



Joy F5J Glider Build Guide

Joy is a 2.5-meter F5J glider that is provided by the Falcon and Hawk manufacturers in Ukraine.

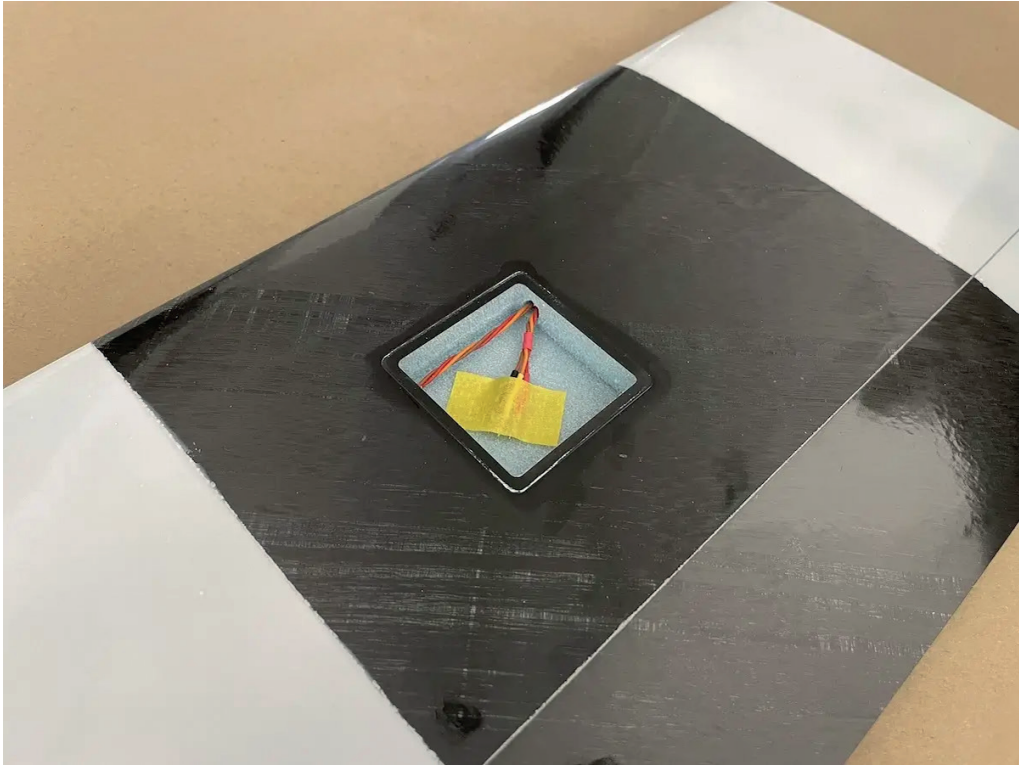
The glider has an extreme flying envelope being able to handle a low-level lift as well as strong winds.

For better convenience, the ballast tubes are located in the wings and allow for a fast weight change during the pause between the competition rounds.

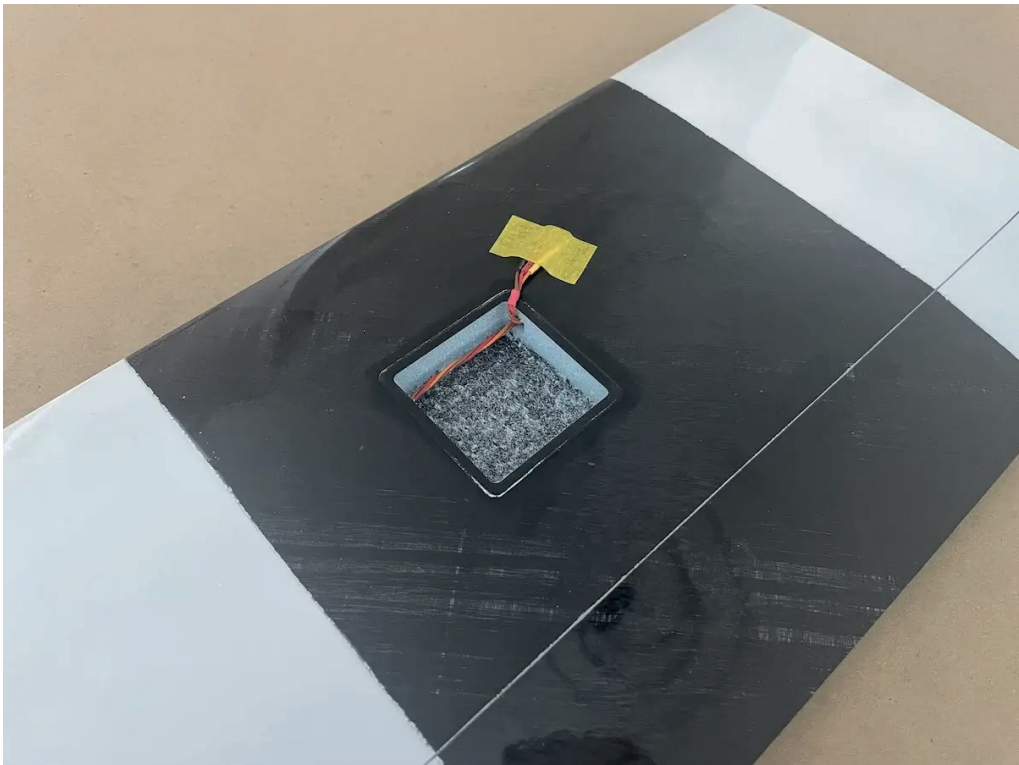
The wingspan is only 2.5 meters which allows pilots to hunt for low-level thermals, just like with the 4-meter ships.

You can purchase this model as a kit and build it on your own or choose a Receiver Ready option and let our professional team build it to your preference – with servos and powertrain.

