

Deluxe Elastic Launched Glider Launcher V3

Build Manual

By J&H Aerospace ↗
www.jhaerospace.com



*The Ultimate Launcher meeting restrictions for Science Olympiad
Elastic Launched Glider competitions*

Deluxe Elastic Launched Glider Launcher V3



Building Instructions

Please use the Launcher build video on the product page to guide your construction:

<http://jhaerospace.com/product/launcher-for-elastic-catapult-launched-glider-deluxe-edition/>

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: 1/8" Plywood parts
2. Parts Sheet #2: 1/16" Plywood parts
3. Binder Clips (2)
4. Bubble Levels (2)
5. #6 Wingnuts and bolts (2 each)
6. 3/32" Rubber Strip, 24" long
7. 1/4" Dowel, 2" long
8. 0.040" Carbon Rod, 2" long
9. Red straw tubing

Pay extremely close attention to the orientation of the parts on this launcher. If you orient parts wrong, the launcher will not work!!!

Find the trigger plate for the launch handle group.

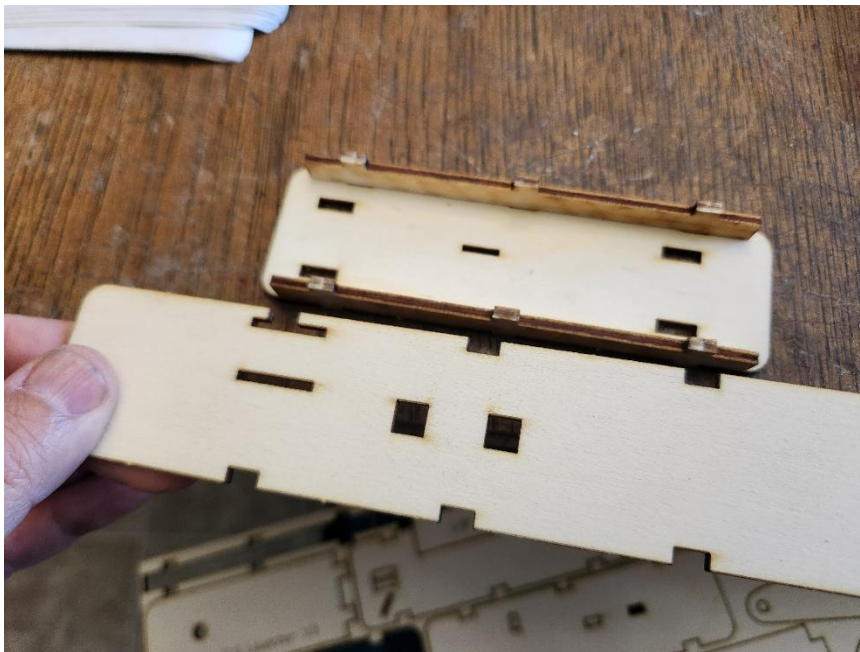


Glue the side fences to the trigger plate in the exact orientation shown.



