

Ball nose end mills SpheroX

Tolerance $r \pm 0.005, 4.5 \times d$

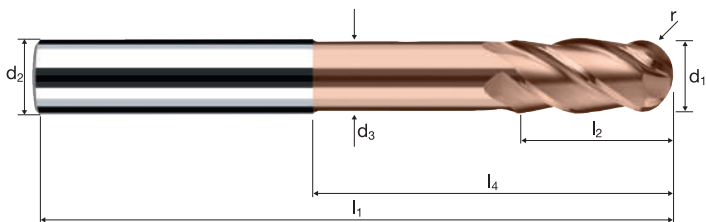


HM λ 40°
XA γ 0°

h4 **SC**

Vario **r**

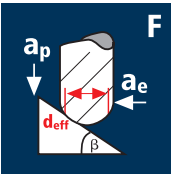
R **F**



	Rm 1100-1300	Rm 1300-1500	HRC 48-56	HRC 56-60	HRC > 60	Ti Titanium	HSS
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Example: Order-N°.											DURO-Si	
											H7492	
\emptyset Code	d_1	d_2 h4	d_3	l_1	l_2	l_3	l_4	r ± 0.005	α	z		
100	1.00	6.00	0.95	61	2.00	4.50	14.58	0.500	10.0°	4	●	
140	2.00	6.00	1.90	61	4.00	9.00	17.31	1.000	6.8°	4	●	
180	3.00	6.00	2.80	61	6.00	13.50	20.13	1.500	4.5°	4	●	
220	4.00	6.00	3.70	66	8.00	18.00	22.95	2.000	2.7°	4	●	
260	5.00	6.00	4.60	66	10.00	22.50	25.77	2.500	1.4°	4	●	
300	6.00	6.00	5.50	69	12.00	30.34	31.00	3.000	0.0°	4	●	
391	8.00	8.00	7.40	80	16.00	39.29	40.00	4.000	0.0°	4	●	
450	10.00	10.00	9.20	90	20.00	47.20	48.00	5.000	0.0°	4	●	
501	12.00	12.00	11.00	105	24.00	54.13	55.00	6.000	0.0°	4	●	
610	16.00	16.00	15.00	125	32.00	74.13	75.00	8.000	0.0°	4	●	

