

JULY 2017 DEMONSTRATION CRUSH GRIND PEPPERMILL WITH ROD CASTLE

In a lively and well attended joint July 12, 2017 meeting between the Sawdust and Woodchips Association and CNY Woodturners, Rod Castle demonstrated his wizardry in making peppermills. Rod has sold his product for many years with his online Etsy outlet: WoodCastle Studio (www.etsy.com/shop/woodcastle). He explained that he only uses the 10" ceramic *Crush Grind* peppermill mechanism sold by Craft Supplies (www.woodturnerscatalog.com) for about \$15. The mechanism can be used for either pepper or salt because the grinder is ceramic.

Rod began the demonstration by explaining how he makes his diagonally laminated peppermill blanks. He starts by re-sawing wood on his band saw into pieces that are of different thicknesses and about 2 ¾" to 3" wide and 12" or slightly more in length. He uses the *Wood Slicer* band saw blade from Highland Woodworking (www.highlandwoodworking.com) because he gets such a clean cut on the band saw that he does not need to plane nor sand the surfaces after cutting. The laminations are glued up in a stack using Titebond glue and many clamps to get a tight fit. After the glue is dry, the block is then cut diagonally (corner to corner) on his band saw across the laminations. The two triangular blocks are then reversed and glued together again to create the diagonal appearance in the final block. When the glue is dry, he squares up the end of the block so that it can be safely put on the lathe between centers. Before mounting it on the lathe, Rod will cut the corners off the block on his band saw using a jig block. This makes the peppermill blank into an octagon shape down its length. The triangular pieces removed are glued together later and Rod makes pen blanks out of them.

Rod then followed the directions for making a peppermill using the "crush grind" mechanism that are provided by Craft Supply and reproduced here with the permission of Craft Supply.

Beyond the handout, Rod shared some tips. One was that he can produce peppermills fairly quickly by using several drills pre-mounted in different chucks to speed up the process of drilling the different diameter holes needed to accommodate the grinder mechanism. Rod used a long *shank 1" Forstner type drill bit* from Rockler (www.rockler.com) or Bad Dog Tools (www.baddogtools.com). He also uses the *Woodcut MillDrill™* from Woodcut Tools (about \$70). Finally, he cuts the inset inside the drilled hole to hold the *Crush Grind* mechanism using a *Sorby Relief Cutting Tool* from (www.packardwoodworking.com) www.packardwoodworking.com (\$38).

Demo write up by *Chad Dawson*

Photos by *Heather Muckley & Barbara Raymond-LaPrease*

Remember,
the *Monthly Challenge*
for August
is making a
peppermill.

*What will
you make?*



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From Craft Supplies Instruction Sheet v 11.16 for

Turning a Crush Grind[®] Mill

Supplies Needed:

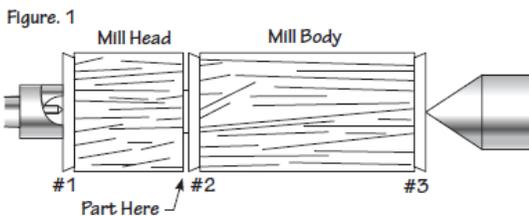
- Blank
- 15/16" Forstner Drill Bit
- 1-1/16" Forstner Drill Bit
- 1-9/16" Forstner Drill Bit
- 1-3/4" Forstner Drill Bit
- Sandpaper/Finish
- Drill or Drill Press
- Eye and Ear Protection

Selecting the Blank:

1. Select a 2-3/4" square blank that is 1" longer than the mechanism you have selected.

Mounting the Blank:

1. Mount the blank between centers and rough turn the blank to round. Layout the Mill Head and Mill Body on the blank and part a 1/2" deep groove. (See Figure 1.)
2. Cut dovetail tenons #1, #2, and #3 as shown in Figure 1 for mounting in a chuck.
3. Part the Mill Head from the Mill Body.



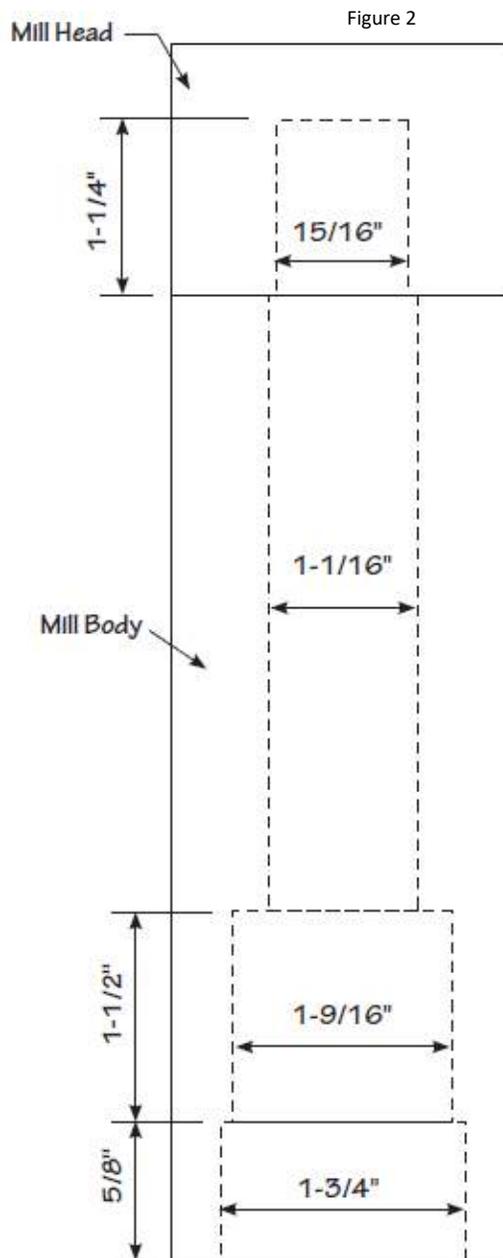
Drilling the Mill Head:

1. Mount the Mill Head in a chuck using Tenon #1 and square the end of the blank.
2. Drill a 15/16" dia. hole 1-1/4" deep in the Mill Head.
3. Remove the Mill Head from the chuck.

