

Riveted Filigree Ring: The Next Step in Riveting Essentials Skills

By: **Gwen Youngblood**

The Riveting Essentials† Riveting Tools are a unique set of tools designed by the author to make riveting easy-peasy and foolproof. This tutorial takes Riveting Essentials skills to the next level. In this tutorial, students not only learn a new way to use the Riveting Essentials Rivet Gauges† to form perfect rivets every time, but also to use Rivet Punches† to form rivets in hard-to-reach locations. In addition, students will learn some simple metal working techniques and walk away from this tutorial with a funky, fun ring!



Prerequisite

Previous experience with Riveting Essentials, such as the Easy-Peasy Riveting class, or Rivet, Riveting, Riveted is recommended.

Materials List

- Sheet metal, 24 gauge
- 3 inches of 16 gauge round wire
- Brass filigree
- 5mm pre-made serrated bezel cup
- 5mm cabochon

Tool List

- Riveting Essentials Riveting Tools
- Wubbers Large or Extra Large Round Mandrel Pliers
- Chasing hammer
- Plastic mallet or rawhide mallet
- Bench block with pad
- Oval shape template
- Flat hand file
- Round diamond needle file
- Metal shears or jeweler's saw
- 4/0 saw blades
- Burnisher
- Texture hammers
- Design stamps and utility hammer
- 1.25 mm hole punching pliers
- Permanent marker
- Safety glasses
- Table vise
- Very fine sandpaper

Forming the Ring Band

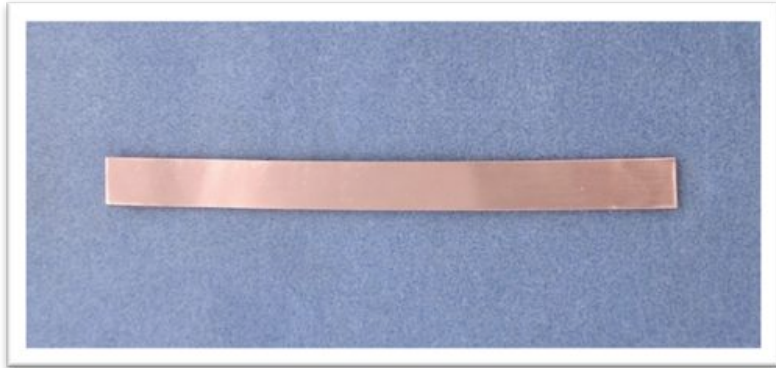
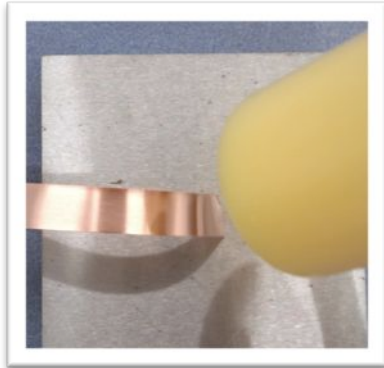
Step 1. Cut a strip of metal ½ inch wide. This will be used to form the ring band. Metal shears or a jeweler's saw can be used to cut the metal. If using a jeweler's saw, 4/0 saw blades are required to saw 24-gauge sheet metal.

Alternatively, an old-fashioned guillotine paper cutter will cut 24-gauge metal.



ALWAYS wear safety glasses when cutting wire and metal—small pieces of flying wire or metal can injure unprotected eyes.

Step 2. The act of cutting the metal may cause it to warp. To flatten the metal strip, place it on the bench block and tap with a plastic or rawhide mallet.



