

Deviant 2 DLG Assembly Instructions

Parts and Materials List

Included Hardware:

1. 3D launch blade *1
2. Wing control horns *2
3. Rudder control horn *1
4. Stabiliser control horn *1
5. Wire for springs *2
6. Wire for pull-string *1
7. Crimps for pull-string *4
8. Pull-string guide tubes *2
9. Wing metal pushrods *2
10. Wing carbon pushrod sleeves *2
11. Wing bolts *3
12. Tail bolts *2

Equipment needed to complete the Deviant 2 assembly:

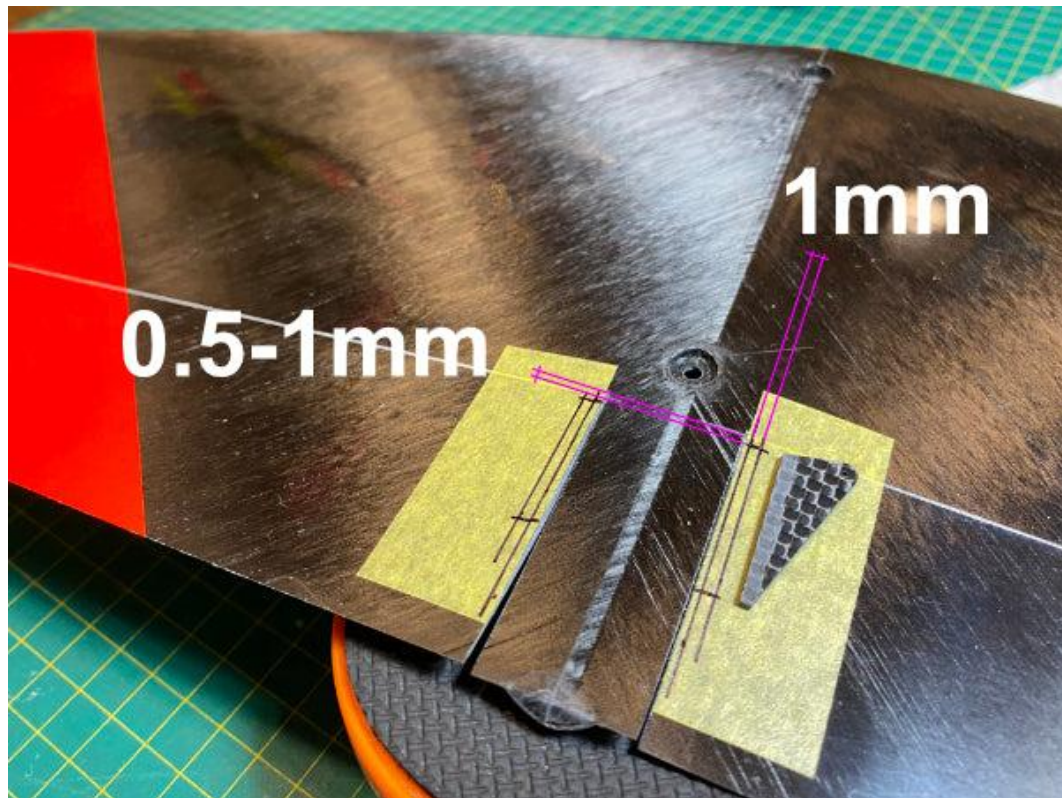
1. 1S LiPo battery, 300-500 mAh range. I am using a Giant Power 380 mAh pack: 38x8.7x19mm, 10.3 grams.
2. Small full range receiver with end pins, dual antennas recommended. The following have been tested to fit (may require de-casing and shrink-wrapping the receiver): FrSky X4R, D4R-ii, G-RX6; Spektrum AR410.
3. 4* KST X06 servos.