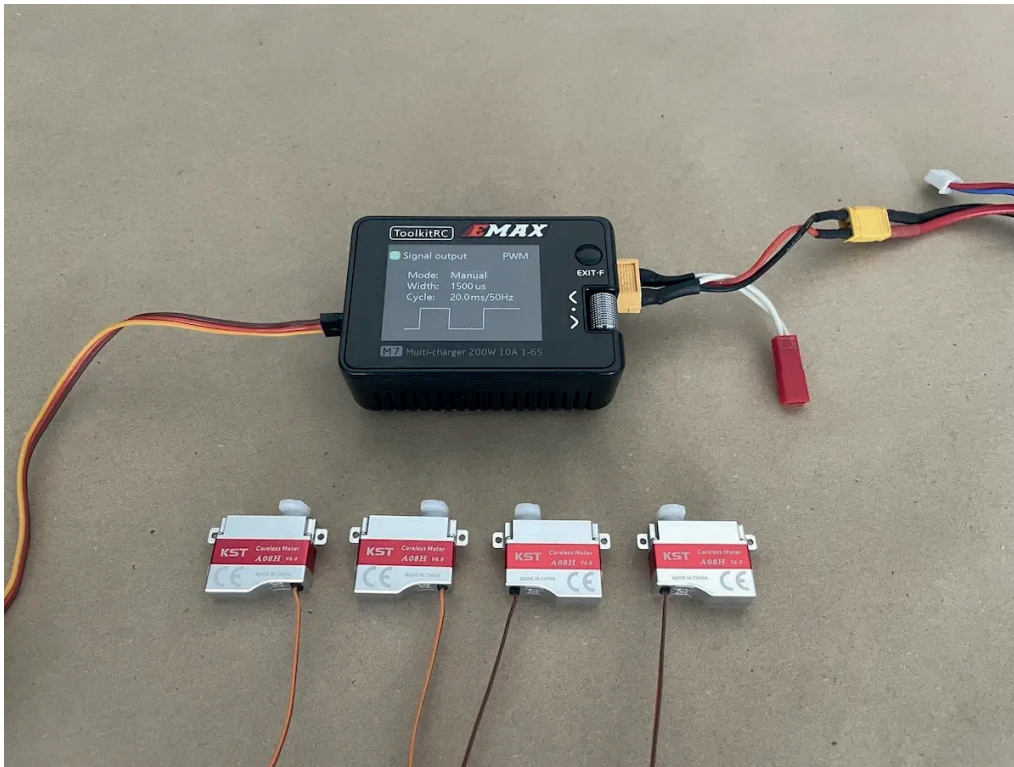
If you prefer to build it on your own, please, refer to the images below.



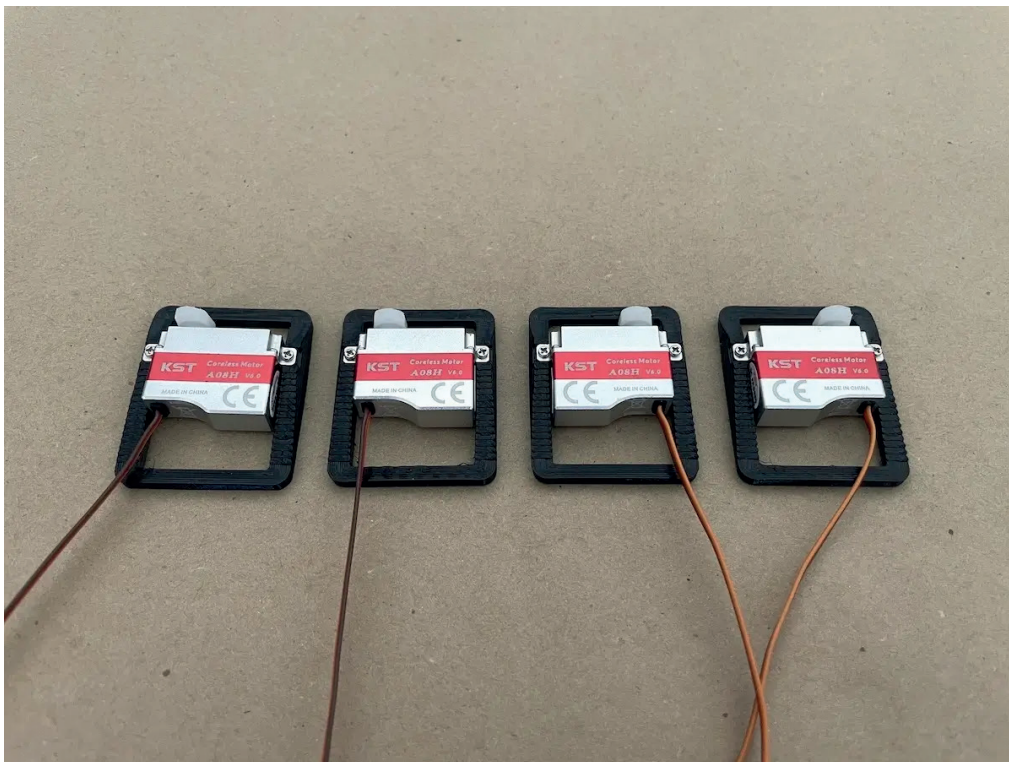
The wing harness comes pre-installed in the wings.



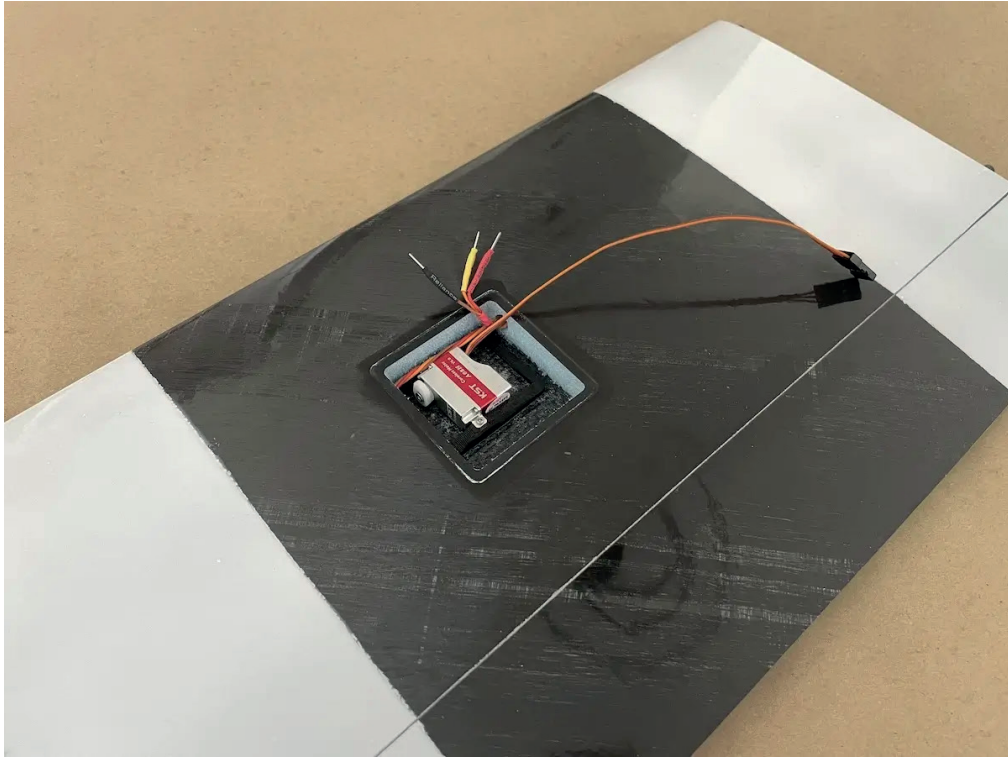
Remove the foam from the servo openings to get the naked carbon skin.



