

Torque Meter V2 Build Instructions

By J&H Aerospace ↗
www.jhaerospace.com



An essential tool for repeatable indoor flying performance

Torque Meter V2

J&H Aerospace 

Building Instructions

Please use the Torque Meter Build Tutorial video on the product page to guide your construction:
<http://jhaerospace.com/product/torque-meter/>

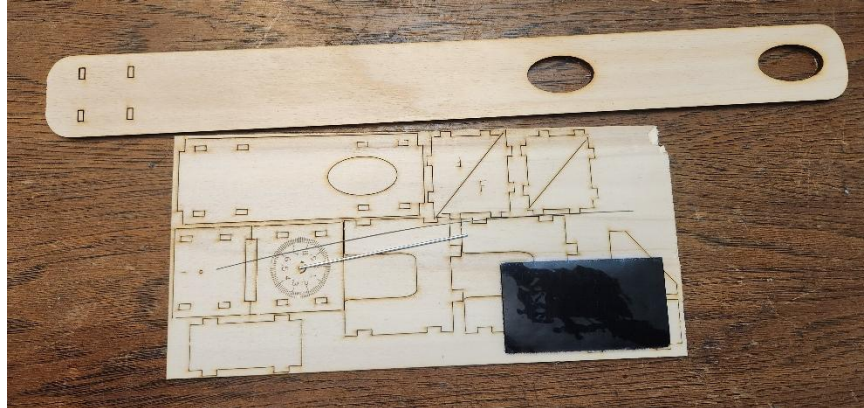
Parts list

Before beginning construction, please verify that your kit contains all of the necessary parts listed below. Please be aware that some of the laser cut parts may have separated from their carrier sheet, so you should ensure that all of those parts are present and undamaged.

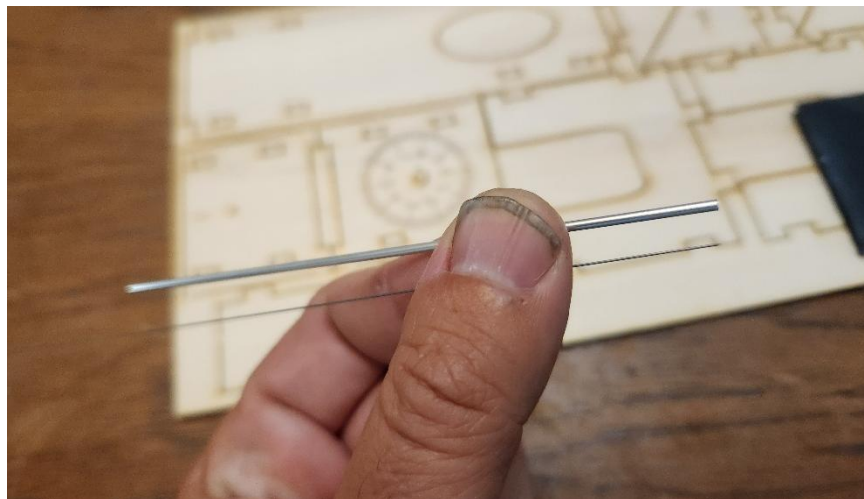
1. Parts Sheet (1/8" ply)
2. Platform (1/4" ply)
3. 0.015" Piano wire (10" long)
4. 1/16" Aluminum tubing (2" long)
5. Binding thread
6. Self adhesive velcro

Before beginning construction, make sure you have all of the materials you will need:

1. Needle nose pliers (optional: a set of round nose pliers)
2. Scissors
3. Razor blade
4. CA glue
5. Ruler

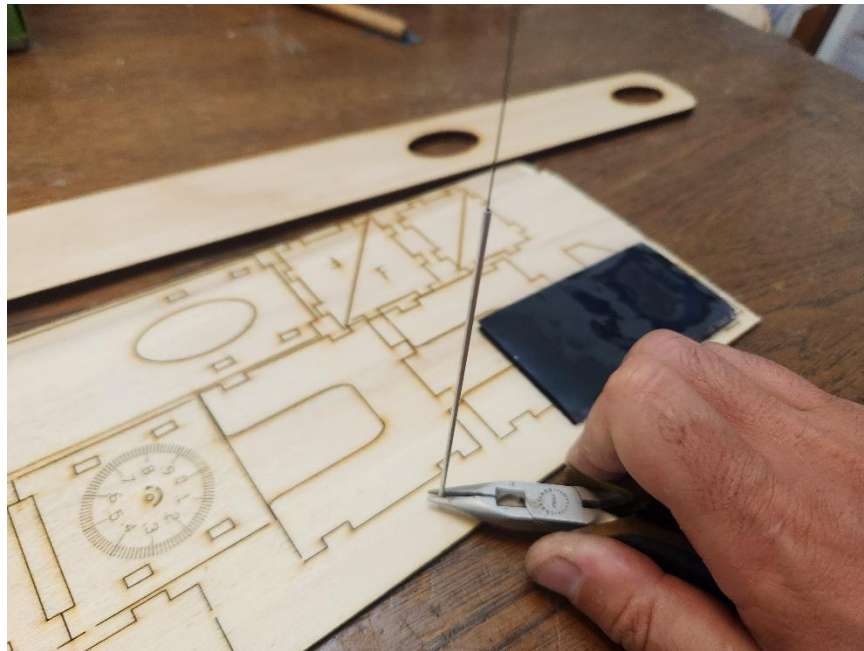


Locate the 0.015" piano wire and aluminum tube. You will be sliding the tubing over the wire and flush with the end. This is extremely important.



