6	16	60
SEME7202510E	2.5	6	10	60
SEME7202512E	2.5	6	12	60
SEME7202516E	2.5	6	16	60
SEME7202520E	2.5	6	20	60
SEME7202526E	2.5	6	26	60

▶ NEXT PAGE

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h5

◎ : Excellent ○ : Good

ISO	P											M			K						
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	○	○	◎	◎	◎	○	◎	◎	◎	○	◎				○	○	○	○	○	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend																		○		◎	○

CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X1-EH END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
JET-POWER END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
D-POWER GRAPHITE END MILLS
CRX S END MILLS
K-2 END MILLS
ONLY ONE COATED PM60 END MILLS
TANK POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS

4G MILL END MILLS

PLAIN SHANK **SEME72** SERIES

CARBIDE, 4 FLUTE LONG LENGTH

VOLLHARTMETALL, 4 SCHNEIDEN LANG
Fraise carbure, 4 dents, longue
MD, 4 TAGLIENTI, SPIGOLO VIVO, SERIE LUNGA

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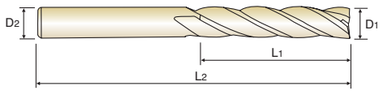
- Erhältlich in verschiebenen Schneiden- und Gesamtlängen.



CARBIDE | 4 | 30° | PLAIN | Y Coating | p.C354~C359

Unit : mm

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
SEME72030163SE	3.0	3	16	100
SEME7203010E	3.0	6	10	70
SEME7203012E	3.0	6	12	70
SEME7203014E	3.0	6	14	70
SEME7203016E	3.0	6	16	70
SEME7203020E	3.0	6	20	70
SEME7203026E	3.0	6	26	70
SEME7203030E	3.0	6	30	70
SEME72040204SE	4.0	4	20	100
SEME7204012E	4.0	6	12	70
SEME7204016E	4.0	6	16	70
SEME7204020E	4.0	6	20	70
SEME7204026E	4.0	6	26	70
SEME7204030E	4.0	6	30	70
SEME7205020E	5.0	6	20	70
SEME7205025E	5.0	6	25	70
SEME7205025100E	5.0	6	25	100
SEME7205030E	5.0	6	30	80
SEME7205035E	5.0	6	35	90
SEME7205040E	5.0	6	40	100
SEME7206015080E	6.0	6	15	80
SEME7206020E	6.0	6	20	70
SEME7206020090E	6.0	6	20	90
SEME7206025E	6.0	6	25	75

▶ NEXT PAGE

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h5

◎ : Excellent ○ : Good

ISO	P											M			K						
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	○	○	◎	◎	◎	○	◎	◎	◎	○	◎				○	○	○	○	○	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend																		○		◎	○

4G MILL END MILLS

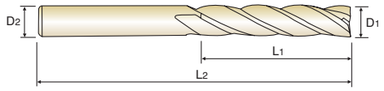
PLAIN SHANK **SEME72** SERIES

CARBIDE, 4 FLUTE LONG LENGTH

VOLLHARTMETALL, 4 SCHNEIDEN LANG
Fraise carbure, 4 dents, longue
MD, 4 TAGLIENTI, SPIGOLO VIVO, SERIE LUNGA

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available in short, regular and long shank end mills.

- ▶ Aufgrund einer neuartigen Beschichtung und neuer Werkzeuggeometrien hervorragende Schnittleistung und Verschleißfestigkeit
- ▶ Hervorragende Leistung bei der Zerspanung von vorvergüteten Stählen bis HRc55, welche im Werkzeug- und Formenbau Verwendung finden.
- ▶ Erhältlich in verschiebenen Schneiden- und Gesamtlängen.



CARBIDE | 4 | 30° | PLAIN | Y Coating | p.C354~C359

Unit : mm

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
SEME7206030E	6.0	6	30	80
SEME7206030100E	6.0	6	30	100
SEME7206030150E	6.0	6	30	150
SEME7206035E	6.0	6	35	90
SEME7206040E	6.0	6	40	90
SEME7206040120E	6.0	6	40	120
SEME7206045E	6.0	6	45	150
SEME7208025E	8.0	8	25	80
SEME7208030E	8.0	8	30	80
SEME7208030100E	8.0	8	30	100
SEME7208035E	8.0	8	35	90
SEME7208040E	8.0	8	40	90
SEME7208040120E	8.0	8	40	120
SEME7208040150E	8.0	8	40	150
SEME7208045E	8.0	8	45	100
SEME7208050E	8.0	8	50	100
SEME7208050150E	8.0	8	50	150
SEME7210030E	10.0	10	30	80
SEME7210030100E	10.0	10	30	100
SEME7210035E	10.0	10	35	90
SEME7210040E	10.0	10	40	90
SEME7210040120E	10.0	10	40	120
SEME7210045E	10.0	10	45	100
SEME7210050E	10.0	10	50	100

▶ NEXT PAGE

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h5

◎ : Excellent ○ : Good

ISO	P											M			K						
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommend	○	○	◎	◎	◎	○	◎	◎	◎	○	◎				○	○	○	○	○	○	

