

Relining Motorcycle Brake Shoes

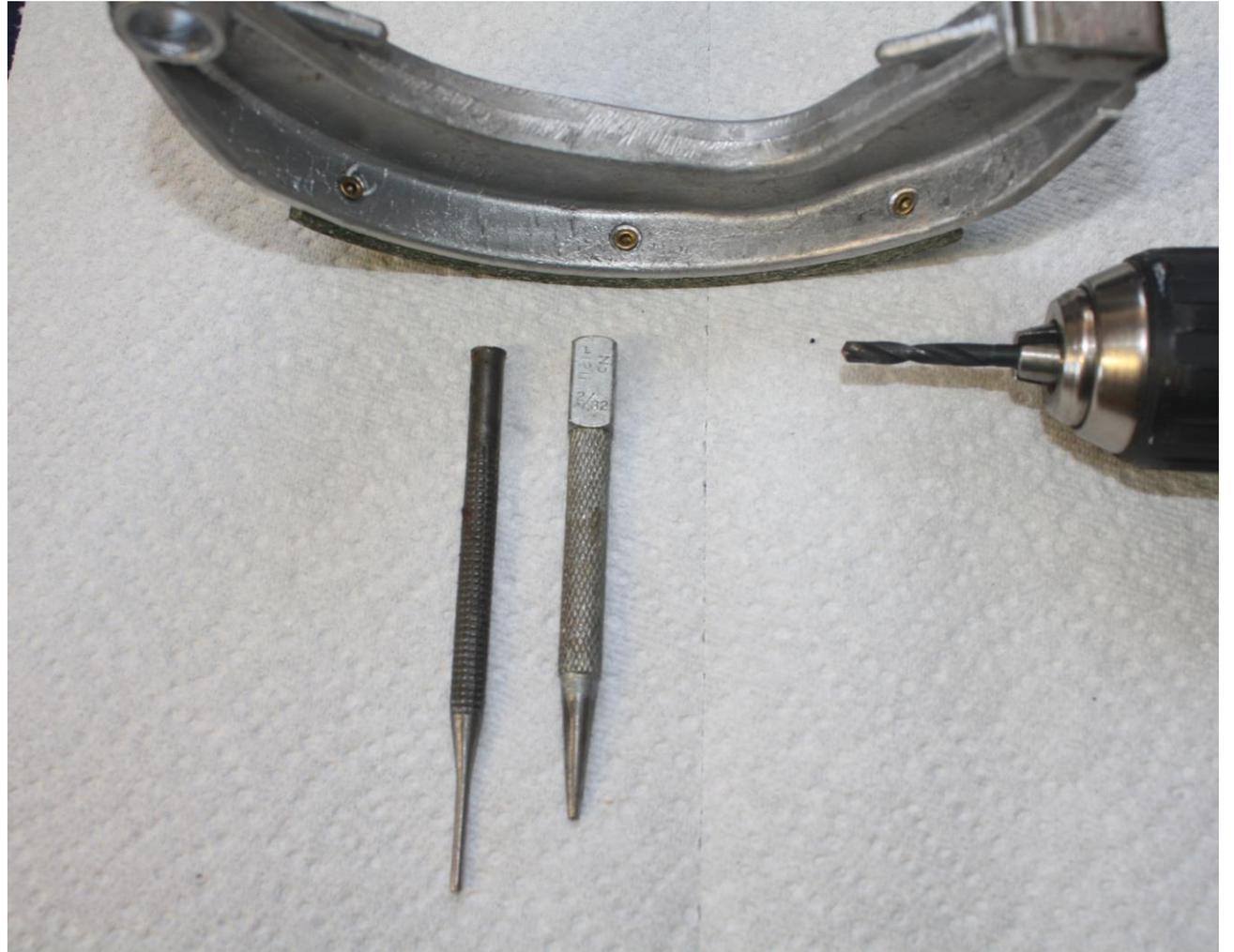
Okay, I'm Cheap.