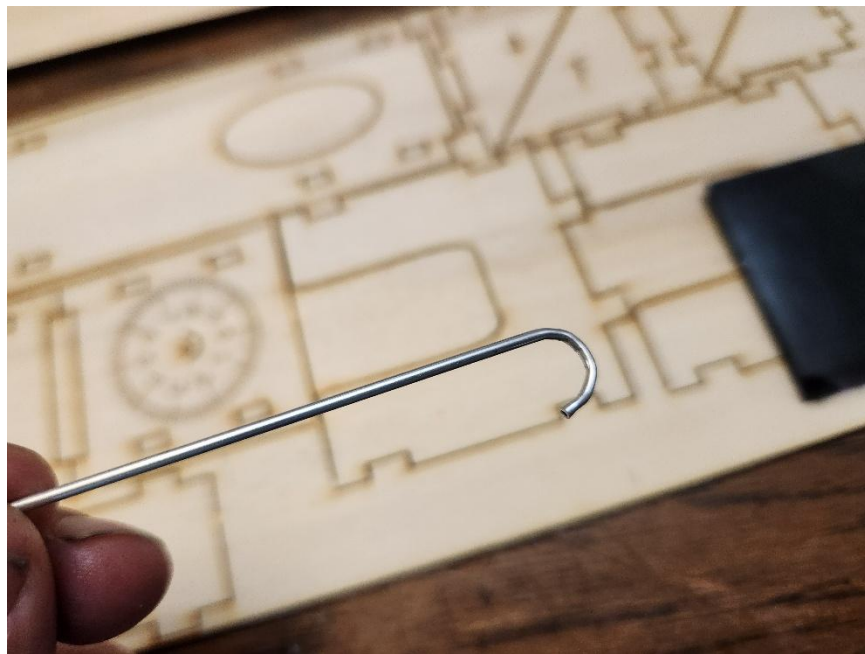


If you place the assembly vertically on the parts sheet or table and grip it at the base with pliers, you can then bend the tubing over pliers, which will lock the wire into the tubing at the correct position. It is important to have the wire flush with the end of the tubing. If the end sticks out of the tube, it makes a sharp edge which can hurt your fingers, and if it is too far inside the tubing, it will leave the tubing unsupported so that the tubing breaks off under load (this is a common mistake).

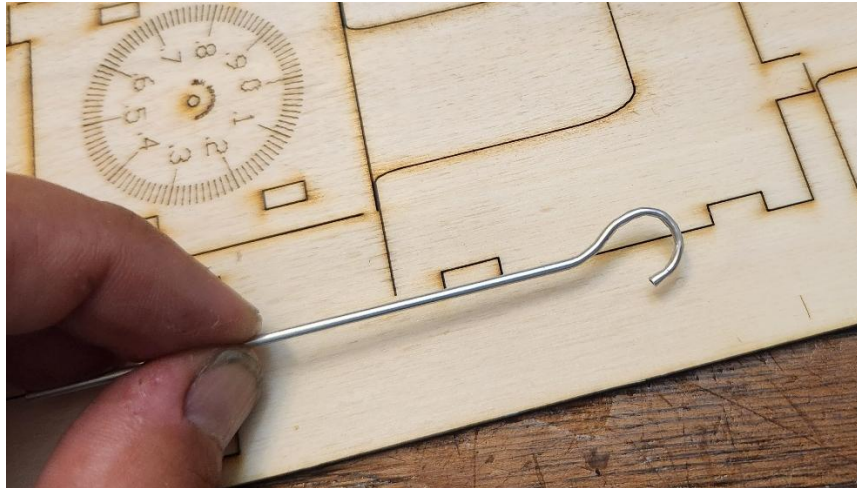




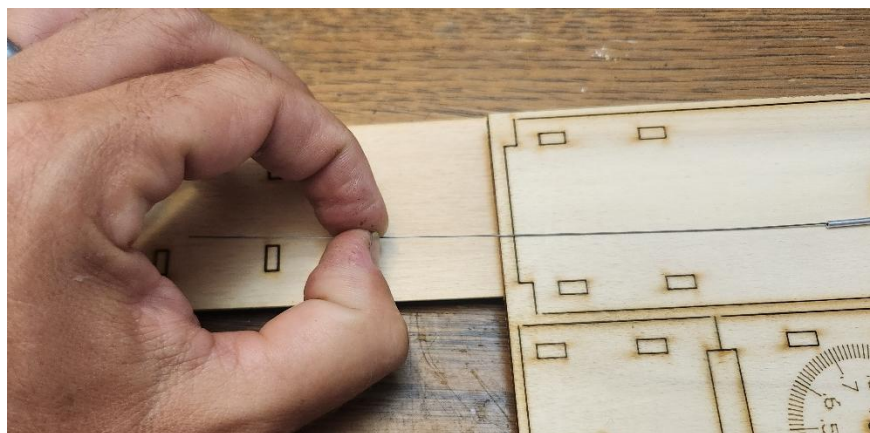
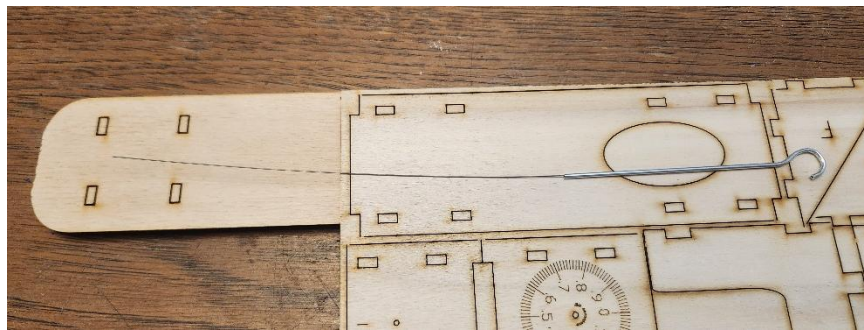
Carefully work the tubing around into a hook $\frac{1}{4}$ " to $\frac{3}{8}$ " diameter. Take your time and try to avoid crushing the tubing in the process. If you have round nose pliers, you'll get better results.

