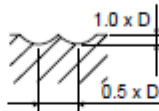


134123, 134323 (4 Flute Ball Nose)

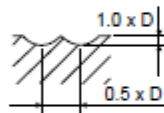


MATERIAL GROUP	HRc		Size (mm)												
			3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	25.0	
P	11 12 13 14	< 30	v_c (m/min)	135	135	135	135	135	135	135	135	135	135	135	135
			n	14324	10740	8590	7460	5370	4290	3580	3070	2680	2380	2140	1710
			f_z	0.025	0.025	0.03	0.038	0.06	0.06	0.07	0.075	0.075	0.08	0.09	0.099
			f (mm/min)	1430	1070	1030	1140	1280	1030	1000	920	800	760	770	680
M	21 22	30-45	v_c (m/min)	75	75	75	75	75	75	75	75	75	75	75	
			n	8220	6160	4930	4110	3080	2460	2050	1700	1540	1370	1230	980
			f_z	0.02	0.02	0.025	0.041	0.045	0.05	0.055	0.06	0.06	0.064	0.065	0.069
	23		v_c (m/min)	70	70	70	70	70	70	70	70	70	70	70	
			n	7420	5570	4450	3710	2780	2220	1850	1590	1390	1230	1110	890
			f_z	0.015	0.015	0.025	0.03	0.04	0.045	0.05	0.054	0.054	0.059	0.059	0.059
K	31 32 33 34		v_c (m/min)	135	135	135	135	135	135	135	135	135	135	135	
			n	14324	10740	8590	7460	5370	4290	3580	3070	2680	2380	2140	1710
			f_z	0.025	0.025	0.03	0.038	0.06	0.06	0.07	0.075	0.075	0.08	0.09	0.099
			f (mm/min)	1430	1070	1030	1140	1280	1030	1000	920	800	760	770	680
S	41 42		v_c (m/min)	55	55	55	55	55	55	55	55	55	55	55	
			n	5830	4370	3500	2910	2180	1750	1450	1250	1090	970	870	700
			f_z	0.012	0.012	0.015	0.02	0.03	0.03	0.04	0.042	0.044	0.049	0.06	0.068
	51 52 53		v_c (m/min)	30	30	30	30	30	30	30	30	30	30	30	
			n	3180	2380	1910	1590	1190	950	790	680	590	530	470	380
			f_z	0.011	0.011	0.01	0.016	0.025	0.026	0.038	0.04	0.047	0.052	0.053	0.053
			f (mm/min)	140	100	80	100	120	100	120	115	110	110	100	80

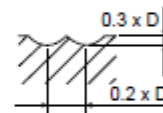
STEEL, STAINLESS STEEL, CAST IRON



TITANIUM



INCONEL



v_c - cutting speed (m/min)
 n - RPM (rev/min)
 f_z - feed rate (mm/tooth)
 f - feed rate (mm/rev)
 z - No. of teeth
 a_p - axial depth of cut
 a_e - radial depth of cut

To calculate RPM from cutting speed: $n = \frac{v_c \times 1000}{\pi \times \phi}$

To calculate cutting speed from RPM: $v_c = \frac{n \times \pi \times \phi}{1000}$

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.