Tube Rivets:
Using the Riveting Essentials† Riveting Tools

By Gwen Youngblood

The Riveting Essentials† riveting tools are a unique set of tools designed by the author to make riveting easy-peasy and nearly foolproof. Tube Rivets are formed with short pieces of tube, which are passed through holes in the jewelry pieces and the ends of the tube are flared and then flattened to secure the pieces in place. The tube used to form the rivet must be of the proper diameter in order to fit snugly in the holes. And more importantly, the tube must be cut to the proper length—too short and the rivet will not be secure; too long and the wire will bend instead of flatten. Learning to cut the tube to the correct length to form the rivet properly has been the "trickiest" part of learning to rivet, usually requiring a great deal of practice.

In this tutorial, students will learn to use the Riveting Essentials Rivet Gauges† to cut the tube to the correct length every time.

The Riveting Essentials kit can be purchased at www.wubbersu.com/riveting.

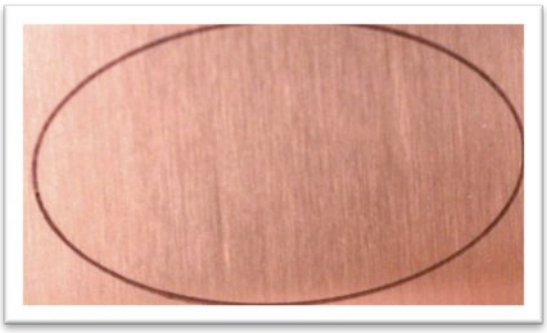
Materials List

- Copper sheet metal, 24 gauge
- 3/32" tubing in metal of choice
- Large, heavy gauge jump ring for bail
- Jump rings and headpins
- Miscellaneous beads

Tool List – Don't Forget Safety Glasses!

- Riveting Essentials† riveting tools
- Chasing hammer
- Plastic mallet or rawhide mallet
- Bench block with pad
- Shape template(s)
- Permanent marker (fine tip Sharpie)
- Wubbers Classic Medium Flat Nose Pliers
- Wubbers Classic Chain Nose Pliers
- Wubbers Looping Pliers
- Safety glasses
- Pro-Polish Pads
- Flat #2 hand file
- Metal shears or jeweler's saw with 4/0 saw blades for 24 gauge metal or 6/0 saw blades for 26 gauge metal to cut base shape
- Texture hammer(s)
- Drill (hand drill, Dremel or flex shaft) with 3/32" drill bit
- Jeweler's saw with 8/0 saw blades to cut tube
- Liver of Sulfur
- Plastic fork to use with liver of sulfur
- Flush cutters
- Utility/household hammer
- Center punch
- Dimpling pliers

Creating the Backplate



Step 1. Using a template and the permanent marker, trace the shape onto the metal.

Templates are available from a variety of sources, such as office supply stores, hobby stores and online sources. The ones used in this tutorial are templates used by precious metal clay (PMC) artists to shape PMC.

Step 2. Using either metal shears or a jeweler's saw, cut the traced shape from the metal.

If using a jeweler's saw, size 4/0 saw blades are needed to saw 24 gauge metal. Size 6/0 saw blades are required to saw 26 gauge metal.

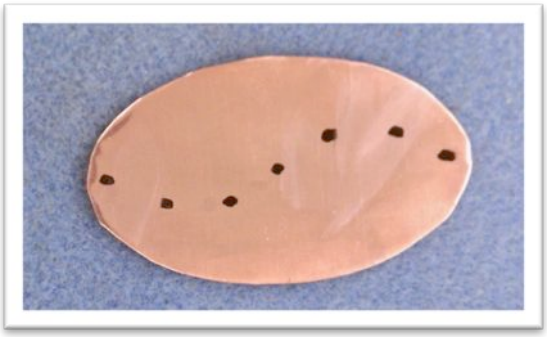
Pro-Polish Pads can be used to remove any remaining permanent marker from the metal.

If there 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.