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend																		○		◎	○

CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X1-EH END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
JET-POWER END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
D-POWER GRAPHITE END MILLS
CRX S END MILLS
K-2 END MILLS
ONLY ONE COATED PM60 END MILLS
TANK POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS

4G MILL END MILLS

PLAIN SHANK **SEME72** SERIES

CARBIDE, 4 FLUTE LONG LENGTH

VOLLHARTMETALL, 4 SCHNEIDEN LANG
Fraise carbure, 4 dents, longue
MD, 4 TAGLIENTI, SPIGOLO VIVO, SERIE LUNGA

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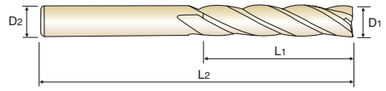
- ▶ Hervorragende Leistung bei der Zerspanung von vorvergüteten Stählen bis HRc55, welche im Werkzeug- und Formenbau Verwendung finden.
- ▶ Erhältlich in verschiebenen Schneiden- und Gesamtlängen.



CARBIDE | 4 | 30° | PLAIN | Y Coating | p.C354~C359

Unit : mm

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
SEME7210050150E	10.0	10	50	150
SEME7210050200E	10.0	10	50	200
SEME7210055E	10.0	10	55	150
SEME7210060E	10.0	10	60	110
SEME7210060200E	10.0	10	60	200
SEME7212035E	12.0	12	35	90
SEME7212040E	12.0	12	40	100
SEME7212040120E	12.0	12	40	120
SEME7212045E	12.0	12	45	130
SEME7212050E	12.0	12	50	100
SEME7212050150E	12.0	12	50	150
SEME7212055E	12.0	12	55	110
SEME7212060E	12.0	12	60	110
SEME7212060150E	12.0	12	60	150
SEME7212060200E	12.0	12	60	200
SEME7212065E	12.0	12	65	150
SEME7212070E	12.0	12	70	120
SEME7212070200E	12.0	12	70	200
SEME7214050E	14.0	16	50	110
SEME7214060E	14.0	16	60	150
SEME7216040E	16.0	16	40	150
SEME7216050E	16.0	16	50	110
SEME7216050150E	16.0	16	50	150
SEME7216070E	16.0	16	70	130

▶ NEXT PAGE

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h5

◎ : Excellent ○ : Good

ISO	P											M			K						
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommend	○	○	◎	◎	◎	○	◎	◎	◎	○	◎				○	○	○	○	○	○	

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend																		○		◎	○

4G MILL END MILLS

PLAIN SHANK **SEME72 SERIES**

CARBIDE, 4 FLUTE LONG LENGTH

VOLLHARTMETALL, 4 SCHNEIDEN LANG
Fraise carbure, 4 dents, longue
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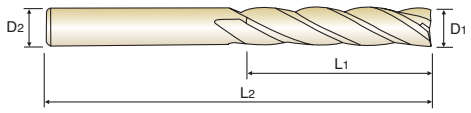
- Hervorragende Leistung bei der Zerspanung von vorvergüteten Stählen bis HRc55, welche im Werkzeug- und Formenbau Verwendung finden.
- Erhältlich in verschiebenen Schneiden- und Gesamtlängen.



CARBIDE | 4 | 30° | PLAIN | Y Coating

p.C354~C359

Unit : mm

EDP No.	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Overall Length L2
SEME7216070150E	16.0	16	70	150
SEME7216070200E	16.0	16	70	200
SEME7216080E	16.0	16	80	150
SEME7216090E	16.0	16	90	150
SEME72160110E	16.0	16	110	200
SEME72160120E	16.0	16	120	250
SEME7218070E	18.0	20	70	130
SEME7220050E	20.0	20	50	110
SEME7220050150E	20.0	20	50	150
SEME7220060E	20.0	20	60	130
SEME7220070E	20.0	20	70	130
SEME7220080E	20.0	20	80	150
SEME7220090E	20.0	20	90	150
SEME7220090200E	20.0	20	90	200
SEME72200110E	20.0	20	110	200
SEME72200120E	20.0	20	120	250
SEME7222075E	22.0	20	75	150
SEME72220110E	22.0	20	110	200
SEME7225070E	25.0	25	70	150
SEME7225090E	25.0	25	90	150
SEME72250110E	25.0	25	110	200
SEME72250120E	25.0	25	120	250

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h5

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	○	○	◎	◎	◎	○	◎	◎	◎	○	◎				○	○	○	○	○	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend																		○		◎	○