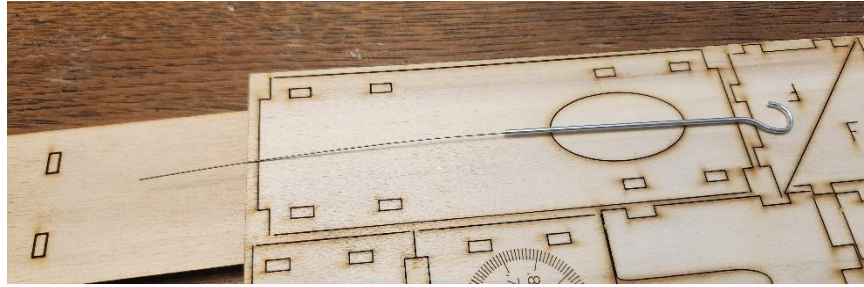


You can then bend the hook back around to center it up with the centerline of the rest of the tubing and wire.

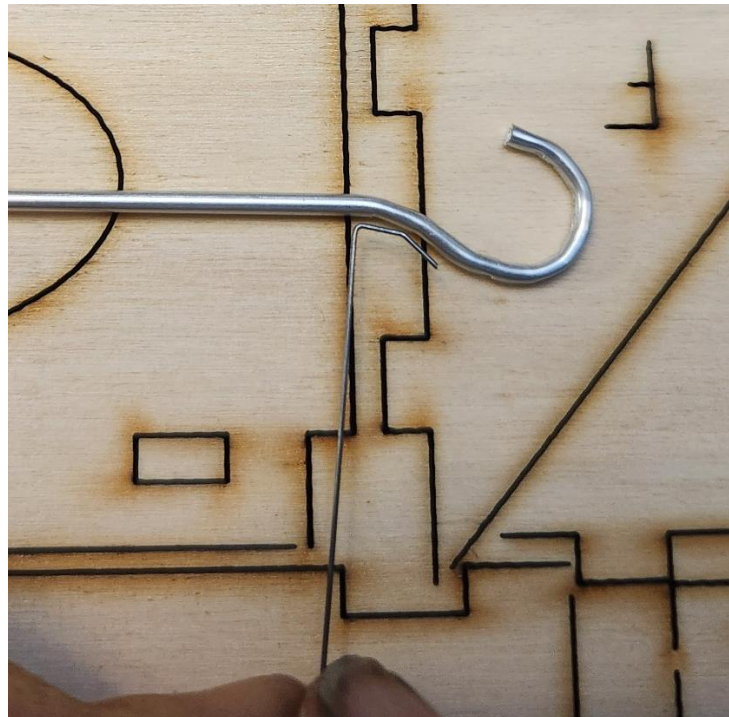


The wire is significantly longer than it needs to be. Set it atop the base of the torque meter frame with the hook clear of the end. Mark off a point about 1" past the end of the frame. Cut the wire there. This should leave you with a little over an inch of wire to make a dial needle with.

