

Turning a Small Stainless Steel Insert

Supplies Needed

- 2 1/4" Forstner Drill Bit
- 5 1/2" x 5 1/2" x 8 1/2" Blank
- Key Chuck
- Sandpaper & Finish
- Outside Calipers
- Eye and Ear Protection
- Tape Measure



1. Mount blank between centers and turn it down until round and true the ends of the blank.



2. Set your caliper to the distance across the inside of the chuck jaws with the jaws partially open. Cut a 5/16" long tenon to fit into the chuck jaws. Use calipers to determine the correct size of the tenon.



3. Mount the blank in the chuck and tighten securely. Drill a 5 3/4" deep hole in the blank using a 2 1/4" forstner bit clearing the chips frequently.



4. Verify the correct hole depth before continuing. Mark a 2 7/8" diameter line at the opening of the blank.



5. Turn a 5/8" deep recess at the line as marked. This establishes the finished size of the opening. Using a heavy scraper or hollowing tool, turn the inside of the blank to match the profile of the insert.



Hint: For final fitting, mark the outside of the insert with a dry erase marker then press check for fit by inserting and twisting the insert. Missing ink on the insert indicate areas that need to be turned away. Repeat this process as needed until the shoulder of the insert rests against the top of the blank.



6. Turn a 1/8" rabbet on the top of the blank for the lip of the insert to register against. (see diagram). Check frequently until a proper fit is achieved.



7. Measure the inside depth of the hole. Add 1/2" and mark this distance on the outside of the blank. Be sure to include the shoulder when measuring. Make a parting cut left of the pencil mark down to 3" diameter which represents the diameter of the finished base. Turn the blank to shape. Be sure to leave a shoulder where the insert registers against the wood. This provides a good transition point.



8. Continue the parting cut at the base until the tenon is about 1" diameter. This cut should be made at a slight angle to provide a slightly undercut base. Sand through 320 grit. With the lathe stopped, cut through the tenon.



9. Mount a 4" x 4" x 2 1/2" scrap block in a chuck and turn a 1/2" to 1" long tenon with shoulder to fit firmly inside the opening of the vase.



10. Press the blank onto the tenon until it seats against the shoulder, bring the tailstock up to the base of the blank and secure. Rotate the lathe by hand to make sure the blank runs true before you continue turning the base.



11. Using a small gouge to make light cuts, turn the foot of the insert with a recess in the center area. Turn away as much of the cone as you're comfortable with while leaving support for sanding and finishing. Sand and finish the base. With the lathe stopped, cut through the tenon. Sand away the remaining nub.

12. Apply the finish of your choice to the insert.