Supplies and equipment needed to assemble the Deviant 2:

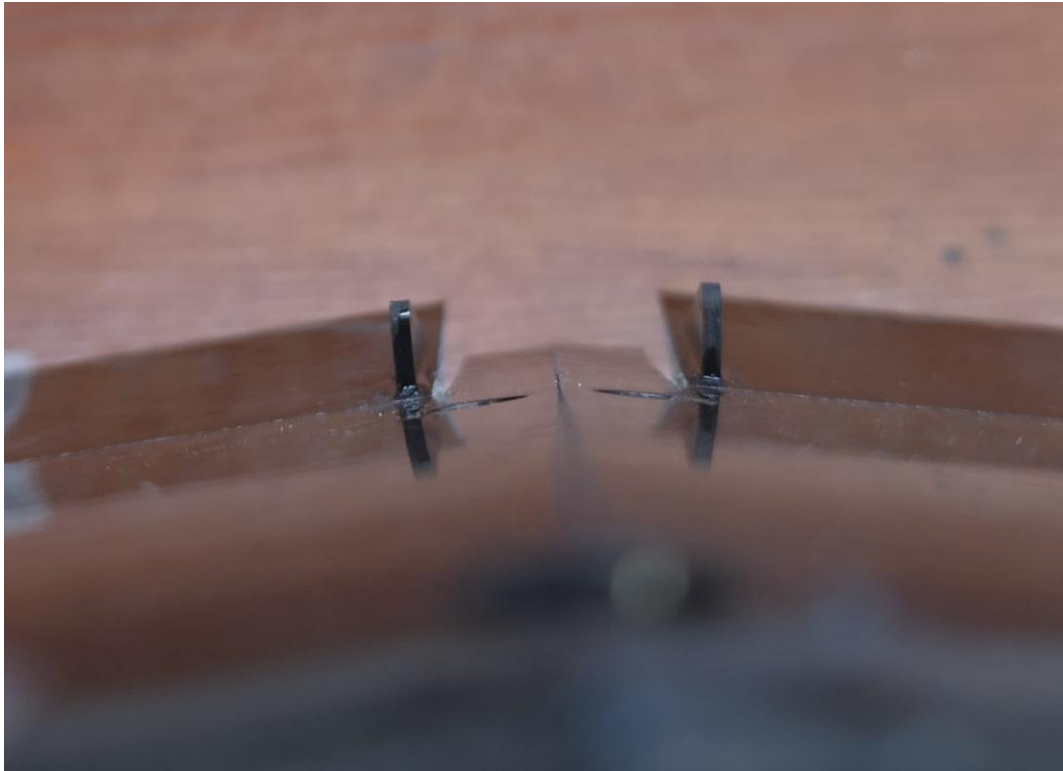
1. Model knife (X-acto #11, etc),
2. Masking tape
3. Pen
4. Straightedge
5. Dremel
6. Pliers
7. Small file (flat and round)
8. Phillips screwdriver
9. Superthin CA
10. Medium CA

Wing

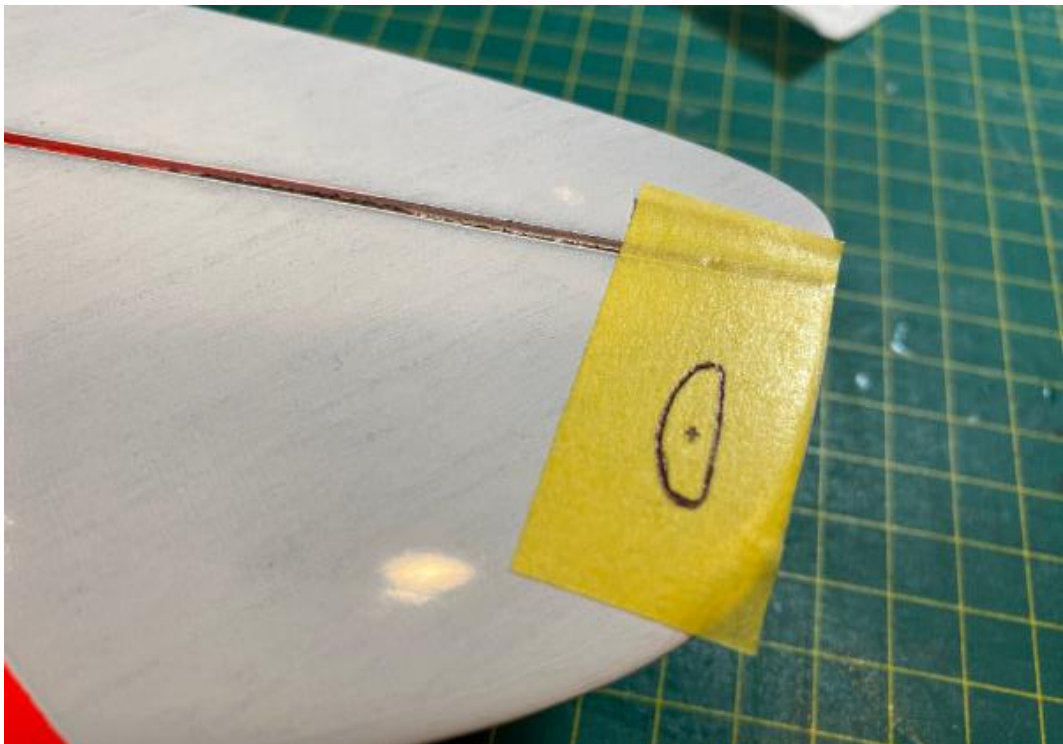
Using a piece of masking tape, mask the root of the bottom of the flaperon right up against the edge of the flaperon and hingeline as pictured. Mark the position of the control horn as follows: 1mm from the edge of the flaperon, 1mm from the hingeline.



