

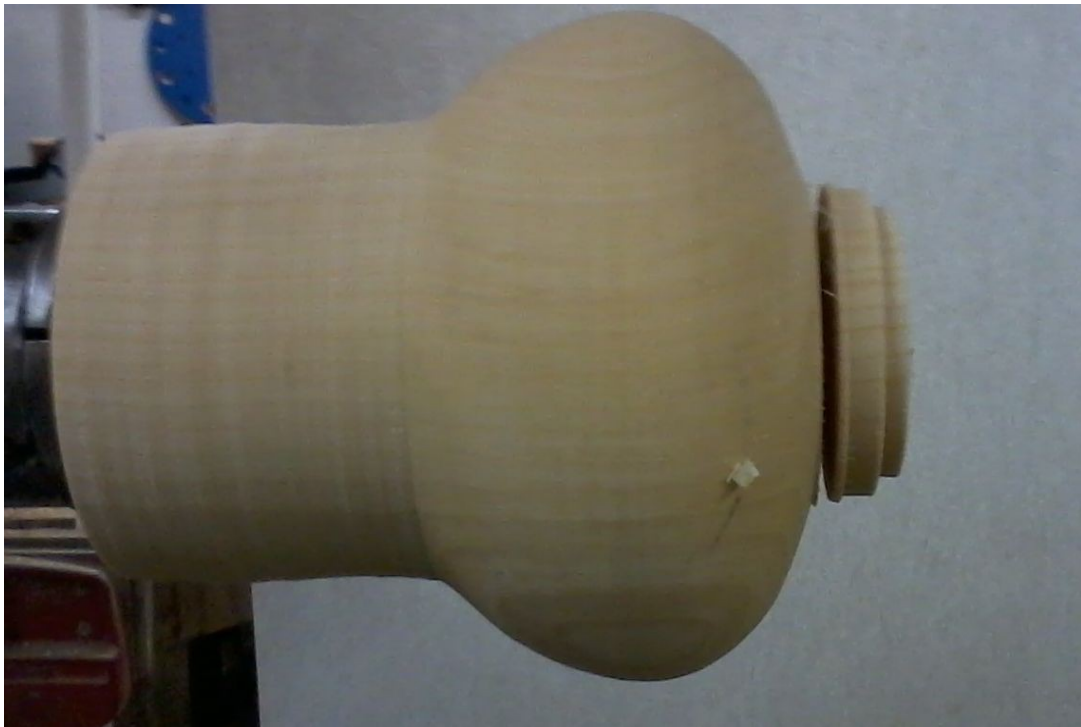
Hollowing from the bottom

Hollowing from the bottom requires more planning and/or visualizing than normal hollow forms. The portion that will become the opening is hidden away inside wood until near the end of the process. Planning the proportions is necessary to end up with a pleasing form.

This technique can be used to turn many shapes; the steps described here are for a large bottomed vase with a small neck and opening.

Turning sequence

- A. Mount the piece between centers and turn a tenon for your chuck on the end that will end up as the top of the piece.
- B. Put the tenon just turned into your chuck and tighten securely.
 - I. True up the blank and mark center of tail-stock end.
 - II. Turn a tenon on the bottom end and part off a section that will be used later to plug the bottom. (be sure to part off a generously sized piece; the piece in picture below left no room for error; **should have been twice as long**)



- C. Shape the bottom portion on the outside, leaving the top portion full sized for stiffness.
- D. Use the tail-stock to drill a hole in the bottom. Be careful to avoid compromising the desired shape by making the hole larger than the neck of vessel. **Do not drill all the way through.**
- E. Turning the form.
 - I. Decide on the approximate size of the bottom opening and begin hollowing the form. Once the bottom section is hollowed to the desired wall thickness; additional wood can be removed from the outside: see next picture.



II. **Back to the inside:** Continue with hollowing the mid section, (stop short of where the vessel opening will be).

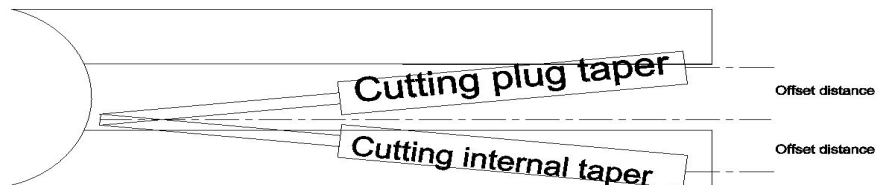
III. **Back to the outside:** A steady rest will be needed later; turn a cylindrical section near the chuck to run in the steady rest once the piece is reversed.

F. Now it is time to fit the bottom plug.

I. Open the bottom slightly with a gentle taper (use light cuts to avoid vibration). Use a square end scraper and judge the angle by how far the handle is out of line with the ways. See illustration below. The angle of taper is not critical (5 to 10 degrees is suggested) but the opening and the plug **MUST** match.

II. Remove the main form and mount the plug that was parted off earlier. Turn down a short section to just larger than the tapered opening in the main form.

III. Turn a matching taper by holding the tool handle the same amount out of line with the ways (in the other direction). Test fit the taper and adjust the size until it fits into the opening. If you accidentally cut a little too much off; making the tapered section longer will give you a second chance. Check the depth that the plug fits into the opening and trim its length so that it will be flush on the inside of the main form.



- IV. Once the plug fits the opening; align the grain in main form and plug and make pencil marks to assist alignment during glue-up.
- G. **Glue up:** Keep the plug mounted in the chuck and use tail-stock to press the hollow form onto the plug, centering on the mark left earlier. Be cautious with the tail-stock; excessive pressure might force the tapered plug to act as a wedge and split the hollow form. Use glue of your choice.
- H. **Turn the top section.**
- I. Install a steady rest to support the top of piece if needed.
 - II. Use a drill bit in tail-stock to drill opening in top of vessel.
 - III. Turn the inside of the opening blending it into the portion that was turned from the bottom.
 - IV. Remove the steady rest and install the tail-stock with live center (and cone adapter) to support the workpiece.
 - V. Finish turning the outside of vase
- I. Sand as needed and reverse to dress up the bottom (cutting a few grooves on the bottom will disguise the joint if one groove is directly on the joint).

The picture below shows the end product of the progress pictures above. Note that the piece would have been better with a smaller and shorter neck. Not enough planning and visualizing was done on this piece.



Another try at the same shape resulted in this piece which I like better.

Side view:



Bottom view:

