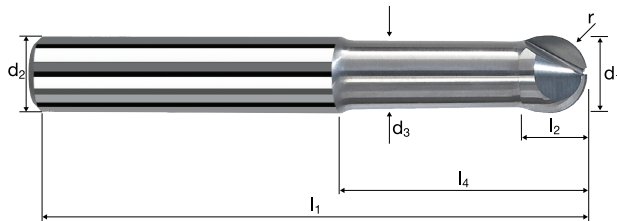


# Ball nose end mills Sphero-CBN

Cylindrical neck, 3xd



CBN	$\lambda$	0°
	$\gamma$	0°

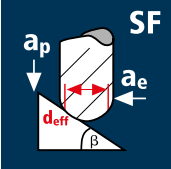


			HRC 48-56	HRC 56-60	HRC > 60			HSS
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Ø Code	d <sub>1</sub> 0/-0.01	d <sub>2</sub> h5	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	r ±0.005	β	z	Example: Order-N°.	
											Coating	Article-N°
											<b>31700</b>	
220	4.00	6.00	3.70	80	3.20	12.00	16.95	2.000	4°	2	●	
260	5.00	6.00	4.60	80	4.00	15.00	18.27	2.500	2°	2	●	
300	6.00	6.00	5.50	80	4.80	20.00	-	3.000	0°	2	●	
391	8.00	8.00	7.40	100	6.40	26.00	-	4.000	0°	2	●	
450	10.00	10.00	9.20	100	8.00	31.00	-	5.000	0°	2	●	
501	12.00	12.00	11.00	120	9.60	37.00	-	6.000	0°	2	●	

## Application

## Material



Hardened tool steel  
52 - 56 HRC



d1 [mm]	z	v <sub>c</sub> [m/min]	f <sub>c</sub> [mm]	a <sub>p</sub> [mm]	a <sub>e</sub> [mm]	d <sub>eff</sub> [mm]	n [min <sup>-1</sup> ]	v <sub>r</sub> [mm/min]	β [°]
4.00	2	488	0.020	0.018	0.018	3.70	41980	1680	60°
5.00	2	608	0.025	0.020	0.020	4.61	41980	2100	60°
6.00	2	700	0.030	0.022	0.022	5.52	40365	2420	60°
8.00	2	700	0.040	0.026	0.026	7.34	30355	2430	60°
10.00	2	700	0.040	0.028	0.028	9.14	24380	1950	60°
12.00	2	700	0.050	0.032	0.032	10.96	20330	2035	60°

Hardened tool steel  
56 - 60 HRC



4.00	2	488	0.020	0.018	0.018	3.70	41980	1680	60°
5.00	2	608	0.025	0.020	0.020	4.61	41980	2100	60°
6.00	2	650	0.025	0.022	0.022	5.52	37480	1875	60°
8.00	2	650	0.035	0.026	0.026	7.34	28190	1975	60°
10.00	2	650	0.035	0.028	0.028	9.14	22635	1585	60°
12.00	2	650	0.045	0.032	0.032	10.96	18880	1700	60°

Hardened tool steel  
> 60 HRC



4.00	2	488	0.015	0.018	0.018	3.70	41980	1260	60°
5.00	2	600	0.020	0.020	0.020	4.61	41430	1655	60°
6.00	2	600	0.025	0.022	0.022	5.52	34600	1730	60°
8.00	2	600	0.030	0.026	0.026	7.34	26020	1560	60°
10.00	2	600	0.030	0.028	0.028	9.14	20895	1255	60°
12.00	2	600	0.040	0.032	0.032	10.96	17425	1395	60°