

BAMF 2 Assembly Instructions

Parts and Materials List

Included Hardware:

1. 3D launch blade *1
2. Wing control horns *2
3. Rudder control horn *1
4. Stabilizer control horn *1
5. Wire for springs *2
6. Wire for pull-string *1 length
7. Crimps for pull-string *4
8. Wing pushrod sleeves *2
9. Wing metal pushrods *2
10. Wing bolts *4
11. Tail bolts *2
12. Ballast clip *1
13. Ballast tube *1

Equipment needed to complete the BAMF 2 assembly:

1. 1S LiPo battery, 400-800 mAh capacity.
2. Small full range receiver with end pins, dual antennas highly recommended. The following have been tested to fit: FrSky GR6, G-RX6, FrSky X4R, Spektrum AR410, AR6610T, Futaba 3004SB, Jeti R4L, Jeti R5L.
3. 4* KST X08N(A08N) servos (no tabs).

Supplies and equipment needed to assemble the BAMF 2:

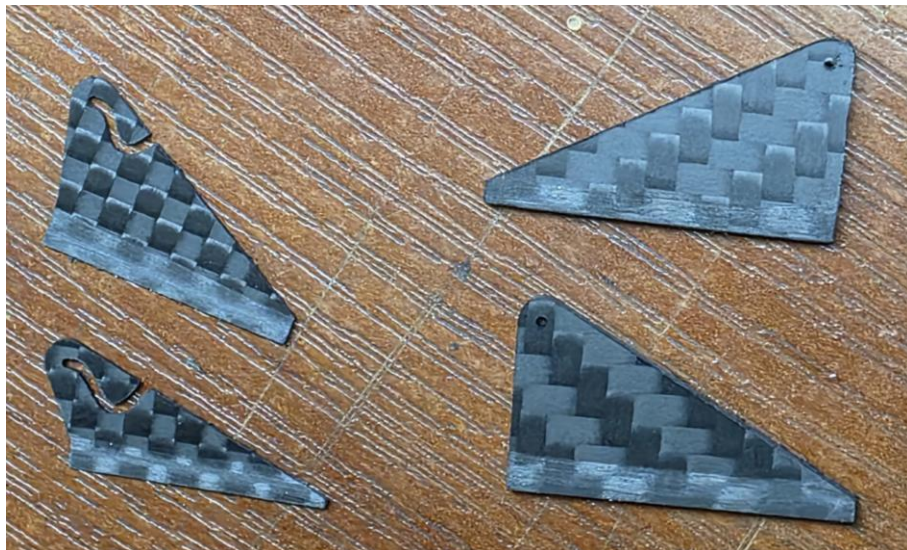
1. Model knife (X-acto #11, etc),
2. Masking tape
3. Pen
4. Straightedge
5. Dremel
6. Pliers
7. Small file (flat and round)
8. Phillips screwdriver
9. Superthin CA
10. Medium CA

Wing

Remove the rest of foam from the CNC cutted slots for control horns with a knife.



Roughen the surface of the control horn by scoring with a knife then clean the surface with rubbing alcohol to rid it of dust and grease.



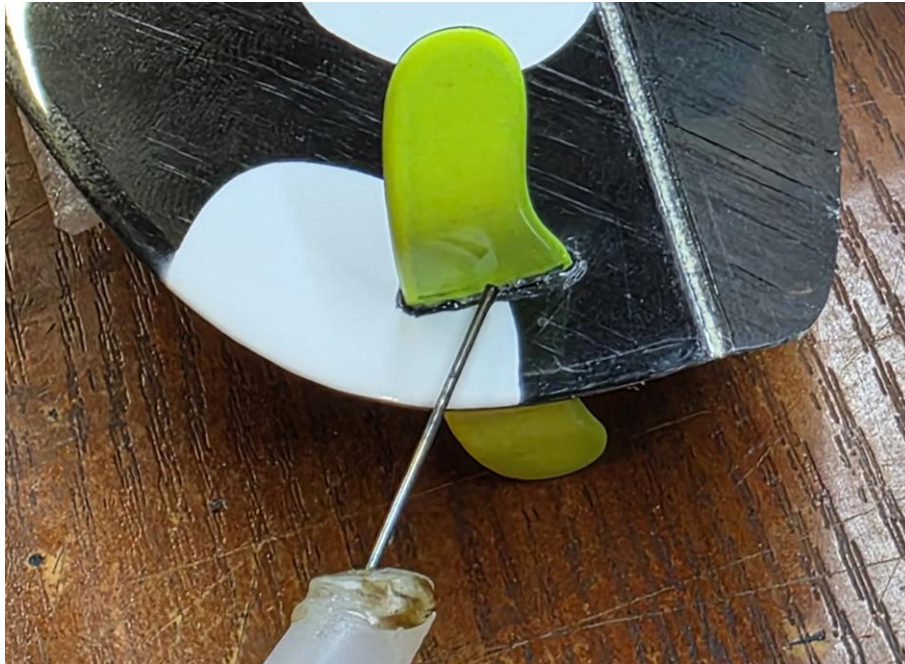
Slip the control horns into the slot, and make sure the control horns are parallel to each other going straight up and down (not normal to the wing surface). Glue with superthin CA, let cure, and make a small fillet with medium CA.