Center the servos, trim and install the servo arms. For ailerons, you might want to make a hole as close to the shaft as possible.



Install your servos in frames.



Glue the frames into the wings.



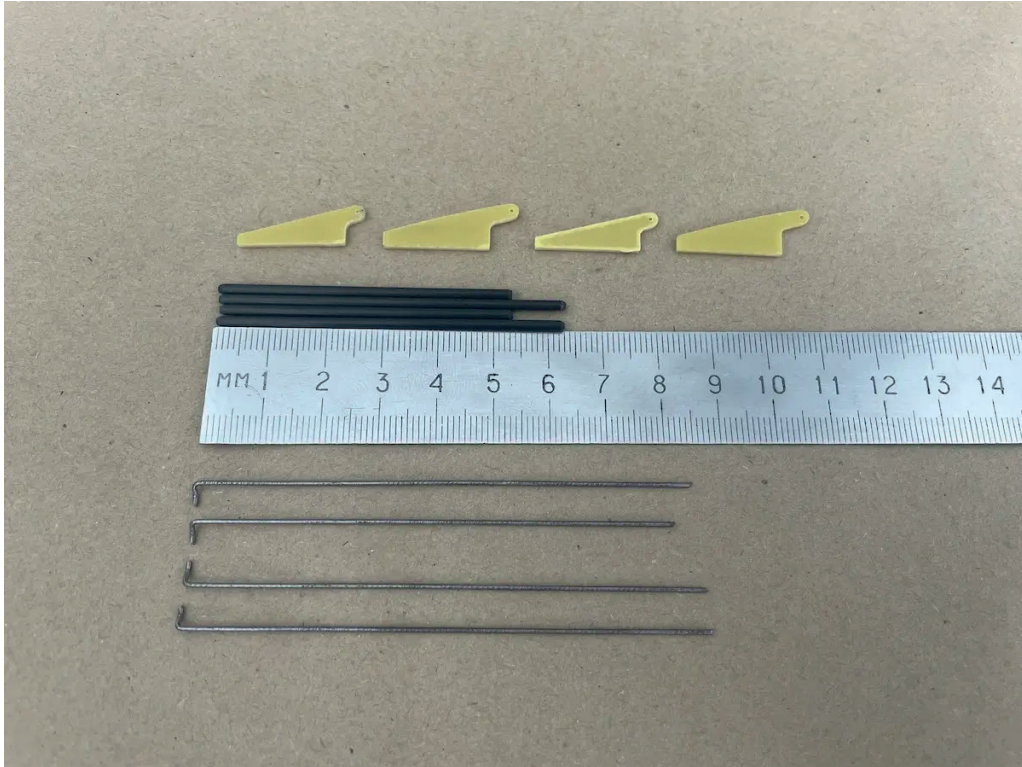
Connect your servos, double-check polarity of the wires.



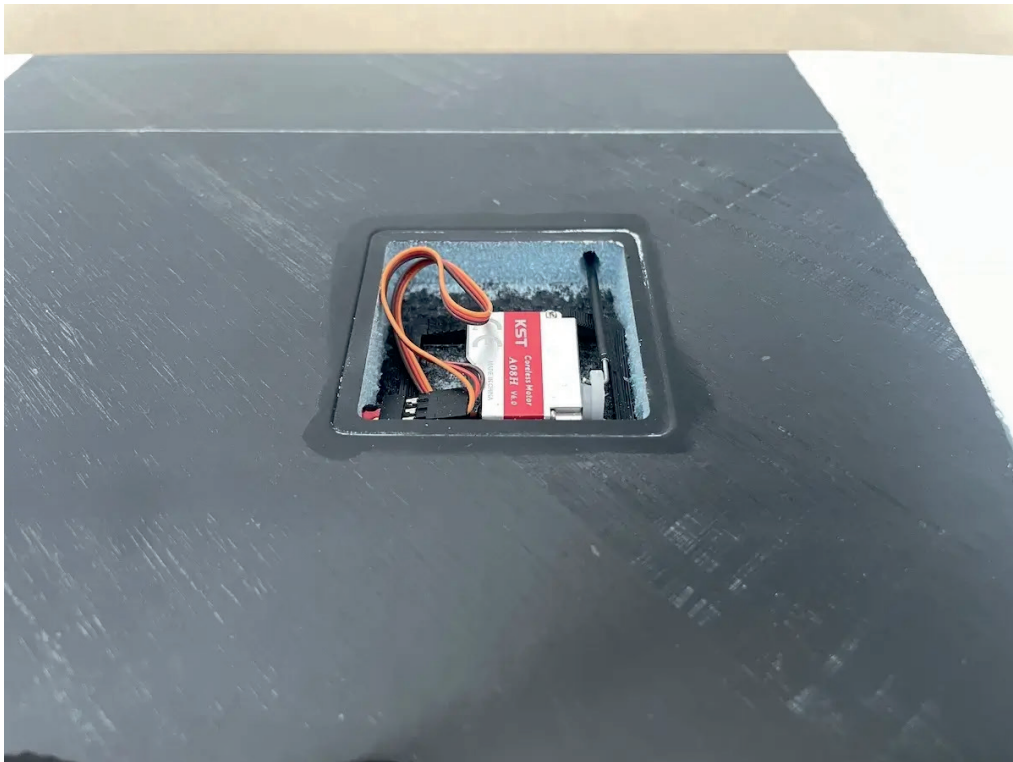
Make a pushrod channel with a provided 2x1mm CF tube.



