Amana Tool®

SPEKTRA
EXTREME TOOL LIFE COATING

Spektra™ Extreme Tool Life Coated 2D/3D Carving CNC Solid Carbide Router Bits
Operating RPM: 18,000 / **Depth of Cut:** 1 x Tool Diameter

2 Flute Ball Nose

	1/4" (0.250")		Tool Reference #'s	
	IPM* (Based on 18,000 RPM)	**Chip Load Per Tooth**	46294-K	1/4" Dia.
Plastic, Acrylic, Plexiglas®	140" - 210"	0.004" - 0.006"		
Wood, MDF, Sign-Foam	250" - 320"	0.007" - 0.009"		

2 Flute Flat Bottom

	1/4" (0.250")		Tool Reference #'s	
	IPM*	**Chip Load Per Tooth** (Based on 18,000 RPM)	46577-K	1/4" Dia.
Plastic, Acrylic, Plexiglas®	180" - 250"	0.005" - 0.007"		
Wood, MDF, Sign-Foam	215" - 290"	0.006" - 0.008"		

3 Flute Ball Nose

	1/32" (0.031")		1/8" (0.125")		Tool Reference #'s	
	IPM*	**Chip Load Per Tooth** (Based on 18,000 RPM)	**IPM***	**Chip Load Per Tooth** (Based on 18,000 RPM)	46280-K	1/32" Dia.
					46284-K	1/8" Dia.
Plastic, Acrylic, Plexiglas®	27" - 81"	0.0005" - 0.0015"	50" - 100"	0.0009" - 0.0018"	46286-K	1/8" Dia.
					46288-K	1/8" Dia.
Wood, MDF, Sign-Foam	40" - 108"	0.00075" - 0.002"	80" - 100"	0.0015" - 0.0025"	46295-K	1/8" Dia.

Depth of Cut: 1 x D Use recommended chip load
2 x D Reduce chip load by 25%
3 x D Reduce chip load 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 =** RPM x # of flutes x chip load
To find **Chip Load =** $\dfrac{IPM}{RPM \times \# \text{ of Flutes}}$

Disclaimer: It is important to understand that these values are only recommendations.

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4 Flute Ball Nose & Flat Bottom

	1/16" (0.0625")		1/8" (0.125")		Tool Reference #'s	
	IPM*	Chip Load Per Tooth (Based on 18,000 RPM)	IPM*	Chip Load Per Tooth (Based on 18,000 RPM)	46282-K	1/16" Dia.
					46292-K	1/8" Dia.
Plastic, Acrylic, Plexiglas®	25" - 30"	0.00037" - 0.00045"	25" - 30"	0.00037" - 0.00045"		
Wood, MDF, Sign-Foam	35" - 45"	0.0005" - 0.00065"	35" - 45"	0.0005" - 0.00065"		

3 Flute Extra Long Ball Nose & Flat Bottom

	1/4" (0.250")		Tool Reference #'s	
	IPM*	Chip Load Per Tooth (Based on 18,000 RPM)	46490-K	1/4" Dia.
Plastic, Acrylic, Plexiglas®	135" - 190"	0.0025" - 0.0035"		
Wood, MDF, Sign-Foam	215" - 320"	0.004" - 0.006"		

IPM* Inches per minute

Depth of Cut: 1 x D Use recommended chip load
2 x D Reduce chip load by 25%
3 x D Reduce chip load 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 =** RPM x # of flutes x chip load
To find **Chip Load =** $\dfrac{\text{IPM}}{\text{RPM} \times \text{\# of Flutes}}$

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