Rough up the centre of the blade and clean with rubbing alcohol.



Install the blade into the wingtip, double check to make sure alignment is to your preference, and glue with superthin CA. Glue by wicking in superthin CA into the joint from the top, let cure, and repeat from the bottom. Allow each layer to cure before adding the next drops. Build up a small fillet using medium CA.



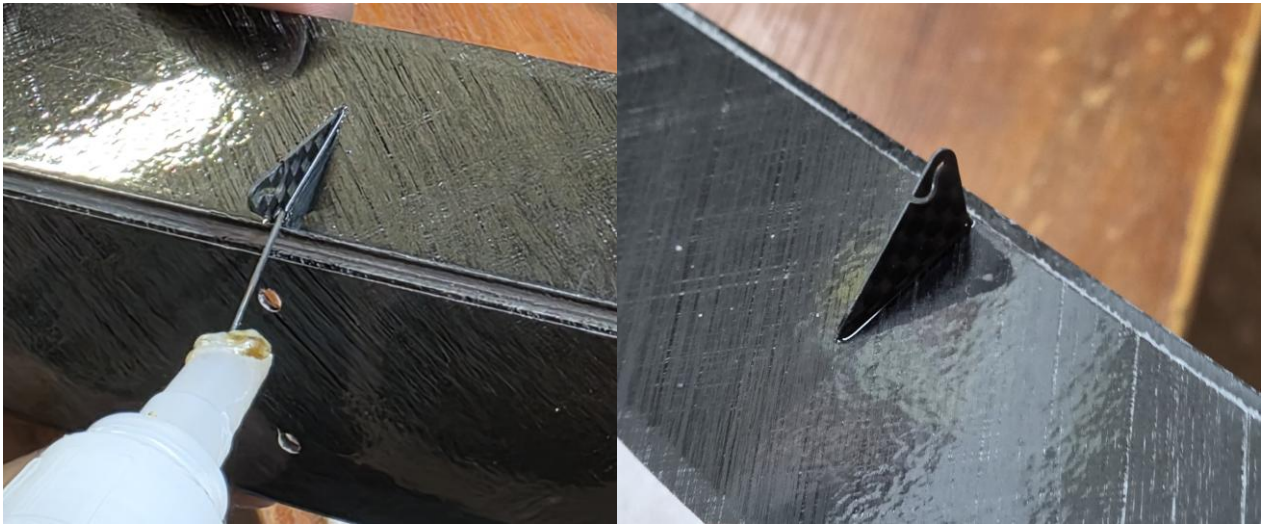
**Optional, if you feel CA is too brittle, you can substitute the medium CA with epoxy for the fillet.*

Tails

Remove the foam within the slot. Be careful to not cut through the opposite carbon skin.