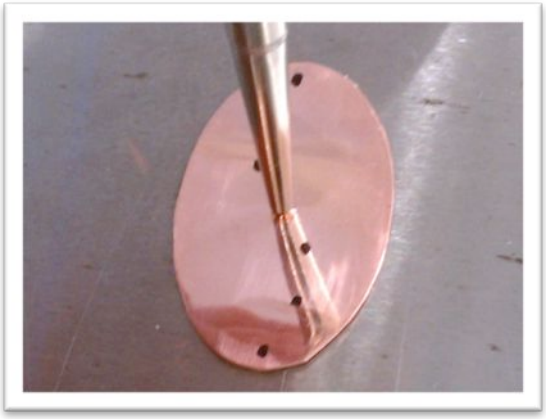
Remember, jeweler's files only work on the "push." There is no need to work the file back and forth.

If the metal piece has been warped by the cutting process, place it on the bench block and tap with a plastic or rawhide mallet to flatten. These mallets will not mar the metal.

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



Step 3. With a permanent marker (Sharpie), mark the position of tube rivets.

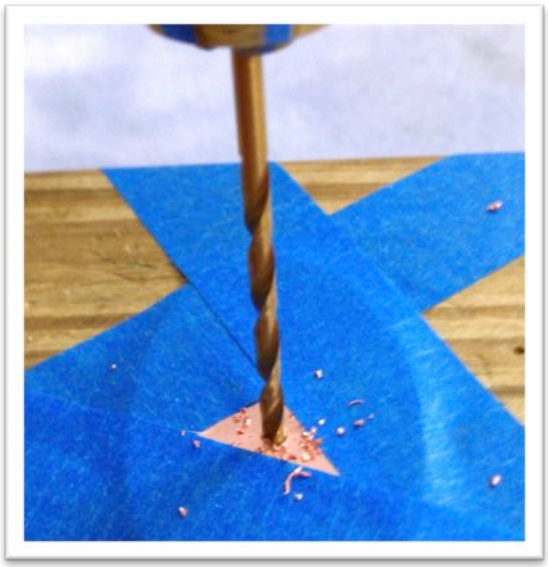


Step 4. In preparation for drilling the holes for the tube rivets, mark each location to be drilled with a center punch. Place the pointed tip of the center punch on the metal and tap with a household hammer.

The small divot left by the center punch provides a place to rest the tip of a drill bit.

Step 5. Place a 3/32" drill bit in a drill. Tape the metal piece securely to a wooden block, leaving the location to be drilled exposed. Place the tip of the drill bit in the divot and drill the hole. Repeat for each tube rivet location.

Using the wooden block and taping your piece to it will ensure that the metal will not spin and cut your fingers while drilling—safety first!



Step 6. Many methods exist to texture metal. For this project, two different textures are created by using two different texture hammers.

Step 7. Additional interest is added to the piece with patina. Dip the metal piece in a Liver of Sulfur solution. The Liver of Sulfur leaves a dark patina on the metal. To insure an even layer of patina, this step is completed prior to embellishment.

Step 8. Using a polishing pad, polish the surface of the metal piece to reveal the texture. Fine sandpaper can also be used to remove the patina.

Step 9. Place one of the #14 Rivet Gauges† on top of the bench block. The #14 Rivet Gauges† are used with tubing because the #14 Rivet Gauges† measure the proper length of tubing for a tube rivet.

Step 10. Place the metal piece on top of the Rivet Gauge†, aligning one of the holes in the metal piece with the center hole of the Rivet Gauge†.

Step 11. Place the second #14 Rivet Gauge† on top of the stack, aligning all the holes.

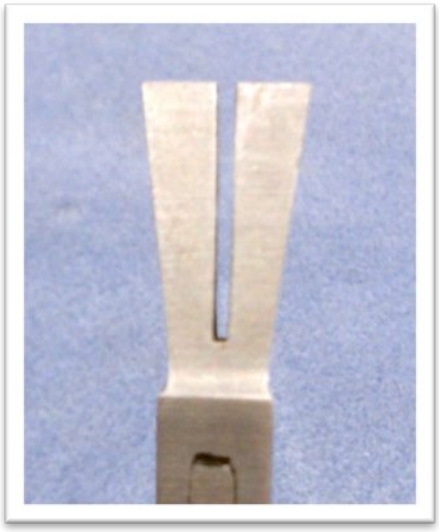
Step 12. Place the tubing through the stack, making sure the flat end of the tubing is against the top of the bench block. Using a permanent marker (i.e. Sharpie), mark the side of the tubing level with the top of the Rivet Gauge†.

