



# Wire Bending Jig Tutorial

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This is a simple wire and strip bending jig I use for bending clips. The jig is designed for making small radius bends in stainless steel and brass. The dimensions can be adjusted for any diameter wire. It may be possible to make one jig that accommodates more than one size wire.

The jig consists of two parts, a stationary aluminum part with two pins that hold the wire and a rotating nut with a pin that is turned with a wrench and bends the wire. It is possible to make the jig with a bolt but consider the threads when drilling for the dowel pins. The threaded end of the bolt is not flat and may not be a stable platform for the wire. Also, Grade 5 bolts are hard to drill.

Material recommendations:

- Stationary part: 3/4" Aluminum bar stock.
- Hex nut: 5/8" or 3/4" steel, or brass. (Less than grade 5 or higher)
- Dowel pins: 1/8" diameter by 1/2 inch or longer, smaller diameters may also work.

The thickness of the wire will dictate the stationary part turn down and the nut used. The nut must have enough material between the ID and outside point to hold a dowel pin.

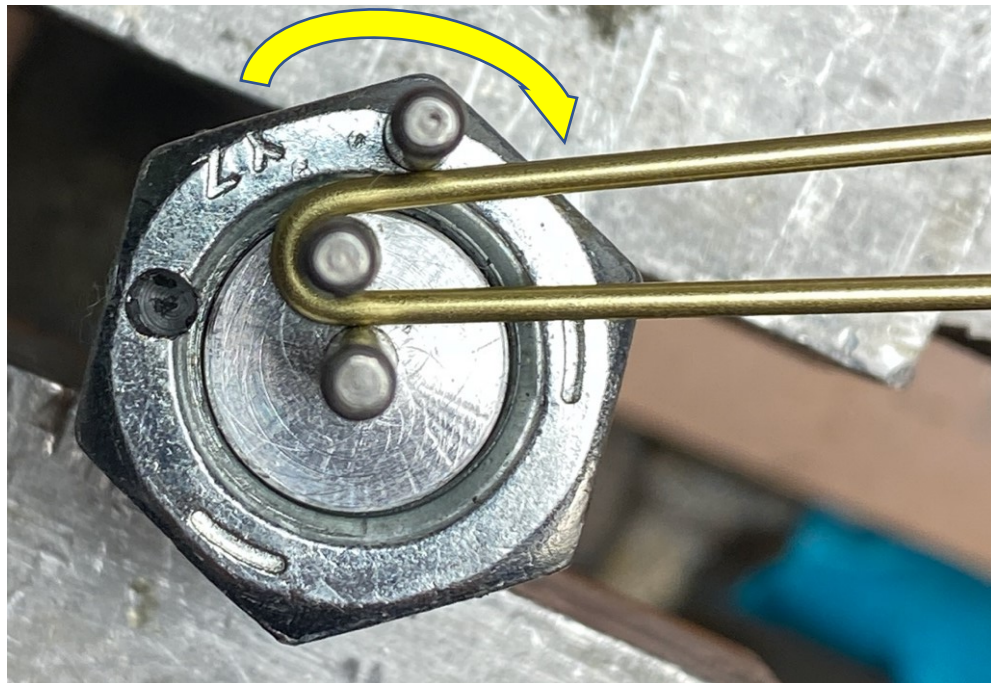
- 1) Turn down the aluminum bar stock to fit the nut ID and as deep as the nut thickness. It should be a sliding fit and not too loose. Part off the stock with a convenient length to hold in a vise. I filed a shallow flat on the OD to prevent rotation when clamped in a vise.
- 2) Center drill at the center of the stationary part then drill a hole for an interference fit with the dowel pin. For 1/8" dia. pins a #31 drill works well.
- 3) Next center drill and drill a hole closer to the OD. The gap between the two pins should allow for the wire to slip between the pins. For example, for bending 1/16" diameter wire with 1/8" diameter dowel pins the outer pin is drilled at 0.188. This is about the largest size wire that can be bent using a 5/8" nut. Bending 0.08" diameter wire with 1/8" diameter pins the outer pin is drilled at 0.205. This requires a 3/4" nut, trying this on with a 5/8" nut puts the pin too close to the edge.
- 4) Center drill and bore a hole in the nut. Drilling at the corner gives a little more material around the pin.
- 5) Drill at least 1/4" deep.
- 6) Press in the pins.