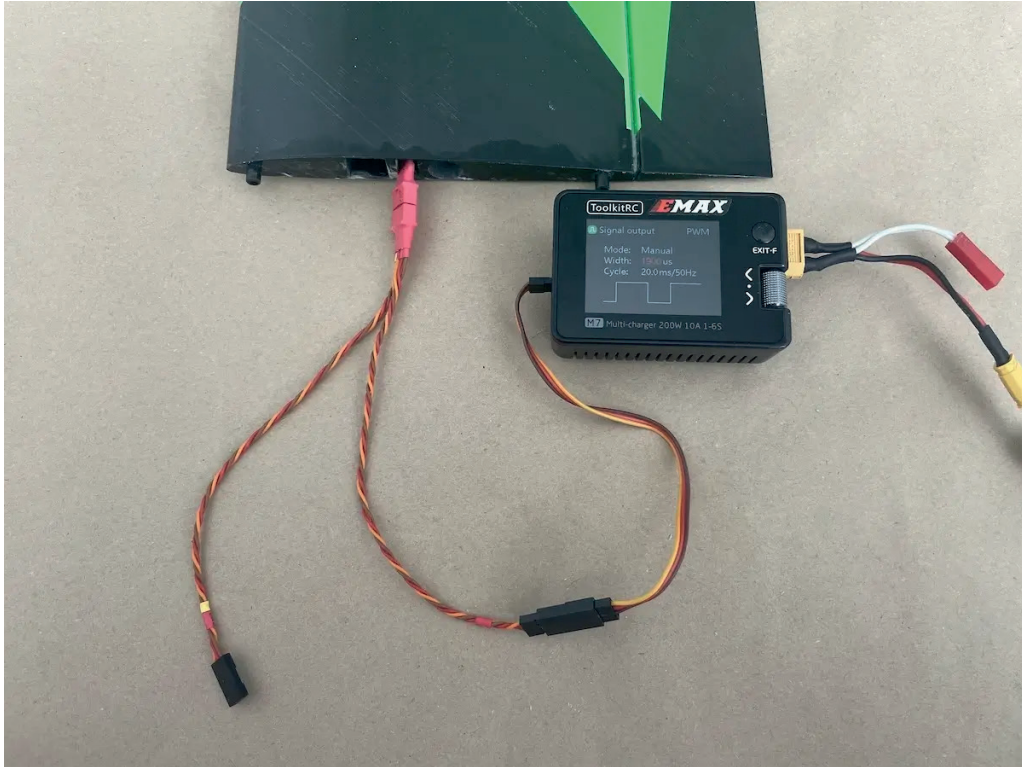
Make sure the CF tube moves freely inside the channel and have some extra vertical gap.



Prepare the pushrod wires, cut 2x1 mm CF tube, and prepare your Control horns.



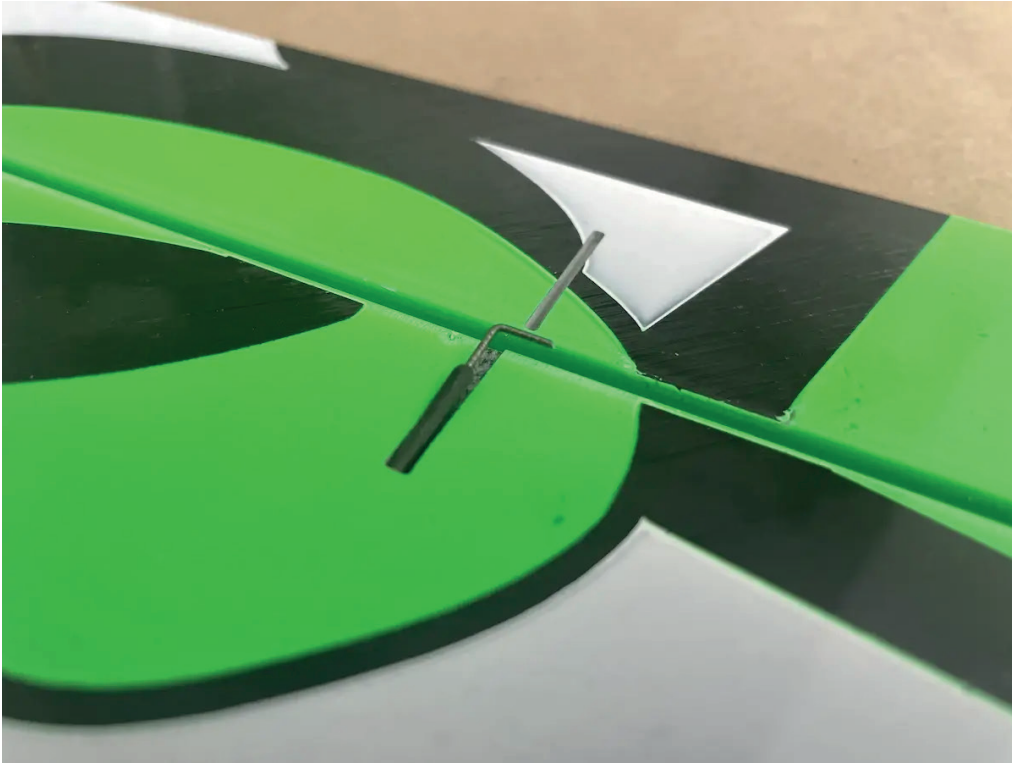
Put the pushrod wire into 2x1 CF sleeve.



Connect your servo to a servo tester with a provided harness and dry-fit your control horns.



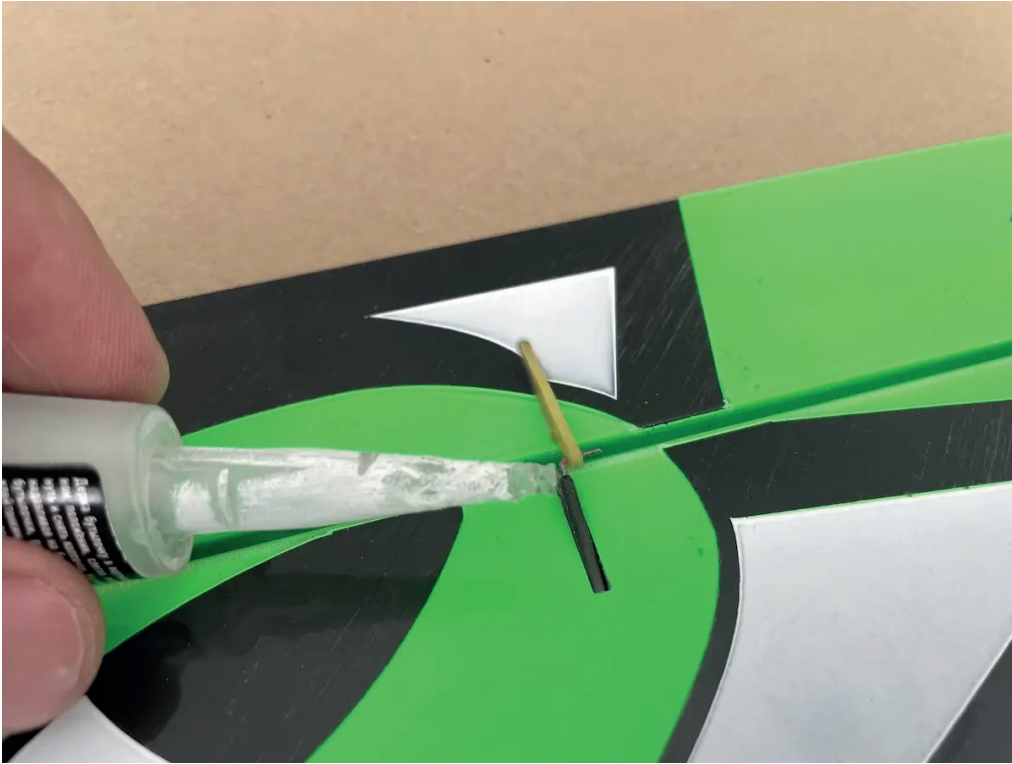
Set Flap servos to Full-Up, move your Flap accordingly, and mark the place where you need to make an L-band. Center the Aileron servo and flatten the control surface with the wing bottom for Ailerons.



