4G MILL END MILLS

SEMD98 SERIES PLAIN SHANK / GLATTER ZYLINDERSCHAFT

CARBIDE, 2 FLUTE BALL NOSE (Short, Regular, Long Shank)

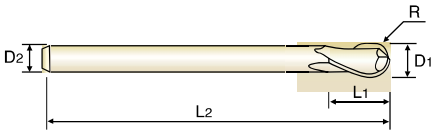
VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS

Fraise carbure, 2 dents, hémisphérique

MD, 2 TAGLIENTI, SEMISFERICA (Serie corta, media e lunga)

- New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
- Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

- Aufgrund einer neuartigen Beschichtung und neuer Werkzeuggeometrien hervorragende Schnittleistung und Verschleißfestigkeit.
- Aufgrund der einzigartigen Kugelgeometrie und Schneidkantenpräparation wird die Schniitkraft reduziert und die Verschleißfestigkeit erhöht.
- Hervorragende Leistung bei der Zerspanung von vorvergüteten Stählen bis HRc55, welche im Werkzeug- und Formenbau Verwendung finden.



NG HM | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN

R0.05~R3 R3.25~R12.5

P.906-907

Unit : mm

EDP No.	Radius of Ball Nose R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Overall Length L2	Remark
SEMD98150E	R7.5	15.0	16	28	140	-
★ SEMD98160100E	R8.0	16.0	16	24	100	Short
SEMD98160130E	R8.0	16.0	16	24	130	Short
★ SEMD98160E	R8.0	16.0	16	30	150	Regular
SEMD98160180E	R8.0	16.0	16	30	180	Long Shank
★ SEMD98160200E	R8.0	16.0	16	30	200	Long Shank
★ SEMD98180E	R9.0	18.0	16	34	150	Regular
SEMD98180180SE	R9.0	18.0	18	34	150	-
★ SEMD98200100E	R10.0	20.0	20	30	100	Short
SEMD98200130E	R10.0	20.0	20	30	130	Short
★ SEMD98200E	R10.0	20.0	20	38	150	Regular
SEMD98200200E	R10.0	20.0	20	38	200	Long Shank
SEMD98250120E	R12.5	25.0	25	50	120	Short
SEMD98250E	R12.5	25.0	25	50	180	Regular

▶ ★ Stock Item

Size	Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to R3	±0.005	0~−0.012	h6
over R3	±0.010	0~−0.015	

◎ : Excellent ○ : Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
○	◎	◎	◎	○			○							

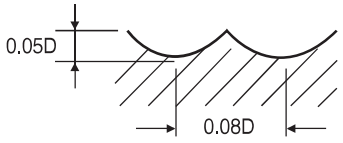
4G MILL END MILLS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

CARBIDE, 2 FLUTE BALL NOSE
VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS

SEMD98 SERIES

MATERIAL	P							
	NON-ALLOYED STEELS ALLOY STEELS				ALLOY STEELS HEAT RESISTANT STEELS			
HARDNESS	~ HRc 35				HRc 35 ~ HRc 45			
STRENGTH	~ 1100N/mm²				1110 ~ 1500N/mm²			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
R0.05 × 0.1	40000	550	13	0.007	40000	500	13	0.006
R0.1 × 0.2	30000	720	19	0.012	30000	630	19	0.011
R0.15 × 0.3	30000	900	28	0.015	30000	810	28	0.014
R0.2 × 0.4	30000	1140	38	0.019	30000	1020	38	0.017
R0.25 × 0.5	30000	1440	47	0.024	30000	1260	47	0.021
R0.3 × 0.6	30000	1740	57	0.029	30000	1500	57	0.025
R0.35 × 0.7	30000	2040	66	0.034	30000	1740	66	0.029
R0.4 × 0.8	30000	2340	75	0.039	30000	1980	75	0.033
R0.45 × 0.9	30000	2610	85	0.044	30000	2250	85	0.038
R0.5 × 1.0	30000	2880	94	0.048	30000	2520	94	0.042
R0.6 × 1.2	30000	3060	113	0.051	28800	2580	109	0.045
R0.75 × 1.5	30000	3240	141	0.054	28800	2700	136	0.047
R1.0 × 2.0	29820	3420	187	0.057	28680	2880	180	0.050
R1.25 × 2.5	23800	3510	187	0.074	22900	3030	180	0.066
R1.5 × 3.0	19860	3600	187	0.091	19080	3180	180	0.083
R1.75 × 3.5	17000	3600	187	0.106	16400	3180	180	0.097
R2.0 × 4.0	14900	3600	187	0.121	14340	3180	180	0.111
R2.25 × 4.5	13030	3540	184	0.136	12510	3060	177	0.122
R2.5 × 5.0	11160	3480	175	0.156	10680	2940	168	0.138
R2.75 × 5.5	9750	3195	168	0.164	9360	2700	162	0.144
R3.0 × 6.0	8340	2910	157	0.174	8040	2460	152	0.153
R3.25 × 6.5	7780	2780	159	0.179	7500	2340	153	0.156
R3.5 × 7.0	7220	2650	159	0.184	6960	2220	153	0.159
R4.0 × 8.0	6660	2520	167	0.189	6420	2100	161	0.164
R4.25 × 8.5	6300	2420	168	0.192	6060	2020	162	0.167
R4.5 × 9.0	5940	2320	168	0.195	5700	1940	161	0.170
R5.0 × 10.0	5580	2220	175	0.199	5340	1860	168	0.174
R5.5 × 11.0	4875	1995	168	0.205	4670	1680	161	0.180
R6.0 × 12.0	4170	1770	157	0.212	4000	1500	151	0.188
R6.5 × 13.0	3960	1725	162	0.218	3800	1500	155	0.197
R7.0 × 14.0	3750	1680	165	0.224	3600	1500	158	0.208
R7.5 × 15.0	3550	1635	167	0.230	3400	1500	160	0.221
R8.0 × 16.0	3340	1590	168	0.238	3210	1320	161	0.206
R9.0 × 18.0	3005	1500	170	0.250	2895	1245	164	0.215
R10.0 × 20.0	2670	1410	168	0.264	2580	1170	162	0.227
R12.5 × 25.0	2130	1150	167	0.270	2060	950	162	0.231



