

## Solid Carbide CNC Spiral Ball Nose Router Bits

Operating RPM: 18,000

Material	Chip Load Per Tooth							Tool Reference #'s		
	1/16"	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	Up-Cut	Down-Cut	Dia.
Aluminum	0.002" - 0.004"	0.003" - 0.005"	0.004" - 0.006"	0.006" - 0.008"	0.010" - 0.012"	0.012" - 0.014"	0.014" - 0.016"	46369	—	1/8"
Softwood	0.003" - 0.005"	0.005" - 0.007"	0.007" - 0.009"	0.008" - 0.010"	0.009" - 0.011"	0.010" - 0.012"	0.011" - 0.013"	46373	—	1/16"
Hardwood	0.002" - 0.004"	0.003" - 0.005"	0.005" - 0.007"	0.006" - 0.008"	0.007" - 0.009"	0.008" - 0.010"	0.009" - 0.011"	46374	46475	1/4"
MDF	0.003" - 0.005"	0.005" - 0.007"	0.006" - 0.008"	0.007" - 0.009"	0.008" - 0.010"	0.009" - 0.011"	0.010" - 0.012"	46375	—	1/8"
Soft Plastic	0.002" - 0.004"	0.002" - 0.004"	0.004" - 0.006"	0.004" - 0.006"	0.006" - 0.008"	0.010" - 0.012"	0.012" - 0.014"	46376	46476	1/4"
Hard Plastic	0.002" - 0.004"	0.002" - 0.004"	0.004" - 0.006"	0.004" - 0.006"	0.006" - 0.008"	0.008" - 0.004"	0.010" - 0.012"	46378	46478	3/8"
Sign Foam	0.003" - 0.005"	0.005" - 0.007"	0.006" - 0.008"	0.007" - 0.009"	0.008" - 0.010"	0.009" - 0.011"	0.010" - 0.012"	46380	46477	1/2"
								46384	—	1/2"
								46386	—	5/8"
								46387	—	3/4"

### 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)