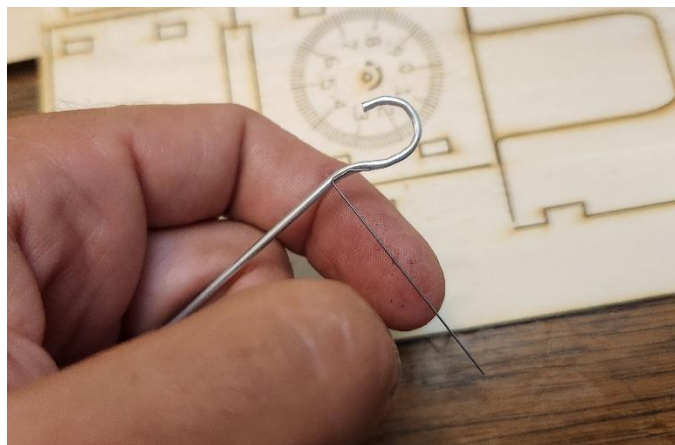


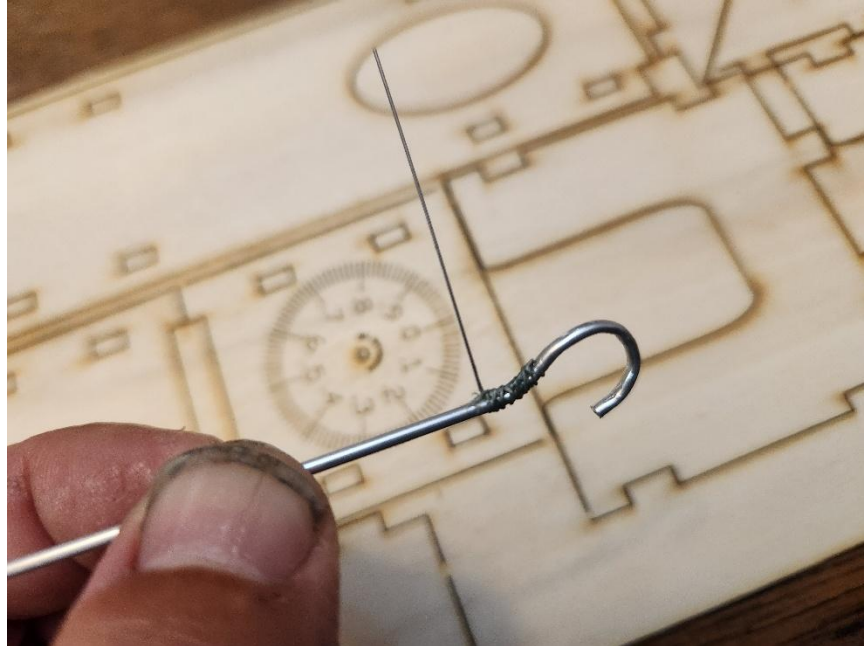


Make a few bends in the end of the dial wire so that it matches the curve of the hook.



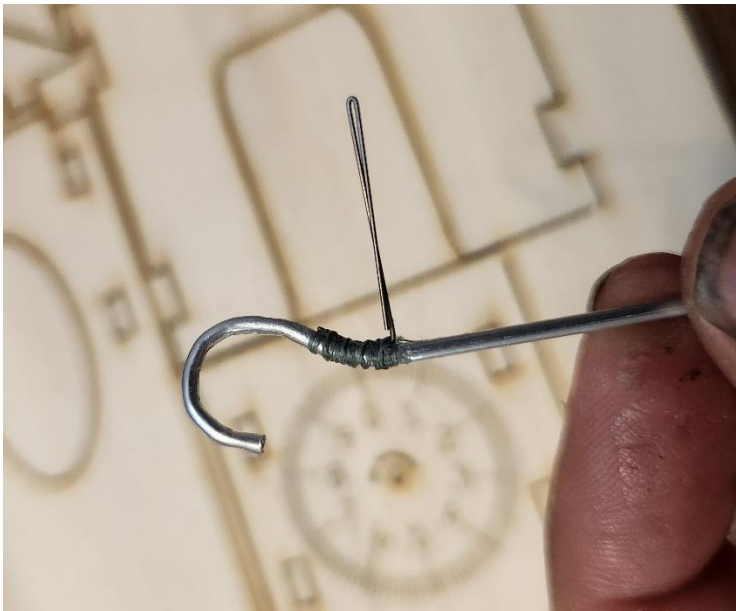
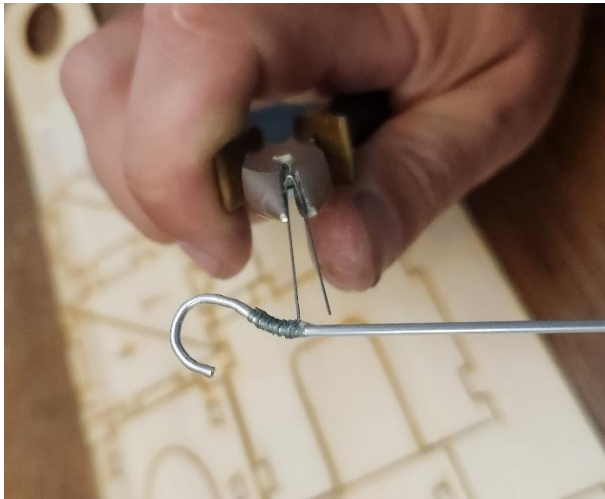
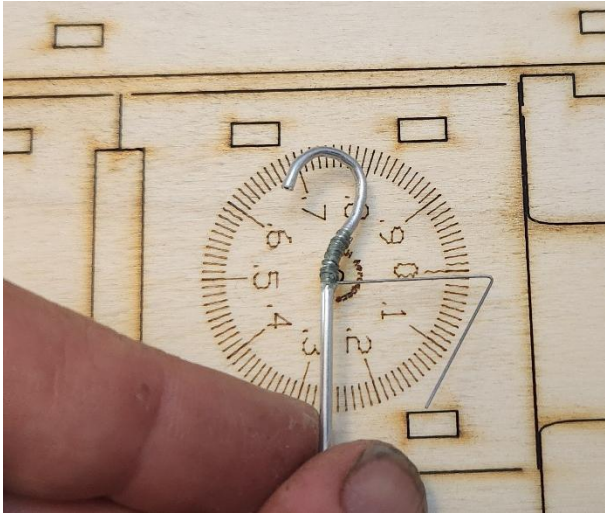
Use thread to bind the wire in place and harden it with CA glue.





The needle wire should extend slightly past the markings on the dial. Bend the wire around there to form a back fold. Cut the excess so that the fold back doesn't extend all the way back to the tubing.





Break out the parts for the torque meter frame. Note that they must be installed in the correct orientation. The hole in the base will go at the opposite end from the dial.



The gussets labeled "F" are the ones which support the dial.