Make your L-Bands.



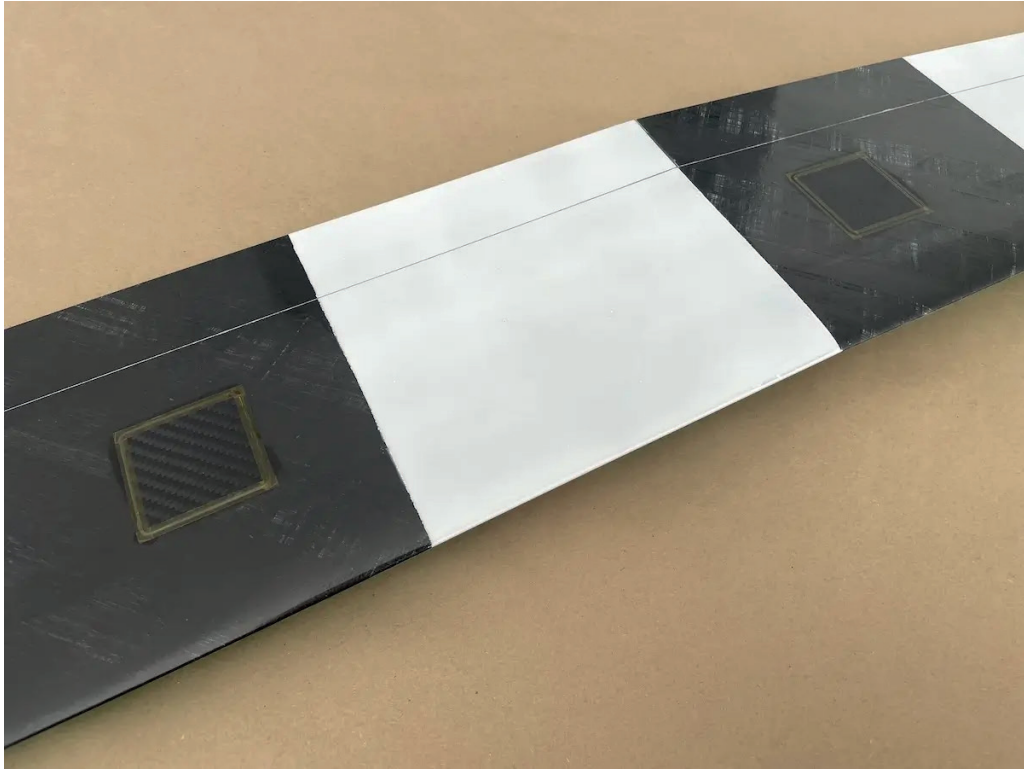
Install control horns onto the L-bands and glue the last in place.



Put a drop of CA on the link to remove any possible slop.



Repeat for all wing control surfaces.



Laslty, install the servo covers.



Find an Elevator control horn.



Mask, mark and cut the opening for the control horn in the elevator.



Clue the horn in place and install the torsion spring.



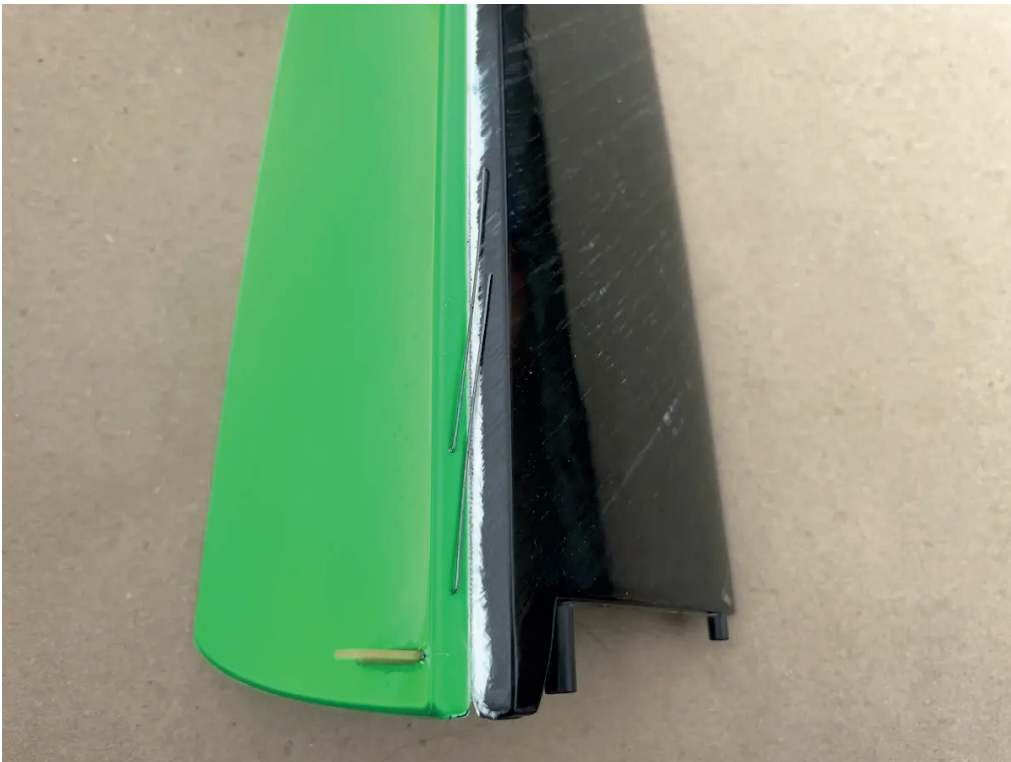
Mask the Rudder and the boom where the cable opening will be.



