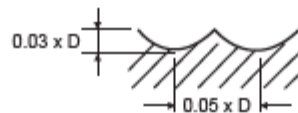




MATERIAL GROUP	HARDNESS HRC		Size (mm)										
			0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.5	2.0	
P	13 14	< 35	v_c (m/min)	13	19	28	38	47	57	75	94	141	187
			n	40000	30000	30000	30000	30000	30000	30000	30000	30000	29820
			f_z	0.007	0.012	0.015	0.019	0.024	0.029	0.039	0.048	0.054	0.057
			f (mm/min)	550	720	900	1140	1440	1740	2340	2880	3240	3420
H	15 16	35-45	v_c (m/min)	13	19	28	38	47	57	75	94	136	180
			n	40000	30000	30000	30000	30000	30000	30000	30000	28800	28680
			f_z	0.006	0.011	0.014	0.017	0.021	0.025	0.033	0.042	0.047	0.05
			f (mm/min)	500	630	810	1020	1280	1500	1980	2520	2700	2880
	15 16	45-55	v_c (m/min)	10	17	25	34	42	51	68	85	122	151
			n	33000	27000	27000	27000	27000	27000	27000	27000	25800	24000
			f_z	0.006	0.011	0.013	0.017	0.021	0.024	0.033	0.042	0.047	0.05
			f (mm/min)	400	575	720	900	1140	1320	1800	2280	2400	2400
K	31 32 33 34		v_c (m/min)	13	19	28	38	47	57	75	94	141	187
			n	40000	30000	30000	30000	30000	30000	30000	30000	30000	29820
			f_z	0.007	0.012	0.015	0.019	0.024	0.029	0.039	0.048	0.054	0.057
			f (mm/min)	550	720	900	1140	1440	1740	2340	2880	3240	3420



► The data shown is based on medial length tools. Please adjust machining conditions according to length.

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

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

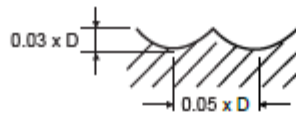
$$\text{To calculate cutting speed from RPM: } v_c = \frac{n \times \pi \times \varnothing}{1000}$$

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.

100365 (2 Flute Ball Nose)



MATERIAL GROUP	HARDNESS HRC		Size (mm)										
			2.5	3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0	
P	13 14	< 35	v_c (m/min)	187	187	187	175	157	167	175	157	168	168
			n	23800	19860	14900	11160	8340	6660	5580	4170	3340	2670
			f_z	0.074	0.091	0.121	0.156	0.174	0.189	0.199	0.212	0.238	0.264
			f (mm/min)	3510	3600	3600	3480	2910	2520	2220	1770	1590	1410
H	15 16	35-45	v_c (m/min)	180	180	180	168	152	161	168	151	161	162
			n	22900	19080	14340	10880	8040	6420	5340	4000	3210	2580
			f_z	0.068	0.083	0.111	0.138	0.153	0.164	0.174	0.188	0.206	0.227
			f (mm/min)	180	180	180	168	152	161	168	151	161	162
	15 16	45-55	v_c (m/min)	151	151	151	141	135	136	141	127	136	136
			n	19200	16000	12000	9000	6600	5400	4500	3360	2700	2160
			f_z	0.063	0.075	0.1	0.125	0.141	0.15	0.16	0.17	0.189	0.208
			f (mm/min)	2400	2400	2400	2250	1860	1620	1440	1140	1020	900
K	31 32 33 34		v_c (m/min)	187	187	187	175	157	167	175	157	168	168
			n	23800	19860	14900	11160	8340	6660	5580	4170	3340	2670
			f_z	0.074	0.091	0.121	0.156	0.174	0.189	0.199	0.212	0.238	0.264
			f (mm/min)	3510	3600	3600	3480	2910	2520	2220	1770	1590	1410



► The data shown is based on medial length tools. Please adjust machining conditions according to length.

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.