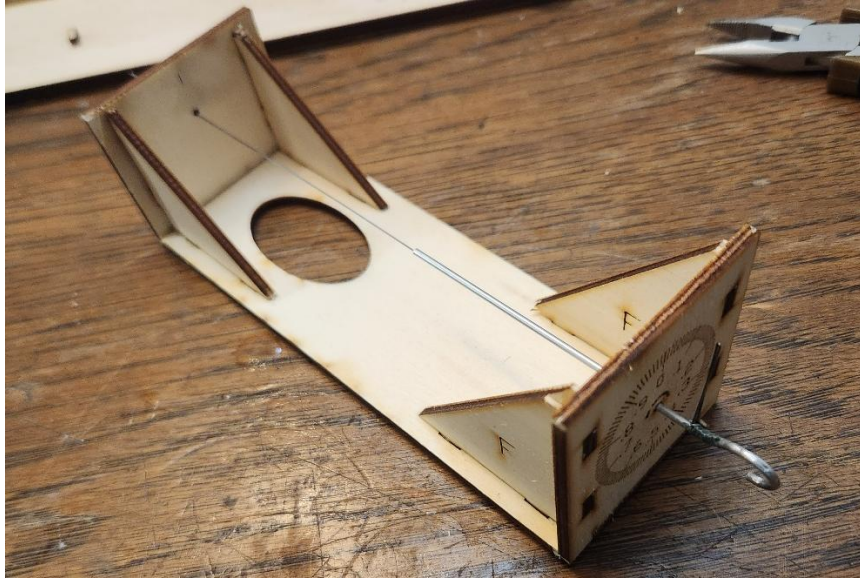
Install the torque meter face on the front of the torquemeter.



Install the back of the torquemeter.



Slide the wire into the torquemeter frame. Leave the assembly so that the needle has about $\frac{1}{4}$ " clearance from the front of the dial.



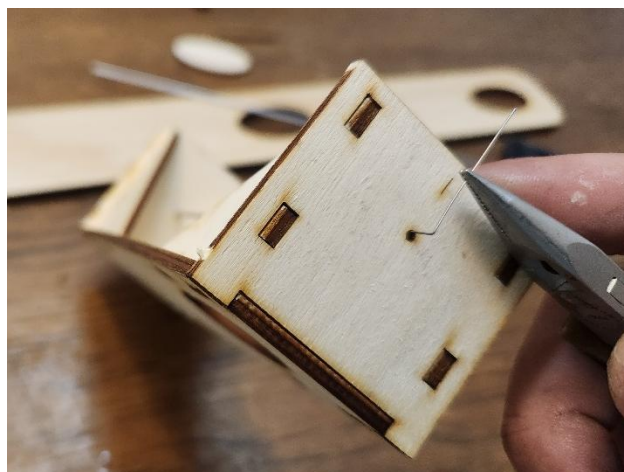
With the needle lined up with the 0 and at the proper clearance, use pliers to grip the wire flush with the back of the torque meter frame.



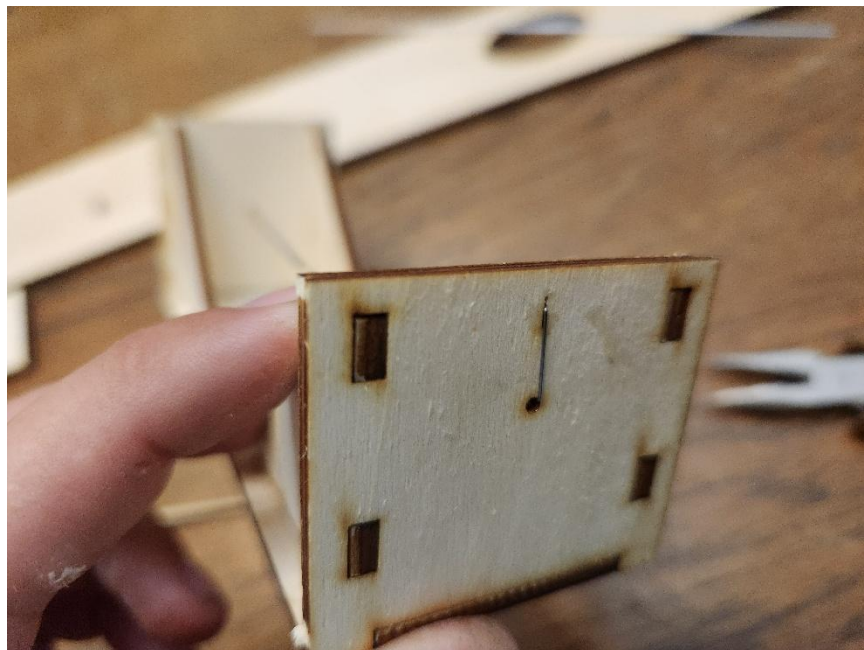
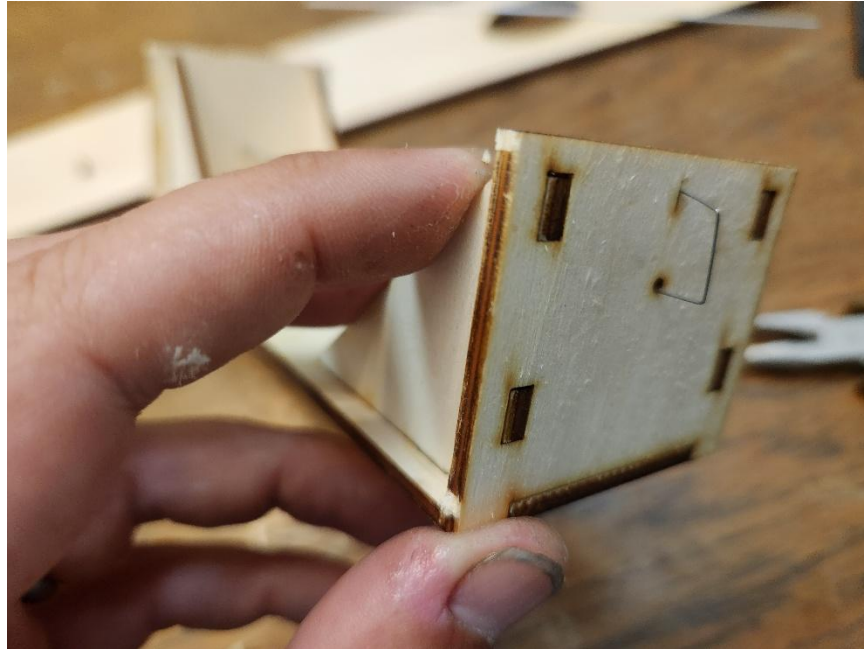
Bend the wire straight up in a clean, sharp bend, keeping the needle lined up with the 0.