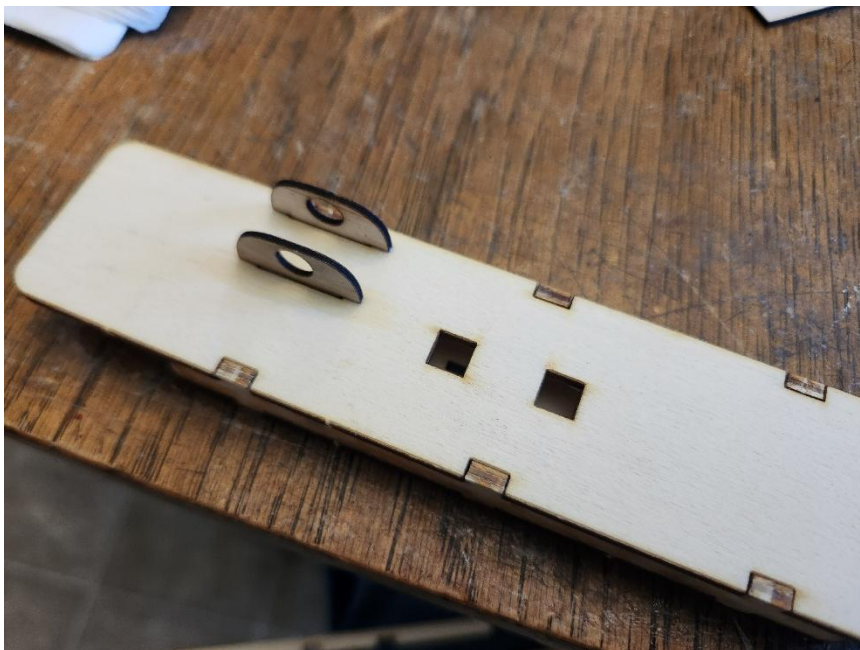


Orient and install the handle assembly plate in the exact orientation shown, noting the relationship between the handle plate and the trigger plate.

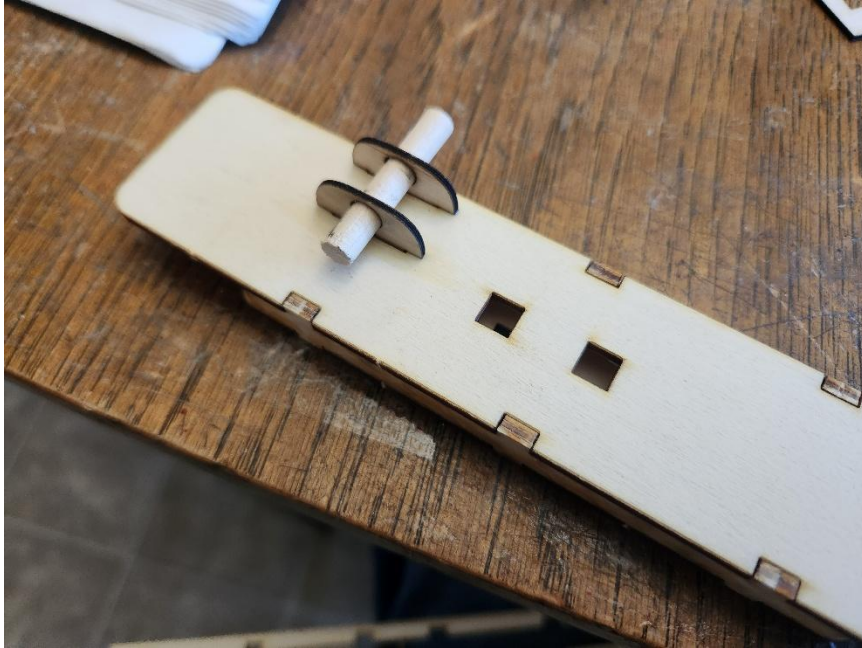




Install the trigger axle bearings.



Slide the trigger axle in place. DO NOT ALLOW GLUE INTO THE BEARINGS!



Glue the trigger to the trigger axle.



Glue the trigger transfer lever in place, again keeping glue clear of the bearings. Note the angular differential between the transfer lever and the trigger itself.



Glue the transfer bar slider plate into the trigger plate on the same side as the transfer lever.



