ZrN-Coated 3D Profiling Tools, Speed and Feed Chart
Maximum Operating Spindle Speed: 50,000 RPM

Material	Spindle Speed SFM*	Equivalent Speed per Diameter					
		1/32" (0.0313")	1/16" (0.0625")	1/8"(0.125")	1/4" (0.250")	3/8" (0.375")	1/2" (0.500")
Aluminum, Low Silicone (≤8% Silicone)	1,200 +	50,000 RPM Max	50,000 RPM Max	37,000 RPM	18,400 RPM	12,200 RPM	9,200 RPM
Aluminum, High Silicone (8%+ Silicone)	800 +	50,000 RPM Max	50,000 RPM Max	25,000 RPM	12,200 RPM	8,200 RPM	6,100 RPM
Graphite	1,000 +	50,000 RPM Max	50,000 RPM Max	31,000 RPM	15,200 RPM	10,200 RPM	7,600 RPM
Copper, Brass	900 +	50,000 RPM Max	50,000 RPM Max	28,000 RPM	13,800 RPM	9,200 RPM	6,900 RPM
Plastics and Composites	1,200 +	50,000 RPM Max	50,000 RPM Max	37,000 RPM	18,400 RPM	12,200 RPM	9,200 RPM
Plastic w/ high glass content	600 +	50,000 RPM Max	50,000 RPM Max	19,000 RPM	9,200 RPM	6,100 RPM	4,600 RPM
Wood	2,500 +	50,000 RPM Max	50,000 RPM Max	50,000 RPM Max	40,000 RPM	25,500 RPM	19,100 RPM

SFM* Surface feet per minute

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

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%

ZrN-Coated 3D Profiling Tools, Speed and Feed Chart
Maximum Operating Spindle Speed: 50,000 RPM

Material	Spindle Speed SFM*	Chip Load Per Tooth					
		1/32" (0.0313")	1/16" (0.0625")	1/8"(0.125")	1/4" (0.250")	3/8" (0.375")	1/2" (0.500")
Aluminum, Low Silicone (≤8% Silicone)	1,200 +	0.0005"	0.001"	0.002"	0.003"	0.004"	0.005"
Aluminum, High Silicone (8%+ Silicone)	800 +	0.0005"	0.001"	0.002"	0.003"	0.004"	0.005"
Graphite	1,000 +	0.00075"	0.0015"	0.003"	0.005"	0.007"	0.009"
Copper, Brass	900 +	0.0005"	0.001"	0.002"	0.003"	0.004"	0.005"
Plastics and Composites	1,200 +	0.00075"	0.0015"	0.003"	0.005"	0.007"	0.009"
Plastic w/ high glass content	600 +	0.00075"	0.0015"	0.003"	0.005"	0.007"	0.009"
Wood	2,500 +	0.00075"	0.0015"	0.003"	0.005"	0.007"	0.009"

SFM* Surface feet per minute

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

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%