



# Central Oklahoma Woodturners

## Interactive Remote Demo - May 9th, 2023

### *Turn a Piston Box*

by  
Tod Raines



[Click here to see replay on Vimeo.](#)

Note: This replay video on Vimeo is for COWA members only. Do not share this link. Post this document in your club members only page or send to your club members. The video will remain available until August 19<sup>th</sup>, 2023.

**Piston Box** — from AAW Journal June 2015 (by Walt Wager)  
Modified version of instructions by Tod Raines



To see a time lapse of the pyrography of the whiskey barrel...[Wood burning a Whiskey Barrel style piston box](#)

This project can take on a variety of designs for the look and aesthetics of the final piece. Please use your imagination or look for inspiration to create your own designs. The step by step will not address the outer shape and form of the Piston Box but will address the technical design needs for functionality.

I use two forstner (or sawtooth) drill bits for hollowing. 1 1/4" and 1 1/8". The difference between the two bits is 1/8" and therefore I will end up with a box wall thickness of 1/16".

There are a few jigs needed for this project.

- 1) A wooden ring gauge the size of the larger forstner bit (or slightly larger by sanding the inside of the ring).
- 2) A lathe mounted sanding disk
- 3) A lathe mounted drum sander of about 1" diameter.

### Step-by-step instructions

- Turn to cylinder – min 1 3/4" x 8".
- Turn tenon and mount in chuck; optionally mount square blank in your chuck if it fits properly.
- Re-true and face off end; mark center of end for forstner bit.
- Drill 1 1/8" hole 2 – 2.5" deep.
- Mark the hole depth on the outside. Also mark the lid – about 5/8".
- Turn box cylinder outer diameter to size – 1 1/4". Use the wooden ring gauge to get a consistent box cylinder along the length.; sand as desired.
- Part off the inner cylinder.
- True up end and mark center for drilling.
- Drill 1 1/8" hole to 1/16" deeper than inner cylinder; sand inside of outer cylinder as desired.
- Jam chuck the inner cylinder in the outer cylinder (use paper towel for tight fit if necessary).
- Shape the outer profile as desired; also shape the end of the inner cylinder.
- Sand and mark index lines and rings as desired for the Whiskey Barrel motif and then part off the box.
- Create a jam chuck for the outer cylinder and shape the end as desired, sand as desired.
- Create a short jam chuck for the inner cylinder then use CA glue to glue the inner cylinder to the jam chuck and then part off the enclosed inner cylinder; sand as needed.
- Use a sanding disk on the lathe to sand the bottom of the inner cylinder.
- Use a sanding drum to create the opening in the inner cylinder on the high side of the box (I used a lathe driven 1" dowel with wrapped sanding strip paper); finish sand the opening by hand.
- Finish and/or decorate as desired.

Contact Tod Raines at [tod@woodturningtoolstore.com](mailto:tod@woodturningtoolstore.com) for any questions.