Application



Material

Hardened tool steel
52 - 56 HRC



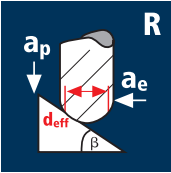
Hardened tool steel
56 - 60 HRC



Hardened tool steel
> 60 HRC



High speed steel,
hardened
64 - 70 HRC



Hardened tool steel
52 - 56 HRC



Hardened tool steel
56 - 60 HRC



Hardened tool steel
> 60 HRC



High speed steel,
hardened
64 - 70 HRC



d1 [mm]	z	v _c [m/min]	f _s [mm]	a _s [mm]	a _e [mm]	d _{eff} [mm]	n [min ⁻¹]	v _r [mm/min]	β [°]
1.00	4	120	0.014	0.030	0.090	0.91	41975	2350	45°
2.00	4	140	0.022	0.030	0.120	1.72	25910	2280	45°
3.00	4	180	0.034	0.050	0.150	2.59	22120	3010	45°
4.00	4	180	0.042	0.050	0.180	3.39	16900	2840	45°
5.00	4	180	0.048	0.050	0.210	4.17	13740	2640	45°
6.00	4	180	0.052	0.050	0.230	4.94	11600	2410	45°
8.00	4	180	0.056	0.080	0.280	6.67	8590	1925	45°
10.00	4	180	0.060	0.080	0.310	8.22	6970	1675	45°
12.00	4	180	0.066	0.100	0.340	9.89	5795	1530	45°
1.00	4	110	0.014	0.030	0.090	0.91	38475	2155	45°
2.00	4	110	0.022	0.030	0.120	1.72	20355	1790	45°
3.00	4	140	0.034	0.050	0.150	2.59	17205	2340	45°
4.00	4	140	0.042	0.050	0.180	3.39	13145	2210	45°
5.00	4	140	0.048	0.050	0.210	4.17	10685	2050	45°
6.00	4	140	0.052	0.050	0.230	4.94	9020	1875	45°
8.00	4	140	0.056	0.080	0.280	6.67	6680	1495	45°
10.00	4	140	0.060	0.080	0.310	8.22	5420	1300	45°
12.00	4	140	0.066	0.100	0.340	9.89	4505	1190	45°
1.00	4	70	0.014	0.030	0.090	0.91	24485	1370	45°
2.00	4	70	0.022	0.030	0.120	1.72	12955	1140	45°
3.00	4	90	0.034	0.050	0.150	2.59	11060	1505	45°
4.00	4	90	0.042	0.050	0.180	3.39	8450	1420	45°
5.00	4	90	0.048	0.050	0.210	4.17	6870	1320	45°
6.00	4	90	0.052	0.050	0.230	4.94	5800	1205	45°
8.00	4	90	0.056	0.080	0.280	6.67	4295	960	45°
10.00	4	90	0.060	0.080	0.310	8.22	3485	835	45°
12.00	4	90	0.066	0.100	0.340	9.89	2895	765	45°
1.00	4	40	0.014	0.030	0.090	0.91	13990	785	45°
2.00	4	40	0.022	0.030	0.120	1.72	7405	650	45°
3.00	4	50	0.034	0.050	0.150	2.59	6145	835	45°
4.00	4	50	0.042	0.050	0.180	3.39	4695	790	45°
5.00	4	50	0.048	0.050	0.210	4.17	3815	735	45°
6.00	4	50	0.052	0.050	0.230	4.94	3220	670	45°
8.00	4	50	0.056	0.080	0.280	6.67	2385	535	45°
10.00	4	50	0.060	0.080	0.310	8.22	1935	465	45°
12.00	4	50	0.066	0.100	0.340	9.89	1610	425	45°
1.00	4	104	0.023	0.180	0.180	0.99	33440	3075	30°
2.00	4	104	0.039	0.280	0.280	1.92	17240	2690	30°
3.00	4	104	0.049	0.360	0.360	2.83	11700	2295	30°
4.00	4	104	0.058	0.480	0.480	3.77	8780	2035	30°
5.00	4	104	0.065	0.600	0.600	4.71	7030	1825	30°
6.00	4	104	0.070	0.720	0.720	5.66	5850	1640	30°
8.00	4	104	0.086	0.960	0.960	7.54	4390	1510	30°
10.00	4	104	0.098	1.200	1.200	9.43	3510	1375	30°
12.00	4	104	0.101	1.440	1.440	11.31	2925	1185	30°
1.00	4	64	0.014	0.160	0.160	0.97	21000	1175	30°
2.00	4	64	0.023	0.250	0.250	1.90	10720	985	30°
3.00	4	64	0.029	0.320	0.320	2.78	7330	850	30°
4.00	4	64	0.035	0.430	0.430	3.72	5475	765	30°
5.00	4	64	0.039	0.540	0.540	4.65	4380	685	30°
6.00	4	64	0.042	0.650	0.650	5.58	3650	615	30°
8.00	4	64	0.051	0.860	0.860	7.43	2740	560	30°
10.00	4	64	0.058	1.080	1.080	9.30	2190	510	30°
12.00	4	64	0.061	1.300	1.300	11.16	1825	445	30°
1.00	4	48	0.011	0.130	0.130	0.95	16085	710	30°
2.00	4	48	0.019	0.200	0.200	1.84	8305	630	30°
3.00	4	48	0.023	0.250	0.250	2.69	5680	525	30°
4.00	4	48	0.028	0.340	0.340	3.59	4255	475	30°
5.00	4	48	0.031	0.420	0.420	4.48	3410	425	30°
6.00	4	48	0.034	0.500	0.500	5.37	2845	385	30°
8.00	4	48	0.041	0.670	0.670	7.17	2130	350	30°
10.00	4	48	0.047	0.840	0.840	8.96	1705	320	30°
12.00	4	48	0.049	1.010	1.010	10.76	1420	280	30°
1.00	4	24	0.007	0.130	0.130	0.95	8040	225	30°
2.00	4	24	0.012	0.200	0.200	1.84	4150	200	30°
3.00	4	24	0.015	0.250	0.250	2.69	2840	170	30°
4.00	4	24	0.018	0.340	0.340	3.59	2130	155	30°
5.00	4	24	0.020	0.420	0.420	4.48	1705	135	30°
6.00	4	24	0.022	0.500	0.500	5.37	1425	125	30°
8.00	4	24	0.026	0.670	0.670	7.17	1065	110	30°
10.00	4	24	0.030	0.840	0.840	8.96	855	100	30°
12.00	4	24	0.031	1.010	1.010	10.76	710	90	30°