Step 3. To determine the proper length of the strip of metal, use the following chart:

Size 4: 1-13/16" (46.0 mm)

Size 5: 1-15/16" (49.2 mm)

Size 6: 2-1/16" (52.4 mm)

Size 7: 2-1/8" (54.0 mm)

Size 8: 2-1/4" (57.2 mm)

Size 9: 2-5/16" (58.7 mm)

Size 10: 2-7/16" (61.9 mm)

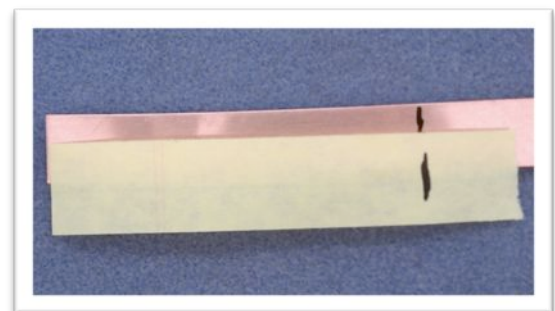
Size 11: 2-9/16" (65.1 mm)

Size 12: 2-5/8" (66.7 mm)

Alternatively, cut a narrow strip of paper and wrap it around the desired finger. (A dowel is used for illustrative purposes in the adjacent photo.) Mark the point where the strip overlaps the end of the strip.



Step 4. Use this strip of paper to measure the length of metal needed for the ring. Using either metal shears or a jeweler's saw (with 4/0 saw blades), cut the metal to the proper length.

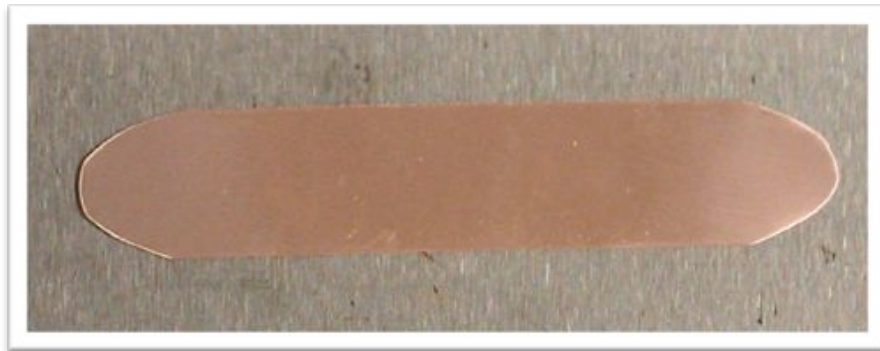
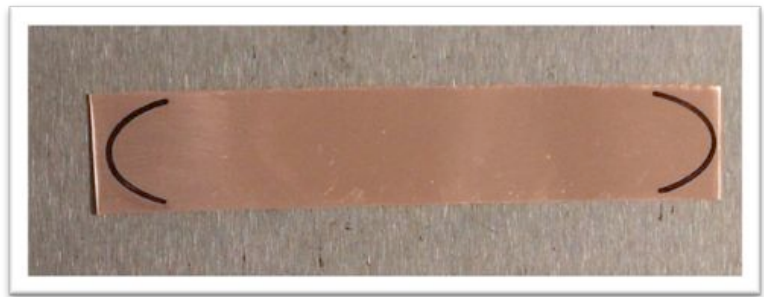
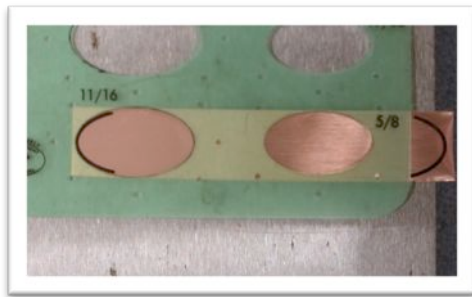


SAFETY TIP: ALWAYS wear safety glasses when cutting wire and metal—small pieces of wire or metal can fly into unprotected eyes.

Step 5. Use the Oval Shape Template to shape the ends of the metal strip. Place one of the smaller oval shapes over the end of the strip and trace the end of the oval shape onto the end of the metal strip with the permanent marker. Repeat for the other end of the metal strip.

Using either metal shears or a jeweler’s saw (with 4/0 saw blades), cut along the lines traced on the metal strip. This will produce rounded ends for the ring band.

If there are any sharp places on the edge of the metal, use the flat hand file to gently file the edge to remove the rough spots and refine the shape. Hold the edge of the metal flat against the surface of the file. Push the file away from you to remove the offending metal.



TIP: Jeweler’s files only work on the “push”—no need to work the file back and forth.

