

### Polycrystalline Diamond (PCD) Ball Nose Router Bit

Tool No. DRB-432			Chip Load Per Tooth		RPM		Feed Rate	
Material	Diameter Inch/mm	No. Teeth	From Inch (mm)/min	To Inch (mm)/min	From	To	From Inch (mm)/min	To Inch (mm)/min
CFRP	1/4" (6.35mm)	2	.0012" (0.03mm)	.006" (0.15mm)	5,000	10,000	12" (301mm)	120" (3,009mm)
Plastics	1/4" (6.35mm)	2	.002" (0.05mm)	.007" (0.17mm)	8,000	18,000	32" (802mm)	250" (6,350mm)
Wood	1/4" (6.35mm)	2	.002" (0.05mm)	.007" (0.17mm)	15,000	18,000	60" (1,505mm)	250" (6,350mm)
MDF	1/4" (6.35mm)	2	.0016" (.04mm)	.005" (0.13mm)	12,000	18,000	40" (1,016mm)	180" (4,572mm)
Chipboard Without Coating	1/4" (6.35mm)	2	.002" (0.05mm)	.007" (0.17mm)	16,500	18,000	65" (1,651mm)	250" (6,350mm)

**Maximum RPM:** 18,000

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Material	Diameter Inch/mm	No. Teeth	From Inch (mm)/min	To Inch (mm)/min	From	To	From Inch (mm)/min	To Inch (mm)/min
CFRP	3/8" (9.53mm)	2	.0012" (0.03mm)	.006" (0.15mm)	3,400	6,700	8" (201mm)	80" (2,006mm)
Plastics	3/8" (9.53mm)	2	.002" (0.05mm)	.01" (0.25mm)	5,400	13,400	30" (749mm)	260" (6,684mm)
Wood	3/8" (9.53mm)	2	.006" (0.15mm)	.01" (0.25mm)	16,700	18,000	200" (5,013mm)	360" (9,144mm)
MDF	3/8" (9.53mm)	2	.005" (0.13mm)	.008" (0.2mm)	13,400	18,000	135" (3,429mm)	290" (7,366mm)
Chipboard Without Coating	3/8" (9.53mm)	2	.006" (0.15mm)	.01" (0.25mm)	18,000	18,000	215" (5,461mm)	360" (9,144mm)

**Maximum RPM:** 18,000

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:** IPM / (RPM x # of Flutes)

**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%