Most Motorcycles to be restored have old or worn-out brake linings. Many times you can buy new brake shoes, but with some old motorcycles they can be hard to find.



Removing the Old Lining

Use a drill to remove the mushroomed end of the rivet from the back side. Then punch the rivet out, also from the back side. I use a drill bit that is slightly larger than the body size of the rivet, being careful not to drill the shoe.



Brake Lining Material

You can buy brake shoe material from McMaster Carr. I use the Metal Free Brake and Clutch Lining. It has a high-medium coefficient of friction and comes in many thicknesses and widths. It can be bonded or riveted. Cut to length based on the old lining, and mark the shoe for positioning.



Adhesive for Bonding the Lining

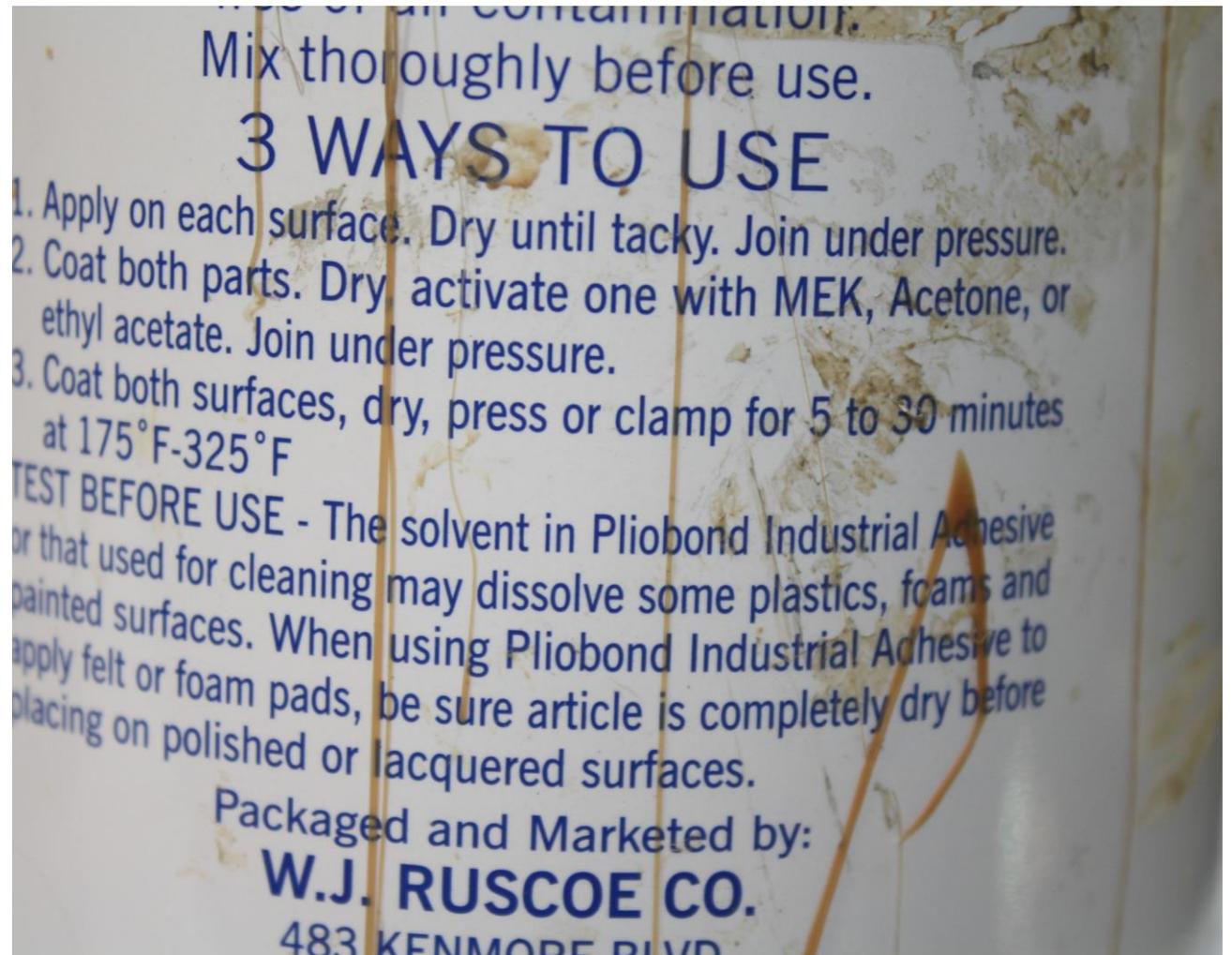
Pliobond, available from McMaster Carr Get the high temperature Pliobond.