Cut the slot for the control horn using a sharp knife, and use a file to widen the slot to make sure the control horns fit in tight and snug. Roughen the surface of the control horn by scoring with a knife, and 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.



Use a piece of masking tape to mask the left wingtip (assuming you are right handed launcher). Mark the position of the throwing blade 10mm away from the wingtip and centred between the leading edge and hingeline.

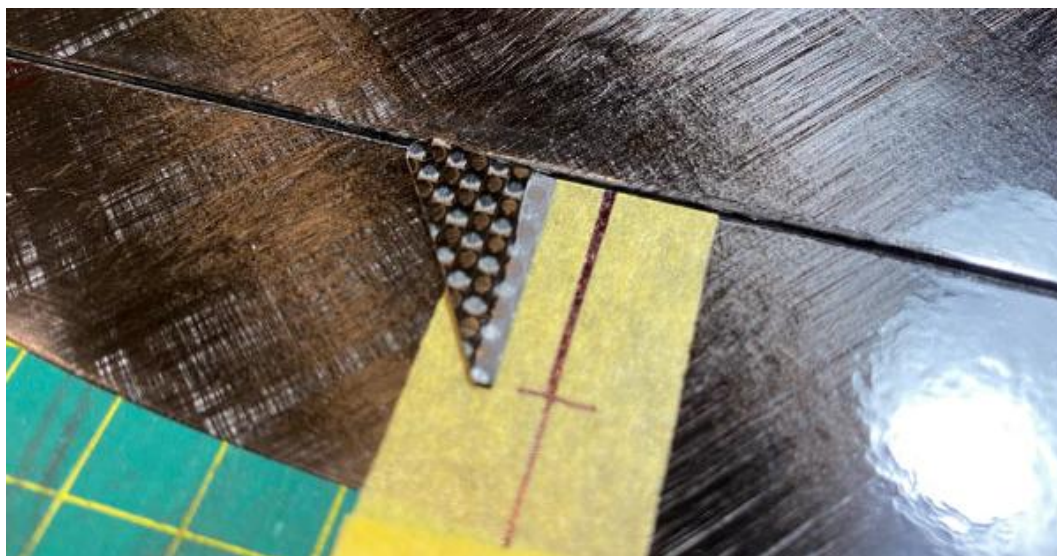


Drill through the wing and hardpoint, and make sure the hole is nice and snug with the blade. Rough up the centre of the blade and clean with alcohol. Install the blade into the wingtip, double check to make sure alignment is to your preference, and glue with superthin CA. Glue by wicking in superthin 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.