Step 6. Texture the metal strip as desired with texture hammers or design stamps. If using design stamps, use a utility or household hammer to strike the stamps.

An alternative is to use an embossing machine and embossing dies. The embossing dies are folders containing metal dies. The strip of metal is placed in the folder. The folder is closed and rolled through the embossing machine. The dies inside the folder impart a design to the metal.



Step 7. Using a permanent marker, mark a spot in the center of the metal strip. The filigree component and bezel cup will be riveted to the metal strip at this location.

Using the 1.25mm hole punching pliers, punch a hole in the metal strip at the spot previously marked.

Insert the round diamond needle file into the punched hole and twist to slightly enlarge the hole to accommodate 16-gauge wire. Test fit the 16-gauge wire in the hole—the wire should fit snugly in the hole.



Making the Focal Piece

Step 8. The brass filigree component has a center recessed area which will accommodate the bezel cup and cabochon. The entire assembly will be riveted to the metal strip.

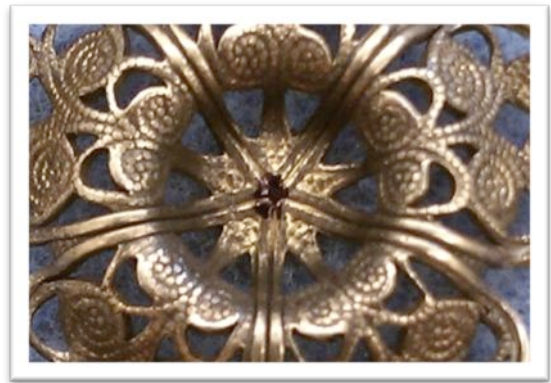
However, the bottom of the recessed area is rounded and will not make a solid connection to the metal strip. To rectify this, the bottom of the recessed area will be flattened.



Step 9. Place the brass filigree component on the bench block with the bottom of the recessed area against the bench block. Insert the middle-sized Rivet Punch† into the recessed area and tap with the plastic mallet to flatten the bottom of the recessed area.



Step 10. Using a permanent marker, mark a spot in the center of the bottom of the recessed area.



Step 11. Using the 1.25mm hole punching pliers, punch a hole in the bottom of the recessed area at the spot previously marked.

Insert the round diamond needle file into the punched hole and twist to slightly enlarge the hole to accommodate 16-gauge wire. Test fit the 16-gauge wire in the hole—the wire should fit snugly in the hole.



Step 12. Repeat Steps #10 and #11 with the bezel cup.



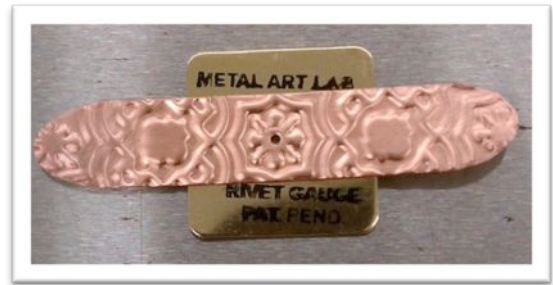
Assembly and Riveting

Step 13. Place one of the #16 Rivet Gauges† on top of the bench block.



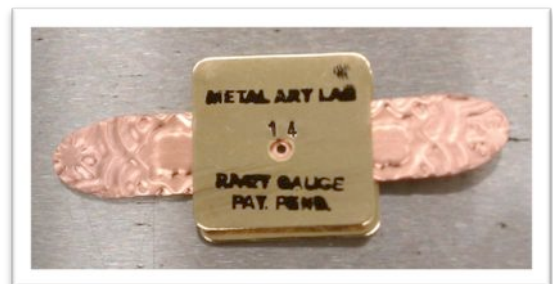
TIP: The number of the Rivet Gauge[†] matches the gauge of wire used to form the rivet.

Step 14. Place the metal strip on top of the Rivet Gauge[†], aligning the holes.