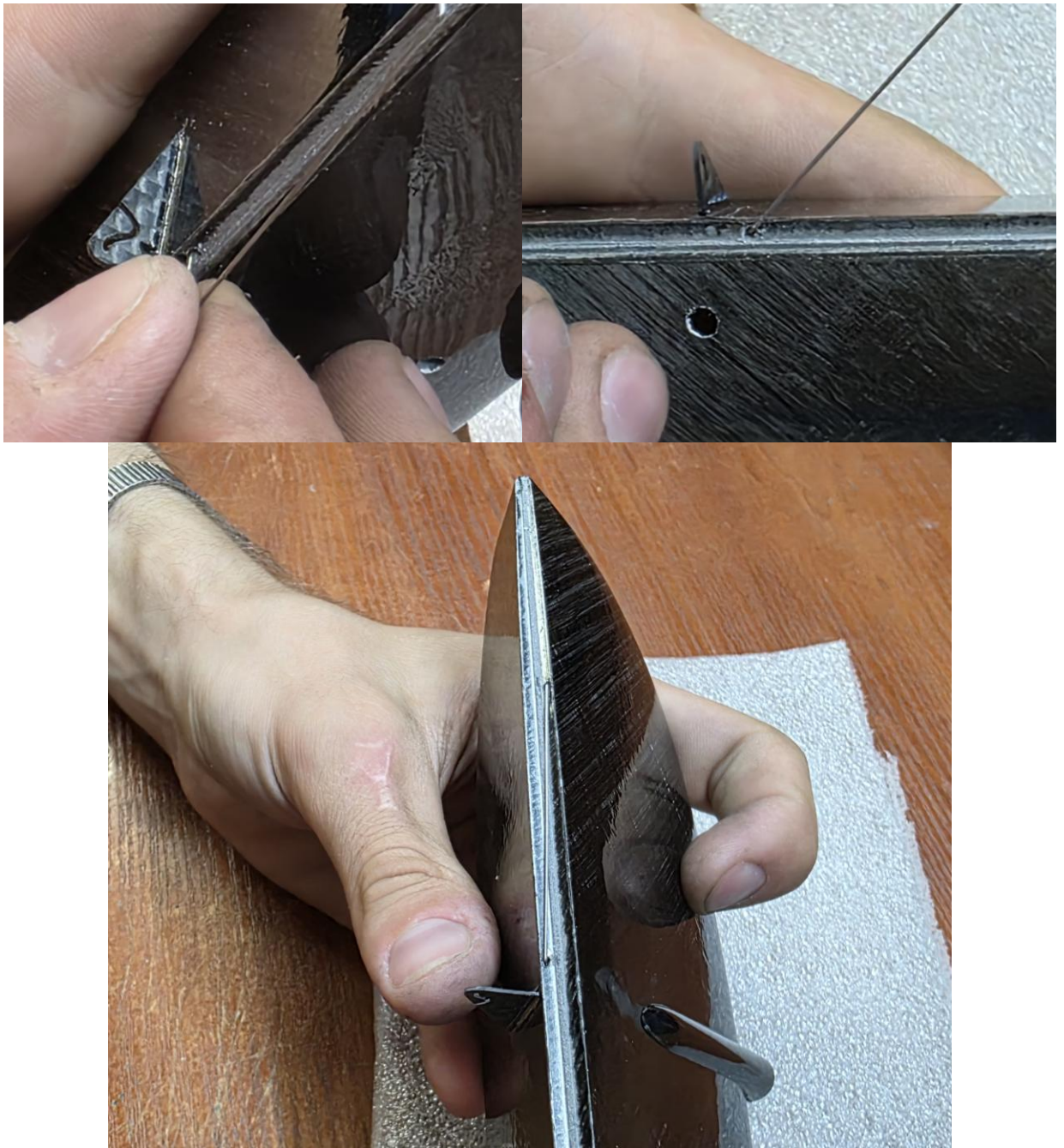
Roughen the tail control horns, and clean thoroughly to remove dust and grease. Insert the slotted control horn into the elevator slot and insert the other control horn into the rudder slot. Glue the control horns with superthin CA, let cure, and create a small fillet with medium CA.



Bend the two springs as shown.



Bend the stabilizer 180 degrees around the hinge. Poke two holes into the stabilizer pre-faced hinge to insert the spring and insert spring to make sure it fits properly. Remove the spring and make a little chamfer on the slots dip each leg into white Gorilla Glue, then reinsert into the tail (or insert and glue with superthin CA). Repeat for rudder.



Note, the hole for the control surface side should be as close to the control horn as possible, so the spring forces can be transferred to the control horn and wire directly, preventing twist from developing on the thin surfaces.

Note 2, the white Gorilla Glue expands and foams up as it cures. This helps the concentrated load from the thin spring wire spread to a larger surface so it doesn't rip through the core material and potentially poke out the skins.

Fuselage

Rough up the ballast tube and the spot for gluing inside the fuselage.

Place ballast tube inside and align under the middle of opening. Glue with CA.

