



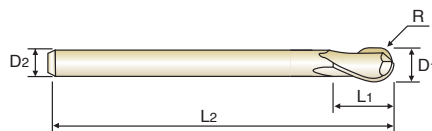
SEMD98 SERIES

PLAIN SHANK
GLATTER ZYLINDERSCHAFT

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

- ▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
- ▶ Due to unique ball nose geometry and cutting edges, cutting force decreased, and so wear resistance increased.
- ▶ 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 Schnittkraft reduziert und die Verschleißfestigkeit erhöht.
- ▶ Hervorragende Leistung bei der Zerspaltung von vorvergüteten Stählen bis HRc55, welche im Werkzeug- und Formenbau Verwendung finden.



R0.05-R3 R3.25-R12.5

Unit : mm

EDP No.	Radius of Ball Nose R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Overall Length L2	Remark
SEMD98001SE	R0.05	0.1	4	0.1	40	Short
★ SEMD98001E	R0.05	0.1	4	0.2	40	Regular
SEMD980013SE	R0.05	0.1	3	0.2	40	3mm Shank
SEMD980015SE	R0.075	0.15	4	0.15	40	Short
SEMD980015E	R0.075	0.15	4	0.3	40	Regular
SEMD9800153SE	R0.075	0.15	3	0.3	40	3mm Shank
SEMD98002SE	R0.1	0.2	4	0.2	40	Short
★ SEMD98002E	R0.1	0.2	4	0.4	40	Regular
SEMD980023SE	R0.1	0.2	3	0.4	40	3mm Shank
SEMD98003SE	R0.15	0.3	4	0.3	40	Short
★ SEMD98003E	R0.15	0.3	4	0.6	40	Regular
SEMD980033SE	R0.15	0.3	3	0.6	40	3mm Shank
SEMD98004SE	R0.2	0.4	4	0.4	40	Short
★ SEMD98004E	R0.2	0.4	4	0.8	40	Regular
SEMD980043SE	R0.2	0.4	3	0.8	40	3mm Shank
SEMD98005SE	R0.25	0.5	4	0.5	40	Short
★ SEMD98005E	R0.25	0.5	4	1.0	40	Regular
SEMD980053SE	R0.25	0.5	3	1.0	40	3mm Shank
SEMD98006SE	R0.3	0.6	4	0.6	40	Short
★ SEMD98006E	R0.3	0.6	4	1.2	40	Regular
SEMD980063SE	R0.3	0.6	3	1.2	40	3mm Shank
SEMD98007SE	R0.35	0.7	4	0.7	40	Short
★ SEMD98007E	R0.35	0.7	4	1.4	40	Regular
SEMD980073SE	R0.35	0.7	3	1.4	40	3mm Shank
SEMD98008SE	R0.4	0.8	4	0.8	40	Short
★ SEMD98008E	R0.4	0.8	4	1.6	40	Regular
SEMD980083SE	R0.4	0.8	3	1.6	40	3mm Shank
SEMD98009SE	R0.45	0.9	4	0.9	40	Short
★ SEMD98009E	R0.45	0.9	4	1.8	40	Regular
SEMD980093SE	R0.45	0.9	3	1.8	40	3mm Shank

▶ ★ Stock Item

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel	Acrylic	CFRP
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
○	◎	◎	◎	○					○					



4G MILL END MILLS

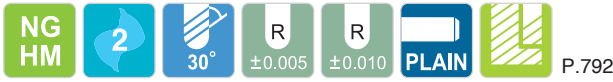
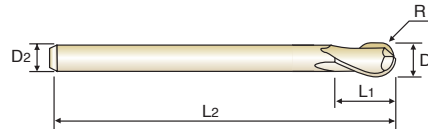
SEMD98 SERIES

PLAIN SHANK
GLATTER ZYLINDERSCHAFT

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

- ▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
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- ▶ Excellent performance when cutting prehardened steels, up to HRC55 which are used for molds & dies.