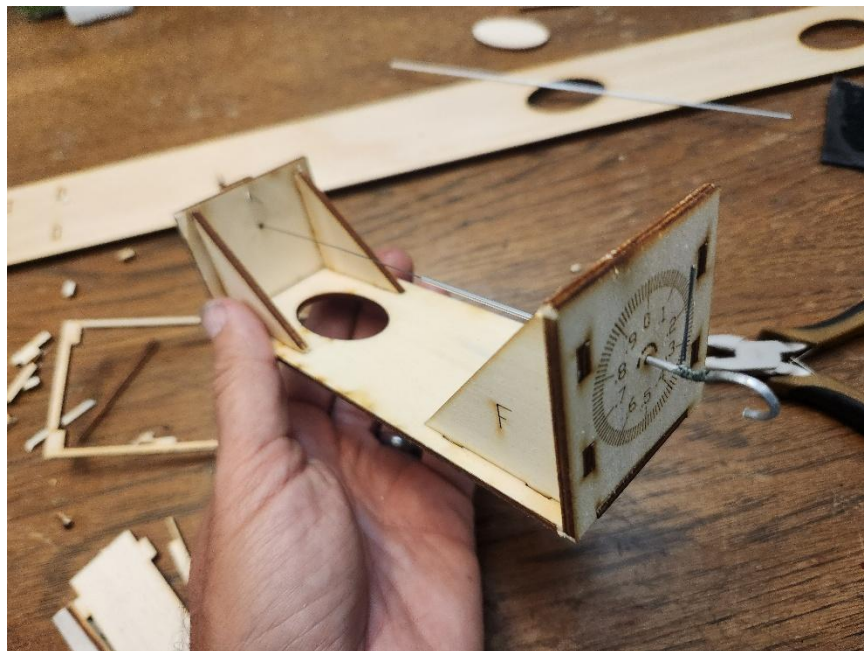
Grip the wire in line with the little slot above the torque meter shaft hole.



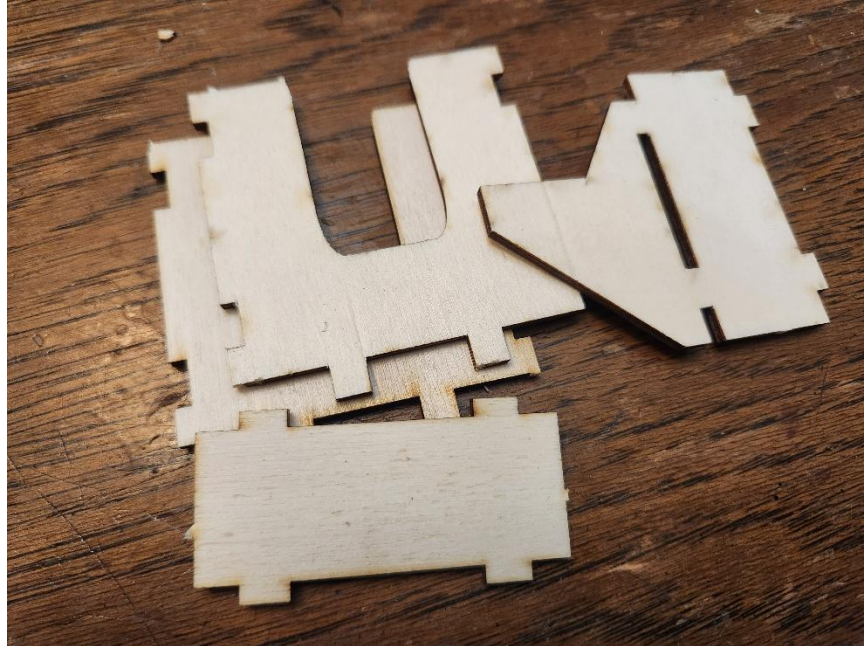
Bend the wire completely over and around so that it can be pressed into the slot in the frame.



