

Figure. 2

## Turning a Crush Grind® Mill

### Supplies Needed

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

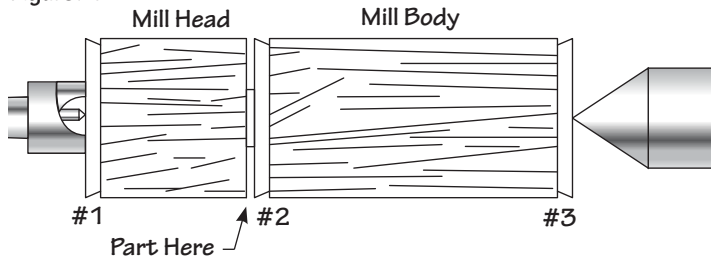
### Selecting the Blank

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.

Figure. 1



### Drilling the Mill Head

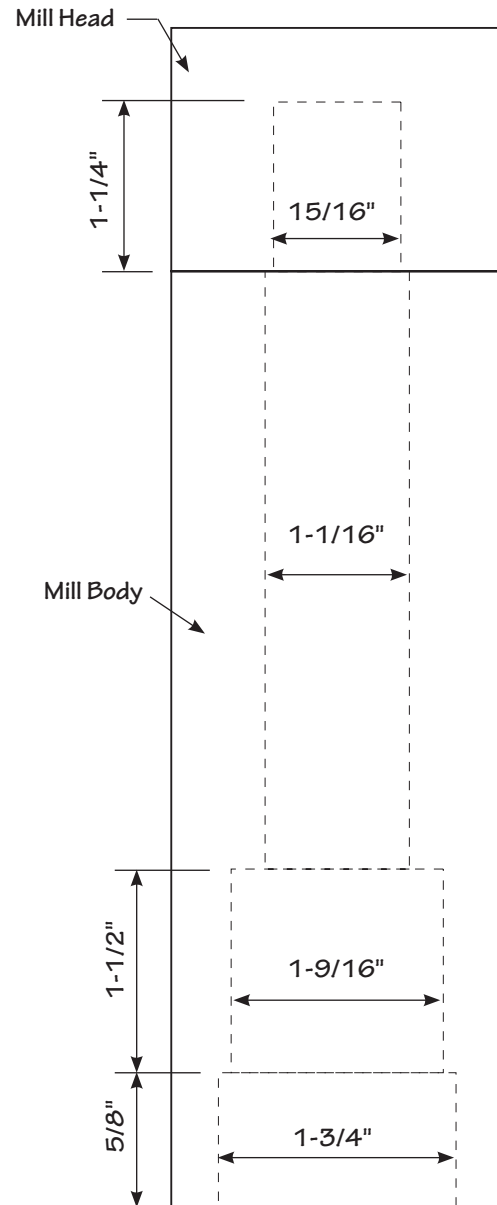
1. Mount the Mill Head in a chuck using Tenon #1 and square the end of the blank.
2. Drill a 15/16" dia. hole 1-1/4" deep in the Mill Head.
3. Remove the Mill Head from the chuck.

### Drilling the Mill Body

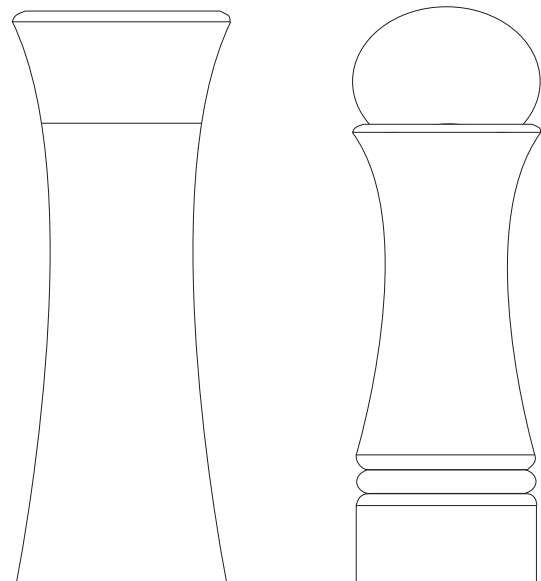
1. Mount the Mill Body in a chuck using Tenon #3 and square the end of the blank.
2. Drill a 1-1/16" dia. hole half way through the Mill Body.
3. Remove the Mill Body from the chuck and remount the Mill Body using tenon #2. Square the end of the blank removing tenon #3.
4. Drill a 1-3/4" dia. hole 5/8" deep.
5. Drill a 1-9/16" dia. hole 1-1/2" deep. (See Figure. 2)
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.