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R0.05-R3 R3.25-R12.5

Unit : mm

EDP No.	Radius of Ball Nose R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Overall Length L2	Remark
SEMD98010040E	R0.5	1.0	6	1.5	40	Short
SEMD980103SE	R0.5	1.0	3	2.5	50	3mm Shank
★ SEMD980104SE	R0.5	1.0	4	2.5	50	Regular
★ SEMD98010E	R0.5	1.0	6	2.5	50	Regular
★ SEMD98010070E	R0.5	1.0	6	2.5	70	Long Shank
SEMD98010100E	R0.5	1.0	6	2.5	100	Long Shank
SEMD98012040E	R0.6	1.2	6	2	40	Short
SEMD980123SE	R0.6	1.2	3	3	50	3mm Shank
SEMD980124SE	R0.6	1.2	4	3	50	Regular
★ SEMD98012E	R0.6	1.2	6	3	50	Regular
SEMD98012070E	R0.6	1.2	6	3	70	Long Shank
SEMD98012100E	R0.6	1.2	6	3	100	Long Shank
SEMD98015040E	R0.75	1.5	6	2.5	40	Short
SEMD980153SE	R0.75	1.5	3	4	50	3mm Shank
★ SEMD980154SE	R0.75	1.5	4	4	50	Regular
★ SEMD98015E	R0.75	1.5	6	4	50	Regular
★ SEMD98015070E	R0.75	1.5	6	4	70	Long Shank
SEMD98015100E	R0.75	1.5	6	4	100	Long Shank
★ SEMD98020040E	R1.0	2.0	6	3	40	Short
SEMD980203SE	R1.0	2.0	3	5	50	3mm Shank
★ SEMD980204SE	R1.0	2.0	4	5	50	Regular
★ SEMD98020E	R1.0	2.0	6	5	50	Regular
★ SEMD98020080E	R1.0	2.0	6	5	80	Long Shank
SEMD98020100E	R1.0	2.0	6	5	100	Long Shank
SEMD98025040E	R1.25	2.5	6	4	40	Short
SEMD980253SE	R1.25	2.5	3	6	60	3mm Shank
SEMD980254SE	R1.25	2.5	4	6	60	Regular
★ SEMD98025E	R1.25	2.5	6	6	60	Regular
★ SEMD98025080E	R1.25	2.5	6	6	80	Long Shank
SEMD98025100E	R1.25	2.5	6	6	100	Long Shank

▶ ★ Stock Item

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel	Acrylic	CFRP
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70									
○	◎	◎	◎	○										



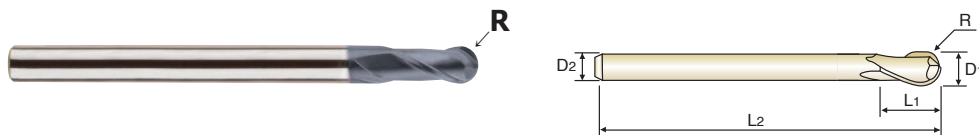
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NG HM
2
30°
R ±0.005
R ±0.010
PLAIN
P.792

R0.05-R3 R3.25-R12.5

Unit : mm

EDP No.	Radius of Ball Nose R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Overall Length L2	Remark
★ SEMD98030040E	R1.5	3.0	6	4.5	40	Short
SEMD980303SE	R1.5	3.0	3	6	60	3mm Shank
★ SEMD980304SE	R1.5	3.0	4	6	60	Regular
★ SEMD98030E	R1.5	3.0	6	6	60	Regular
★ SEMD98030080E	R1.5	3.0	6	6	80	Long Shank
★ SEMD98030100E	R1.5	3.0	6	6	100	Long Shank
SEMD98035E	R1.75	3.5	6	8	70	-
★ SEMD98040050E	R2.0	4.0	6	6	50	Short
★ SEMD980404SE	R2.0	4.0	4	8	70	Regular
★ SEMD98040E	R2.0	4.0	6	8	70	Regular
★ SEMD980401004SE	R2.0	4.0	4	8	100	Long Shank
SEMD980401204SE	R2.0	4.0	4	8	120	Long Shank
★ SEMD98040100E	R2.0	4.0	6	8	100	Long Shank
★ SEMD98040120E	R2.0	4.0	6	8	120	Long Shank
★ SEMD98045E	R2.25	4.5	6	9	80	-
★ SEMD98050060E	R2.5	5.0	6	7.5	60	Short
★ SEMD98050E	R2.5	5.0	6	10	80	Regular
SEMD980505SE	R2.5	5.0	5	10	80	5mmShank
SEMD98055E	R2.75	5.5	6	11	90	-
★ SEMD98060050E	R3.0	6.0	6	9	50	Short
SEMD98060060E	R3.0	6.0	6	9	60	Short
★ SEMD98060080E	R3.0	6.0	6	9	80	Short
★ SEMD98060E	R3.0	6.0	6	12	90	Regular
SEMD98060110E	R3.0	6.0	6	12	110	Long Shank
★ SEMD98060130E	R3.0	6.0	6	12	130	Long Shank
SEMD98060150E	R3.0	6.0	6	12	150	Long Shank
SEMD98065E	R3.25	6.5	8	13	90	-
★ SEMD98070E	R3.5	7.0	8	14	90	-
★ SEMD98080050E	R4.0	8.0	8	12	50	Short
SEMD98080060E	R4.0	8.0	8	12	60	Short