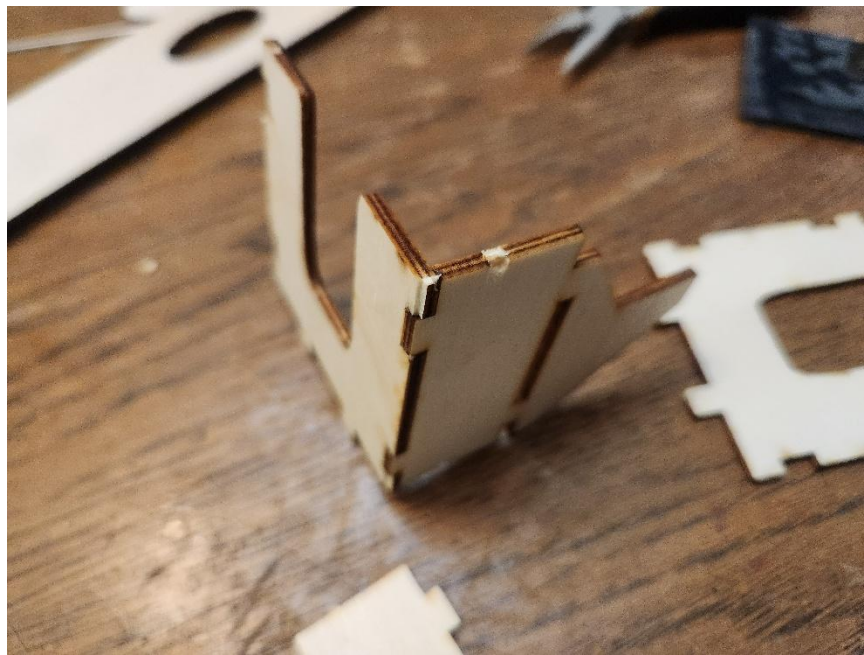
Glue a rectangle over the wire on the back of the torque meter so that the wire cannot slip out under load.

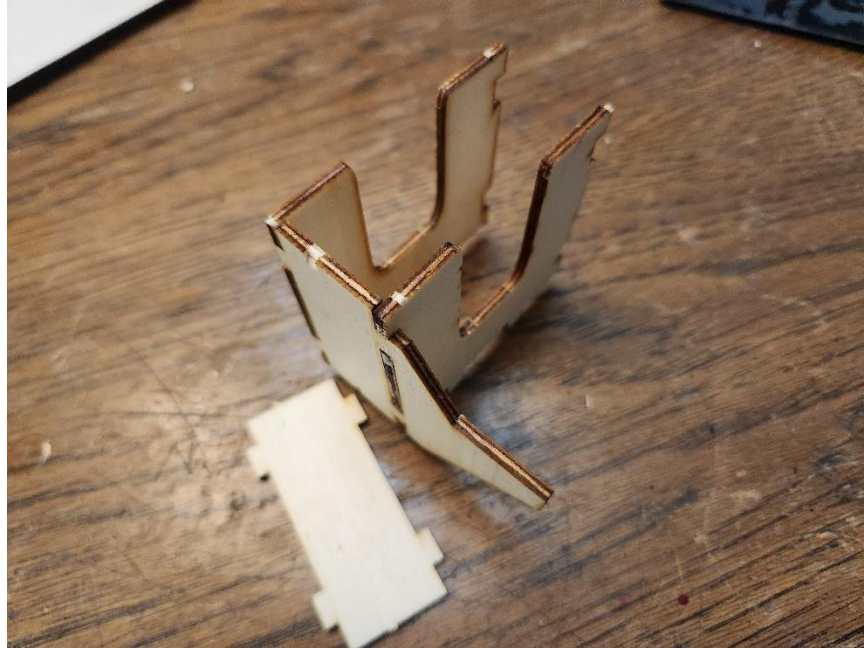


Break out the parts for the winder holder.

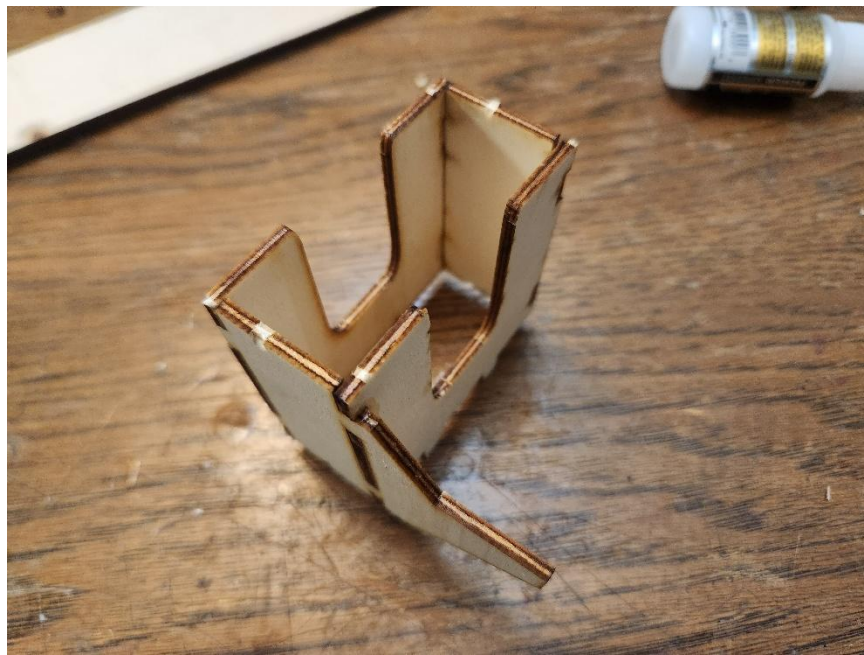


The side plate with the handle catch goes on the left side of the holder.