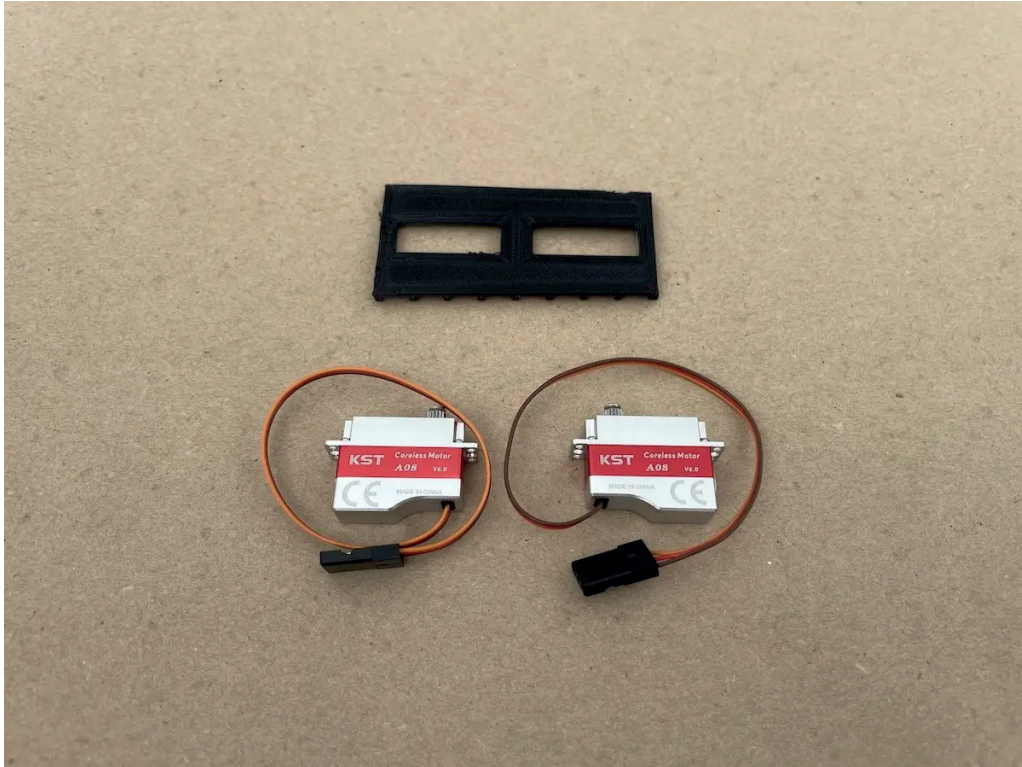
Make an openings with the sharp knife. The rotary tool with diamond bit/disc will come in handy as well.



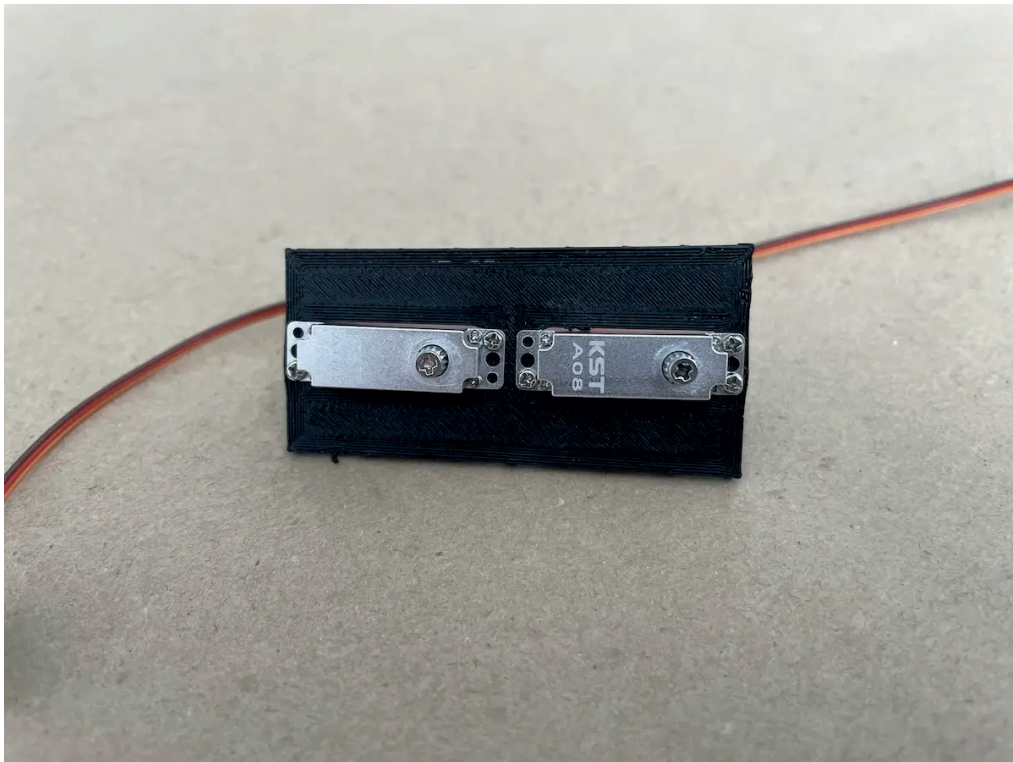
Clue the Rudder horn in place.



Install TWO torsion springs into the rudder to prevent fluttering in high speeds.



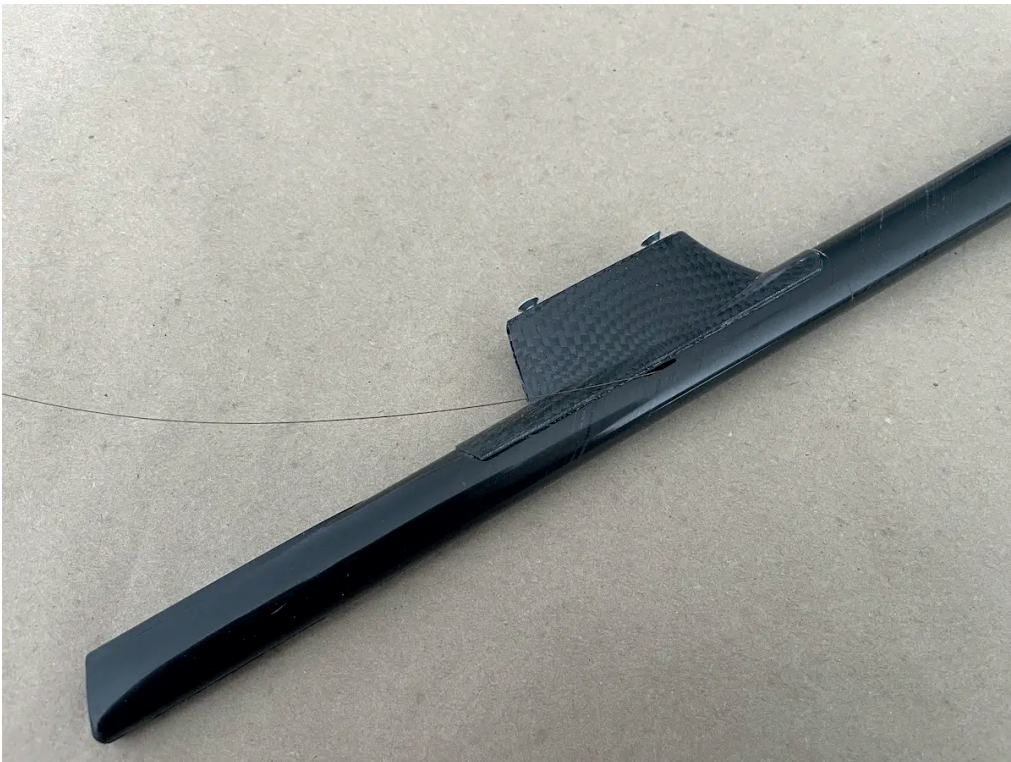
Prepare fuselage servos and a servo frame.