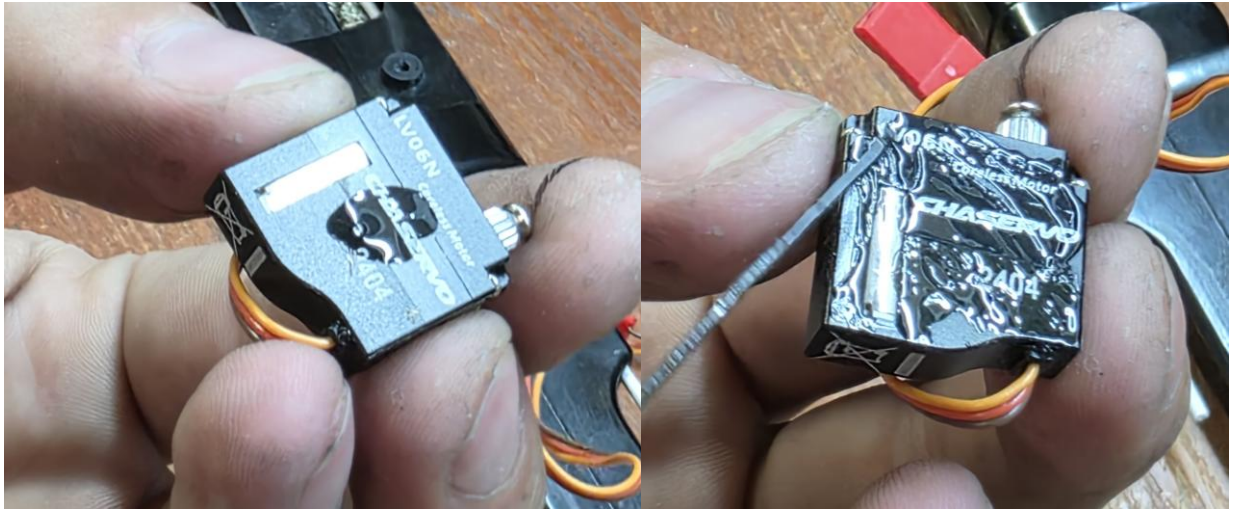


Mount the wing and tails to the fuselage.

Arrange your battery, receiver and servos in the nose with tape. Put on the nosecone and check the CG. Redo this step until you get the model to balance at your desired CG without additional nose weight. Mark carefully where your servos are to be installed.

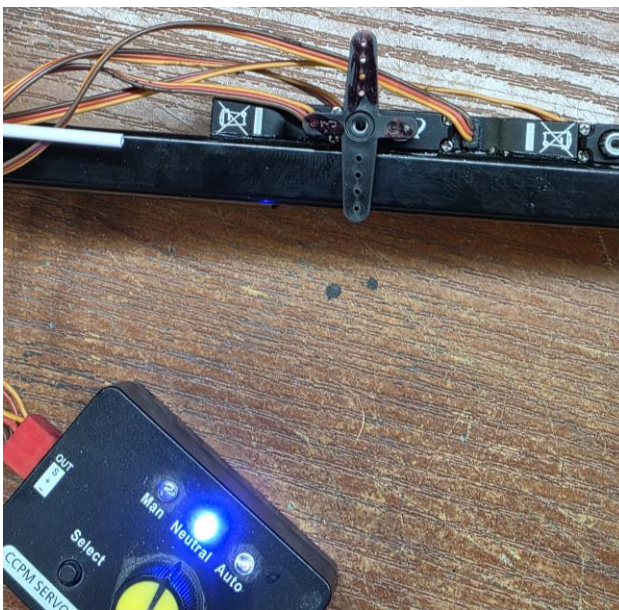
Remove gear. Rough up the servo cases and wipe clean with rubbing alcohol. Glue the servos to the fuselage using medium CA.





Note, make sure the servos with the arms are in line with where the pushrods will be installed so the pushrods will be as straight as possible.

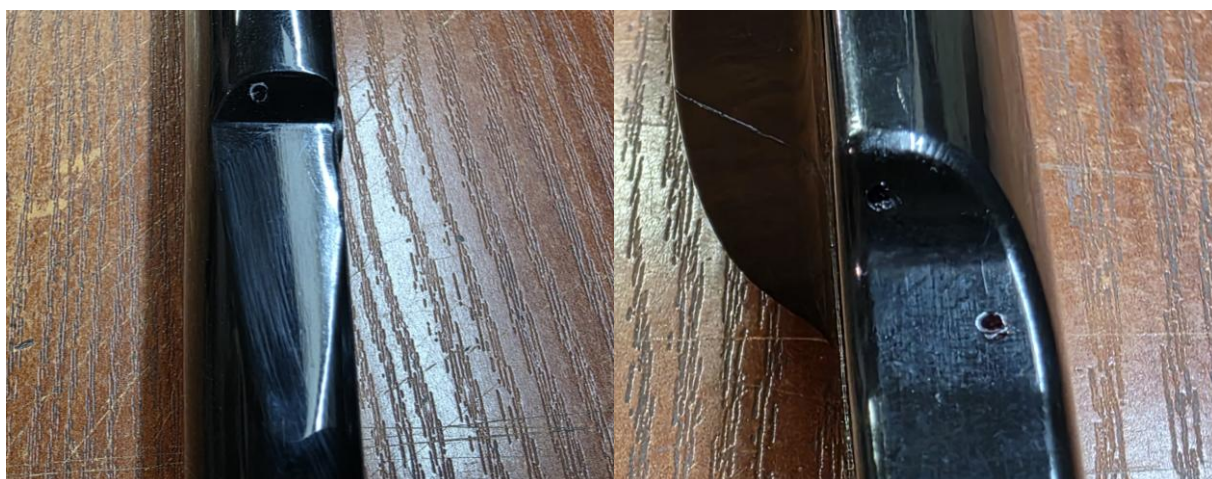
Plug in the aileron servos (either the front two or rear two, depending on your preference) to a servo tester and set it to the center position. Put on the cross shaped control horn and choose from one of the two larger legs. Choose the leg that gives a more perpendicular position relative to the fuselage. Cut the rest of the legs.



