
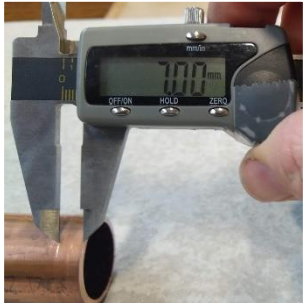





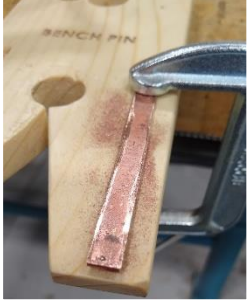



Procedure - Copper Pipe Band Ring

Material Prep

<p>1. Obtain a length of suitable copper pipe</p>	
<p>2. Use a digital caliper measure and score the pipe 1 mm larger than your desired ring width.</p>	
<p>3. Use a pipe cutter to cut your ring from the pipe. Work through the pipe slowly slightly tightening the cutter after each rotation.</p>	
<p>4. Anneal (soften) the copper by placing it on a fire brick and heating with a torch.</p> <ul style="list-style-type: none">• Heat until dull red colour• Use pliers to cool it in water.	
<p>5. Use aviation shears to cut the pipe</p>	

<p>6. Work the pipe open and then tap flat on a solid smooth surface. The copper is now very soft so take care when flattening not to dent/distort the metal</p>	
<p>7. Use your bench pin and clamps as shown to hold the workpiece and file off the burrs left from the cutting process.</p>	
<p>8. File only enough to remove the burrs. Look for the widening of the shined surface as an indicator that you have filed enough.</p>	

Sizing

<p>1. Use a ring sizer to determine the intended size for your project</p>	
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2. Use a sizing chart (class website) to determine the required length of material based on the materials thickness and desired size.



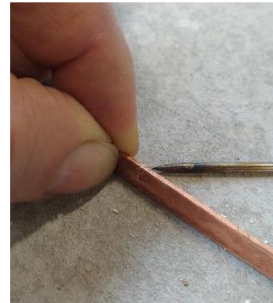
3. Use a scribe to score a line a few mm in from one end of the material



4. Set a digital caliper to the length previously determined and use it to score a 2nd line at this length



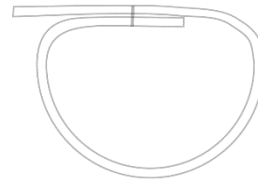
5. Using a scribe transfer these lines to one edge of the material.



6. Bend the band around a ring mandrel to form a half circle.



7. Use pliers to bend the ends with the goal of overlapping these, flat, with the sizing marks you made on the edge in alignment. Note – the end with the shortest extra material should be on the inside.



8. Use a clamp to secure the ring to your bench pin. Take care to leave enough space for the saw blade to pass through.



9. Use a jewelry saw to cut through both ends of the ring. The goal here is to produce mirrored ends that will form a seamless joint.











10. Using pliers, align carefully align then ends. Closely examine the seam. If acceptable, proceed to soldering. If not acceptable, make another saw pass with the seams aligned so that each end is cut at the same time. Re-align and examine again, repeat if necessary.

Proceed only when alignment is acceptable!









Soldering

<p>1. Prep your ring for soldering by cleaning it in the pickle.</p>	
<p>2. Apply flux to the solder region.</p>	
<p>3. Use a torch to heat the solder region until the flux turns glassy (2 step flux type).</p> <ul style="list-style-type: none">• Note the flux will first turn white, then glassy	
<p>4. Using tweezers, place a solder pallion on the joint.</p>	
<p>5. Heat the joint from the bottom to melt the solder and draw it through.</p>	

<p>6. Soldered ring, nicely flowed.</p>	
<p>7. Place the ring back into the pickle to remove flux and carbon.</p>	
<p>8. After pickle.</p>	

Soldering

<p>1. Place the ring on a ring mandrel and tap round using a mallet. Flip the ring several times tapping round each time.</p>	
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<p>2. Sand the edges of the ring flat.</p>	
<p>3. At the drill press, use 'sand paper on a stick' to clean up the inside solder joint.</p>	 <p>Pictures Soon</p>
<p>4. Place the ring on a mandrel and use sanding sticks to clean up the outside solder joint. The goal is to make this nearly invisible. A single cut file may be needed initially.</p>	 <p>Pictures Soon</p>
<p>5. Holding the ring in a wooden jewelry clamp, use sanding sticks and/or files to chamfer the edges. If a file is used, be sure to clean up the surface with sanding sticks.</p>	
<p>6. Using a wooden polishing mandrel, at the bench buffer polish the outside surface of the ring.</p>	 <p>Pictures Soon</p>
<p>7. Use a rotary tool and polishing head to polish the inside surface of the ring.</p>	

