

ALU-XP CUTTING CONDITIONS



135303 (1 Flute Router)

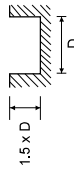


122303 (2 Flute 25° Helix)



SLOTTING

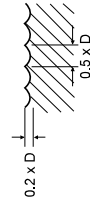
MATERIAL GROUP	Size (mm)	Size (mm)													
		2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0				
N	v_c (m/min)	145	170	190	190	190	195	190	190	190	190	190	190	190	190
	n	23000	18000	15000	12000	10000	78000	6000	6000	6000	6000	6000	6000	6000	6000
	f_z	0.065	0.094	0.12	0.15	0.18	0.244	0.333	0.44	0.333	0.333	0.44	0.44	0.44	0.44
O	f (mm/min)	1500	1700	1800	1800	1800	1800	2000	2200	2000	2000	2200	2200	2200	2200
	v_c (m/min)	200	235	250	235	255	250	250	250	250	250	255	255	255	255
	n	32000	25000	20000	15000	13500	10000	8000	6700	6700	6700	6700	6700	6700	6700
O	f_z	0.069	0.096	0.12	0.147	0.17	0.24	0.3	0.343	0.24	0.24	0.3	0.343	0.343	0.343
	f (mm/min)	2200	2400	2400	2200	2300	2400	2400	2300	2400	2400	2400	2300	2300	2300



112303 (2 Flute 50° Helix, Ball Nose)



MATERIAL GROUP	Size (mm)	Size (mm)													
		6.0	8.0	10.0	12.0	16.0	20.0	25.0	30.0	40.0	50.0				
N	v_c (m/min)	85	85	105	125	135	105	105	105	105	105	105	105	105	105
	n	4400	3360	3360	3360	2840	1680	1680	1680	1680	1680	1680	1680	1680	1680
	f_z	0.04	0.06	0.069	0.089	0.101	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0.131
N	f (mm/min)	350	400	465	600	535	440	440	440	440	440	440	440	440	440
	v_c (m/min)	270	280	350	420	440	350	350	350	350	350	350	350	350	350
	n	14400	11200	11200	11200	8800	5600	5600	5600	5600	5600	5600	5600	5600	5600
N	f_z	0.049	0.071	0.084	0.07	0.123	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157
	f (mm/min)	1400	1600	1880	2400	2160	1760	1760	1760	1760	1760	1760	1760	1760	1760



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

- 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_r - radial depth of cut

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.

ALU-XP CUTTING CONDITIONS

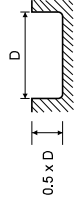


122303 (2 Flute 25° Helix)



SLOTTING

MATERIAL GROUP	Size (mm)	Size (mm)													
		2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0				
N	v_c (m/min)	65	100	130	165	195	200	250	300	320	250	250	250	250	250
	n	10400	10400	10400	10400	10400	8000	8000	8000	8000	8000	8000	8000	8000	8000
	f_z	0.022	0.035	0.046	0.05	0.058	0.09	0.011	0.135	0.156	0.2	0.2	0.2	0.2	0.2
N	f (mm/min)	460	720	960	1040	1200	1440	1760	2160	2000	1600	1600	1600	1600	1600

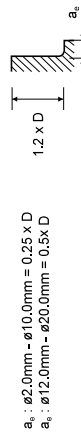


122303 (2 Flute 25° Helix)



PROFILING

MATERIAL GROUP	Size (mm)	Size (mm)													
		2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0				
N	v_c (m/min)	65	100	130	165	195	200	250	300	320	250	250	250	250	250
	n	10400	10400	10400	10400	10400	8000	8000	8000	8000	8000	8000	8000	8000	8000
	f_z	0.039	0.046	0.054	0.065	0.077	0.115	0.135	0.17	0.194	0.25	0.25	0.25	0.25	0.25
N	f (mm/min)	810	960	1120	1360	1600	1840	2160	2720	2480	2000	2000	2000	2000	2000



$a_r = \phi 2.0\text{mm} - \phi 10.0\text{mm} = 0.25 \times D$
 $a_r = \phi 12.0\text{mm} - \phi 20.0\text{mm} = 0.5 \times D$

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

- 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_r - radial depth of cut

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.