Views of the two dowel pins pressed in the aluminum stationary part and one on the hex nut.

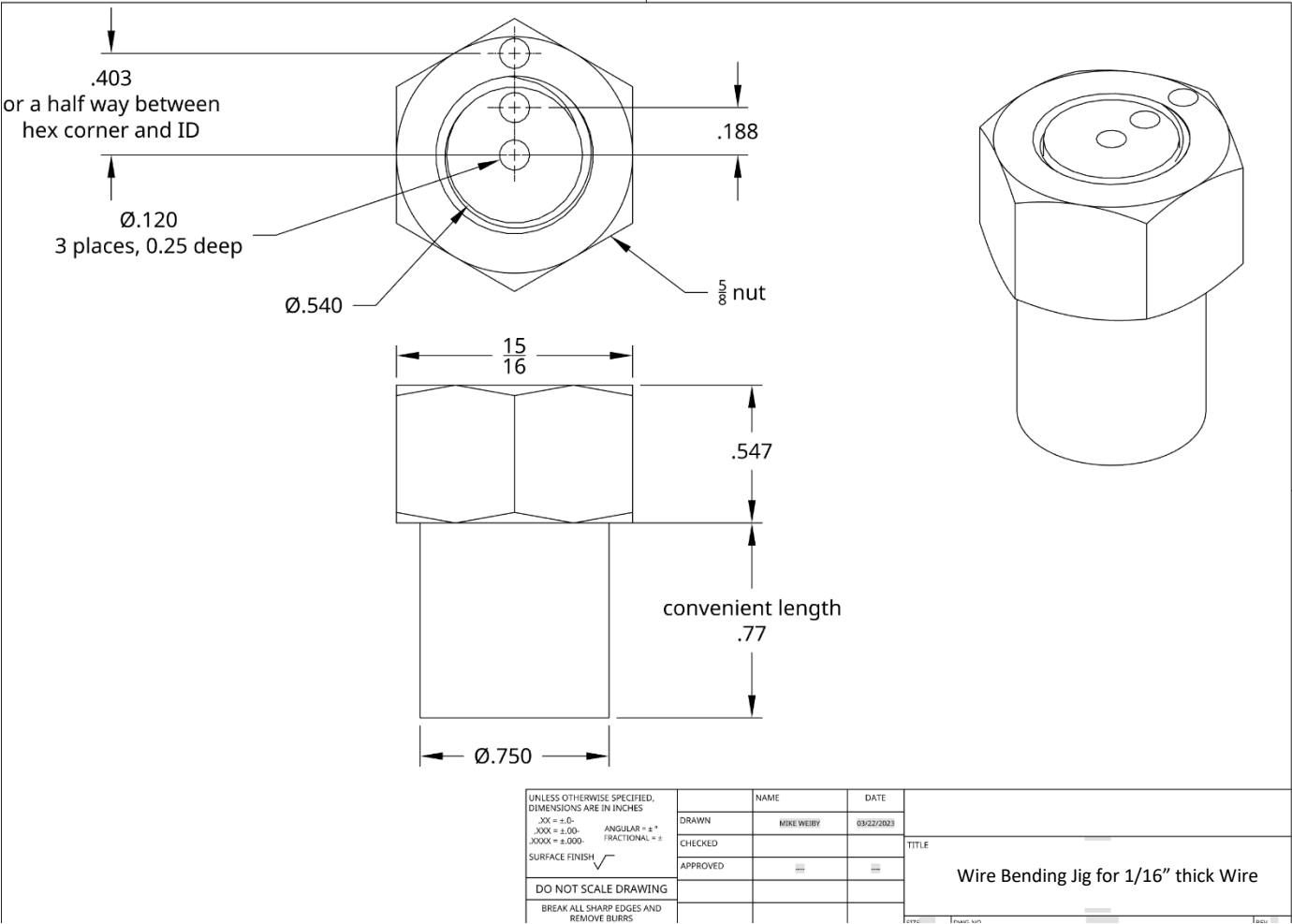
It is better to drill a hole at the corner. The gap is for 1/16" wire.

The wire can be bent around either stationary pin. Place a piece of wire between the two pins on the stationary part. Use a wrench to turn the nut and bend the wire.



I believe the pin arrangement can be changed such that the center pin doesn't have to be at the center of the stationary aluminum part.

Here's a detailed drawing of this jig.



Thanks for looking.