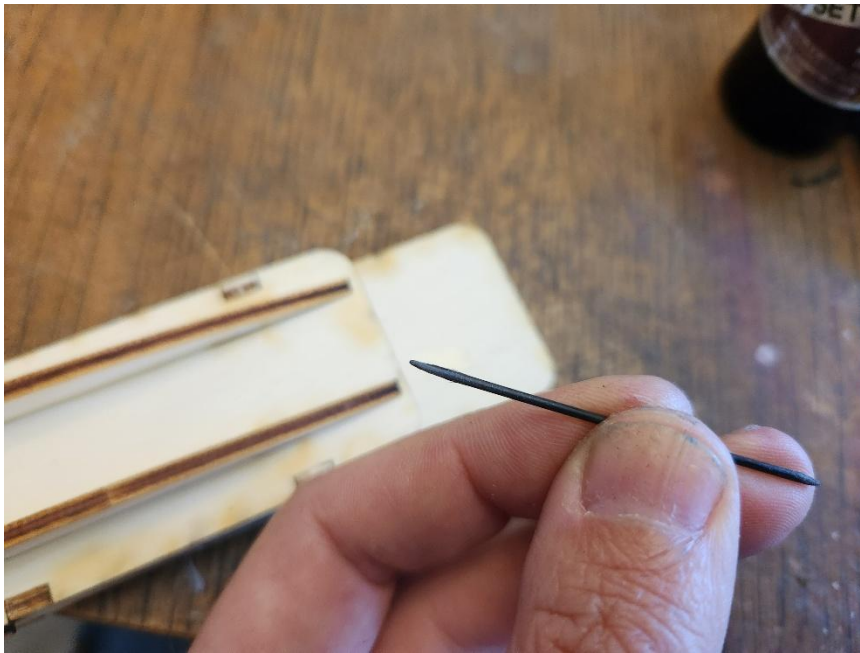
Install the trigger sear in the exact orientation shown.



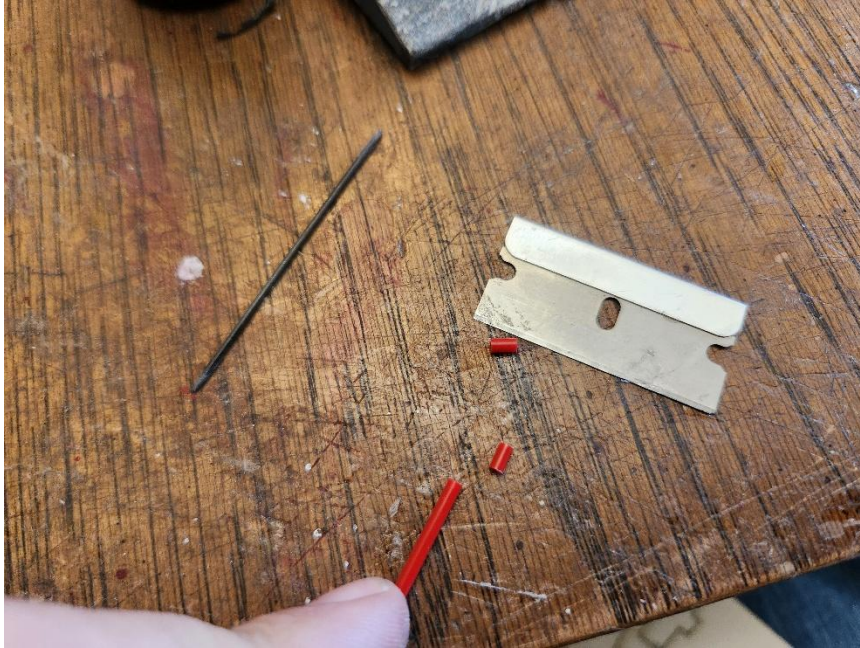
Install the transfer bar bearing plate on the other side of the trigger plate.