4G MILL END MILLS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

SEME72 SERIES — 4 FLUTE - SIDE CUTTING

Vc = m/min.
fz = mm/tooth
RPM = rev./min.
FEED = mm/min.
LOC = Length of Cut

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)											
						1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.2	1.2	1.2
					LOC	3	4	5	6	7	8	10	12	4	6	8	10
P	1-5	Non-alloy steel	0.05D	2.5D	Vc	60	60	60	54	54	54	54	48	61	61	55	55
					fz	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.002
					RPM	19099	19099	19099	17189	17189	17189	17189	15279	16181	16181	14589	14589
					FEED	153	153	153	138	138	138	138	122	194	194	175	117
	6-8	Low alloy steel	0.05D	2.5D	Vc	60	60	60	54	54	54	54	48	61	61	55	55
					fz	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.002
					RPM	19099	19099	19099	17189	17189	17189	17189	15279	16181	16181	14589	14589
					FEED	153	153	153	138	138	138	138	122	194	194	175	117
	9		0.05D	2.5D	Vc	34	34	34	31	31	31	31	28	35	35	31	31
					fz	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.002	0.002	0.002	0.002
					RPM	10823	10823	10823	9868	9868	9868	9868	8913	9284	9284	8223	8223
					FEED	87	87	87	79	79	39	39	36	74	74	66	66
	10-11.1	High alloyed steel, and tool steel	0.05D	2.5D	Vc	60	60	60	54	54	54	54	48	61	61	55	55
					fz	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.002
					RPM	19099	19099	19099	17189	17189	17189	17189	15279	16181	16181	14589	14589
					FEED	153	153	153	138	138	138	138	122	194	194	175	117
	11.2		0.05D	2.5D	Vc	34	34	34	31	31	31	31	28	35	35	31	31
					fz	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.002	0.002	0.002	0.002
					RPM	10823	10823	10823	9868	9868	9868	9868	8913	9284	9284	8223	8223
					FEED	87	87	87	79	79	39	39	36	74	74	66	66
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.05D	2.5D	Vc	60	60	60	54	54	54	54	48	61	61	55	55
					fz	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.002
					RPM	19099	19099	19099	17189	17189	17189	17189	15279	16181	16181	14589	14589
					FEED	153	153	153	138	138	138	138	122	194	194	175	117
H	38.1 - 38.2	Hardened steel	0.02D	2.0D	Vc	21	21	21	19	19	19	19	17	21	21	19	19
					fz	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.001
					RPM	6685	6685	6685	6048	6048	6048	6048	5411	5570	5570	5040	5040
					FEED	27	27	27	24	24	24	24	22	45	45	40	20
	40	Chilled Cast Iron	0.05D	2.5D	Vc	34	34	34	31	31	31	31	28	35	35	31	31
					fz	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.002	0.002	0.002	0.002
					RPM	10823	10823	10823	9868	9868	9868	9868	8913	9284	9284	8223	8223
					FEED	87	87	87	79	79	39	39	36	74	74	66	66
	41	Hardened Cast Iron	0.02D	2.0D	Vc	21	21	21	19	19	19	19	17	21	21	19	19
					fz	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.001
					RPM	6685	6685	6685	6048	6048	6048	6048	5411	5570	5570	5040	5040
					FEED	27	27	27	24	24	24	24	22	45	45	40	20

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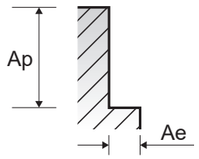