Drill a thin slot on the back of the elevator pylon, this is for the elevator control horn and wire to go through. Make the slot thin and shorter, extend later as required to pass the horn though with the stabilizer mounted. This will allow you to have a cleaner opening, without removing too much material.



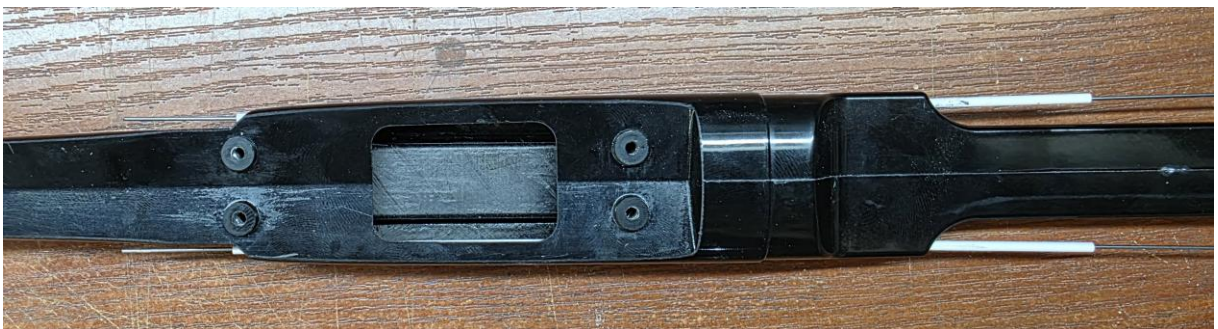
Tape the front and rear fairing on the fuselage for the QuikLink pushrods, and mark out the edges of the fairing. Mark down where the openings for the pushrods are to be cut.



Cut the holes for the pushrod using a Dremel. Start small and expand as needed to prevent removing too much material.

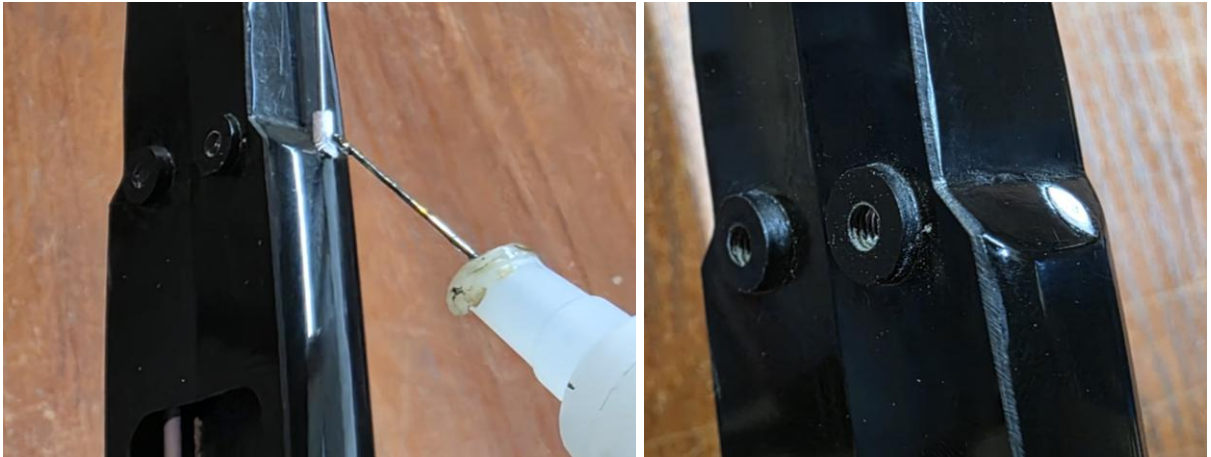


Feed in the white plastic tube through the front and rear holes and ensure it is straight. Do NOT glue anything yet. Put in the pushrod material and make sure it's straight and aligned to both the servo arm and wing control horn. Double check to ensure the tube is straight and there is minimal friction when sliding your pushrod through the tube. Adjust holes as necessary and repeat until satisfied.