Heat to Bond

I use instruction number 3, where heat is used to bond the lining to the shoe. This is done by putting the shoes in a BBQ or oven, but the lining must be clamped in place while heating and cooling the shoes.

I initially bond the lining to the shoe even though I am riveting the linings. This holds the linings in place while you drill and rivet as you will see later. It also holds the edges and ends of this flexible lining in place. Pliobond is resistant to oil, chemicals, and water.



Clamping the Lining

I started using lots of C-clamps to hold the lining on the shoe, but I found that a brake drum of the right size works great. You can shim the ends of the lining slightly if needed to make sure the ends of the lining are clamped to the shoe.

This whole arrangement is now placed in the BBQ or oven and heated to 250-300 degrees for 20+ minutes. Leave the shoes clamped while cooling.



Drilling the Lining

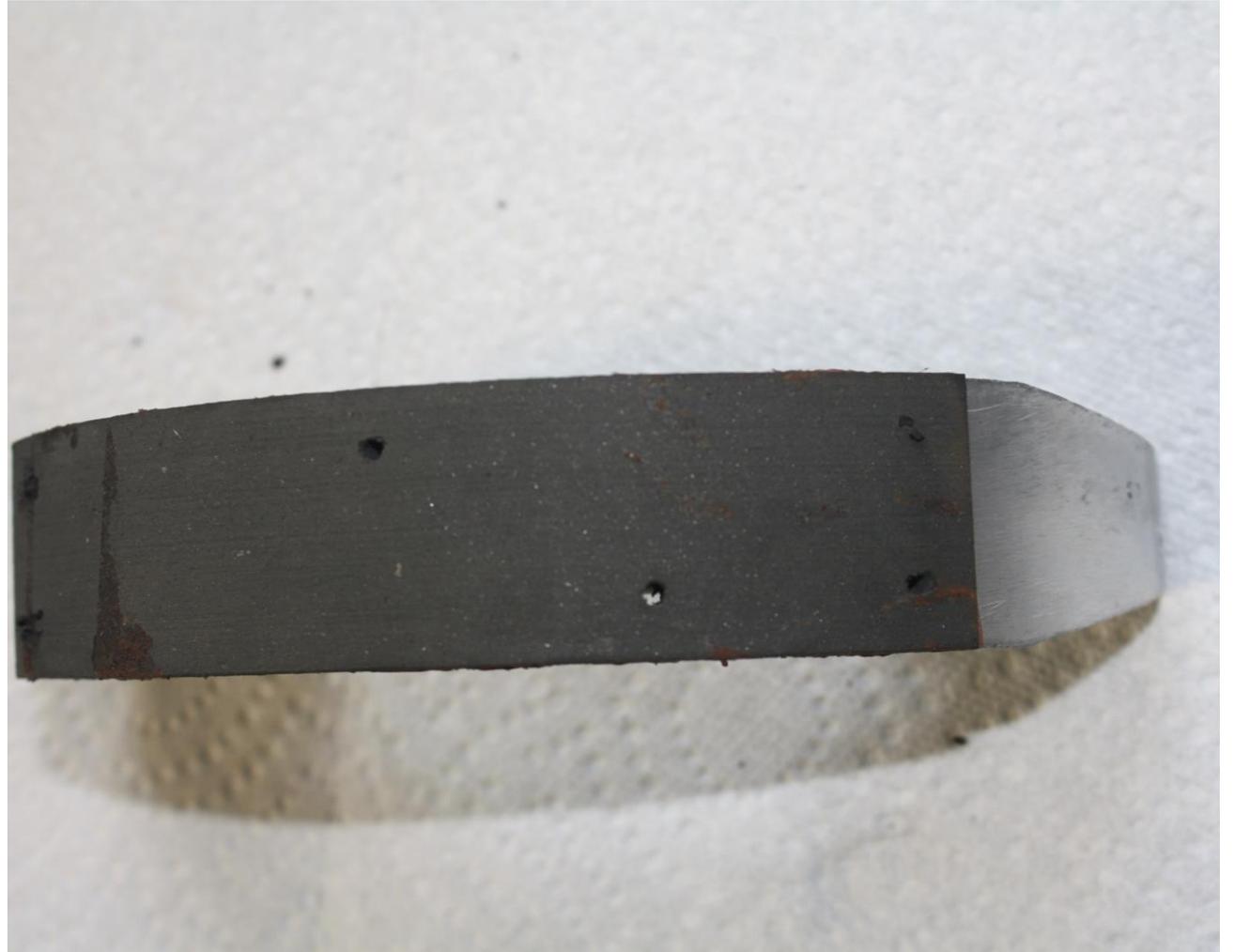
Drill from the backside to locate the holes, keep perpendicular.