4G MILL END MILLS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

SEME72 SERIES — 4 FLUTE - SIDE CUTTING

Vc = m/min.
fz = mm/tooth
RPM = rev./min.
FEED = mm/min.
LOC = Length of Cut

VDI 3323	Parameter	Diameter (Ø)																		
		1.2	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	3.0	3.0
	LOC	12	6	8	10	12	14	16	8	10	12	14	16	10	12	16	20	26	10	12
1-5	Vc	55	65	59	59	59	59	52	66	66	60	60	60	71	71	64	64	57	70	70
	fz	0.002	0.004	0.004	0.004	0.003	0.003	0.003	0.006	0.006	0.005	0.005	0.005	0.007	0.007	0.006	0.006	0.005	0.009	0.009
	RPM	14589	13793	12520	12520	12520	12520	11035	10504	10504	9549	9549	9549	9040	9040	8149	8149	7257	7427	7427
	FEED	117	221	200	200	150	150	132	252	252	191	191	191	253	253	196	196	145	267	267
6-8	Vc	55	65	59	59	59	59	52	66	66	60	60	60	71	71	64	64	57	70	70
	fz	0.002	0.004	0.004	0.004	0.003	0.003	0.003	0.006	0.006	0.005	0.005	0.005	0.007	0.007	0.006	0.006	0.005	0.009	0.009
	RPM	14589	13793	12520	12520	12520	12520	11035	10504	10504	9549	9549	9549	9040	9040	8149	8149	7257	7427	7427
	FEED	117	221	200	200	150	150	132	252	252	191	191	191	253	253	196	196	145	267	267
9	Vc	31	37	33	33	33	33	30	38	38	34	34	34	41	41	37	37	32	40	40
	fz	0.002	0.003	0.003	0.002	0.002	0.002	0.002	0.004	0.004	0.004	0.004	0.003	0.005	0.005	0.005	0.004	0.004	0.007	0.007
	RPM	8223	7852	7003	7003	7003	7003	6366	6048	6048	5411	5411	5411	5220	5220	4711	4711	4074	4244	4244
	FEED	66	94	84	56	56	56	51	97	97	87	87	65	104	104	94	75	65	119	119
10 - 11.1	Vc	55	65	59	59	59	59	52	66	66	60	60	60	71	71	64	64	57	70	70
	fz	0.002	0.004	0.004	0.004	0.003	0.003	0.003	0.006	0.006	0.005	0.005	0.005	0.007	0.007	0.006	0.006	0.005	0.009	0.009
	RPM	14589	13793	12520	12520	12520	12520	11035	10504	10504	9549	9549	9549	9040	9040	8149	8149	7257	7427	7427
	FEED	117	221	200	200	150	150	132	252	252	191	191	191	253	253	196	196	145	267	267
11.2	Vc	31	37	33	33	33	33	30	38	38	34	34	34	41	41	37	37	32	40	40
	fz	0.002	0.003	0.003	0.002	0.002	0.002	0.002	0.004	0.004	0.004	0.004	0.003	0.005	0.005	0.005	0.004	0.004	0.007	0.007
	RPM	8223	7852	7003	7003	7003	7003	6366	6048	6048	5411	5411	5411	5220	5220	4711	4711	4074	4244	4244
	FEED	66	94	84	56	56	56	51	97	97	87	87	65	104	104	94	75	65	119	119
15 - 20	Vc	55	65	59	59	59	59	52	66	66	60	60	60	71	71	64	64	57	70	70
	fz	0.002	0.004	0.004	0.004	0.003	0.003	0.003	0.006	0.006	0.005	0.005	0.005	0.007	0.007	0.006	0.006	0.005	0.009	0.009
	RPM	14589	13793	12520	12520	12520	12520	11035	10504	10504	9549	9549	9549	9040	9040	8149	8149	7257	7427	7427
	FEED	117	221	200	200	150	150	132	252	252	191	191	191	253	253	196	196	145	267	267
38.1 - 38.2	Vc	19	23	20	20	20	20	18	24	24	21	21	21	25	25	23	23	20	25	25
	fz	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.004	0.004	0.003	0.003	0.003	0.005	0.005	0.004	0.004	0.003	0.006	0.006
	RPM	5040	4881	4244	4244	4244	4244	3820	3820	3820	3342	3342	3342	3183	3183	2928	2928	2546	2653	2653
	FEED	20	39	34	34	34	34	31	61	61	40	40	40	64	64	47	47	31	64	64
40	Vc	31	37	33	33	33	33	30	38	38	34	34	34	41	41	37	37	32	40	40
	fz	0.002	0.003	0.003	0.002	0.002	0.002	0.002	0.004	0.004	0.004	0.004	0.003	0.005	0.005	0.005	0.004	0.004	0.007	0.007
	RPM	8223	7852	7003	7003	7003	7003	6366	6048	6048	5411	5411	5411	5220	5220	4711	4711	4074	4244	4244
	FEED	66	94	84	56	56	56	51	97	97	87	87	65	104	104	94	75	65	119	119
41	Vc	19	23	20	20	20	20	18	24	24	21	21	21	25	25	23	23	20	25	25
	fz	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.004	0.004	0.003	0.003	0.003	0.005	0.005	0.004	0.004	0.003	0.006	0.006
	RPM	5040	4881	4244	4244	4244	4244	3820	3820	3820	3342	3342	3342	3183	3183	2928	2928	2546	2653	2653
	FEED	20	39	34	34	34	34	31	61	61	40	40	40	64	64	47	47	31	64	64

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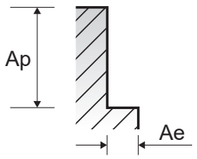

