Ball nose end mills SpheroX

Tolerance r ±0.005, 3xd

HM
XA

λ 30°
γ -10°

h4

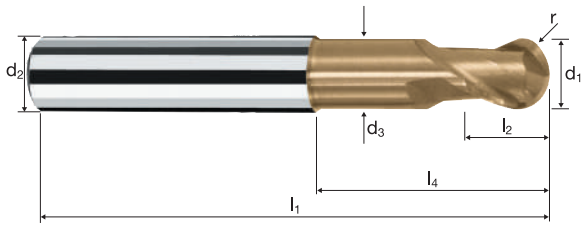
sc

d_1

r

R

F

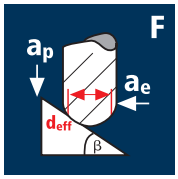


		Rm 1100-1300	Rm 1300-1500	HRC 48-56	HRC 56-60	HRC > 60		Ti Titanium	HSS ToolSteel

Example: **Order-N°.** Coating **V** | Article-N°. **7470** | ø-Code **100**

Ø Code	d_1	d_2 h4	d_3	l_1	l_2	l_3	l_4	r ±0.005	α	z		DURO-V **V7470**
100	1.00	6.00	0.95	57	1.50	3.00	13.08	0.500	11.8°	2		●
140	2.00	6.00	1.90	57	3.00	6.00	14.31	1.000	9.0°	2		●
180	3.00	6.00	2.80	57	4.00	9.00	15.63	1.500	6.4°	2		●
220	4.00	6.00	3.70	57	5.00	12.00	16.95	2.000	4.0°	2		●
260	5.00	6.00	4.60	57	6.00	15.00	18.27	2.500	2.0°	2		●
300	6.00	6.00	5.50	57	7.00	19.34	20.00	3.000	0.0°	2		●
391	8.00	8.00	7.40	63	9.00	25.29	26.00	4.000	0.0°	2		●
450	10.00	10.00	9.20	72	11.00	30.20	31.00	5.000	0.0°	2		●
501	12.00	12.00	11.00	83	13.00	36.13	37.00	6.000	0.0°	2		●
610	16.00	16.00	15.00	92	17.00	42.13	43.00	8.000	0.0°	2		●

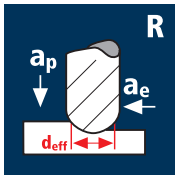
Application



Material

Material	d1 [mm]	z	v_c [m/min]	f_z [mm]	a_p [mm]	a_e [mm]	d_{eff} [mm]	n [min^{-1}]	v_f [mm/min]	β [°]
Hardened tool steel 52 - 56 HRC	1.00	2	120	0.018	0.030	0.090	0.91	41975	1510	45°
	2.00	2	160	0.028	0.030	0.120	1.72	29610	1660	45°
	3.00	2	200	0.042	0.050	0.150	2.59	24580	2065	45°
	4.00	2	200	0.052	0.050	0.180	3.39	18780	1955	45°
	5.00	2	200	0.058	0.050	0.210	4.17	15265	1770	45°
	6.00	2	200	0.064	0.050	0.230	4.94	12885	1650	45°
	8.00	2	200	0.068	0.080	0.280	6.67	9545	1300	45°
	10.00	2	200	0.074	0.080	0.310	8.22	7745	1145	45°
	12.00	2	200	0.082	0.100	0.340	9.89	6435	1055	45°
Hardened tool steel 56 - 60 HRC	1.00	2	120	0.018	0.030	0.090	0.91	41975	1510	45°
	2.00	2	120	0.028	0.030	0.120	1.72	22210	1245	45°
	3.00	2	150	0.042	0.050	0.150	2.59	18435	1550	45°
	4.00	2	150	0.052	0.050	0.180	3.39	14085	1465	45°
	5.00	2	150	0.058	0.050	0.210	4.17	11450	1330	45°
	6.00	2	150	0.064	0.050	0.230	4.94	9665	1235	45°
	8.00	2	150	0.068	0.080	0.280	6.67	7160	975	45°
	10.00	2	150	0.074	0.080	0.310	8.22	5810	860	45°
	12.00	2	150	0.082	0.100	0.340	9.89	4830	790	45°
Hardened tool steel > 60 HRC	1.00	2	80	0.018	0.030	0.090	0.91	27985	1005	45°
	2.00	2	80	0.028	0.030	0.120	1.72	14805	830	45°
	3.00	2	100	0.042	0.050	0.150	2.59	12290	1030	45°
	4.00	2	100	0.052	0.050	0.180	3.39	9390	975	45°
	5.00	2	100	0.058	0.050	0.210	4.17	7635	885	45°
	6.00	2	100	0.064	0.050	0.230	4.94	6445	825	45°
	8.00	2	100	0.068	0.080	0.280	6.67	4770	650	45°
	10.00	2	100	0.074	0.080	0.310	8.22	3870	575	45°
	12.00	2	100	0.082	0.100	0.340	9.89	3220	530	45°
High speed steel, hardened 64 - 70 HRC	1.00	2	50	0.018	0.030	0.090	0.91	17490	630	45°
	2.00	2	50	0.028	0.030	0.120	1.72	9255	520	45°
	3.00	2	60	0.042	0.050	0.150	2.59	7375	620	45°
	4.00	2	60	0.052	0.050	0.180	3.39	5635	585	45°
	5.00	2	60	0.058	0.050	0.210	4.17	4580	530	45°
	6.00	2	60	0.064	0.050	0.230	4.94	3865	495	45°
	8.00	2	60	0.068	0.080	0.280	6.67	2865	390	45°
	10.00	2	60	0.074	0.080	0.310	8.22	2325	345	45°
	12.00	2	60	0.082	0.100	0.340	9.89	1930	315	45°