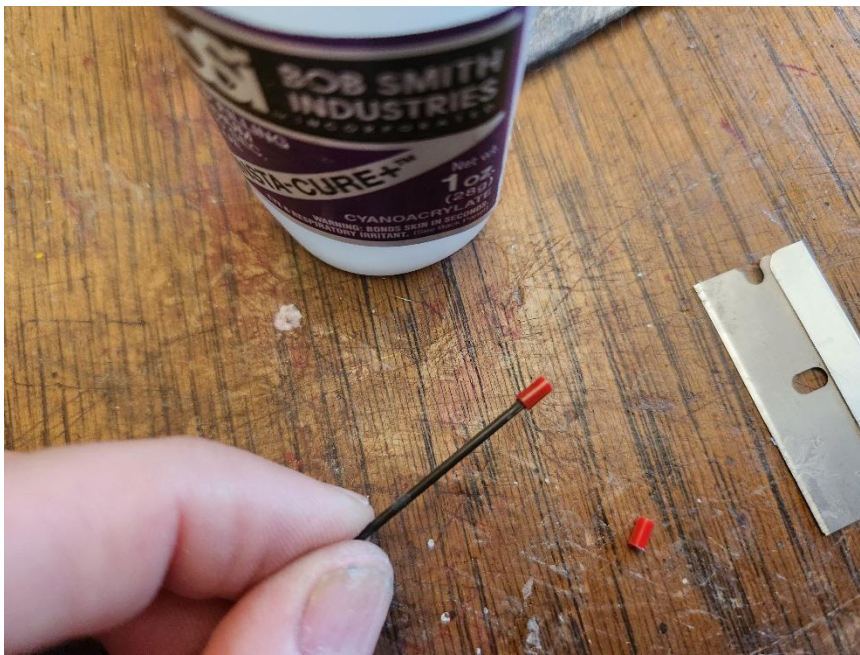
Sand the ends of the carbon rod so that the red tubing will slide easily onto each end of it.



Cut two pieces of red tubing.



Slide and glue a piece of tubing on one piece of the carbon fiber transfer rod.



Install the transfer bar and glue another piece of tubing on the other end of it so that it cannot fall out.

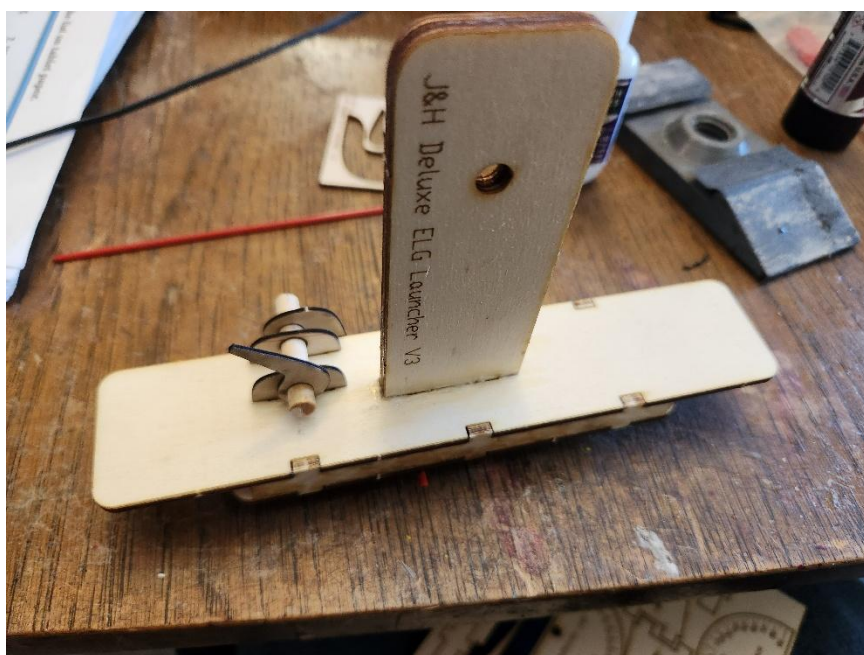


Laminate the handles pieces together and sand the edges smooth.





Glue the handle into the handle plate.



Install edge fences in the tail alignment guide plate.



Glue the level mount plate to the bottom of the tail guide assembly.



Install the level mounts.