RPM = rev./min.
FEED = mm/min.
Vc = m/min.
fz = mm/tooth

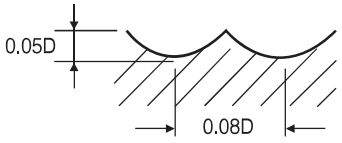
4G MILL END MILLS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

CARBIDE, 2 FLUTE BALL NOSE
VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS

SEMD98 SERIES

MATERIAL	P				K			
	HARDENED STEELS				CAST IRON			
HARDNESS	HRc 45 ~ HRc 55							
STRENGTH	1500 ~ 2000N/mm²							
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
R0.05 × 0.1	33000	400	10	0.006	40000	550	13	0.007
R0.1 × 0.2	27000	575	17	0.011	30000	720	19	0.012
R0.15 × 0.3	27000	720	25	0.013	30000	900	28	0.015
R0.2 × 0.4	27000	900	34	0.017	30000	1140	38	0.019
R0.25 × 0.5	27000	1140	42	0.021	30000	1440	47	0.024
R0.3 × 0.6	27000	1320	51	0.024	30000	1740	57	0.029
R0.35 × 0.7	27000	1560	59	0.029	30000	2040	66	0.034
R0.4 × 0.8	27000	1800	68	0.033	30000	2340	75	0.039
R0.45 × 0.9	27000	2040	76	0.038	30000	2610	85	0.044
R0.5 × 1.0	27000	2280	85	0.042	30000	2880	94	0.048
R0.6 × 1.2	25800	2310	97	0.045	30000	3060	113	0.051
R0.75 × 1.5	25800	2400	122	0.047	30000	3240	141	0.054
R1.0 × 2.0	24000	2400	151	0.050	29820	3420	187	0.057
R1.25 × 2.5	19200	2400	151	0.063	23800	3510	187	0.074
R1.5 × 3.0	16000	2400	151	0.075	19860	3600	187	0.091
R1.75 × 3.5	13700	2400	151	0.088	17000	3600	187	0.106
R2.0 × 4.0	12000	2400	151	0.100	14900	3600	187	0.121
R2.25 × 4.5	10500	2325	148	0.111	13030	3540	184	0.136
R2.5 × 5.0	9000	2250	141	0.125	11160	3480	175	0.156
R2.75 × 5.5	7800	2055	135	0.132	9750	3195	168	0.164
R3.0 × 6.0	6600	1860	124	0.141	8340	2910	157	0.174
R3.25 × 6.5	6200	1780	127	0.144	7780	2780	159	0.179
R3.5 × 7.0	5800	1700	128	0.147	7220	2650	159	0.184
R4.0 × 8.0	5400	1620	136	0.150	6660	2520	167	0.189
R4.25 × 8.5	5100	1560	136	0.153	6300	2420	168	0.192
R4.5 × 9.0	4800	1500	136	0.156	5940	2320	168	0.195
R5.0 × 10.0	4500	1440	141	0.160	5580	2220	175	0.199
R5.5 × 11.0	3930	1290	136	0.164	4875	1995	168	0.205
R6.0 × 12.0	3360	1140	127	0.170	4170	1770	157	0.212
R6.5 × 13.0	3200	1110	131	0.173	3960	1725	162	0.218
R7.0 × 14.0	3030	1080	133	0.178	3750	1680	165	0.224
R7.5 × 15.0	2870	1050	135	0.183	3550	1635	167	0.230
R8.0 × 16.0	2700	1020	136	0.189	3340	1590	168	0.238
R9.0 × 18.0	2430	960	137	0.198	3005	1500	170	0.250
R10.0 × 20.0	2160	900	136	0.208	2670	1410	168	0.264
R12.5 × 25.0	1730	730	136	0.211	2130	1150	167	0.270



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