Application



Material

Material	d1 [mm]	z	v_c [m/min]	f_z [mm]	a_p [mm]	a_e [mm]	d_{eff} [mm]	n [min^{-1}]	v_f [mm/min]	Q [mm^3/min]
Hardened tool steel 52 - 56 HRC	1.00	2	100	0.028	0.180	0.200	0.77	41340	2315	83.3
	2.00	2	111	0.048	0.280	0.400	1.39	25420	2440	273.3
	3.00	2	111	0.060	0.360	0.600	1.95	18120	2175	469.6
	4.00	2	111	0.072	0.480	0.800	2.60	13590	1955	751.4
	5.00	2	111	0.080	0.600	1.000	3.25	10870	1740	1043.7
	6.00	2	111	0.086	0.720	1.200	3.90	9060	1560	1346.3
	8.00	2	111	0.106	0.960	1.600	5.20	6795	1440	2212.6
	10.00	2	111	0.120	1.200	2.000	6.50	5435	1305	3131.0
	12.00	2	111	0.125	1.440	2.400	7.80	4530	1130	3913.7
Hardened tool steel 56 - 60 HRC	1.00	2	68	0.017	0.160	0.200	0.74	29250	995	31.8
	2.00	2	68	0.029	0.250	0.400	1.33	16275	945	94.4
	3.00	2	68	0.036	0.320	0.600	1.86	11635	840	160.9
	4.00	2	68	0.043	0.430	0.800	2.48	8730	750	258.2
	5.00	2	68	0.048	0.540	1.000	3.10	6980	670	362.0
	6.00	2	68	0.052	0.650	1.200	3.72	5820	605	472.0
	8.00	2	68	0.063	0.860	1.600	4.97	4355	550	755.1
	10.00	2	68	0.072	1.080	2.000	6.21	3485	500	1084.1
	12.00	2	68	0.075	1.300	2.400	7.45	2905	435	1359.7
Hardened tool steel > 60 HRC	1.00	2	51	0.014	0.130	0.200	0.66	24595	690	17.9
	2.00	2	51	0.023	0.200	0.400	1.19	13640	630	50.2
	3.00	2	51	0.029	0.250	0.600	1.66	9780	565	85.1
	4.00	2	51	0.035	0.340	0.800	2.22	7315	510	139.2
	5.00	2	51	0.038	0.420	1.000	2.77	5860	445	187.1
	6.00	2	51	0.041	0.500	1.200	3.33	4875	400	239.9
	8.00	2	51	0.051	0.670	1.600	4.44	3655	375	399.8
	10.00	2	51	0.058	0.840	2.000	5.55	2925	340	570.0
	12.00	2	51	0.060	1.010	2.400	6.66	2440	295	709.0
High speed steel, hardened 64 - 70 HRC	1.00	2	34	0.011	0.130	0.200	0.66	16400	360	9.4
	2.00	2	34	0.018	0.200	0.400	1.19	9095	325	26.2
	3.00	2	34	0.023	0.250	0.600	1.66	6520	300	45.0
	4.00	2	34	0.028	0.340	0.800	2.22	4875	275	74.3
	5.00	2	34	0.031	0.420	1.000	2.77	3905	240	101.7
	6.00	2	34	0.033	0.500	1.200	3.33	3250	215	128.7
	8.00	2	34	0.041	0.670	1.600	4.44	2440	200	214.3
	10.00	2	34	0.046	0.840	2.000	5.55	1950	180	301.4
	12.00	2	34	0.048	1.010	2.400	6.66	1625	155	378.1