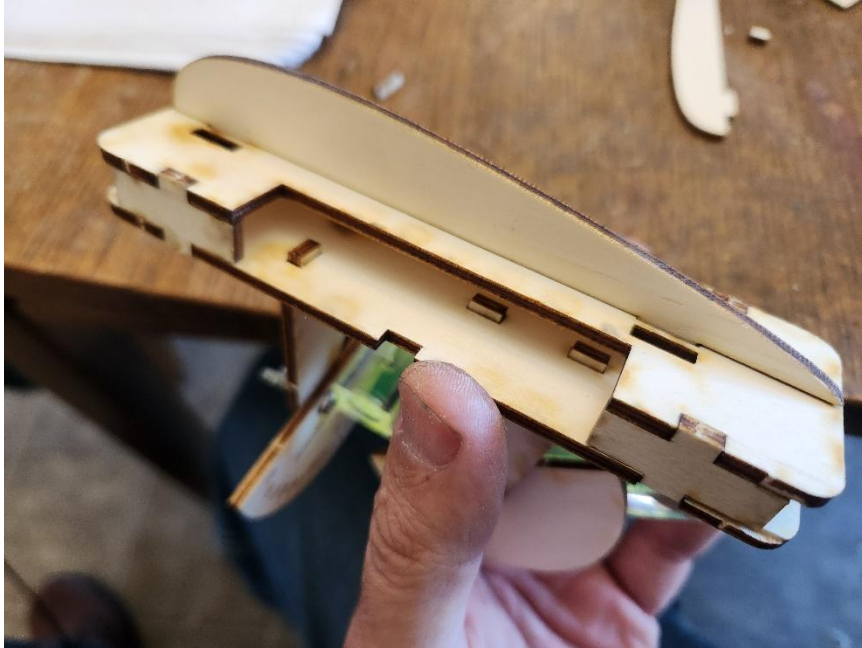
Glue bubble levels to the level protractors as shown.



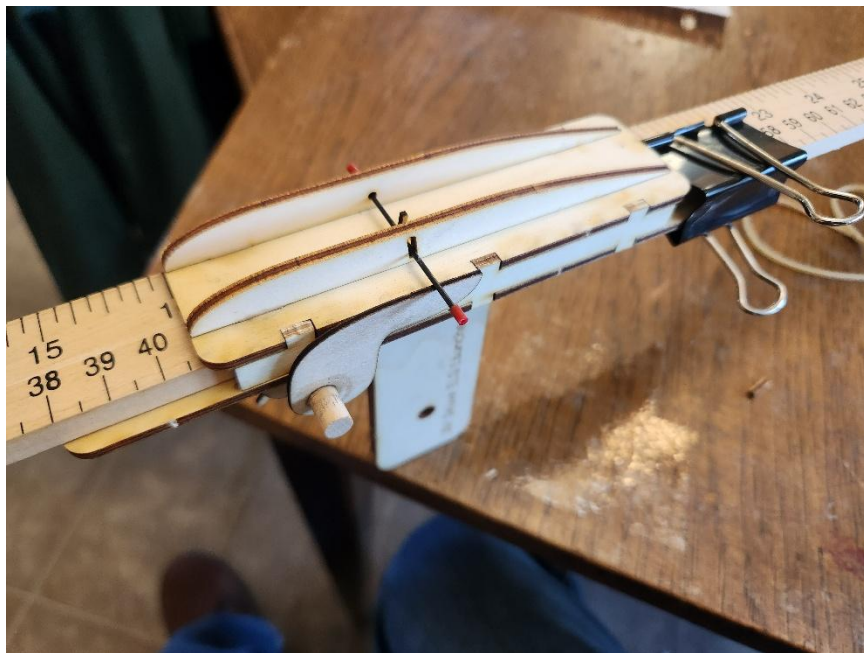
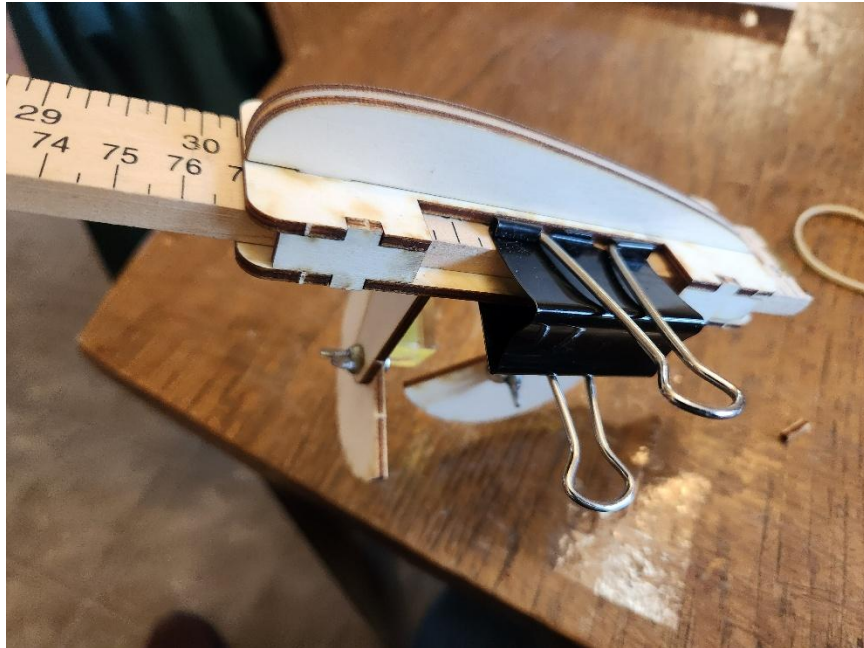
The protractors are shown installed upside down here. Be sure the install them so the arrows on the mounts point to the protractor gages.