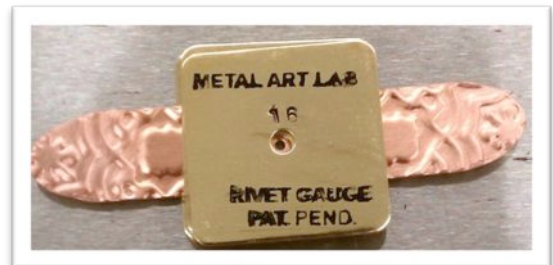


Step 15. At this point, the next step would normally be to stack the to-be-riveted pieces on top of the metal strip. However, both of the components (the filigree piece and the bezel cup) have recessed areas, which would prevent accurate measuring/cutting of the rivet wire.

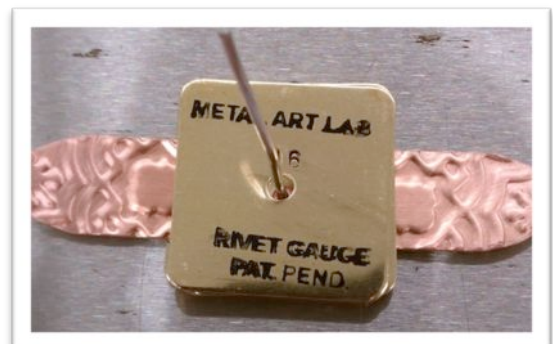
The thickness of the metal comprising the brass filigree piece and the bezel cup must be accounted for in another way. A #14 Rivet Gauge[†] will be used to take the place of the filigree piece and bezel cup—the thickness of the #14 Rivet Gauge[†] approximates the combined thickness of the brass filigree component and the bezel cup. Stack a single #14 Rivet Gauge[†] on top of the metal strip to represent the filigree piece and bezel cup. Align all the holes.



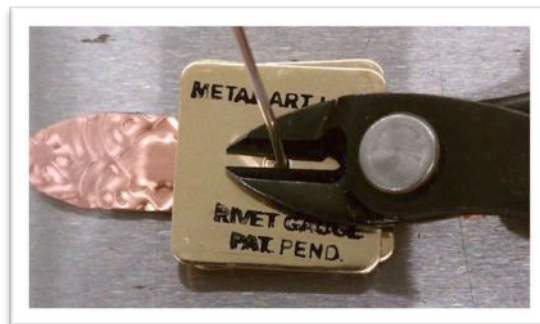
Step 16. Place the second #16 Rivet Gauge[†] on the stack and align all the holes.



Step 17. Flush cut the end of the 16-gauge rivet wire. Pass the rivet wire through all the holes. The flat end of the rivet wire should rest firmly against the bench block.



Step 18. Cut the rivet wire by pacing the flat back of the flush cutters firmly against the top Rivet Gauge†. With one finger on the exposed end of the wire (to control it after it is cut), cut the rivet wire.



SAFETY TIP: ALWAYS wear safety glasses when cutting wire and metal—small pieces of wire or metal can injure unprotected eyes.

Step 19. Remove the top #16 Rivet Gauge† and the #14 Rivet Gauge†, exposing the stub of rivet wire.



Step 20. Stack the brass filigree component and bezel cup on the wire stub.



Step 21. Select the largest Rivet Punch† that will fit inside the bezel cup. Place the flat end of the punch in the bezel cup, resting against the end of the wire stub. Tap the punch with the utility/household hammer until the wire stub is flattened inside the bezel cup.

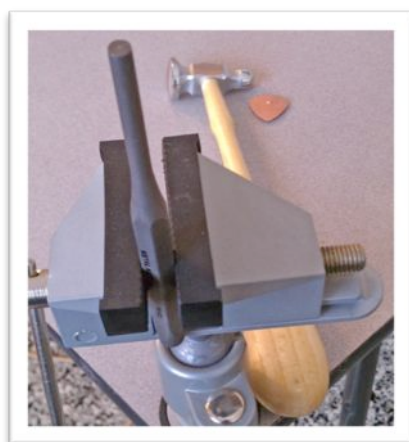


Step 22. Remove the assembly from the bench block, exposing the stub of wire on the back of the assembly.



Step 23. Place the Rivet Punch† upright in the vise.

