

Ball nose end mills SpheroX

Tolerance $r \pm 0.005$, 3xd



HM
XA

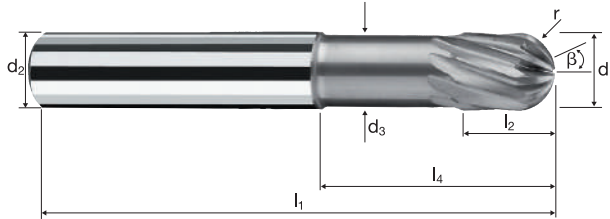
λ 30°
 γ -10°

h4

d₁

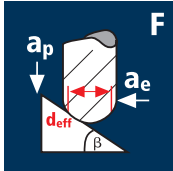
















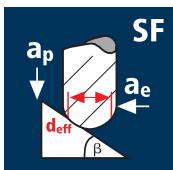
















r

F



Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56	HRC 56-60	HRC > 60	Ti Titanium	HSS ToolSteel
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Ø Code	Example: Order-N°.										X-AL
	d ₁	d ₂ h4	d ₃	l ₁	l ₂	l ₃	l ₄	r ±0.005	β	z	X7460
300	6.00	6.00	5.50	57	7.00	19.34	20.00	3.000	25°	8	●
391	8.00	8.00	7.40	63	9.00	25.29	26.00	4.000	25°	10	●
450	10.00	10.00	9.20	72	11.00	30.20	31.00	5.000	25°	12	●
501	12.00	12.00	11.00	83	13.00	36.13	37.00	6.000	25°	16	●

Application	Material	d1 [mm]	z	v _c [m/min]	f _z [mm]	a _s [mm]	a _e [mm]	d _{eff} [mm]	n [min ⁻¹]	v _f [mm/min]	β [°]
	Hardened tool steel 42 - 48 HRC    	6.00	8	300	0.055	0.120	0.120	5.26	18155	7990	45°
		8.00	10	300	0.060	0.140	0.140	6.94	13760	8255	45°
		10.00	12	300	0.065	0.160	0.160	8.62	11080	8640	45°
		12.00	16	300	0.070	0.180	0.180	10.29	9280	10395	45°
Hardened tool steel 48 - 52 HRC  	Hardened tool steel 48 - 52 HRC  	6.00	8	250	0.050	0.120	0.120	5.26	15130	6050	45°
		8.00	10	250	0.055	0.140	0.140	6.94	11465	6305	45°
		10.00	12	250	0.060	0.160	0.160	8.62	9230	6645	45°
		12.00	16	250	0.065	0.180	0.180	10.29	7735	8045	45°
Hardened tool steel 52 - 56 HRC  	Hardened tool steel 52 - 56 HRC  	6.00	8	200	0.050	0.120	0.120	5.26	12105	4840	45°
		8.00	10	200	0.055	0.140	0.140	6.94	9175	5045	45°
		10.00	12	200	0.060	0.160	0.160	8.62	7385	5315	45°
		12.00	16	200	0.065	0.180	0.180	10.29	6185	6435	45°
Hardened tool steel 56 - 60 HRC  	Hardened tool steel 56 - 60 HRC  	6.00	8	150	0.045	0.120	0.120	5.26	9075	3270	45°
		8.00	10	150	0.050	0.140	0.140	6.94	6880	3440	45°
		10.00	12	150	0.055	0.160	0.160	8.62	5540	3655	45°
		12.00	16	150	0.060	0.180	0.180	10.29	4640	4455	45°
	Hardened tool steel 42 - 48 HRC    	6.00	8	400	0.030	0.030	0.030	4.80	26525	6365	45°
		8.00	10	400	0.035	0.030	0.030	6.31	20180	7060	45°
		10.00	12	400	0.035	0.040	0.040	7.91	16095	6760	45°
		12.00	16	400	0.040	0.040	0.040	9.41	13530	8660	45°
Hardened tool steel 48 - 52 HRC  	Hardened tool steel 48 - 52 HRC  	6.00	8	350	0.030	0.030	0.030	4.80	23210	5570	45°
		8.00	10	350	0.035	0.030	0.030	6.31	17655	6180	45°
		10.00	12	350	0.035	0.040	0.040	7.91	14085	5915	45°
		12.00	16	350	0.040	0.040	0.040	9.41	11840	7575	45°
Hardened tool steel 52 - 56 HRC  	Hardened tool steel 52 - 56 HRC  	6.00	8	280	0.025	0.030	0.030	4.80	18570	3715	45°
		8.00	10	280	0.030	0.030	0.030	6.31	14125	4235	45°
		10.00	12	280	0.030	0.040	0.040	7.91	11270	4055	45°
		12.00	16	280	0.035	0.040	0.040	9.41	9470	5305	45°
Hardened tool steel 56 - 60 HRC  	Hardened tool steel 56 - 60 HRC  	6.00	8	180	0.025	0.030	0.030	4.80	11935	2385	45°
		8.00	10	180	0.030	0.030	0.030	6.31	9080	2725	45°
		10.00	12	180	0.030	0.040	0.040	7.91	7245	2610	45°
		12.00	16	180	0.035	0.040	0.040	9.41	6090	3410	45°