

Shaftless Mechanism

(93K03.17)

The following instructions were provided by the manufacturer.

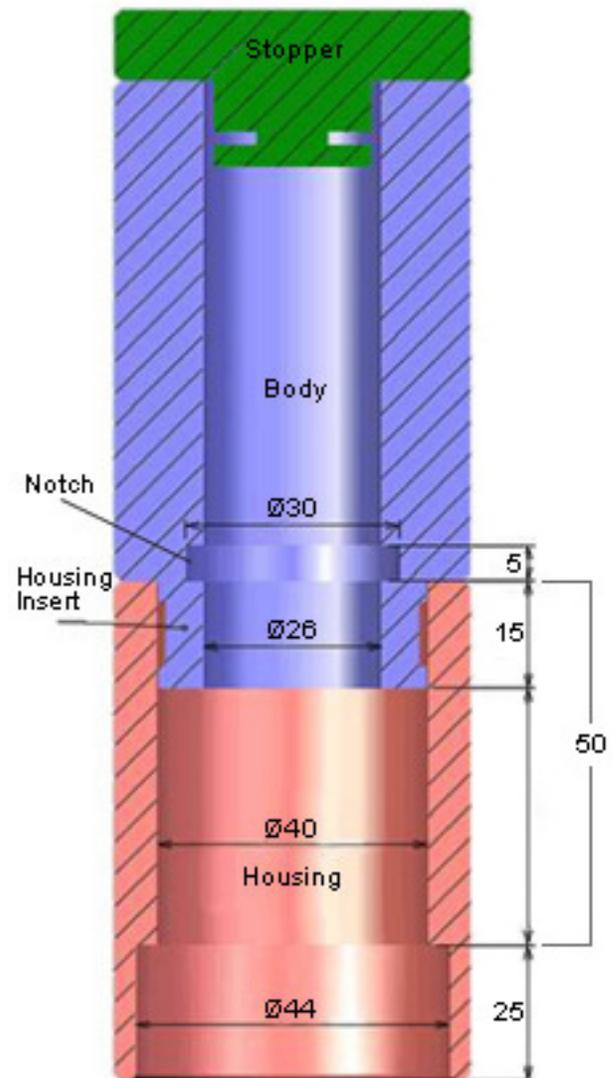
Note: Making mills of this design with this mechanism requires a high level of skill as a woodturner and some complex mathematics. Please contact us with any questions or concerns regarding these instructions.

1. The housing

- Bore a 1-3/4" (44 mm) to 2" (50 mm) hole 1" (25 mm) into the blank.
- Bore a 1-9/16" (40 mm) hole 2" (50 mm) further into the blank (add the width of your part-off tool to this dimension).
- Part-off the housing.

2. The body

- Bore a 1-1/16" (26 mm) hole as deep as is necessary to completely penetrate the body.
- Be sure to allow an additional 9/16" (15 mm) in body length to account for the housing insert.
- Turn down the 9/16" (15 mm) housing insert so that it fits snugly into the housing but turns freely.
- Cut a notch on the inside of the body that is 1/8" deep and 9/16" from the bottom.
- Part-off the body from the blank.



3. The stopper

- a. Turn down the blank so that 3/4" of the stopper fits snugly into the body.
- b. If you are planning to install a plastic/rubber ring on the stopper insert you can loosen the fit into the body. The ring acts to snug the fit. You can also turn threads and screw the stopper into the body.
- c. Turn the stopper profile and part it off from the blank.

4. Profiling the housing and body

- a. Make a jam-chuck and re-mount the housing.
- b. Turn whatever profile for the housing that pleases your eye.
- c. Sand the housing to the desired grit.
- d. Turn down the jam-chuck so you can mount the body and turn its profile as well (I do them in this order so I can re-use the jam-chuck and to be sure the profiles complement each other by occasionally installing the housing to the end of the body).
- e. Sand the body to the desired grit.
- f. While the body is still mounted to the jam-chuck, insert the stopper and sand it to the desired grit.

5. Congratulations!

You have completed the boring and profiling of your mill. Now you can move on to whatever finishing process you prefer.

6. Install the mechanism

- a. Press or glue the mechanism into the housing.
- b. With the mechanism secured in the housing, press the body into the housing until the "catchers" clip into the notches.
- c. The mechanism is now installed.

* Use of fractional bits may require slight modification of the mechanisms. The mechanisms will also need to be glued in. I recommend a 5 minute epoxy. For oily wood, pre-treat the area to be glued with acetone and let dry prior to applying any glue.

* The height of this mill can be adjusted to a maximum of 8 inches. This is done by extending the body length. Taller mills are possible. Contact us for special instructions if you are attempting a mill greater than 8 inches.