### 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.



Sample Shapes



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" dia. 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.

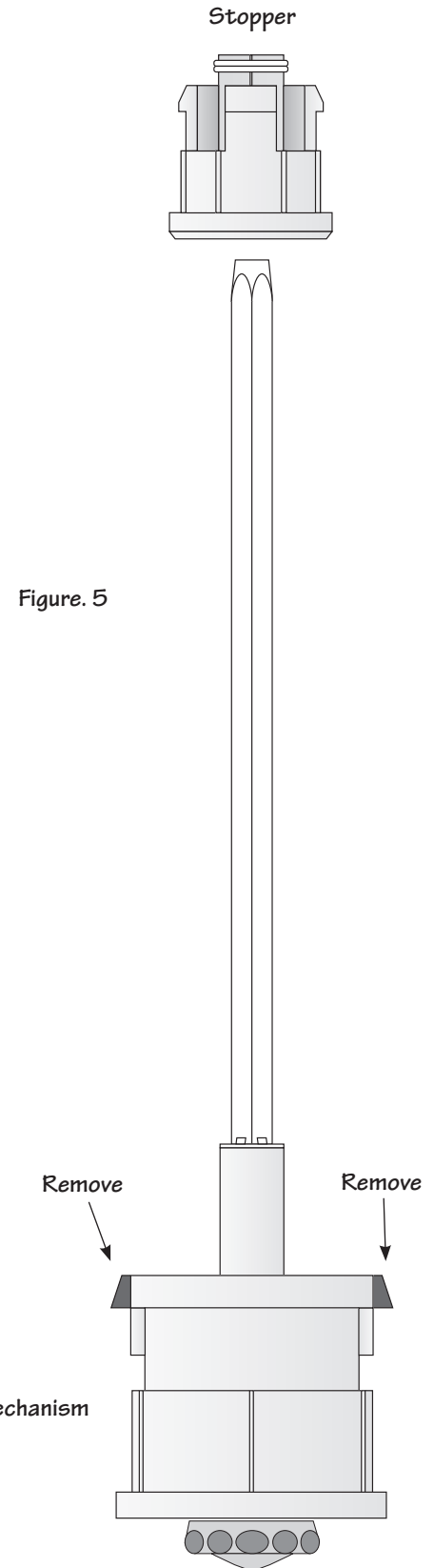
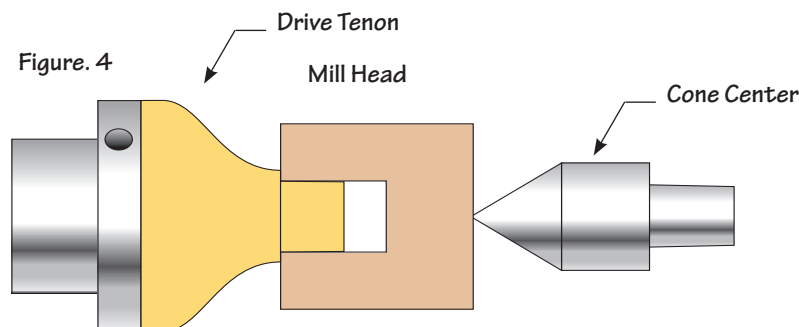
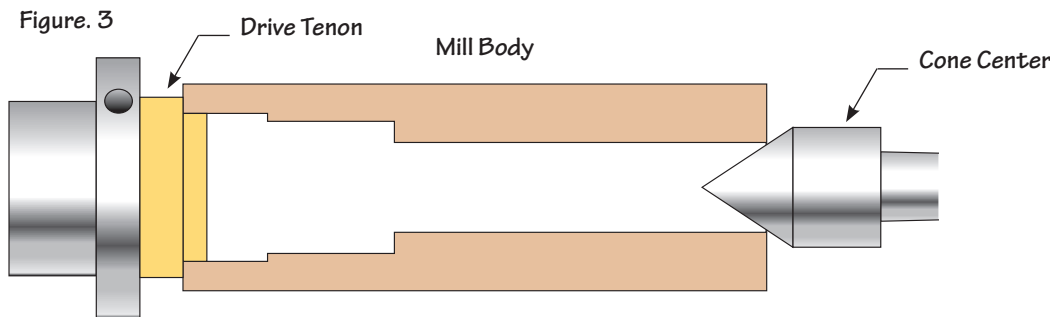


Figure. 5