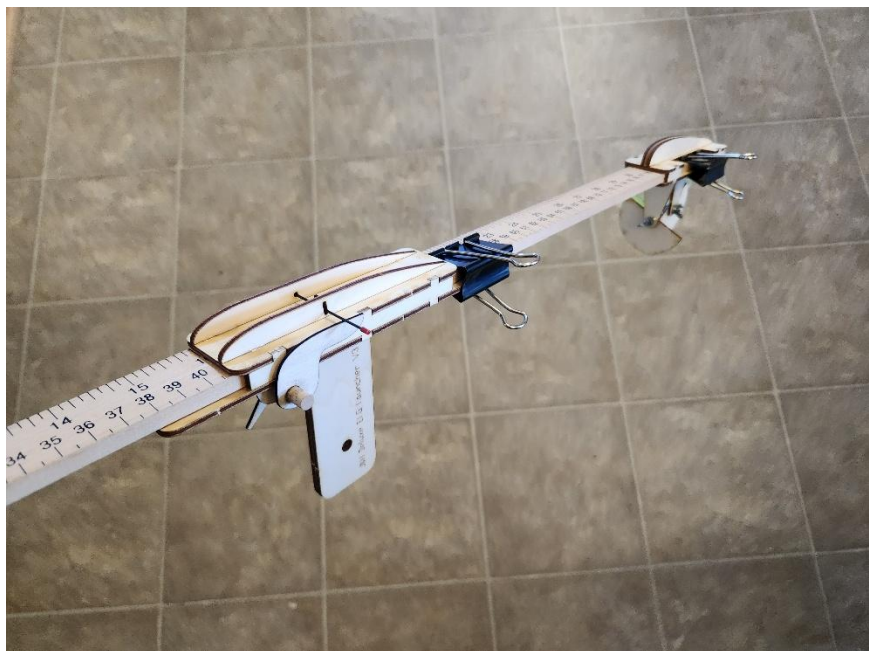


Install the tail guides.



Use binder clips to fasten the assemblies to a yardstick.



