
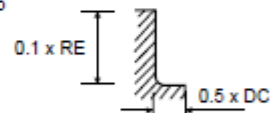


110350, 111350 (4 Flute High Feed)

MATERIAL GROUP	HARDNESS HRC	NORMAL SPEED	Size (mm)									
			2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	
H	15 16	<40	v_c (m/min)	85	90	100	100	110	110	110	110	110
			n	13530	9550	7960	6365	5835	4375	3500	2915	2185
			f_z	0.12	0.14	0.22	0.28	0.33	0.44	0.546	0.659	0.869
			f (mm/min)	6495	5350	7000	7130	7700	7700	7650	7695	7610
	15 16	40-50	v_c (m/min)	60	65	70	75	75	75	75	75	80
			n	9554	6900	5570	4775	3980	2985	2385	1990	1590
			f_z	0.099	0.15	0.2	0.25	0.3	0.4	0.5	0.598	0.79
			f (mm/min)	3780	4140	4455	4775	4775	4775	4775	4760	5030
	15 16	50-55	v_c (m/min)	35	45	50	55	55	55	55	55	55
			n	5570	4775	3980	3500	2915	2185	1750	1460	1095
			f_z	0.1	0.15	0.2	0.235	0.302	0.398	0.5	0.603	0.795
			f (mm/min)	2225	2865	3185	3290	3525	3485	3500	3520	3480
	15 16	55-60	v_c (m/min)	20	25	30	35	35	35	35	35	35
			n	3185	2650	2385	2225	1855	1390	1115	925	695
			f_z	0.078	0.101	0.132	0.182	0.25	0.33	0.42	0.5	0.61
			f (mm/min)	990	1070	1260	1620	1855	1835	1870	1855	1700
	15 16	60-65	v_c (m/min)	15	20	20	25	25	25	25	25	25
			n	2385	2120	1590	1590	1325	995	795	660	495
			f_z	0.083	0.08	0.1	0.117	0.147	0.2	0.25	0.299	0.398
			f (mm/min)	600	675	635	745	780	795	795	790	790
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► For long length tools reduce feed rate by 15%.

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.

110350, 111350 (4 Flute High Feed)

MATERIAL GROUP	HARDNESS HRc	HIGH SPEED	Size (mm)									
			2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	
H	15 16	<40	v_c (m/min)	180	205	215	235	255	250	250	250	250
			n	2880	2170	1711	1496	1353	995	796	663	497
			f_z	0.129	0.182	0.257	0.3	0.343	0.463	0.578	0.701	0.925
			f (mm/min)	1479	1584	1759	1798	1857	1843	1840	1860	1841
	15 16	40-50	v_c (m/min)	140	160	165	175	200	200	200	200	195
			n	2229	1698	1313	1114	1061	796	636	530	388
			f_z	0.111	0.147	0.231	0.284	0.329	0.438	0.547	0.66	0.897
			f (mm/min)	989	988	1213	1268	1397	1394	1393	1401	1392
	15 16	50-55	v_c (m/min)	95	200	140	155	170	170	170	170	165
			n	1512	2123	1114	987	902	676	541	451	328
			f_z	0.131	0.16	0.209	0.25	0.306	0.404	0.509	0.611	0.833
			f (mm/min)	792	1358	931	987	1104	1093	1102	1102	1094
	15 16	55-60	v_c (m/min)	70	90	100	110	120	120	120	120	120
			n	1114	955	796	705	636	477	382	318	238
			f_z	0.101	0.121	0.172	0.214	0.25	0.349	0.447	0.547	0.729
			f (mm/min)	450	462	547	599	636	666	683	696	696
	15 16	60-65	v_c (m/min)	55	65	70	75	85	85	85	85	85
			n	875	690	557	477	451	338	270	225	169
			f_z	0.07	0.091	0.129	0.158	0.2	0.301	0.352	0.4	0.5
			f (mm/min)	245	251	287	301	360	407	381	360	338

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► For long length tools reduce feed rate by 15%.

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 f_z - feed rate (mm/tooth)
 f - feed rate (mm/rev)
 z - No. of teeth
 a_p - axial depth of cut
 a_w - 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: $v_c = \frac{n \times \pi \times \phi}{1000}$

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