

Material Classification				Vc (sfm)	Diameter (D ₁) inch				
		Ae x D ₁	Ap x D ₁		1/8	1/4	5/16	3/8	
CFRP, AFRP (Carbon Fiber, Aramid Fiber)	 Slot	1	≤ 1	400 (320-480)	RPM	12224	6112	4890	4075
					Fr	0.0024	0.0048	0.0060	0.0072
					Feed (ipm)	29.4	29.4	29.4	29.4
	 Profile	≤ 0.5	≤ 1.5	500 (400-600)	RPM	15280	7640	6112	5093
					Fr	0.0024	0.0048	0.0060	0.0072
					Feed (ipm)	36.6	36.6	36.6	36.6
	 HSM	≤ 0.05	≤ 2	825 (660-990)	RPM	25212	12606	10085	8404
					Fr	0.0055	0.0110	0.0138	0.0165
					Feed (ipm)	139.0	139.0	139.0	139.0
GFRP (Fiberglass)	 Slot	1	≤ 1	320 (256-384)	RPM	9779	4890	3912	3260
					Fr	0.0024	0.0048	0.0060	0.0072
					Feed (ipm)	23.4	23.4	23.4	23.4
	 Profile	≤ 0.5	≤ 1.5	400 (320-480)	RPM	12224	6112	4890	4075
					Fr	0.0024	0.0048	0.0060	0.0072
					Feed (ipm)	29.4	29.4	29.4	29.4
	 HSM	≤ 0.05	≤ 2	660 (582-792)	RPM	20170	10085	8068	6723
					Fr	0.0055	0.0110	0.0138	0.0165
					Feed (ipm)	111.0	111.0	111.0	111.0
Carbon, Graphite	 Slot	1	≤ 1	480 (384-576)	RPM	14669	7334	5868	4890
					Fr	0.0037	0.0075	0.0094	0.0112
					Feed (ipm)	55.0	55.0	55.0	55.0
	 Profile	≤ 0.5	≤ 1.5	600 (480-720)	RPM	18336	9168	7334	6112
					Fr	0.0037	0.0075	0.0094	0.0112
					Feed (ipm)	68.7	68.7	68.7	68.7
	 HSM	≤ 0.05	≤ 2	990 (792-1188)	RPM	30254	15127	12102	10085
					Fr	0.0086	0.0172	0.0215	0.0258
					Feed (ipm)	260.0	260.0	260.0	260.0
Plastics	 Slot	1	≤ 1	800 (640-690)	RPM	24448	12224	9779	8149
					Fr	0.0038	0.0075	0.0094	0.0113
					Feed (ipm)	91.7	91.7	91.7	91.7
	 Profile	≤ 0.5	≤ 1.5	1000 (800-1200)	RPM	30560	15280	12224	10187
					Fr	0.0038	0.0075	0.0094	0.0113
					Feed (ipm)	114.6	114.6	114.6	114.6
	 HSM	≤ 0.05	≤ 2	1650 (1320-1980)	RPM	50424	25212	20170	16808
					Fr	0.0035	0.0069	0.0086	0.0104
					Feed (ipm)	174.0	174.0	174.0	174.0

rpm = sfm x 3.82 / D₁
ipm = (inch / revolution) x 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