Use a drill bit equal to the shoe's hole size, 1/8" here. Don't drill at an angle.



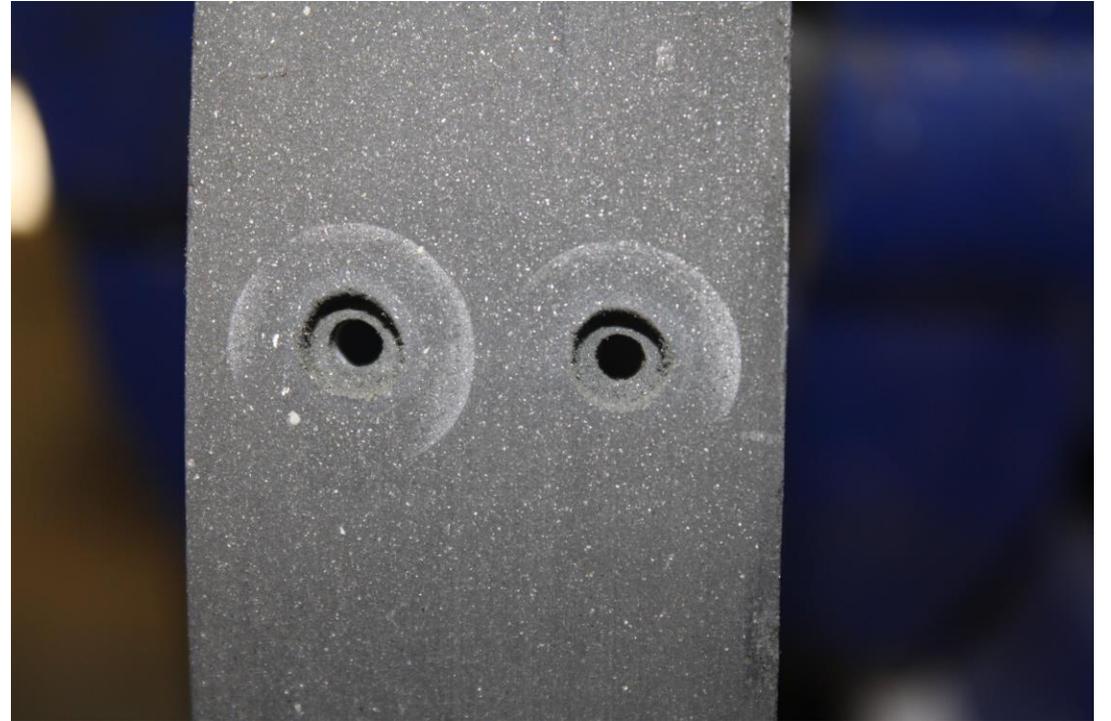
Rivet holes are located.
Now we must
countersink the holes to
sink the rivet head below
the surface.