4G MILL END MILLS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

SEME72 SERIES — 4 FLUTE - SIDE CUTTING

Vc = m/min.
fz = mm/tooth
RPM = rev./min.
FEED = mm/min.
LOC = Length of Cut

ISO	VDI 3323	Ae	Ap	Parameter	Diameter (Ø)														
					3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0
				LOC	14	16	20	26	30	12	16	20	26	30	20	25	30	35	40
P	1-5	0.05D	2.5D	Vc	70	63	63	63	63	75	75	75	68	68	80	80	72	72	72
				fz	0.009	0.009	0.008	0.008	0.008	0.014	0.014	0.014	0.013	0.013	0.021	0.021	0.019	0.019	0.017
				RPM	7427	6685	6685	6685	6685	5968	5968	5968	5411	5411	5093	5093	4584	4584	4584
				FEED	267	241	214	214	214	334	334	334	281	281	428	428	348	348	312
	6-8	0.05D	2.5D	Vc	70	63	63	63	63	75	75	75	68	68	80	80	72	72	72
				fz	0.009	0.009	0.008	0.008	0.008	0.014	0.014	0.014	0.013	0.013	0.021	0.021	0.019	0.019	0.017
				RPM	7427	6685	6685	6685	6685	5968	5968	5968	5411	5411	5093	5093	4584	4584	4584
				FEED	267	241	214	214	214	334	334	334	281	281	428	428	348	348	312
	9	0.05D	2.5D	Vc	40	36	36	36	36	43	43	43	39	39	46	46	41	41	41
				fz	0.007	0.007	0.006	0.006	0.006	0.01	0.01	0.01	0.009	0.009	0.015	0.015	0.013	0.013	0.011
				RPM	4244	3820	3820	3820	3820	3422	3422	3422	3104	3104	2928	2928	2610	2610	2610
				FEED	119	107	92	92	92	137	137	137	112	112	176	176	136	136	115
	10-11.1	0.05D	2.5D	Vc	70	63	63	63	63	75	75	75	68	68	80	80	72	72	72
				fz	0.009	0.009	0.008	0.008	0.008	0.014	0.014	0.014	0.013	0.013	0.021	0.021	0.019	0.019	0.017
				RPM	7427	6685	6685	6685	6685	5968	5968	5968	5411	5411	5093	5093	4584	4584	4584
				FEED	267	241	214	214	214	334	334	334	281	281	428	428	348	348	312
	11.2	0.05D	2.5D	Vc	40	36	36	36	36	43	43	43	39	39	46	46	41	41	41
				fz	0.007	0.007	0.006	0.006	0.006	0.01	0.01	0.01	0.009	0.009	0.015	0.015	0.013	0.013	0.011
				RPM	4244	3820	3820	3820	3820	3422	3422	3422	3104	3104	2928	2928	2610	2610	2610
				FEED	119	107	92	92	92	137	137	137	112	112	176	176	136	136	115
K	15-20	0.05D	2.5D	Vc	70	63	63	63	63	75	75	75	68	68	80	80	72	72	72
				fz	0.009	0.009	0.008	0.008	0.008	0.014	0.014	0.014	0.013	0.013	0.021	0.021	0.019	0.019	0.017
				RPM	7427	6685	6685	6685	6685	5968	5968	5968	5411	5411	5093	5093	4584	4584	4584
				FEED	267	241	214	214	214	334	334	334	281	281	428	428	348	348	312
H	38.1 - 38.2	0.02D	2.0D	Vc	25	22	22	22	22	27	27	27	24	24	30	30	27	27	27
				fz	0.006	0.006	0.006	0.005	0.005	0.008	0.008	0.008	0.008	0.008	0.011	0.011	0.01	0.01	0.009
				RPM	2653	2334	2334	2334	2334	2149	2149	2149	1910	1910	1910	1910	1719	1719	1719
				FEED	64	56	56	47	47	69	69	69	61	61	84	84	69	69	62
	40	0.05D	2.5D	Vc	40	36	36	36	36	43	43	43	39	39	46	46	41	41	41
				fz	0.007	0.007	0.006	0.006	0.006	0.01	0.01	0.01	0.009	0.009	0.015	0.015	0.013	0.013	0.011
				RPM	4244	3820	3820	3820	3820	3422	3422	3422	3104	3104	2928	2928	2610	2610	2610
				FEED	119	107	92	92	92	137	137	137	112	112	176	176	136	136	115
	41	0.02D	2.0D	Vc	25	22	22	22	22	27	27	27	24	24	30	30	27	27	27
				fz	0.006	0.006	0.006	0.005	0.005	0.008	0.008	0.008	0.008	0.008	0.011	0.011	0.01	0.01	0.009
				RPM	2653	2334	2334	2334	2334	2149	2149	2149	1910	1910	1910	1910	1719	1719	1719
				FEED	64	56	56	47	47	69	69	69	61	61	84	84	69	69	62

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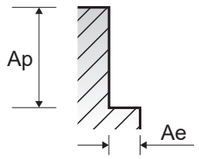