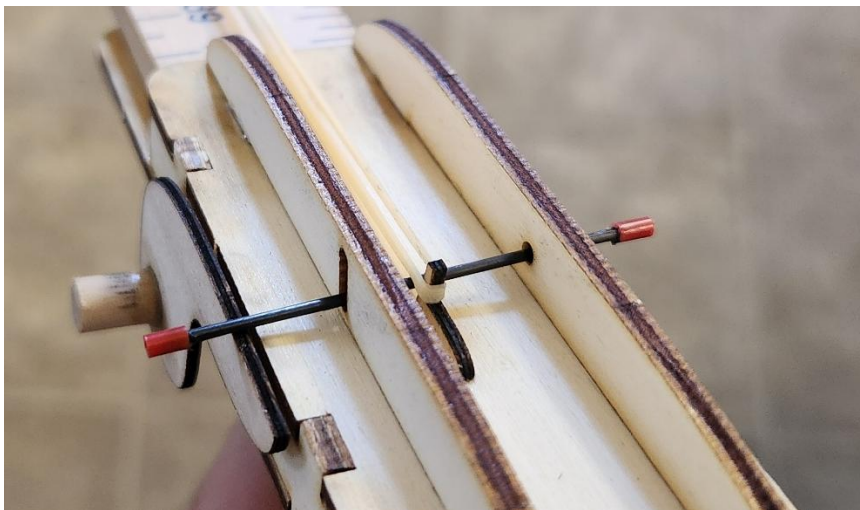


Most yardsticks have a hole on at least one end. Use this for the rubber band made from the included rubbers strip.



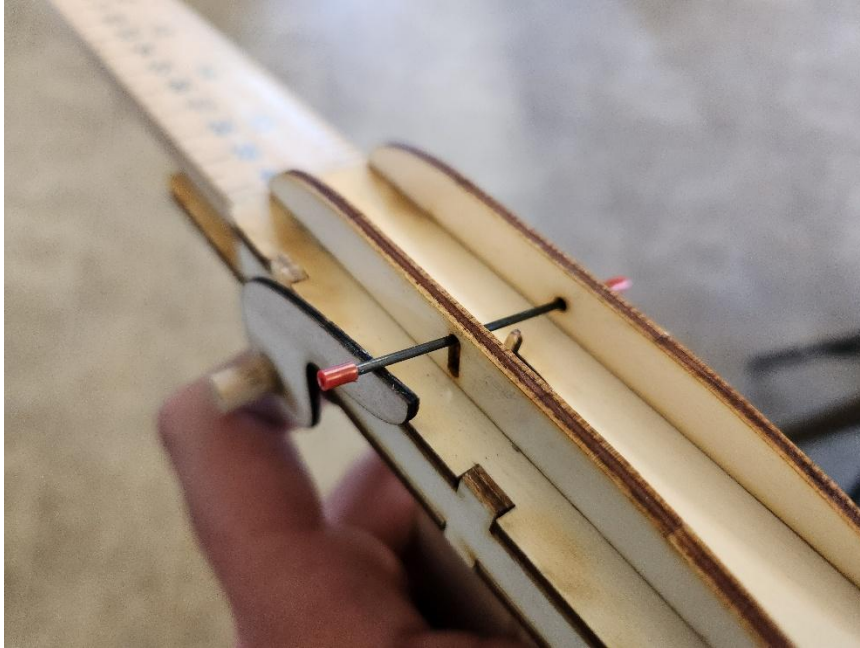


The rubber band latches across the transfer bar onto the sear.



Pressing the trigger raises the transfer bar, lifting the rubber band off the sear.





The handle can be bolted to a camera tripod. If you use a tripod with notched locking plates, disassemble it and cut the notches off so that the camera plate isn't constrained on position.





The hole in the handle matches closely to the 1/4x20 mount bolt for a camera. Note that in competition, the tripod legs must only be extended enough to support the launcher off the floor, as there is a 1 meter maximum length requirement on the launcher.





The glider's hook slides between the sides of the rubber band, resting against the front of the sear. The tail guide should be positioned so that the carbon tail bumper slides neatly into the guides at the back.