▶ ★ Stock Item

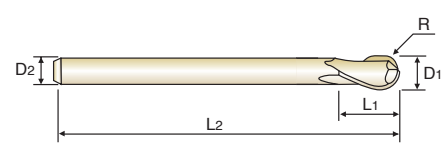
◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel	Acrylic	CFRP
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
○	◎	◎	◎	○				○						

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R0.05-R3 R3.25-R12.5

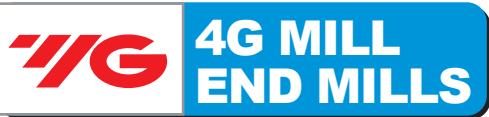
Unit : mm

EDP No.	Radius of Ball Nose R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Overall Length L2	Remark
SEMD98080080E	R4.0	8.0	8	12	80	Short
★ SEMD98080090E	R4.0	8.0	8	12	90	Short
★ SEMD98080E	R4.0	8.0	8	14	100	Regular
SEMD98080130E	R4.0	8.0	8	14	130	Long Shank
★ SEMD98080150E	R4.0	8.0	8	14	150	Long Shank
SEMD98085E	R4.25	8.5	10	16	100	-
SEMD98090E	R4.5	9.0	10	18	100	-
SEMD98100050E	R5.0	10.0	10	15	50	Short
★ SEMD98100060E	R5.0	10.0	10	15	60	Short
SEMD98100080E	R5.0	10.0	10	15	80	Short
★ SEMD98100090E	R5.0	10.0	10	15	90	Short
★ SEMD98100E	R5.0	10.0	10	18	100	Regular
★ SEMD98100130E	R5.0	10.0	10	18	130	Long Shank
★ SEMD98100150E	R5.0	10.0	10	18	150	Long Shank
★ SEMD98100180E	R5.0	10.0	10	18	180	Long Shank
SEMD98100200E	R5.0	10.0	10	18	200	Long Shank
SEMD98110E	R5.5	11.0	12	20	100	-
SEMD98120060E	R6.0	12.0	12	18	60	Short
★ SEMD98120080E	R6.0	12.0	12	18	80	Short
SEMD98120090E	R6.0	12.0	12	18	90	Short
★ SEMD98120100E	R6.0	12.0	12	18	100	Short
★ SEMD98120E	R6.0	12.0	12	22	110	Regular
SEMD98120130E	R6.0	12.0	12	22	130	Long Shank
★ SEMD98120150E	R6.0	12.0	12	22	150	Long Shank
SEMD98120180E	R6.0	12.0	12	22	180	Long Shank
★ SEMD98120200E	R6.0	12.0	12	22	200	Long Shank
★ SEMD98130E	R6.5	13.0	12	24	100	-
SEMD98140E	R7.0	14.0	12	26	100	Regular
★ SEMD9814014SE	R7.0	14.0	14	26	100	-
SEMD9814016SE	R7.0	14.0	16	26	100	-

▶ ★ Stock Item

◎ : Excellent ○ : Good

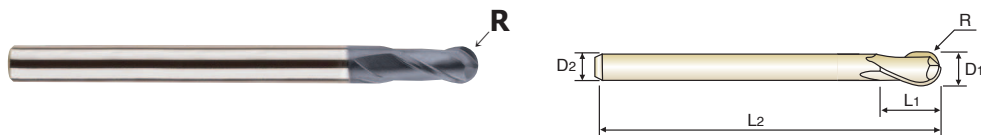
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel	Acrylic	CFRP
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70									
○	◎	◎	◎	○					○					



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R0.05-R3 R3.25-R12.5

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
SEMD9818018SE	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

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~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
○	◎	◎	◎	○				○						

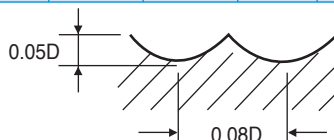


RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

CARBIDE, 2 FLUTE BALL NOSE
VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS

SEMD98 SERIES

MATERIAL	NON-ALLOYED STEELS ALLOY STEELS CAST IRON				ALLOY STEELS HEAT RESISTANT STEELS				HARDENED STEELS			
	~ HRc 35				HRc 35 ~ HRc 45				HRc 45 ~ HRc 55			
STRENGTH	~ 1100N/mm ²				1110 ~ 1500N/mm ²				1500 ~ 2000N/mm ²			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
R0.05 × 0.1	40000	550	13	0.007	40000	500	13	0.006	33000	400	10	0.006
R0.1 × 0.2	30000	720	19	0.012	30000	630	19	0.011	27000	575	17	0.011
R0.15 × 0.3	30000	900	28	0.015	30000	810	28	0.014	27000	720	25	0.013
R0.2 × 0.4	30000	1140	38	0.019	30000	1020	38	0.017	27000	900	34	0.017
R0.25 × 0.5	30000	1440	47	0.024	30000	1260	47	0.021	27000	1140	42	0.021
R0.3 × 0.6	30000	1740	57	0.029	30000	1500	57	0.025	27000	1320	51	0.024
R0.35 × 0.7	30000	2040	66	0.034	30000	1740	66	0.029	27000	1560	59	0.029
R0.4 × 0.8	30000	2340	75	0.039	30000	1980	75	0.033	27000	1800	68	0.033
R0.45 × 0.9	30000	2610	85	0.044	30000	2250	85	0.038	27000	2040	76	0.038
R0.5 × 1.0	30000	2880	94	0.048	30000	2520	94	0.042	27000	2280	85	0.042
R0.6 × 1.2	30000	3060	113	0.051	28800	2580	109	0.045	25800	2310	97	0.045
R0.75 × 1.5	30000	3240	141	0.054	28800	2700	136	0.047	25800	2400	122	0.047
R1.0 × 2.0	29820	3420	187	0.057	28680	2880	180	0.050	24000	2400	151	0.050
R1.25 × 2.5	23800	3510	187	0.074	22900	3030	180	0.066	19200	2400	151	0.063
R1.5 × 3.0	19860	3600	187	0.091	19080	3180	180	0.083	16000	2400	151	0.075
R1.75 × 3.5	17000	3600	187	0.106	16400	3180	180	0.097	13700	2400	151	0.088
R2.0 × 4.0	14900	3600	187	0.121	14340	3180	180	0.111	12000	2400	151	0.100
R2.25 × 4.5	13030	3540	184	0.136	12510	3060	177	0.122	10500	2325	148	0.111
R2.5 × 5.0	11160	3480	175	0.156	10680	2940	168	0.138	9000	2250	141	0.125
R2.75 × 5.5	9750	3195	168	0.164	9360	2700	162	0.144	7800	2055	135	0.132
R3.0 × 6.0	8340	2910	157	0.174	8040	2460	152	0.153	6600	1860	124	0.141
R3.25 × 6.5	7780	2780	159	0.179	7500	2340	153	0.156	6200	1780	127	0.144
R3.5 × 7.0	7220	2650	159	0.184	6960	2220	153	0.159	5800	1700	128	0.147
R4.0 × 8.0	6660	2520	167	0.189	6420	2100	161	0.164	5400	1620	136	0.150
R4.25 × 8.5	6300	2420	168	0.192	6060	2020	162	0.167	5100	1560	136	0.153
R4.5 × 9.0	5940	2320	168	0.195	5700	1940	161	0.170	4800	1500	136	0.156
R5.0 × 10.0	5580	2220	175	0.199	5340	1860	168	0.174	4500	1440	141	0.160
R5.5 × 11.0	4875	1995	168	0.205	4670	1680	161	0.180	3930	1290	136	0.164
R6.0 × 12.0	4170	1770	157	0.212	4000	1500	151	0.188	3360	1140	127	0.170
R6.5 × 13.0	3960	1725	162	0.218	3800	1500	155	0.197	3200	1110	131	0.173
R7.0 × 14.0	3750	1680	165	0.224	3600	1500	158	0.208	3030	1080	133	0.178
R7.5 × 15.0	3550	1635	167	0.230	3400	1500	160	0.221	2870	1050	135	0.183
R8.0 × 16.0	3340	1590	168	0.238	3210	1320	161	0.206	2700	1020	136	0.189
R9.0 × 18.0	3005	1500	170	0.250	2895	1245	164	0.215	2430	960	137	0.198
R10.0 × 20.0	2670	1410	168	0.264	2580	1170	162	0.227	2160	900	136	0.208
R12.5 × 25.0	2130	1150	167	0.270	2060	950	162	0.231	1730	730	136	0.211



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