4G MILL END MILLS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

SEME72 SERIES — 4 FLUTE - SIDE CUTTING

Vc = m/min.
fz = mm/tooth
RPM = rev./min.
FEED = mm/min.
LOC = Length of Cut

VDI 3323	Parameter	Diameter (Ø)																	
		6.0	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	8.0	8.0	8.0	8.0	10.0	10.0	10.0	10.0	10.0	10.0
	LOC	15	20	25	30	35	40	45	25	30	35	40	45	50	30	35	40	45	50	55
1-5	Vc	83	83	83	83	75	75	75	84	84	84	84	76	76	89	89	89	89	89	80
	fz	0.029	0.029	0.029	0.025	0.025	0.022	0.022	0.041	0.041	0.041	0.035	0.035	0.031	0.049	0.049	0.049	0.042	0.042	0.041
	RPM	4403	4403	4403	4403	3979	3979	3979	3342	3342	3342	3342	3024	3024	2833	2833	2833	2833	2833	2546
	FEED	511	511	511	440	398	350	350	548	548	548	468	423	375	555	555	555	476	476	418
6-8	Vc	83	83	83	83	75	75	75	84	84	84	84	76	76	89	89	89	89	89	80
	fz	0.029	0.029	0.029	0.025	0.025	0.022	0.022	0.041	0.041	0.041	0.035	0.035	0.031	0.049	0.049	0.049	0.042	0.042	0.041
	RPM	4403	4403	4403	4403	3979	3979	3979	3342	3342	3342	3342	3024	3024	2833	2833	2833	2833	2833	2546
	FEED	511	511	511	440	398	350	350	548	548	548	468	423	375	555	555	555	476	476	418
9	Vc	48	48	48	48	43	43	43	48	48	48	48	43	43	52	52	52	52	52	46
	fz	0.021	0.021	0.021	0.018	0.018	0.016	0.016	0.028	0.028	0.028	0.024	0.024	0.021	0.033	0.033	0.033	0.028	0.028	0.028
	RPM	2546	2546	2546	2546	2281	2281	2281	1910	1910	1910	1910	1711	1711	1655	1655	1655	1655	1655	1464
	FEED	214	214	214	183	164	146	146	214	214	214	183	164	144	218	218	218	185	185	164
10 - 11.1	Vc	83	83	83	83	75	75	75	84	84	84	84	76	76	89	89	89	89	89	80
	fz	0.029	0.029	0.029	0.025	0.025	0.022	0.022	0.041	0.041	0.041	0.035	0.035	0.031	0.049	0.049	0.049	0.042	0.042	0.041
	RPM	4403	4403	4403	4403	3979	3979	3979	3342	3342	3342	3342	3024	3024	2833	2833	2833	2833	2833	2546
	FEED	511	511	511	440	398	350	350	548	548	548	468	423	375	555	555	555	476	476	418
11.2	Vc	48	48	48	48	43	43	43	48	48	48	48	43	43	52	52	52	52	52	46
	fz	0.021	0.021	0.021	0.018	0.018	0.016	0.016	0.028	0.028	0.028	0.024	0.024	0.021	0.033	0.033	0.033	0.028	0.028	0.028
	RPM	2546	2546	2546	2546	2281	2281	2281	1910	1910	1910	1910	1711	1711	1655	1655	1655	1655	1655	1464
	FEED	214	214	214	183	164	146	146	214	214	214	183	164	144	218	218	218	185	185	164
15 - 20	Vc	83	83	83	83	75	75	75	84	84	84	84	76	76	89	89	89	89	89	80
	fz	0.029	0.029	0.029	0.025	0.025	0.022	0.022	0.041	0.041	0.041	0.035	0.035	0.031	0.049	0.049	0.049	0.042	0.042	0.041
	RPM	4403	4403	4403	4403	3979	3979	3979	3342	3342	3342	3342	3024	3024	2833	2833	2833	2833	2833	2546
	FEED	511	511	511	440	398	350	350	548	548	548	468	423	375	555	555	555	476	476	418
38.1 - 38.2	Vc	31	31	31	31	28	28	28	32	32	32	32	28	28	32	32	32	32	32	29
	fz	0.017	0.017	0.017	0.014	0.014	0.013	0.013	0.022	0.022	0.022	0.018	0.019	0.017	0.027	0.027	0.027	0.022	0.022	0.023
	RPM	1645	1645	1645	1645	1485	1485	1485	1273	1273	1273	1273	1114	1114	1019	1019	1019	1019	1019	923
	FEED	112	112	112	92	83	77	77	112	112	112	92	85	76	110	110	110	90	90	85
40	Vc	48	48	48	48	43	43	43	48	48	48	48	43	43	52	52	52	52	52	46
	fz	0.021	0.021	0.021	0.018	0.018	0.016	0.016	0.028	0.028	0.028	0.024	0.024	0.021	0.033	0.033	0.033	0.028	0.028	0.028
	RPM	2546	2546	2546	2546	2281	2281	2281	1910	1910	1910	1910	1711	1711	1655	1655	1655	1655	1655	1464
	FEED	214	214	214	183	164	146	146	214	214	214	183	164	144	218	218	218	185	185	164
41	Vc	31	31	31	31	28	28	28	32	32	32	32	28	28	32	32	32	32	32	29
	fz	0.017	0.017	0.017	0.014	0.014	0.013	0.013	0.022	0.022	0.022	0.018	0.019	0.017	0.027	0.027	0.027	0.022	0.022	0.023
	RPM	1645	1645	1645	1645	1485	1485	1485	1273	1273	1273	1273	1114	1114	1019	1019	1019	1019	1019	923
	FEED	112	112	112	92	83	77	77	112	112	112	92	85	76	110	110	110	90	90	85

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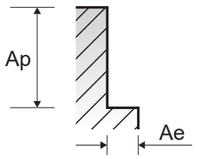

