Amana Tool®

2 & 3 Flute Composite, Fiberglass & Phenolic Cutting ZrN Coated Router Bits
CNC Operating Spindle Speed: 18,000 RPM / **Depth of Cut:** 1 x Tool Diameter †

Material	Spindle Speed SFM*	#46093 (3 Flute) 1.2mm (0.047)		#46040 (2 Flute) 1/8" (0.125)		#46090/46091 (3 Flute) 1/8" (0.125)		#46042 (2 Flute) 3/16" (0.1875)		#46092 (3 Flute) 3/16" (0.1875)		#46043 (2 Flute) 1/4" (0.250)		#46094/46097 (3 Flute) 1/4" (0.250)		#46045 (2 Flute) 3/8" (0.375)		#46047 (2 Flute) 1/2" (0.50)	
		Feed Rate IPM**	Chip Load Per Tooth	Feed Rate IPM**	Chip Load Per Tooth	Feed Rate IPM**	Chip Load Per Tooth	Feed Rate IPM**	Chip Load Per Tooth	Feed Rate IPM**	Chip Load Per Tooth	Feed Rate IPM**	Chip Load Per Tooth	Feed Rate IPM**	Chip Load Per Tooth	Feed Rate IPM**	Chip Load Per Tooth	Feed Rate IPM**	Chip Load Per Tooth
Composites	600 - 800	50" - 100"	0.001" - 0.002"	70" - 140"	0.002" - 0.004"	100" - 210"	0.002" - 0.004"	70" - 140"	0.002" - 0.004"	100" - 210"	0.002" - 0.004"	110" - 180"	0.003" - 0.005"	160" - 270"	0.003" - 0.005"	110" - 180"	0.003" - 0.005"	150" - 210"	0.004" - 0.006"
Fiberglass	800 - 1,200	50" - 100"	0.001" - 0.002"	110" - 180"	0.003" - 0.005"	100" - 210"	0.002" - 0.004"	110" - 180"	0.003" - 0.005"	100" - 210"	0.002" - 0.004"	110" - 180"	0.003" - 0.005"	160" - 270"	0.003" - 0.005"	110" - 180"	0.003" - 0.005"	150" - 210"	0.004" - 0.006"
Phenolic	800 - 1,200	50" - 100"	0.001" - 0.002"	110" - 180"	0.003" - 0.005"	100" - 210"	0.002" - 0.004"	110" - 180"	0.003" - 0.005"	100" - 210"	0.002" - 0.004"	150" - 210"	0.004" - 0.006"	160" - 270"	0.003" - 0.005"	150" - 210"	0.004" - 0.006"	180" - 250"	0.005" - 0.007"
Aluminum	300 - 600	50" - 100"	0.001" - 0.002"	110" - 180"	0.003" - 0.005"	100" - 210"	0.002" - 0.004"	110" - 180"	0.003" - 0.005"	100" - 210"	0.002" - 0.004"	150" - 210"	0.004" - 0.006"	160" - 270"	0.003" - 0.005"	150" - 210"	0.004" - 0.006"	180" - 250"	0.005" - 0.007"

* SFM Surface feet per minute
** IPM Inches per minute

† Depth of Cut: 1 x D Use recommended feed rate
2 x D Reduce feed rate by 25%
3 x D Reduce feed rate by 50%

Simple Machining Calculations:
To find **RPM:** (SFM x 3.82) / diameter of tool
To find **SFM:** 0.262 x diameter of tool x RPM
To find **Feed Rate IPM:** RPM x # of flutes x chip load
To find **Chip Load:** Feed Rate IPM / (RPM x # of flutes)
To find **Ramp Down:** Feed Rate IPM / # of flutes