Install your servos.



Position the servo plate inside the fuselage, as close to the "top" of the fuselage as possible.



Push the cable through the opening in the boom.



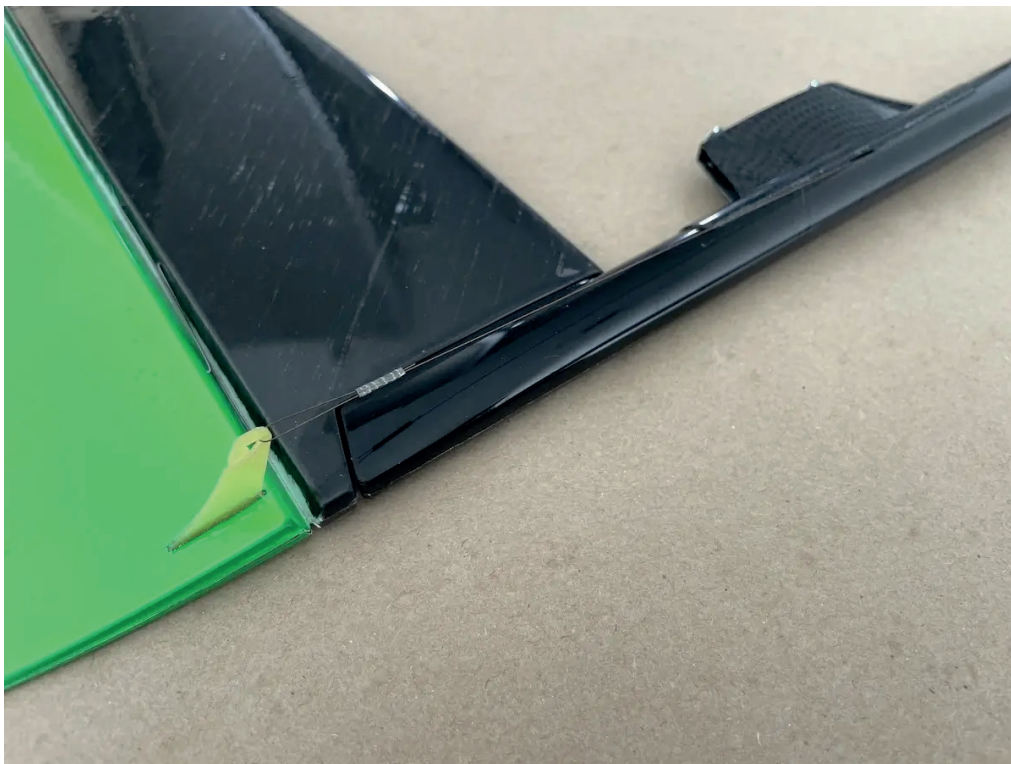
Trim and the Rudder servo arm.



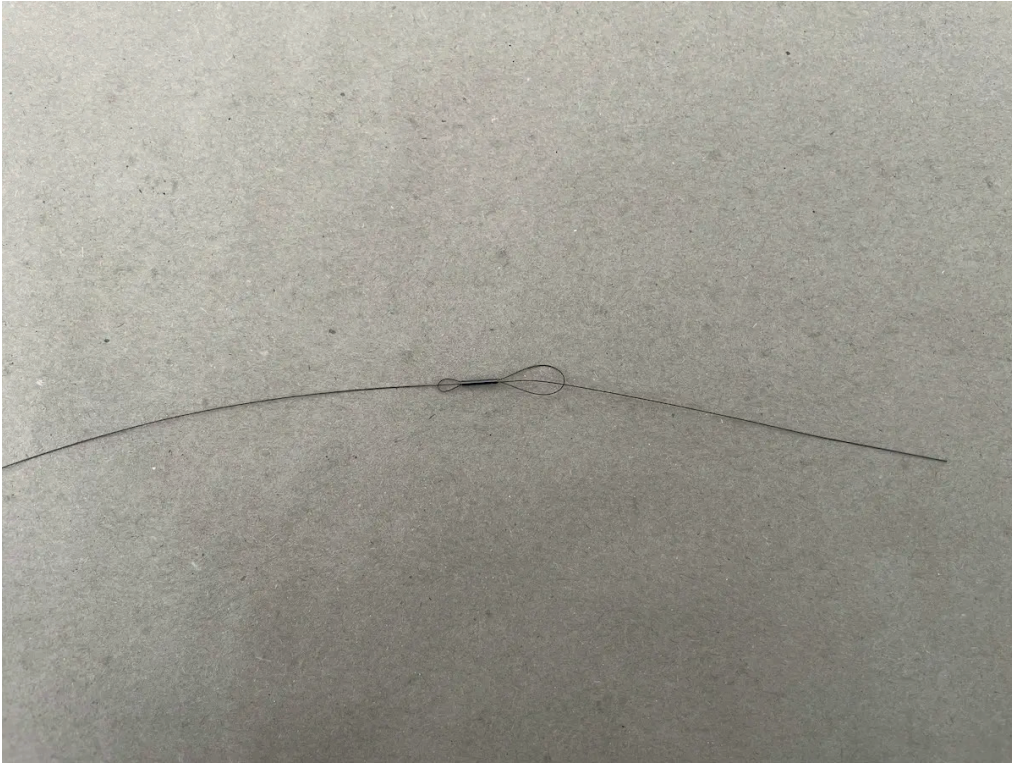
Crimp the cable on the servo arm.