4G MILL END MILLS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

SEME72 SERIES — 4 FLUTE - SIDE CUTTING

Vc = m/min.
fz = mm/tooth
RPM = rev./min.
FEED = mm/min.
LOC = Length of Cut

ISO	VDI 3323	Ae	Ap	Parameter	Diameter (Ø)														
					10.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	14.0	14.0	16.0	16.0	16.0	16.0
				LOC	60	35	40	45	50	55	60	65	70	50	60	40	50	60	70
P	1-5	0.05D	2.5D	Vc	80	87	87	87	87	87	87	78	78	93	93	98	98	98	98
				fz	0.037	0.047	0.047	0.04	0.04	0.04	0.035	0.035	0.035	0.041	0.041	0.05	0.05	0.042	0.042
				RPM	2546	2308	2308	2308	2308	2308	2308	2069	2069	2114	2114	1950	1950	1950	1950
				FEED	377	434	434	369	369	369	323	290	290	347	347	390	390	328	328
	6-8	0.05D	2.5D	Vc	80	87	87	87	87	87	87	78	78	93	93	98	98	98	98
				fz	0.037	0.047	0.047	0.04	0.04	0.04	0.035	0.035	0.035	0.041	0.041	0.05	0.05	0.042	0.042
				RPM	2546	2308	2308	2308	2308	2308	2308	2069	2069	2114	2114	1950	1950	1950	1950
				FEED	377	434	434	369	369	369	323	290	290	347	347	390	390	328	328
	9	0.05D	2.5D	Vc	46	52	52	52	52	52	52	47	47	54	54	54	54	54	54
				fz	0.024	0.034	0.034	0.03	0.03	0.03	0.026	0.026	0.026	0.029	0.029	0.035	0.035	0.03	0.03
				RPM	1464	1379	1379	1379	1379	1379	1379	1247	1247	1228	1228	1074	1074	1074	1074
				FEED	141	188	188	166	166	166	143	130	130	142	142	150	150	129	129
	10-11.1	0.05D	2.5D	Vc	80	87	87	87	87	87	87	78	78	93	93	98	98	98	98
				fz	0.037	0.047	0.047	0.04	0.04	0.04	0.035	0.035	0.035	0.041	0.041	0.05	0.05	0.042	0.042
				RPM	2546	2308	2308	2308	2308	2308	2308	2069	2069	2114	2114	1950	1950	1950	1950
				FEED	377	434	434	369	369	369	323	290	290	347	347	390	390	328	328
	11.2	0.05D	2.5D	Vc	46	52	52	52	52	52	52	47	47	54	54	54	54	54	54
				fz	0.024	0.034	0.034	0.03	0.03	0.03	0.026	0.026	0.026	0.029	0.029	0.035	0.035	0.03	0.03
				RPM	1464	1379	1379	1379	1379	1379	1379	1247	1247	1228	1228	1074	1074	1074	1074
				FEED	141	188	188	166	166	166	143	130	130	142	142	150	150	129	129
K	15-20	0.05D	2.5D	Vc	80	87	87	87	87	87	87	78	78	93	93	98	98	98	98
				fz	0.037	0.047	0.047	0.04	0.04	0.04	0.035	0.035	0.035	0.041	0.041	0.05	0.05	0.042	0.042
				RPM	2546	2308	2308	2308	2308	2308	2308	2069	2069	2114	2114	1950	1950	1950	1950
				FEED	377	434	434	369	369	369	323	290	290	347	347	390	390	328	328
H	38.1 - 38.2	0.02D	2.0D	Vc	29	32	32	32	32	32	32	29	29	33	33	34	34	34	34
				fz	0.021	0.025	0.025	0.021	0.021	0.021	0.019	0.018	0.018	0.021	0.021	0.026	0.026	0.022	0.022
				RPM	923	849	849	849	849	849	849	769	769	750	750	676	676	676	676
				FEED	78	85	85	71	71	71	65	55	55	63	63	70	70	60	60
	40	0.05D	2.5D	Vc	46	52	52	52	52	52	52	47	47	54	54	54	54	54	54
				fz	0.024	0.034	0.034	0.03	0.03	0.03	0.026	0.026	0.026	0.029	0.029	0.035	0.035	0.03	0.03
				RPM	1464	1379	1379	1379	1379	1379	1379	1247	1247	1228	1228	1074	1074	1074	1074
				FEED	141	188	188	166	166	166	143	130	130	142	142	150	150	129	129
	41	0.02D	2.0D	Vc	29	32	32	32	32	32	32	29	29	33	33	34	34	34	34
				fz	0.021	0.025	0.025	0.021	0.021	0.021	0.019	0.018	0.018	0.021	0.021	0.026	0.026	0.022	0.022
				RPM	923	849	849	849	849	849	849	769	769	750	750	676	676	676	676
				FEED	78	85	85	71	71	71	65	55	55	63	63	70	70	60	60

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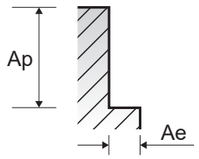