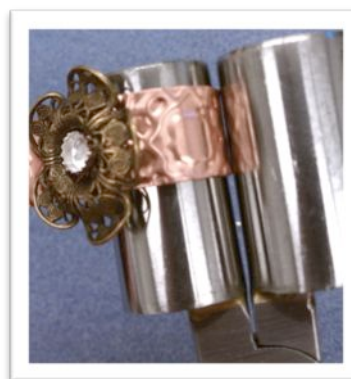
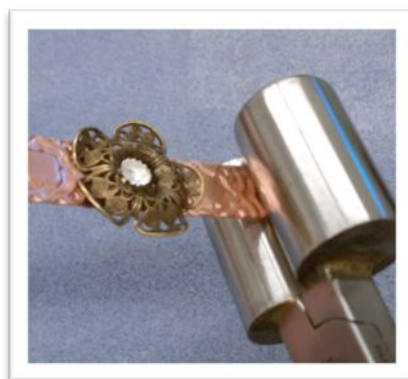
Invert the assembly and place on the upright Rivet Punch†, with the punch securely inside the bezel cup. Using the peen side of the chasing hammer, tap on the exposed end of the wire stub until it flattens.



Step 24. Wubbers Round Mandrel Pliers are used to shape the metal strip into a ring. The size of the mandrel selected depends on the ring size.

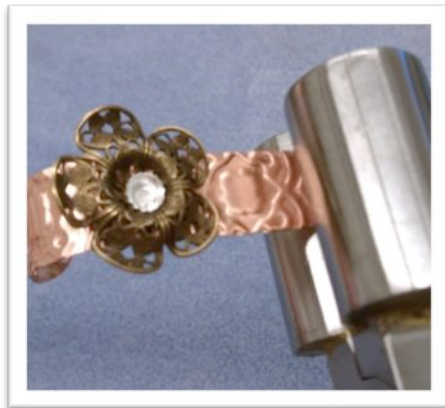
Smaller ring sizes would use the Wubbers Large Round Mandrel Pliers to shape the ring. Larger Ring sizes would use the Wubbers Jumbo Round Mandrel Pliers.

Grasp one end of the metal strip in the jaws of the pliers and form that one end of the metal strip around the mandrel.

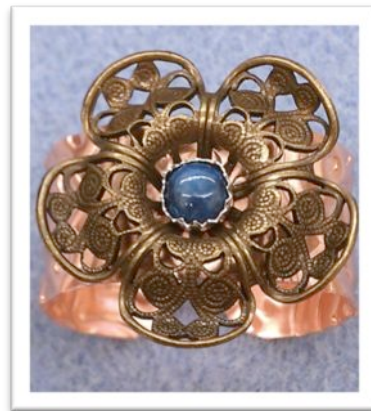


Step 25. Grasp the other end of the metal strip in the jaws of the pliers and form around the mandrel.

The two ends of the metal strip should be aligned and close to touching.



Step 26. Place the 5 mm cabochon in the bezel cup with rounded side facing up. Using the tip of the burnisher, push and roll the teeth of the bezel cup over the cabochon. Work on opposite points on the cabochon—i.e. north, south, east and west. Then work on the points in between, until all the teeth of the bezel cup are settled against the cabochon.



Step 27. Optional “Patina”—coat the entire ring band with the permanent marker. Allow to dry for a few seconds. Sand with very fine sandpaper to remove some of the “patina” and reveal the texture.



Review Questions

- 1) What size saw blade is used in a jeweler’s saw to cut 24-gauge metal?
 - a) 4/0
 - b) 6/0
 - c) 2/0

- 2) What size hole-punching pliers were used to make rivet holes for the 16-gauge wire in this project?
 - a) 1.25mm
 - b) 1.50mm
 - c) 1.80mm

- 3) What are Rivet Gauges[†] used to measure?
 - a) The proper length of the rivet wire to cut
 - b) The diameter of the rivet wire
 - c) The gauge of the sheet metal

- 4) What tool is used to enlarge hole to accommodate the rivet wire?
 - a) Chasing Hammer
 - b) Hole-Punching Pliers
 - c) Round Diamond Needle File