I made a counter sink tool using a woodworking flat bottom countersink with integral 1/8" bit, available from Woodcraft. I ground down of diameter of the countersink portion to equal the size of the rivet head. I then added a collar to control depth.



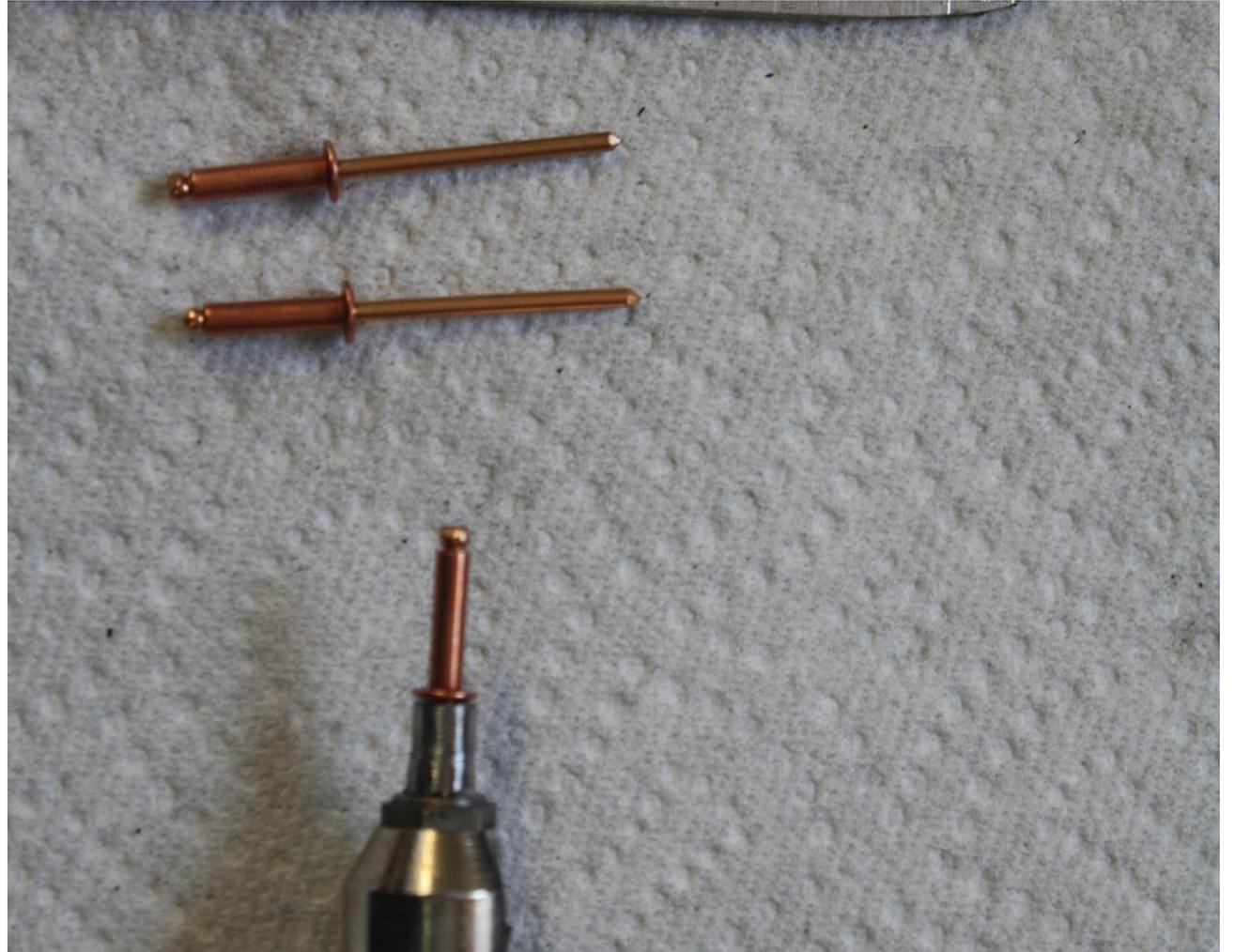
Countersinking the holes, using the previous holes as a guide.



