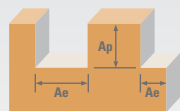


Speed & Feed Recommendations



Series 25 Metric				Vc (m/min)	Diameter (D1) (mm)					
	Ae x D1	Ap x D1			6	8	10	12	16	
CFRP, AFRP (CARBON FIBER, ARAMID FIBER)	 Profile	≤ 0.5	≤ 1.5	150	RPM	7951	5963	4771	3976	2982
				(96-164)	Fz	0.040	0.065	0.075	0.100	0.120
					Feed (mm/min)	1272	1550	2147	3181	2862
	 HSM	≤ 0.05	≤ 2	250	RPM	13252	9939	7951	6626	4970
				(200-300)	Fz	0.095	0.145	0.175	0.235	0.280
					Feed (mm/min)	5036	5765	8349	12457	11132
GFRP (FIBERGLASS)	 Profile	≤ 0.5	≤ 1.5	120	RPM	6361	4771	3817	3181	2385
				(96-164)	Fz	0.040	0.065	0.075	0.100	0.120
					Feed (mm/min)	1018	1240	1717	2544	2290
	 HSM	≤ 0.05	≤ 2	200	RPM	10602	7951	6361	5301	3976
				(160-240)	Fz	0.095	0.145	0.175	0.235	0.280
					Feed (mm/min)	4029	4612	6679	9966	8905
CARBON, GRAPHITE	 Profile	≤ 0.5	≤ 1.5	185	RPM	9807	7355	5884	4903	3677
				(148-222)	Fz	0.050	0.080	0.095	0.125	0.150
					Feed (mm/min)	1961	2354	3354	4903	4413
	 HSM	≤ 0.05	≤ 2	300	RPM	15903	11927	9542	7951	5963
				(240-360)	Fz	0.115	0.185	0.220	0.290	0.350
					Feed (mm/min)	7315	8826	12595	18447	16698
PLASTICS	 Profile	≤ 0.5	≤ 1.5	305	RPM	16168	12126	9701	8084	6063
				(244-366)	Fz	0.050	0.080	0.095	0.125	0.150
					Feed (mm/min)	3234	3880	5529	8084	7275
	 HSM	≤ 0.05	≤ 2	505	RPM	26769	20077	16062	13385	10038
				(404-606)	Fz	0.115	0.185	0.220	0.290	0.350
					Feed (mm/min)	12314	14857	21201	31052	28108
MACHINABLE CERAMICS MACHINABLE GLASS	 Profile	≤ 0.5	≤ 1.5	15	RPM	795	596	477	398	298
				(12-18)	Fz	0.020	0.035	0.045	0.050	0.060
					Feed (mm/min)	64	83	129	159	143
	 HSM	≤ 0.05	≤ 2	25	RPM	1325	994	795	663	497
				(20-30)	Fz	0.045	0.075	0.085	0.115	0.140
					Feed (mm/min)	239	298	406	610	557

$$\text{rpm} = (1000 \times \text{m/min}) / (3.14 \times D_1)$$

$$\text{mm/min} = (\text{mm / flute}) \times 4 \times \text{rpm}$$

HSM (high speed machining)

adjust parameters based on resin type and fiber structure

reduce speed when overheating causes melting or damage to resin

reduce feed if delamination or fraying occur

finish cuts typically required reduced feed and cutting depths

rates shown are for use without coolant; rates may be increased with coolant

dust collection is vital when machining dry

diamond coating will increase tool life in graphite and composite materials

refer to the SGS Tool Wizard for complete technical information (I)