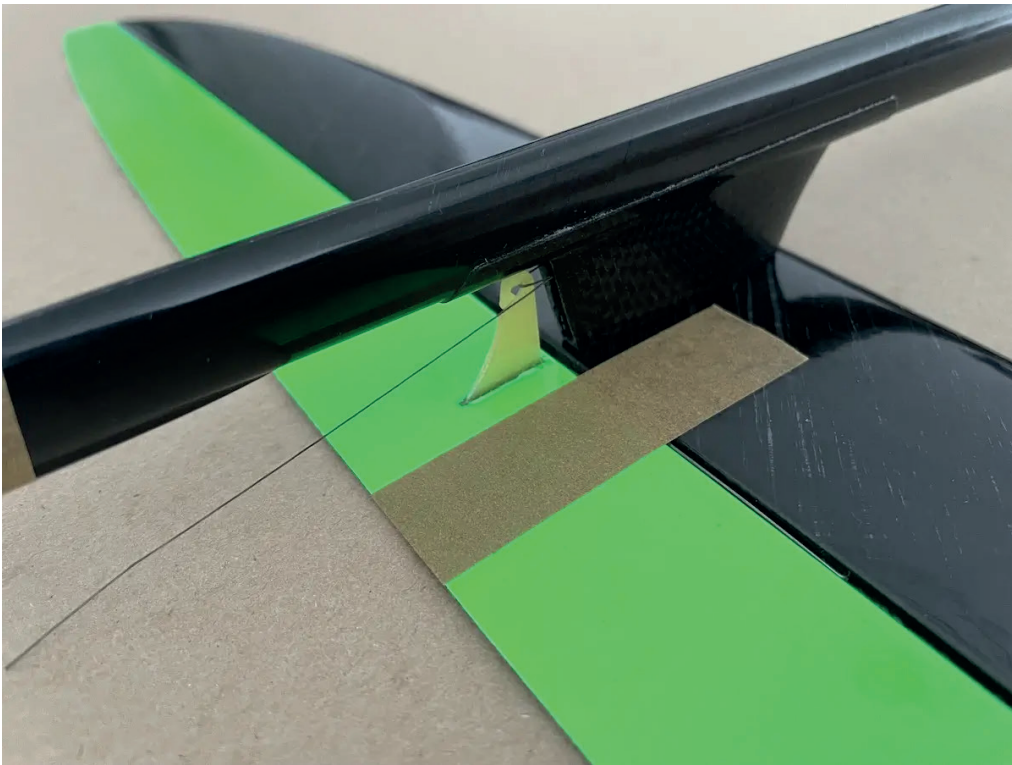
Center the Rudder (rear) servo and install the servo arm on the servo shaft.



Center your Rudder make a nice tension on the cable and crimp it with a provided tube.



Create a loop with a pigtail for the Elevator pull-cable.



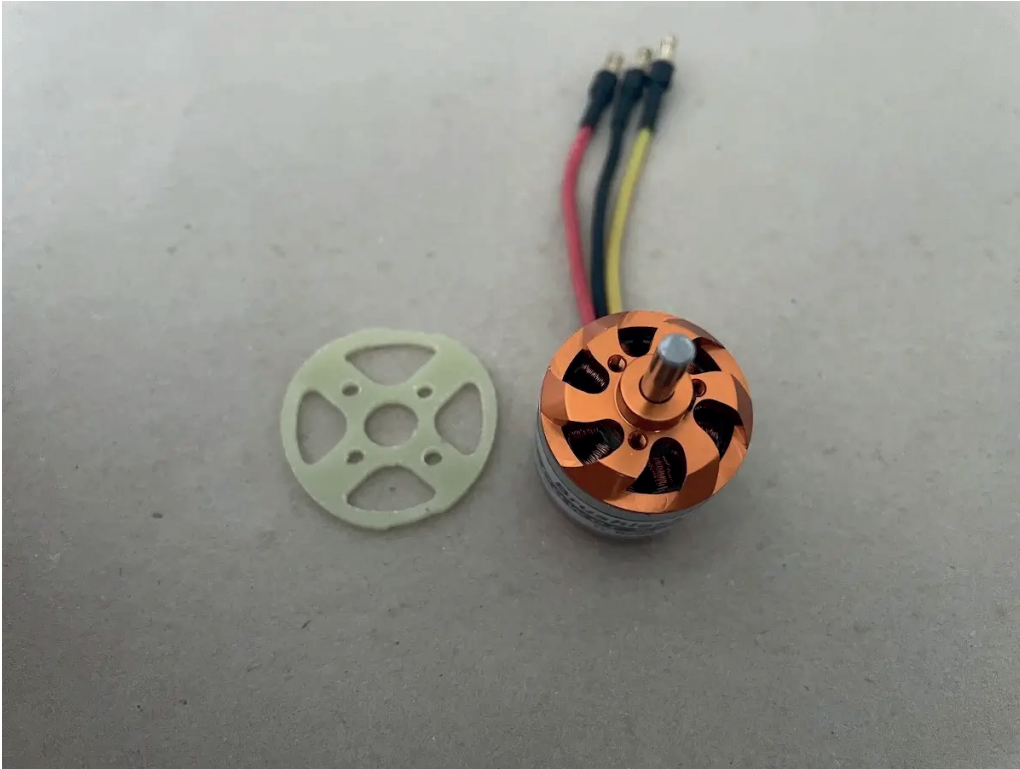
Install the Elevator and hook up the pull cable.



Trim the elevator servo arm, you'll need a long one to have a good deflection.



Center the Elevator (front) servo and install the servo arm. Make nice tension on the cable and crimp it with pliers.



Prepare your motor and firewall.



Put the both parts into the fuse separately and attach the firewall onto the motor once inside. Pay attention to the fuselage seam location and as well as the corresponding spots on the firewall.



Position the motor inside, install your spinner w/ prop, fix it in place and glue the firewall in.



Once done, you'll be ready to install your Rx and battery and start with the radio setup.

Joy F5J Setup Tips

For FrSky or OpenTX / EdgeTX users, we recommend SoarOTX F5J template (<https://github.com/jfrickmann/SoarOTX>) for radio setup.

It is free and extremely easy to use.

Additionally, it provides a flight scoring system that will come in handy during training or simple timekeeping.

Since the wing has a composite construction, check the video below for identifying a “flat” position of the control surfaces relative to the wing body.

Video:

Wing reflection to find control surface center:
<https://www.youtube.com/watch?v=AAKqdpQUMnl>



Recommended throws and camber settings

For the initial setup, please, use the following recommendations on the settings and adjust them depending on your preference.

| Joy F5J Control Throws and Camber Settings | |
|--|--|
| CG Position | At the ballast tube spot in the wing |
| Rudder | +/- 25mm |
| Elevator | +/- 15mm |
| Ailerons | +/- 14mm (Ail to Flap: +/- 6mm) |
| Brakes | Flaps: 25-30mm down, Ailerons: 15mm down or 7mm up |
| Cruise | Flat bottom of the wing (0mm) |
| Speed | 1-3mm up |
| Thermal 1 | 3mm down |
| Thermal 2 | 8mm down |

Happy flying!