

## Unconventional hollowing –turning the torus

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### EQUIPMENT

- Lathe
- Scroll chuck with dovetail jaws
- Drive center
- Live center
- Bowl gouge
- Spindle gouge
- Small teardrop scraper
- Captured hollowing system (Jamieson style)
- Hollowing bars (Kelton, Jordan, Bosch, homemade, etc.)
- Reverse chuck fixture (vacuum chuck, jam chuck, donut chuck)

### PROCESS

1. Mount the blank between centers, turn the outside profile to the desired shape. I usually go for a traditional donut shape.
2. Turn recess on 1st face for expansion chucking.
3. Mount in chuck to access 2nd face.
4. Turn recess on 2nd face for expansion chucking. Undercut recess to match dovetail jaws.
5. Mount in chuck using 2nd face. Refine 1st recess to match size and profile of 2nd recess (similar sized recesses will save time later).
6. Complete turning outer profile and hollow slightly over halfway through the center of the torus.
7. Reverse the piece and complete hollowing through the center of the torus. This will complete the initial shape of the torus leaving us a solid donut shape.
8. Find and mark center line of the torus. Measure and mark 1/2" above and below the center line to designate the channel that the hollowing will be done through. Larger forms may require a larger channel.
9. Using a small teardrop scraper, turn away the channel designated above. Flip the form as necessary.
10. Set up the hollowing system and start the hollowing process. Flip the form as necessary. Most of the hollowing is done on the back side of the form
11. Continue flipping and hollowing until desired thickness is achieved. Articulated hollowing tips can be very useful to reach the extreme outer area. Extra thickness in the area around the recesses is advised so uniform wall thickness can be achieved once the recesses have been removed.
12. Turn away the 1<sup>st</sup> recess, smoothing and shaping as necessary. Sand this face and the outer profile to desired grit.
13. Reverse mount the torus using desired method (vacuum, jam chuck, donut chuck, etc.).
14. Turn away the 2nd recess. Smooth and shape as necessary using light cuts to avoid chatter, tear-out, or worse.

15. Blend and sand the end face of the form to match the rest of the torus.

16. Apply the finish of your choice.

### TIPS

- Voids can be useful for checking the wall thickness and for shavings extraction.
- Pallet wrap and/or painters tape can be used to reinforce or secure the form to finish the 2nd face.
- Finished forms are typically 1/2" smaller than the original blank in all dimensions.
- Common finished sizes: 11" x 4", 9" x 3-1/2", 8" x 3", 6" x 2-1/2".