Cutting the Tubing

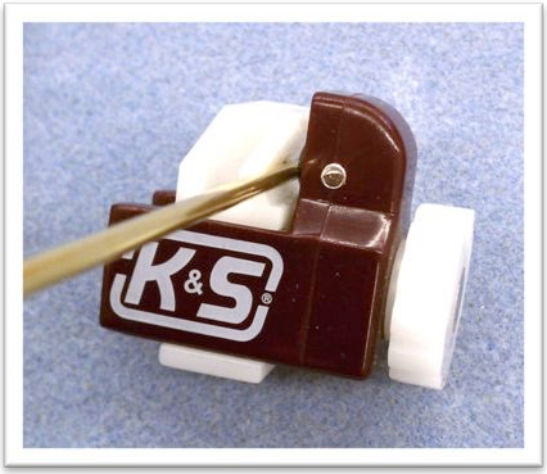
Step 13. Multiple options are available to cut the tubing. The first is to hold the tubing firming on top of the bench block, with the end extending beyond the edge of the block. A jeweler's saw with an 8/0 saw blade can be used to cut the small piece of tubing.

Step 14. Alternatively, a pair of tube cutting pliers can be used. Tube cutting pliers are a pair of wide, duck-billed pliers with a slot cut through the jaws of the pliers. This slot accommodates a saw blade.

Place the tubing in the jaws of the pliers and align the mark on the tubing with one side of the slot. Using a jeweler's saw and an 8/0 saw blade, saw through the tubing. The side of the slot can be used as a guide for the saw blade to insure a straight cut.



Step 15. Or, use a tube cutter—a miniature version of the tool plumbers use to cut copper pipe. These are sized according to the diameter of tubing that can be cut. Slide the tubing into the cutter and align the cutting blade with the mark on the tubing. Tighten the blade against the tubing and twist the cutter around the tubing a few times. Tighten the blade against the tubing again. Twist the cutter around the tubing. The blade of the cutter is gradually cutting through the tubing. Repeat until the tubing is cut completely.



Step 16. Regardless of the method used to cut the tubing, the result will be a small piece of tubing that is the proper length to form a secure tube rivet.

Setting the Tube Rivet

Step 17. Remove the top #14 Rivet Gauge† and place the small piece of tubing through the aligned holes. One end of the piece of tubing should be firmly against the top of the bench block.

Step 18. Place the tapered tip of an eyelet setter in the exposed opening of the tubing. Tap the end of the rivet setter gently with a household hammer.

Step 19. The eyelet setter will gently flare the top of the tubing.

Step 20. Using the small peen side of the chasing hammer, gently tap on the flared edge of the tubing to "roll" and set it against the metal piece.

Step 21. Once the front side of the tube rivet is set, remove the bottom #14 Rivet Gauge† and turn the metal piece over and place on the bench block. Repeat Steps 18 - 20 to set the backside of the tube rivet.

Step 22. If rivets are close together, the holes in the arm of the Rivet Gauges† can be used to measure the tubing.

Step 23. Repeat Steps 9 – 21 for the remaining tube rivets.

Step 24. Use the dimpling pliers to "ruffle" the edge of the metal to add additional interest. Hold the metal in the pliers such that only half of the "bead" on the plier jaw is used on the edge of the metal. Gently squeeze the pliers to impart a "half-dimple" to the edge of the piece, resulting in the ruffled effect. Continue around the metal piece, "half-dimpling" the entire edge of the piece.

Step 25. Use the Wubbers Looping Pliers, head pins and a variety of beads to create charms to embellish the piece. Review the WubbersU tutorial for the Looping Pliers to learn how to use the Looping Pliers.

Use a large, heavy gauge jump ring for the bail. Use smaller jump rings to attach the charms.

The piece is ready to wear.

Review Questions

1) Which Rivet Gauges are used to measure a tube rivet?
    a) 16
    b) 14
    c) 18

2) What determines the diameter of the tube rivet holes drilled?
    a) The diameter of the tube
    b) The gauge of the sheet metal
    c) The number of pieces being joined

3) What size saw blade is used to cut the tube?
    a) 8/0
    b) 0
    c) 2/0

4) What tool is used to flare the tube rivet?
    a) Eyelet setter
    b) Drill bit
    c) Dimpling pliers