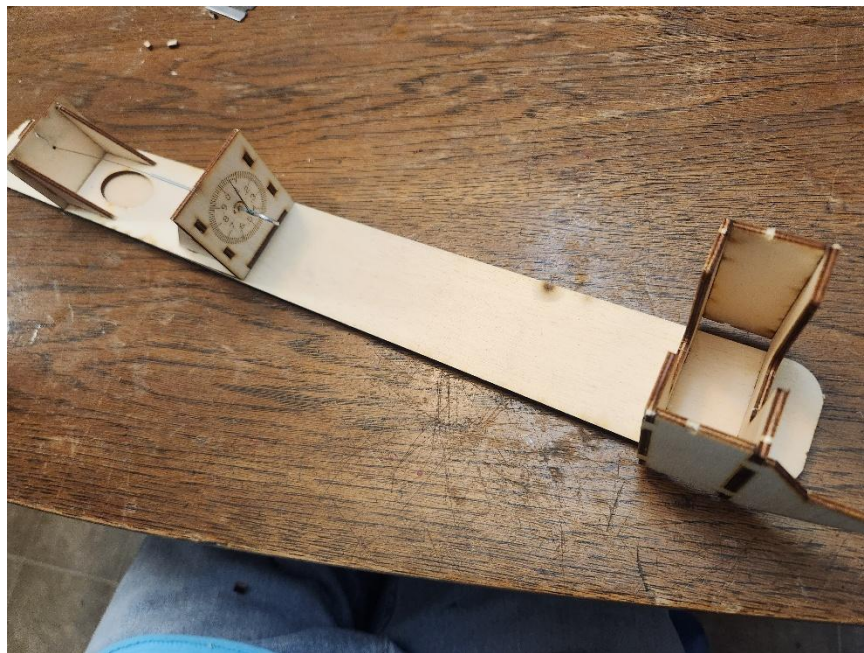




Assemble the rest of the holder.



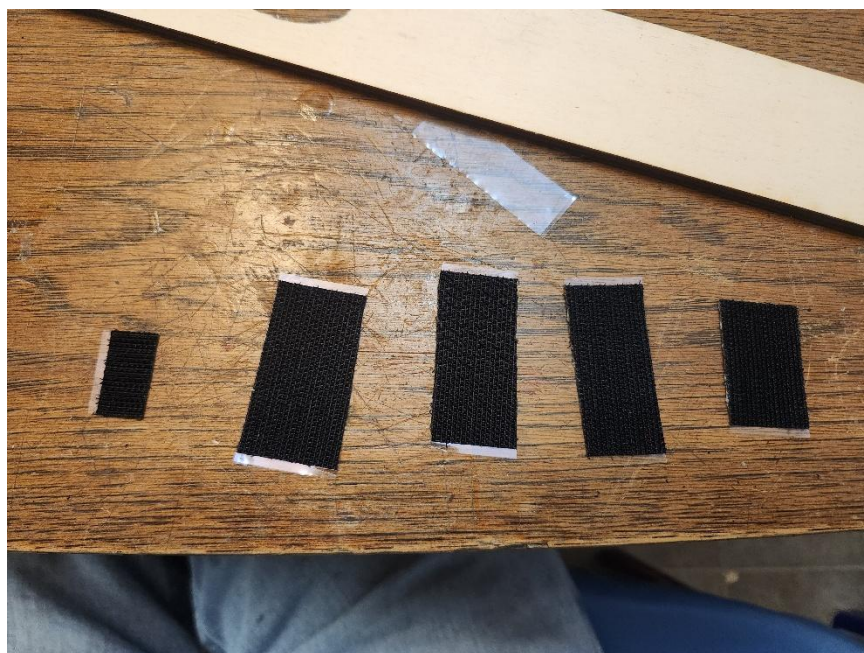
Glue the holder into the platform with the arm facing out as shown.

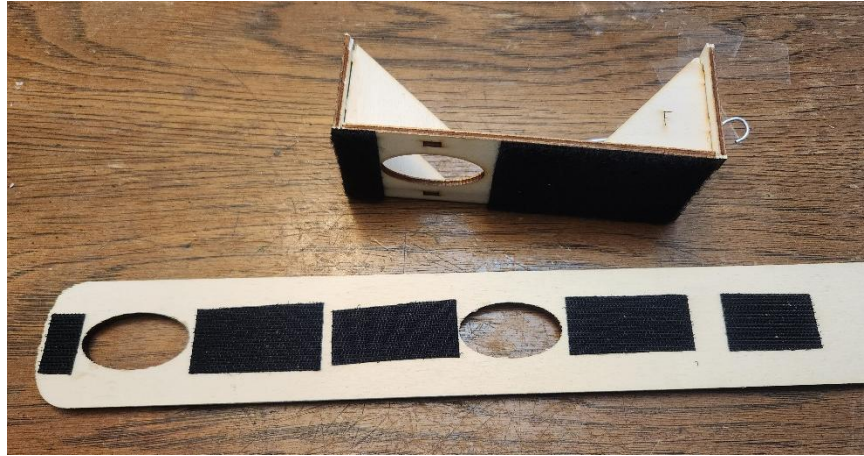


Cut the fuzzy side of the Velcro and attach it to the bottom of the torque meter.



Cut the coarse side of the vecro (the hook side) into small strips and line them up along the holder frame.





You can now place the torque meter on the winding frame at any distance from the winder so that you can match the hook to hook distance to match the motorstick length of your airplane or helicopter.



You can clamp the frame onto a table or onto a tripod. If you choose a tripod, be sure to hang a heavy weight under it to keep it from tipping over, such a half gallon water bottle.

If you have any questions about proper use of winding equipment, please contact us through our website.