




All bowl woodturns have had to face this at one time or another, or yet to come, and that is a tenon that is smaller than the chuck. If not, then you are lucky!

I had rough turned a bunch of crabapple bowls and had the unfortunate experience after drying that the tenon was a bit on the small size and once trued up it would not fit the chuck. After a few post on some forms and a deep search of the internet I came up with two options, spend \$50 for a smaller set of jaws for my chuck or build up the tenon. Building up the tenon was posing a challenge for me, and that was how do you build up a round tenon, I didn't have a shoulder plane as suggested?

Here was my simple solution.....

<p>The trued tenon was ~1.75"</p>	
<p>My only set of jaws is just about that same size. This would result insufficient clamping force, which would be a dangerous situation.</p>	
<p>My jaws can accept a diameter of about 2.375".</p>	

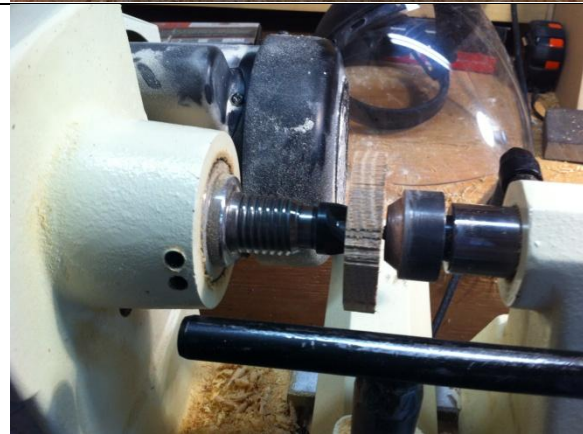
The simple solution was to turn a donut out of hardwood. I chose to use some scrap oak.

The plan was to put it between centers and turn it to just less than 2.375". My driven and live center works best with a 7/64" hole, size according to your centers.



Here is the piece of oak between centers on my lathe.

Since this technically not spindle turning due to end grain a bowl gouge is needed to true it up.



Determine the size of the hole to bore in the donut. In my case I chose a 1.50" hole so I could use a Forstner bit.



The depth of the hole should not penetrate the donut (I guess this makes is not a donut).

My target depth is about $3/8$ " of an inch. Keep in mind that it needs to fit flat but not sloppy in order to get a solid glue joint.



Chuck up the donut in the chuck and use a drill bit chuck in the tail stock with the proper size of Forstner bit.



The final donut!



Now all that is left to do is to square up the old tenon on the bowl.

I chose to use a block of wood that has a drilled and tapped hole for my spindle, turned round and a small pad.



This allows the bowl to be captured between the spindle and tail stock with a live center.

Use your preferred method to true up the old tenon, mine is to use a 1/2" skew chisel as a scraper.



Here are all the pieces of the puzzle. The bowl with a squared up tenon and the donut.

Notice the chisel, I used it to shave off the surface of the tenon to allow the donut to sit flat on the bowl bottom.



I chose to use epoxy for the gap filling properties and strength.

Notice the small piece of masking tape covering the hole. This prevents the epoxy from leaking out.



Apply the epoxy to the inside and mating surface of the donut and attach it to the bowl and apply some clamping pressure.



Allow it to dry overnight and then the bowl is ready for a new tenon!