Note, if it's not straight or there is friction when moving the pushrod through the tube, it will cause double-centering of the control surfaces.

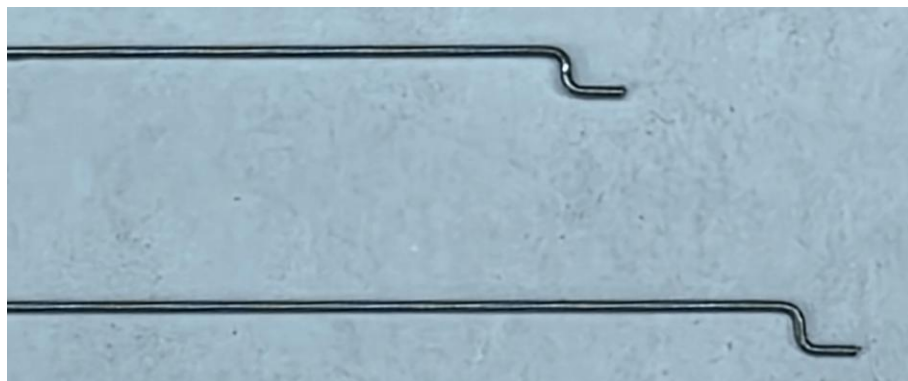
Once you are completely satisfied, put a drop of superthin CA at the rear opening and front opening to glue the tube tightly to the fuselage.



Optional, for strong launchers, you can also add a small piece of balsa or foam through the top fuselage opening to give additional support to the tube. Again, please ensure the tube is friction-free and straight by moving the pushrod back and forth before gluing the additional support.



Bend the wing pushrod front ends as shown.

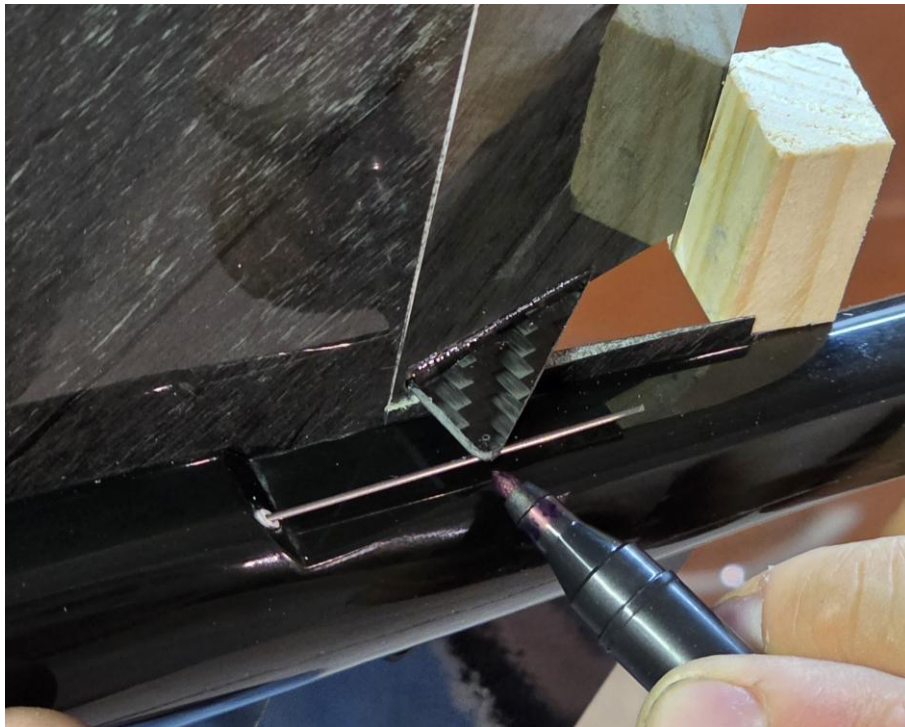


This end hooks to the servos arms. Hook both pushrods to the arms and attach to servos in neutral position.