Drilling the Mill Body:

1. Mount the Mill Body in a chuck using Tenon #3 and square the end of the blank.
2. Drill a 1-1/16" dia. hole half way through the Mill Body.
3. Remove the Mill Body from the chuck and remount the Mill Body using tenon #2. Square the end of the blank removing tenon #3.

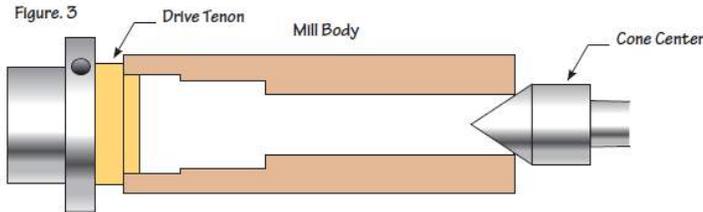
4. Drill a 1-3/4" dia. hole 5/8" deep.
5. Drill a 1-9/16" dia. hole 1-1/2" deep. (See Figure. 2, right)
6. Finish drilling the 1-1/16" dia. hole completely through the rest of the Mill Body.
7. Remove the Mill Body from the lathe.



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Finish Turning the Blank:

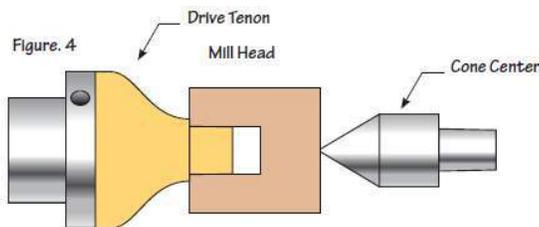
1. Mount a 2" to 3" diameter by 2" thick waste block on the lathe with a chuck or faceplate. (See Figure 3)



2. Turn a 3/4" long tenon to fit very snugly into the 1-3/4" hole in the base of the Mill Body. Leave a small shoulder at the base of the tenon. Frequently test the fit of the tenon to the hole in the Mill Body until you have a snug fit.
3. Mount the Mill Body onto the drive tenon and bring the revolving center into the 1-1/16" hole for support. (See Figure. 3)
4. Turn the body to shape making sure not to turn the wall too thin. Sand and finish the blank.

Turning The Mill Head:

1. Mount a 2" to 3" diameter by 2" thick waste block on the lathe with a chuck or faceplate.
2. Turn a 3/4" long tenon to fit very snugly into the 15/16" diameter hole in the mill head. Leave a small shoulder at the base of the tenon. Frequently test the fit of the tenon to the hole in the Mill Body until you have a snug fit.
3. Mount the head onto the drive tenon and bring the revolving center up against the blank for support. (See Figure. 4)



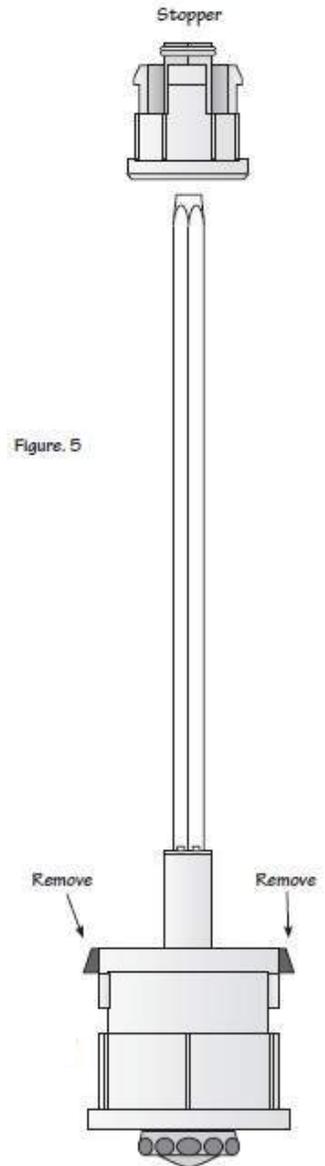
4. Turn the Mill Head to shape. Remove the revolving center then sand and finish.

Assembly:

1. In order to ensure a secure fit during assembly we recommend that the mechanism be glued in place with epoxy.
2. Lightly coat the inside wall of the hole in the Mill Head with epoxy. Press the stopper into the hole and set it aside until the epoxy cures.
3. Cut off the two clips on the top of the Crush Grind® mechanism. (See Figure. 5)
4. Lightly coat the inside wall of the 1-9/16" hole in the Mill Body base with epoxy. Press the Crush Grind® mechanism into the hole and set it aside until the epoxy cures. Make sure that the epoxy does not interfere with any moving parts. Using a hacksaw, cut the hex shaft to length leaving 1-1/8" of the shaft extending out of the Mill Body.
5. Press the stopper and head onto the hex shaft until the head and body are touching. The shoulder of the stopper will center the head with the body of the mill.

How the Mill Works:

1. The mill coarseness is adjusted by turning the small wheel on the bottom of the mechanism. To fill the mill with pepper or salt, pull the mill top off and fill from the top.



Sample Shapes

