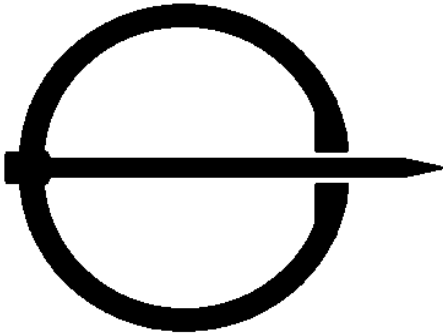


Making a Simple Viking Ring Brooch

by HL HROthgar Thorsson

Points to ponder. Ring Brooches, or popularly called *Pennanular Brooches*, were worn predominantly by men. A man would fasten his cloak with this brooch at the shoulder. In early-Medieval Scandinavian society, the length of the pin and the ring's decoration, as well as the value of the metal, all made a statement about the wealth and standing of the man who owned it.

In this project, you will be shown how to shape and forge a simple and functional brooch that would look good fastening any Viking's cloak. The ring of the brooch will be approximately 4" in diameter. For smaller brooches, multiply the outer diameter you want for the ring by 3.14 to determine the length of rod you will need.



We'll need the following materials:

2 12" solid brass rods, 1/8" diameter (available at hobby and hardware stores)
1 pint of white vinegar (available everywhere)

And we'll need the following equipment:

heavy wire cutters (*able to cut the brass rod*)
1-2 pound hammer (*for forging the brass rod*)
anvil
pair of standard pliers
propane torch with tank
a lighter or striker
fine tooth steel file
coarse steel wool
heavy leather gloves or welding gloves

Phase 1 - The Ring

The first phase will be bending one of the rods into a circle to form the brooch's ring, then shaping the ends of the ring so they will hold the pin securely.

Most commercially available hobby-type brass will be too hard to work at first. During their manufacture, the rods were very likely *work-hardened*; most metals will go from soft and pliable to hard, brittle and difficult to work when they are being formed and shaped. We will have to start by **annealing**, or softening, the metal. Heating the rod to a will leave the metal soft and easy to bend.

While wearing the welding or leather gloves, hold the rod firmly in the jaws of the standard pliers. Strike or light the propane torch, turning the gas control until you have a strong flame. Point the flame and draw it along the length of the rod in a back-and-forth motion. Soon the rod will be hot enough to glow. This is enough to soften it. Lay the rod down on a heat-resistant surface and allow it to cool to room temperature.

After the rod cools, gently bend the rod into a circle. The metal should be soft enough to bend with relatively little effort. You can use a solid round form to help in this step. When the rod has formed a circle, use the pliers to bend the ends to match the rest of the ring.

The next step involves **forging**, or hammering, the ends of the ring. Place the ring flat against the anvil. Strike the ends of the ring a few times firmly, until you have a feel for the action. Continue hammering each side evenly until they take on the appearance of the diagram below.



It is reasonable to expect the ends to be rough after the hammering. Using the steel file, remove any rough edges left on the metal.

The following steps can be combined with the same steps in Phase 2.

After being heated, the brass will have a dark layer burnt on to its surface. This is loosened by soaking the ring in the vinegar. The procedure is called *pickling*; since the vinegar is a weak acid it will act as a mild pickling agent. Allow the ring to soak for about an hour.

When the pickling is finished, the brass should have a tarnished appearance with none of the dark burnt-on layer remaining. With the steel wool, scrub the ring until it has a shiny, matte look to it. Wetting the steel wool with water before scrubbing will make things easier and bring out a shinier appearance.

We are now finished with the ring. Lay it aside for now.

Phase 2 - The Pin

The pin should extend about 1.5" past the outer edge of the ring. For the size pin needed for this project, cut the second brass rod to a length of 7".

The only part of the pin that will be forged and shaped will be the end that wraps around the ring. Repeat the heating and annealing steps from earlier, but heat and soften only 1.5" on one end of the rod. The rest of the rod will need to be left hardened, to withstand being tugged on constantly by the fabric of the cloak.

Hammer the newly softened 1.5" of the rod in the same way you did the ends of the ring. For the pin, hammer the rod uniformly flat and the same width, about 0.25" wide. This flattened end will later be bent into a circle that the ring will be passed through. Use the file to give remove any imperfections. For now, there will be a small gap in the rounded end where it almost touches the rod. We will tighten this with the hammer and anvil in the final step.

Soak the end of the ring in vinegar as before. Scrub it until it is shiny like you did with the ring.

Grasp the flat end of the rod with the pliers. Holding the tool firmly, curl the end of the as shown in the diagram below, forming an opening that the ring will pass through. When this is done, try slipping the ring inside this opening. It should pass through with little effort. Remove the ring and lay it aside.



If you intend to make several brooches for friends or the rest of your Household, a bench grinder would be better for the following steps.

File the other end of the rod until it is sharp. If our cloak has reinforced holes for the pin of a brooch to pass through already, then the pin will not have to be as sharp. Scrub the sharpened end until it shines like the other parts of the brooch.

Re-insert the ring into the rounded end of the pin. Using the hammer and anvil, *gently* strike the rounded end until it is closed tightly. Work the pin and ring until the pin slides on the ring smoothly.

The Ring Brooch is complete.