

# SV4 Recommended Starting Speeds and Feeds

Material Group		Side Milling (A) and Slotting (B)			Speed		IPT	Effective Feed per Tooth (IPT=inch/th) for side milling (A) (Use Chip Thinning Calculations to correct for stepover), for slotting (B) reduce IPT by 20%					
								D - Diameter					
		A		B	A	B	frac.	1/4"	3/8"	1/2"	5/8"	3/4"	1"
		ap	ae	ap	(SFM)	(SFM)	dec.	0.250	0.375	0.500	0.625	0.750	1.000
P	Unalloyed Steel (AISI 1000, 1100, 1200, 1500 Series)	Ap1 max	<0.5 x D	<1 x D	500	200	IPT	0.0011	0.0018	0.0031	0.0035	0.0042	0.0049
	Low-alloy Steel (AISI 3000, 4000, 5000, 6000, 8000, 9000 Series)	Ap1 max	<0.5 x D	<1 x D	400	200	IPT	0.0011	0.0018	0.0031	0.0035	0.0042	0.0049
	High-alloy Steel/Tool Steel (SAE Classes A, D, H, O, S, M, T)	Ap1 max	<0.5 x D	<0.75 x D	350	175	IPT	0.001	0.002	0.0026	0.0029	0.0034	0.0038
M	Austenitic (AISI 200 & 300 Series)	Ap1 max	<0.5 x D	<1 x D	300	150	IPT	0.0015	0.0019	0.0022	0.0026	0.0031	0.0034
	Marensitic (AISI 400 & 500 Series)	Ap1 max	<0.5 x D	<1 x D	350	175	IPT	0.0016	0.002	0.0023	0.0028	0.0033	0.0036
	Precipitation (PH 15-7 Mo, 15-5 PH, 17-7 PH)	Ap1 max	<0.5 x D	<1 x D	300	150	IPT	0.001	0.0021	0.0027	0.0032	0.0036	0.004
K	Gray Iron GG	Ap1 max	<0.5 x D	<1 x D	450	200	IPT	0.0017	0.0025	0.003	0.0035	0.0041	0.0048
	Nodular Iron GGG	Ap1 max	<0.5 x D	<1 x D	500	200	IPT	0.0017	0.0025	0.003	0.0035	0.0041	0.0048
	Malleable Iron GTS/GTW	Ap1 max	<0.5 x D	<1 x D	400	200	IPT	0.0017	0.0025	0.003	0.0035	0.0041	0.0048
S	HRSA Iron-Based (Incoloy 800/909, A286)	Ap1 max	<0.5 x D	N/A	100	N/A	IPT	0.0007	0.001	0.0015	0.0019	0.0025	0.0033
	HRSA Cobalt-Based (Stellite, Haynes 21/25/188)	Ap1 max	<0.5 x D	N/A	80	N/A	IPT	0.0007	0.001	0.0015	0.0019	0.0025	0.0033
	HRSA Nickel-Based (Inconel 601/617/625/700/706/718, Hastelloy, Monel, Nimonic, Rene, Udimet, Waspalloy)	Ap1 max	<0.5 x D	<0.3 x D	120	50	IPT	0.0007	0.001	0.0015	0.0019	0.0025	0.0033
	Titanium (Pure, ASTM 1/2/3, Ti6AL-4V, Ti6Al-2Sn-4Zr-2Mo-Si)	Ap1 max	<0.5 x D	N/A	300	N/A	IPT	0.0008	0.0011	0.0023	0.0026	0.0031	0.0035
H	Hardened Steels and Cast Irons (42-48HRc)	Ap1 max	<0.16 x D	N/A	180	N/A	IPT	0.0008	0.0012	0.0017	0.002	0.0022	0.0025

## Note:

- Ap1 max = Full length of cut of the tool
- Lower cutting speed value is recommended for high stock removal applications or higher hardness within group.
- Higher cutting speed value is recommended for finishing applications or lower hardness within group.
- All values are recommended starting points based on ideal conditions. Adjust parameters accordingly for specific applications.