

Mokume Gane Washer Ring

Materials & Tools List

- 18-14 gauge MG sheet metal (minimum 1.5" x 1.5")
- Disc cutter with centering dies
- Circle template
- Fine sharpie marker
- Ring mandrel
- Nylon hammer
- Goldsmithing hammer
- Ring stretcher/reducer (optional)
- Bench tools (saw, files, sandpaper, etc.)

In this demo, the washer has a 1" outside diameter and $\frac{1}{2}$ " inside diameter. This will make a seamless ring between size 8 and 9 and approximately 5/16" wide (8mm). To make the desired size ring, consult the chart at the end of this demo for help selecting the correct washer size.

Washer layout



In the corner of your sheet draw a 1" outside diameter and $\frac{1}{2}$ " inside diameter washer. Use a template to trace the 1" circle first, include the four hash marks. With a ruler draw a line from the top and bottom hash marks, do the same for the left and right hash marks. This will find the center of the 1" circle. Use the hash marks on the $\frac{1}{2}$ " circle to line it up. Now the $\frac{1}{2}$ " circle is centered and ready to trace. This step is unnecessary if you have a disc cutter with centering dies.

Washer Size to Ring Size

Washer Size (ID/OD in.)	Ring Size/Width (mm)
³ / ₈ / ³ / ₄	5/5
³ / ₈ / ⁷ / ₈	5.25 / 6.5
7/16 / 3/8	6.25 / 6
7/16 / 1	8.5 / 7
5∕8 / 1	11.25 / 4.5
⁵ / ₈ / 1 ¹ / ₈	14 / 6.5
1/2 7/8	7 / 5
1/2 / 1	9 / 7
1/2 / 1 1/8	11.5 / 7.5

Disc Cut Washer



Cut the $\frac{1}{2}$ " hole first. Be sure to use lubrication on the cutting edge. I like using a 20 ton hydraulic press, especially if its thick gauge. Next use the 1" centering die to center the $\frac{1}{2}$ " hole. Centering dies make it easy, but if you don't have them use the washer layout from to help position the disc cutters before cutting. Now the 1" disc can be cut.

Shaping the Washer









Disc cutting work hardens the washer so to start shaping anneal and pickle the washer. This size washer will fit on the end of a round ring mandrel, but just barely. Start with the pattern surface facing up and using a nylon hammer strike the edge of the washer. The blows should be towards your hand holding the mandrel. Hammer until the ½" hole reaches size 3 or 4. Next flip the washer so the 1" edge is on top and the pattern surface is on the bottom. Hammer on the edge, moving the metal towards the tapered mandrel. More hammering will move the washer further down the mandrel and close the gap between the inside ring surface and the mandrel.