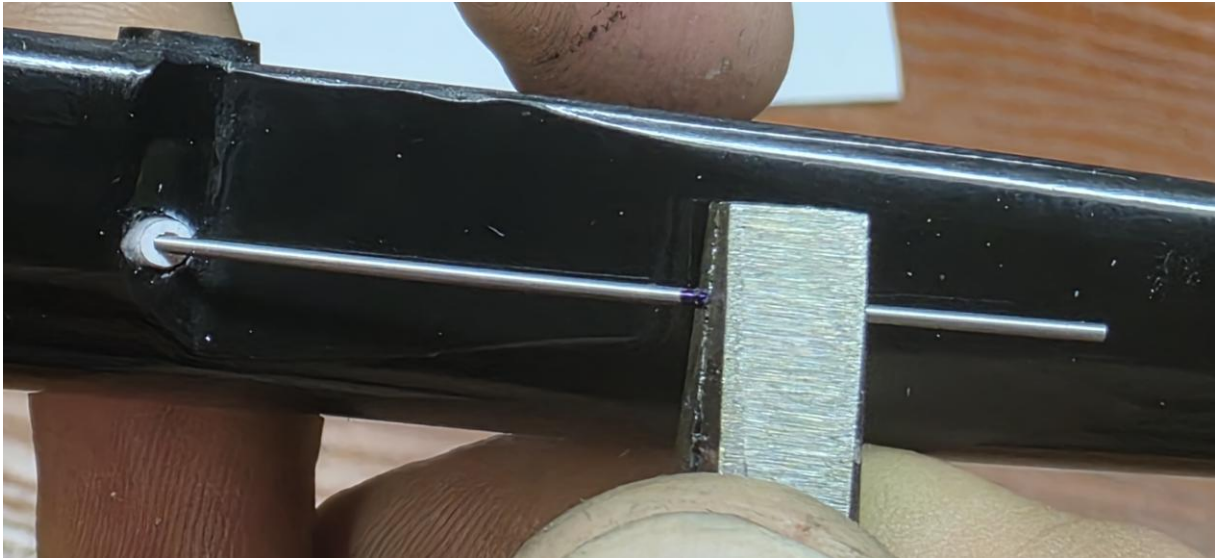
Plug the wing servos back into the servo tester and return servos to their center positions.

Make a small piece of balsa for offsetting the flaperons to their maximum UP deflection. Make your block 20mm wide by 15mm tall, this will give you a maximum 15mm up aileron deflection in the installation. This allows the rest of the travel to be used for braking, using 100% of the servo's potential.

Set the left wing servo to max up travel, mark hole location on the pushrod. Repeat for the right wing servo/pushrod.

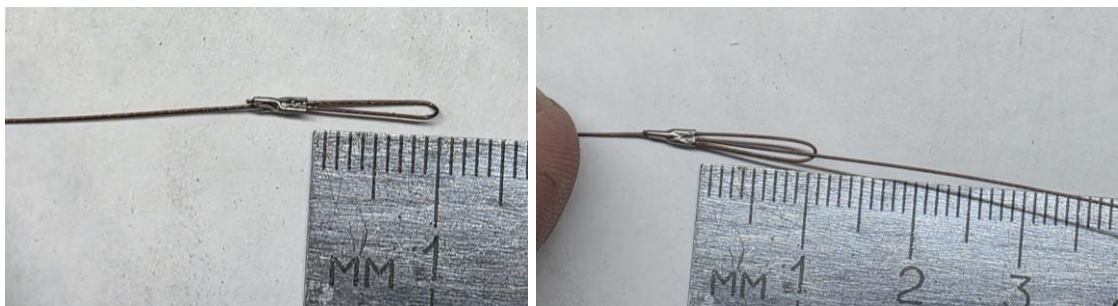


Return the servos to their center position. Use a small set of pliers to bend the pushrod at your marked positions, and cut the excess. Hook up the pushrods to the control horns.

