

# Turning Small Hollow Forms with a Hand Held Hollowing Tool

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## Design Considerations

Some common “design rules.”

- The "Golden Rectangle" = 1" : 1.618" is a pleasing proportion
- The bottom diameter is 1/3 that of the largest diameter
- The top opening diameter shall be either 1/3 or 2/3 that of the largest diameter.
- There should not be any “flats” – just curves.
- All of the components (base, body, finial, etc.) should gracefully flow together.
- When the largest diameter is not at the top rim, it shall be located at 2/3, or 1/3 (optional) of the height above the base."

The following rule was borrowed from Jill Ireland - **Don't be afraid to ignore the rules.**

## Choosing Wood

1. You can use kiln dried or green wood.
2. You can use a solid piece or a glued up blank. If the blank is glued up, the wood must be kiln dried.
3. You can orient the wood so it is a spindle turning or a face plate turning.

## Choosing Tools

1. Choose the right tool. Your decision will be impacted by the size and shape of the hollow form, as well as the size of the hole in the top of the hollow form.
2. You can use home-made or store bought tools.
3. To minimize twisting, the cutting tip should not extend beyond the left side of the tool shaft.
4. Popular store bought tool brands include: Mike Hunter, Kel McNaughton, Dennis Stewart, Don Pencil, Robert Sorby.
5. The size and type of tool rest is also important. Choose one that allows you to get as close to the wood as possible. Note - the hole size may limit the type of tool rest you can use.

## Turning the Hollow Form

1. After deciding upon the shape and size of the hollow form, pick an appropriate turning blank. The blank should be about 1" longer than actually needed.
2. Mount the blank between centers and turn the outside shape of the hollow form. Cut a tenon on the end of the blank that will be the bottom of the hollow form.
3. Remove the shaped blank from the lathe and mount the tenon (bottom of the hollow form) in a chuck.
4. Decide upon the size of the hole in the hollow form. Using the appropriate size Forstner bit, drill the hole to what will be the inside bottom of the hollow form. When determining how deep to drill the hole, consider the following:
  - You will have to remove the small hole caused by the tip of the Forstner bit.
  - You will have to cut a concave on the outside bottom of the hollow form.
  - You need enough material left so you don't go through the bottom!
6. After you finish the hollowing, remove the hollow form from the lathe and jamb chuck it using a piece of wood that is turned to the same diameter of the hollow form hole and long enough to extend to the bottom of the hollow form.
7. Finish sanding the outside and finish as much as possible.
8. Remove the tenon.
9. Complete the finishing (inside and out).

## Hollowing Tips

1. Choose a safe lathe speed. Formula: Diameter X RPM = 6,000 to 9,000
2. Follow the manufacturer's recommendation regarding maximum tool reach over the tool rest.
3. Take light cuts.
4. Measure as often as needed! It truly is important to measure twice and cut once.
5. Keep the tool rest as close to the work as possible.
6. To minimize twisting, place the straight shaft of the hollowing tool on the tool rest. Do not place the curved shaft of the hollowing tool on the tool rest.
7. Hollow from the top of the vessel to the bottom of the vessel.