

Directions
For
Stainless Steel 2-Piece Ring Core, 6mm Wide
By
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The first thing you will need to do is get a ring core of the correct size and then get a piece of cast acrylic, both available from Rockler. I purchased an Inlace cast acrylic block ([Inlace Acrylester 1-1/2" x 1-1/2" x 6" Turning Blank, #129 Copper Canyon](#)) and a 2 piece ring core (Stainless Steel 2-Piece Ring Core, 6mm Wide, Size 11 Item #61179) sized to fit my fat finger.



I mounted the acrylic in my 50 mm chuck jaws. This was done previously for another project so all that I had to do was to turn the end as flat as I could get it and then finish up flattening with a piece of 220 grit sand paper glued with contact cement to a small piece of wood while supporting the wood with the tool rest and rotating the piece with the lathe at slow speed.



Next you will need to drill a hole in the blank about 8 mm deep and smaller in diameter than what the ring core needs. I find that trying to enlarge a hole with standard woodturning tools is a bit awkward and my results are not as good as I would like. I purchased an inexpensive boring head for a milling machine but with a #2MT. A boring head allows you to make any size hole very precisely. Here you can see the boring head with the ring core in place. It is a perfect fit.



Next, I marked the outside of the acrylic blank at 6.1 mm. Here I have used a black magic marker to make the scribe line more visible. I then parted the acrylic with a thin parting tool being careful to keep the tool at 90 degrees to the axis of rotation. In order to



make sure that the piece that I was parting off was of the correct size I measured it and adjusted the thickness before starting the parting operation. Here you can see that the thickness is just over the 6 mm required. I used the drill bit that I used to make the initial hole to “catch” the parted off section of acrylic.



The next thing that you will need is a way to hold the piece that you just parted off. I used a tendon that I had parted off of a previous project but any scrap of wood will work. The piece pictured here was left over from a previous ring. The way that I make this “re-chuck” is to first measure the inside diameter and mark on the surface of the wood that diameter. Then using a parting tool, I remove 1/8” almost all the way to the mark. Then I change the angle of the parting tool so that I make a slight taper on the re-chuck portion of the wood. Then check for fit with the acrylic and take a 1/64” cut to a smaller diameter and check again. Once the acrylic starts to fit, I have a reference mark to turn the rest of the re-chuck down to. Stop a little shy of the mark and do a test fit. The acrylic should be snug on the re-chuck but not tight. You can split the acrylic if you have to force it onto the re-chuck.

Now that the acrylic ring is snug on the re-chuck you can turn the face down to as flat as you can get it. I use a sharp spindle gouge to make very fine cuts and then use the edge to scrape it to nearly flat. Then finish flattening the ring with the sanding block as before. Remove the ring from the re-chuck and measure to make sure that you have 6 mm. You need this to be as close to 6 mm as you can get it or you will have gaps in your ring.

Clean the ring core and acrylic ring with de-natured alcohol and mix up a small amount of 5 min clear epoxy. While wearing rubber or plastic gloves smear the inside of the acrylic ring with epoxy and the outside of the larger diameter half of the ring core. Put this half of the ring core into the acrylic ring. Put epoxy onto the other half of the ring core and place it into the acrylic ring. You may need to put a little pressure to get the 2 halves of the ring core to go together. Clean thoroughly with de-natured alcohol. Then put a spring clamp on it till the epoxy cures.



After the epoxy cures, you will need to put the assembly on the ring mandrill. It should slide on and stop at some point. Turn the lathe on at a slow speed and use a small piece of wood on the tool rest to lightly touch the acrylic to make it run “true,” no wobble, and then lightly tighten the ring mandrill with the supplied Allen wrench.

I am using a #2 MT Jacobs chuck to hold the ring mandrill, so I place the tailstock close but not touching the mandrill to ensure that it stays in place while turning the ring. I remove the majority of the acrylic using a dental tool that is sharpened like a parting tool but bent at 90 degrees, I go in from both sides to remove the bulk of the acrylic leaving me a ring that I can use to make a neckless later. Then using a very sharp spindle gouge carefully cut the shape of the acrylic portion of the ring. Acrylic has a tendency to “chip out” if you are heavy handed with the tool so the idea is to make very light cuts. I leave the acrylic slightly domed above the stainless steel. This requires a very light touch and steady hand so that you don’t scratch or groove the stainless steel. Sand all marks out starting with 320 grit and sand through 1500 grit. Then use a small amount of the rubbing compound to finish polishing the acrylic. Then use a small piece of soft wood and a little of the rubbing compound to put a shine on the stainless steel next to the acrylic. Remove your ring from the mandrill and make sure the inside is free of any residual epoxy and there you have it a very nice-looking ring.