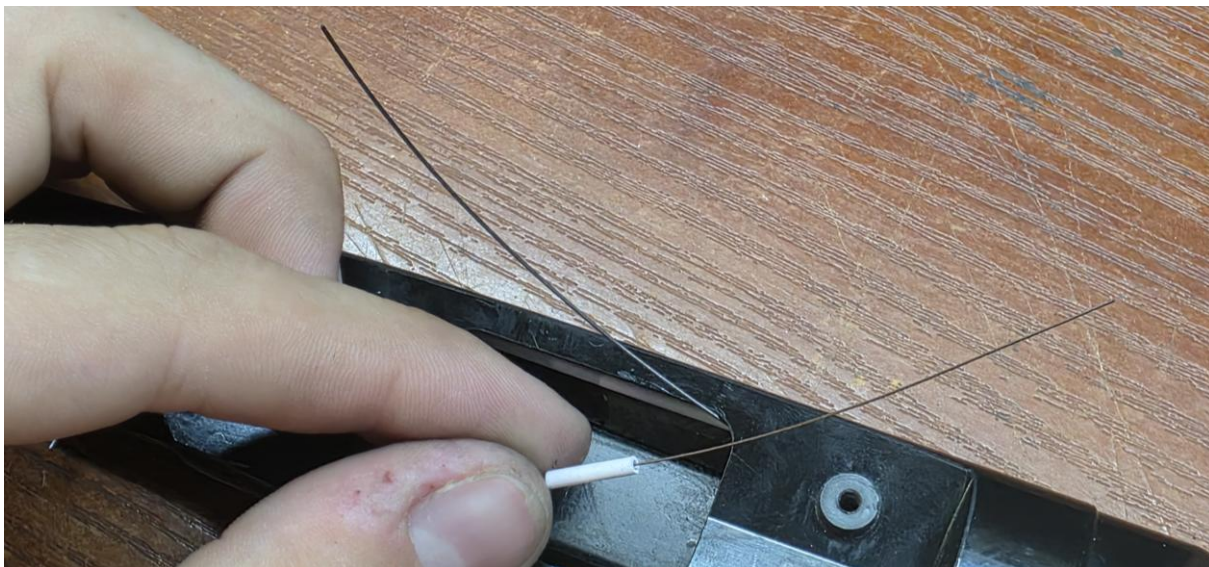


Tip, to ensure both flaperons are symmetrical, place the marked line on the pushrod right to the edge of your pliers. Repeat for second pushrod.

Take the wire material and thread one crimping tube as shown. The left over length is for you to fish out the wire in case the loop goes into the fuselage when the stabilizer is not installed. Crimp the tube hard using a pair of pliers, and reinforce it with a drop of superthin CA.



Thread the line into the fuselage from the elevator pylon to the opening under the wing. Put 10mm plastic tube on the wire. To thread the wire into the front hole you can use a piece of still wire as it shows below.



Hook the elevator control horn into the wire loop, and bolt stab to fuselage.

Thread the wire through the pulley (or servo arm) as shown, pull the wire and wrap it around the screw 3 times (or fix using crimping tube). Ensure servos are powered and the elevator servo at max travel of elevator UP deflection (note the stab is bottom mounted). Start to tighten the screws. You can adjust the wire length to make sure the elevator is deflected perfectly, with it just touching the boom. Once the servos are centered, the elevator should be in a slightly down position. Similar to the wing installation, this allows you to use 100% of the servo travel and gives you lots of push-down travel at the top of launch. Trim wire length, and glue with a drop of medium CA as shown.



Optional, this assumes a glued-on vertical tail. If you are installing the fin as a removable fin, skip next steps.

Sand the boom and clean off all dust and grease. Insert vertical into boom, making sure the rudder control horn is on the side facing away from the throwing blade. Once you ensure it is at the correct angle, glue with superthin CA. Allow it to wick into the joint and cure.

Thread the rudder wire into the fuselage. Then, put on a crimping tube, pass it through the rudder servo control arm hole, and back through the crimping tube. Crimp and glue like the elevator wire with the exception that the servo should be centered, and the rudder should be installed centered.

Initial Setup

These are our latest settings and will be updated as we find better settings. Please treat it as a starting guide.

CG:

- Super calm conditions: 69mm
- Regular conditions: 67mm
- Very windy and turbulent conditions: 64.5mm

Camber:

- Preset: 0mm (flush)
- Zoom: 2mm up
- Speed: 0mm (flush)
- Cruise: 3mm down
- Thermal 1: 6mm down
- Thermal 2: 8mm down

Aileron deflection (measured from root tab):

- Speed: 6mm up, 8mm down
- Cruise: 6mm up, 13mm down
- Thermal 1: 5mm up, 18mm down
- Thermal 2: TBD

Elevator deflection:

- Speed: 6mm up, 8mm down
- Cruise: 10mm up, 10mm down
- Thermal 1: 11mm up, 11mm down
- Thermal 2: 11mm up, 11mm down

Rudder deflection:

- 10mm each way

Snap flaps (Elevator to camber mixing):

- 1.5mm with full elevator deflection

Aileron to rudder mixing:

- 5mm rudder with full aileron deflection