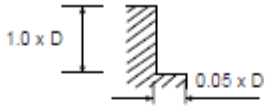
103120, 103320 (3 Flute Miniature) PROFILING

MATERIAL GROUP		HRc		Size (mm)										
				1.0	2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0
P	11 12	< 30	v_c (m/min)	50	75	85	95	100	105	105	100	105	110	105
			n	15500	11560	8920	7560	6300	5560	4200	3260	2740	2200	1680
			f_z	0.004	0.006	0.009	0.019	0.024	0.03	0.042	0.047	0.047	0.047	0.048
			f (mm/min)	190	210	240	430	450	500	530	460	390	310	240
	13 14	30-45	v_c (m/min)	30	50	50	60	60	65	65	65	65	75	65
			n	9550	7560	5560	4620	3780	3360	2520	2000	1680	1360	1060
			f_z	0.004	0.006	0.009	0.018	0.024	0.029	0.042	0.046	0.044	0.047	0.046
			f (mm/min)	115	140	150	260	270	310	290	230	190	150	120
H	15 16	45-55	v_c (m/min)	20	30	30	35	35	40	40	45	45	45	45
			n	6360	5040	3360	2940	2320	2000	1680	1360	1160	900	680
			f_z	0.001	0.002	0.004	0.005	0.008	0.01	0.016	0.017	0.017	0.017	0.015
			f (mm/min)	20	30	40	445	55	60	80	70	60	45	30
	15 16	55-65	v_c (m/min)	-	-	20	20	20	20	20	20	20	20	20
			n	-	-	1900	1480	1260	1100	840	680	560	440	320
			f_z	-	-	0.008	0.01	0.012	0.014	0.018	0.017	0.021	0.015	0.021
			f (mm/min)	-	-	45	45	45	45	45	35	35	20	20
M	21 22		v_c (m/min)	25	40	45	50	50	55	55	55	50	55	55
			n	7960	6300	4620	3880	3160	2840	2100	1680	1360	1060	840
			f_z	0.004	0.006	0.009	0.018	0.024	0.029	0.042	0.046	0.044	0.047	0.046
			f (mm/min)	100	115	125	210	230	250	265	230	180	150	115



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: $n = \frac{v_c \times 1000}{\pi \times \varnothing}$

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

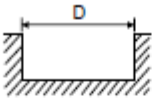
All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.

103120, 103320 (3 Flute Miniature) SLOTTING

MATERIAL GROUP		HRc		Size (mm)										
				1.0	2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0
P	11 12	< 30	v_c (m/min)	50	75	85	95	100	105	105	100	105	110	105
			n	15500	11560	8920	7560	6300	5560	4200	3260	2740	2200	1680
			f_z	0.003	0.005	0.007	0.012	0.015	0.019	0.027	0.031	0.03	0.03	0.03
			f (mm/min)	140	170	190	270	280	310	340	300	250	200	150
	13 14	30-45	v_c (m/min)	30	50	50	60	60	65	65	65	65	75	65
			n	9550	7560	5560	4620	3780	3360	2520	2000	1680	1360	1060
			f_z	0.003	0.005	0.008	0.012	0.015	0.02	0.024	0.023	0.024	0.025	0.022
			f (mm/min)	90	110	130	160	170	200	180	140	120	100	70
H	15 16	45-55	v_c (m/min)	20	30	30	35	35	40	40	45	45	45	45
			n	6360	5040	3360	2940	2320	2000	1680	1360	1160	900	680
			f_z	0.001	0.002	0.003	0.004	0.006	0.008	0.013	0.013	0.014	0.013	0.012
			f (mm/min)	20	30	35	35	45	50	65	55	50	35	25
	15 16	55-65	v_c (m/min)	-	-	20	20	20	20	20	20	20	20	20
			n	-	-	1900	1480	1260	1100	840	680	560	440	320
			f_z	-	-	0.007	0.008	0.009	0.011	0.014	0.015	0.018	0.015	0.021
			f (mm/min)	-	-	40	35	35	35	35	30	30	20	20
M	21 22		v_c (m/min)	25	40	45	50	50	55	55	55	50	55	55
			n	7960	6300	4620	3880	3160	2840	2100	1680	1360	1060	840
			f_z	0.002	0.004	0.008	0.011	0.015	0.019	0.025	0.029	0.029	0.031	0.028
			f (mm/min)	50	80	110	130	140	160	160	145	120	100	70

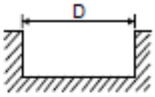
< HRc45

< ø 3.0mm: 0.2 x D
≥ ø 3.0mm: 0.5 x D



> HRc45

0.05 x D



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: $n = \frac{v_c \times 1000}{\pi \times ø}$

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

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.