4G MILL END MILLS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

SEME72 SERIES — 4 FLUTE - SIDE CUTTING

Vc = m/min.
fz = mm/tooth
RPM = rev./min.
FEED = mm/min.
LOC = Length of Cut

VDI 3323	Parameter	Diameter (Ø)																		
		16.0	16.0	16.0	16.0	18.0	18.0	18.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	22.0	22.0	25.0	25.0	25.0	25.0
	LOC	80	90	110	120	50	70	100	50	60	70	80	90	110	120	75	110	70	90	110	120
1-5	Vc	98	88	88	88	95	95	85	89	89	89	89	89	80	80	87	87	86	86	86	86
	fz	0.037	0.037	0.037	0.037	0.049	0.042	0.037	0.048	0.048	0.041	0.041	0.036	0.036	0.036	0.041	0.036	0.049	0.042	0.042	0.036
	RPM	1950	1751	1751	1751	1680	1680	1503	1416	1416	1416	1416	1416	1273	1273	1259	1259	1095	1095	1095	1095
	FEED	289	259	259	259	329	282	222	272	272	232	232	204	183	183	206	181	215	184	184	158
6-8	Vc	98	88	88	88	95	95	85	89	89	89	89	89	80	80	87	87	86	86	86	86
	fz	0.037	0.037	0.037	0.037	0.049	0.042	0.037	0.048	0.048	0.041	0.041	0.036	0.036	0.036	0.041	0.036	0.049	0.042	0.042	0.036
	RPM	1950	1751	1751	1751	1680	1680	1503	1416	1416	1416	1416	1416	1273	1273	1259	1259	1095	1095	1095	1095
	FEED	289	259	259	259	329	282	222	272	272	232	232	204	183	183	206	181	215	184	184	158
9	Vc	54	48	48	48	53	53	48	52	52	52	52	52	46	46	57	57	64	64	64	64
	fz	0.027	0.026	0.026	0.026	0.035	0.029	0.025	0.034	0.034	0.027	0.027	0.024	0.026	0.026	0.027	0.024	0.034	0.027	0.027	0.024
	RPM	1074	955	955	955	937	937	849	828	828	828	828	828	732	732	825	825	815	815	815	815
	FEED	116	99	99	99	131	109	85	113	113	89	89	79	76	76	89	79	111	88	88	78
10 - 11.1	Vc	98	88	88	88	95	95	85	89	89	89	89	89	80	80	87	87	86	86	86	86
	fz	0.037	0.037	0.037	0.037	0.049	0.042	0.037	0.048	0.048	0.041	0.041	0.036	0.036	0.036	0.041	0.036	0.049	0.042	0.042	0.036
	RPM	1950	1751	1751	1751	1680	1680	1503	1416	1416	1416	1416	1416	1273	1273	1259	1259	1095	1095	1095	1095
	FEED	289	259	259	259	329	282	222	272	272	232	232	204	183	183	206	181	215	184	184	158
11.2	Vc	54	48	48	48	53	53	48	52	52	52	52	52	46	46	57	57	64	64	64	64
	fz	0.027	0.026	0.026	0.026	0.035	0.029	0.025	0.034	0.034	0.027	0.027	0.024	0.026	0.026	0.027	0.024	0.034	0.027	0.027	0.024
	RPM	1074	955	955	955	937	937	849	828	828	828	828	828	732	732	825	825	815	815	815	815
	FEED	116	99	99	99	131	109	85	113	113	89	89	79	76	76	89	79	111	88	88	78
15 - 20	Vc	98	88	88	88	95	95	85	89	89	89	89	89	80	80	87	87	86	86	86	86
	fz	0.037	0.037	0.037	0.037	0.049	0.042	0.037	0.048	0.048	0.041	0.041	0.036	0.036	0.036	0.041	0.036	0.049	0.042	0.042	0.036
	RPM	1950	1751	1751	1751	1680	1680	1503	1416	1416	1416	1416	1416	1273	1273	1259	1259	1095	1095	1095	1095
	FEED	289	259	259	259	329	282	222	272	272	232	232	204	183	183	206	181	215	184	184	158
38.1 - 38.2	Vc	34	30	30	30	33	33	30	31	31	31	31	31	28	28	35	35	39	39	39	39
	fz	0.021	0.021	0.021	0.021	0.028	0.023	0.021	0.028	0.028	0.023	0.023	0.02	0.019	0.019	0.023	0.02	0.028	0.023	0.023	0.02
	RPM	676	597	597	597	584	584	531	493	493	493	493	493	446	446	506	506	497	497	497	497
	FEED	57	50	50	50	65	54	45	55	55	45	45	39	34	34	47	41	56	46	46	40
40	Vc	54	48	48	48	53	53	48	52	52	52	52	52	46	46	57	57	64	64	64	64
	fz	0.027	0.026	0.026	0.026	0.035	0.029	0.025	0.034	0.034	0.027	0.027	0.024	0.026	0.026	0.027	0.024	0.034	0.027	0.027	0.024
	RPM	1074	955	955	955	937	937	849	828	828	828	828	828	732	732	825	825	815	815	815	815
	FEED	116	99	99	99	131	109	85	113	113	89	89	79	76	76	89	79	111	88	88	78
41	Vc	34	30	30	30	33	33	30	31	31	31	31	31	28	28	35	35	39	39	39	39
	fz	0.021	0.021	0.021	0.021	0.028	0.023	0.021	0.028	0.028	0.023	0.023	0.02	0.019	0.019	0.023	0.02	0.028	0.023	0.023	0.02
	RPM	676	597	597	597	584	584	531	493	493	493	493	493	446	446	506	506	497	497	497	497
	FEED	57	50	50	50	65	54	45	55	55	45	45	39	34	34	47	41	56	46	46	40