

HOLLOW FORM TUTORIAL by Ralph Thomas

The following is my attempt to explain how I turn hollow forms. 95% of my forms are turned green, end grain and hollowed through the bottom. I have taken pictures of each sequence. It is hoped that this tutorial is easier to follow than my explanation over the phone or in person without a live demo.



I like to decide what size form I want, select a log that will fit my size requirements. I cut the log to size using these calculations from 10h x 8dia should be cut 12h x 10dia. This will allow for tenons on each end and one inch for the plug material to ensure that you will have a close grain match. The diameter allows the material to be cut or turned to size and hopefully eliminate any voids or other defects which would show up in the side of the form.



Where possible I like to use the pith as the center of the form. I mark the center and use a compass to draw a circle and use the band saw to cut the blank to the selected diameter. If the height is to be more than 12 inches, I rough turn on the lathe as my band saw will only cut 13 inches in height.



I use a spigot chuck to hold the blank to start turning between centers. It is important to select the end you want on the top of the form as this should show the most figure. The spigot hole will be in the bottom of the form.



These pictures show the blank mounted in the spigot chuck and between centers. This method will work as shown with a square, round or live edge blank. The center should be marked for the live center to be firmed up to the blank. If you do not have a spigot chuck you can use a spur drive or worm screw the same way just make sure you seat the spur well into the wood. You can now turn the blank to your selected form. I use roughing gouges and bowl gouges of various sizes. I put a tenon on the top, flip the form and put a tenon on the bottom. Then it's mounted using the chuck.



Now I bore out the center using a selected size. My hollow form alignment tools are 1/2, 5/8, 3/4, & 1 inch diameter, so I would use a drill bit the same size as one of those diameters.

Next flip the form, rechuck and finish boring through the bottom if the boring from the top did not go all the way through the form.



Next I set up my laser guided hollowing rig. The cutter should be as near center as possible, never below center.



I set the laser to leave between 1/4 - 3/8 inches wood thickness in the sides of the form. It is important to leave at least 1/2 inch thickness in the bottom so the plug will have enough wood to cut groves 1/8 inch deep and have enough wood left to connect the plug to the form. Next hollow out the form. I stop and check the laser alignment frequently to make sure the laser remains aligned and check that the chuck remains tight on the form.



As I near the top of the form I reset the laser to allow at least 1/2 inch thickness in the top. This will give you enough wood to remove the tenon without getting the top of the form too thin. If the form is turned green I remove the form from the lathe and place in a paper bag to dry. The length of time to dry depends on the type of wood. If the moisture content is less than 15% you should be able to return the form to the lathe and finish the form.



Rechuck the form on the bottom tenon and center up using the tail stock live center and re-bore the hole in the top to eliminate any shrinkage that occurred during the drying process. Flip the form chuck up on the top tenon. Move the live center into the re-bored hole and true up the tenon.



The opening in the bottom should be cut at a slight inward angle so as to fit the plug which has been cut at a slight inward angle to form a wedge. The wedge shape will prevent the plug from slipping through if you cut it a little small. Super glue the plug and slip it into the opening in the bottom.



Let the glue dry, then trim and true up the plug on the tenon making sure you leave enough room on the tenon to chuck the form to finish the top.



Chuck up the form on the bottom tenon clean up the top of the form to desired shape and sand the top and upper part of the form through your sanding process.



Flip the form and vacuum chuck or jam chuck the form using the alignment tool, firm up the live center on the center of the plug to ensure the form remains in place. Shape the bottom by cutting the tenon off.



Leave the live center firmed up and use a thin parting tool cut 3 grooves 1/8 inch deep in the bottom. Make sure one of the grooves is cut over the joint line between the plug and the form.



Remove the form, fill the grooves with epoxy, let dry for 48 hours and vacuum or jam , sand off the excess epoxy and the lower part of the form using your sanding process.

Write the name of the wood and sign the bottom with an india ink pen.