Rivets

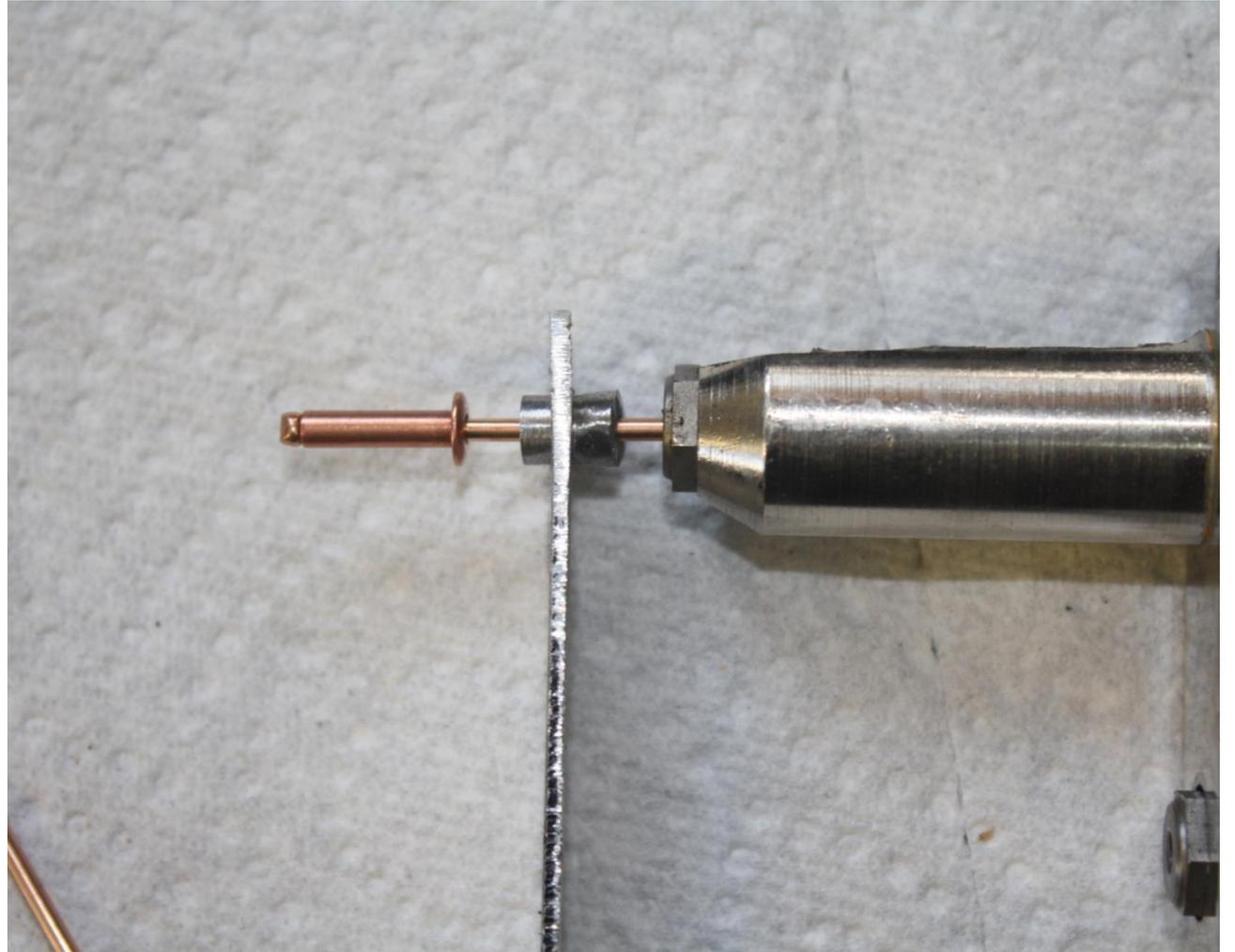
Copper rivets are used so they won't score the drum if you run the linings down to the rivets.

Rivets are available from Hanson Rivet Company or McMaster Carr.



Pop Rivet Tooling

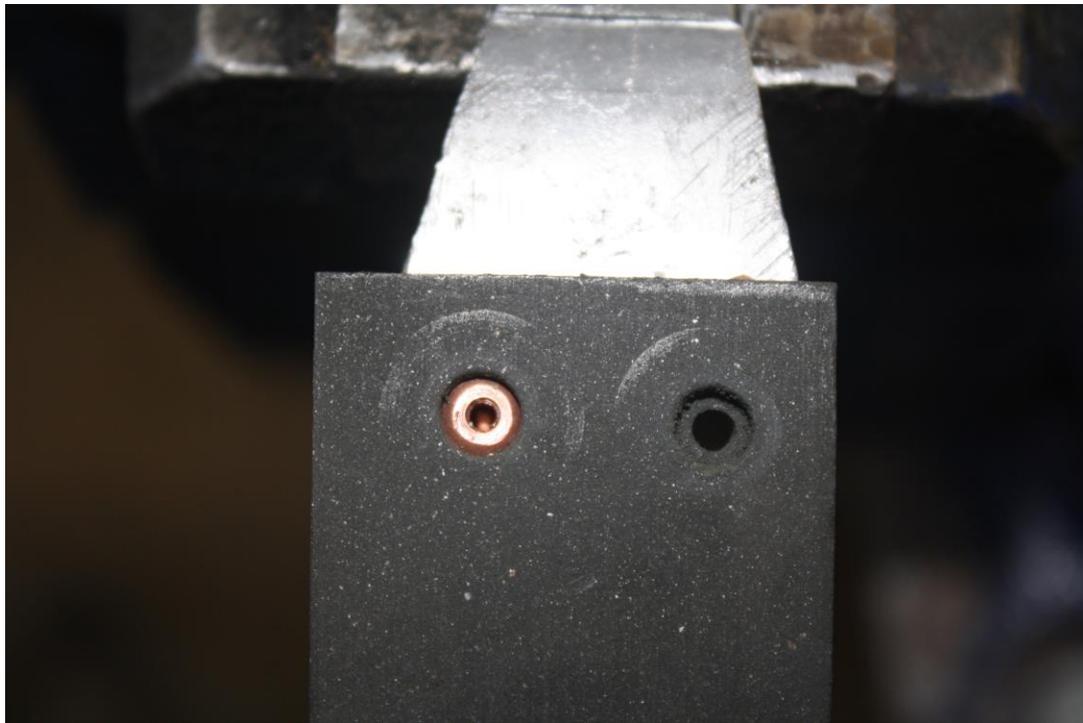
You need to make an “extension” nose for the pop rivet tool. This allows the tool to set the rivet head down in the countersink and pull the rivet up tight. Make sure the nose is not bigger than the head of the rivet. I made the nose larger on the top end so I could hold it with a small piece of aluminum to keep it from flying away every time you pop the rivet.



Here is the arrangement of the pop rivet tool with the extension nose in place. The nose holder is not in place here to better show the alignment.



Rivets in place.



Using a wider lining than needed allows for movement during bonding. Then the lining can be sanded to a perfect fit to the shoe.



Putting a bevel on the end of the lining to prevent grabbing.



These rivets were a little long, so I cut them off with a Dremel cut-off wheel for the sake of appearance.



All Done!!