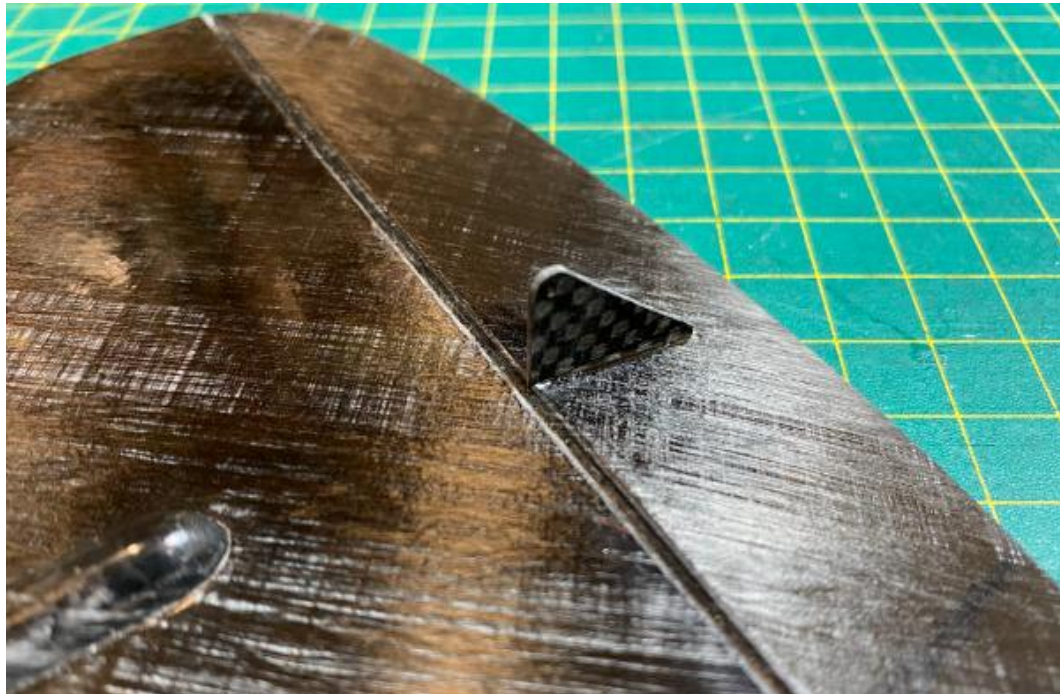
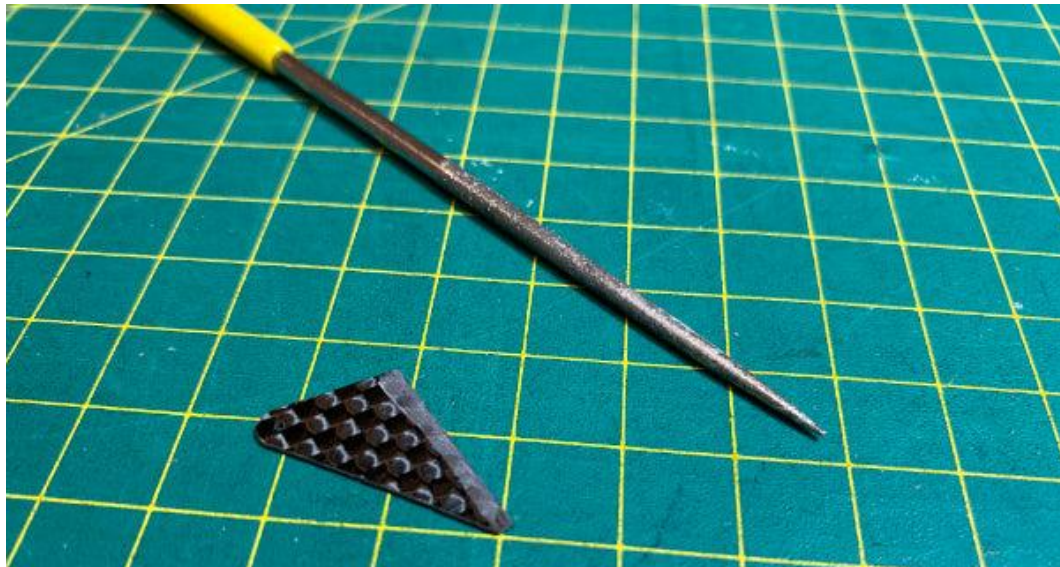
Tails

Apply a piece of masking tape to the rudder as shown, and mark out the center line. Mark out the location for the control horn slot. Repeat for the stabilizer.

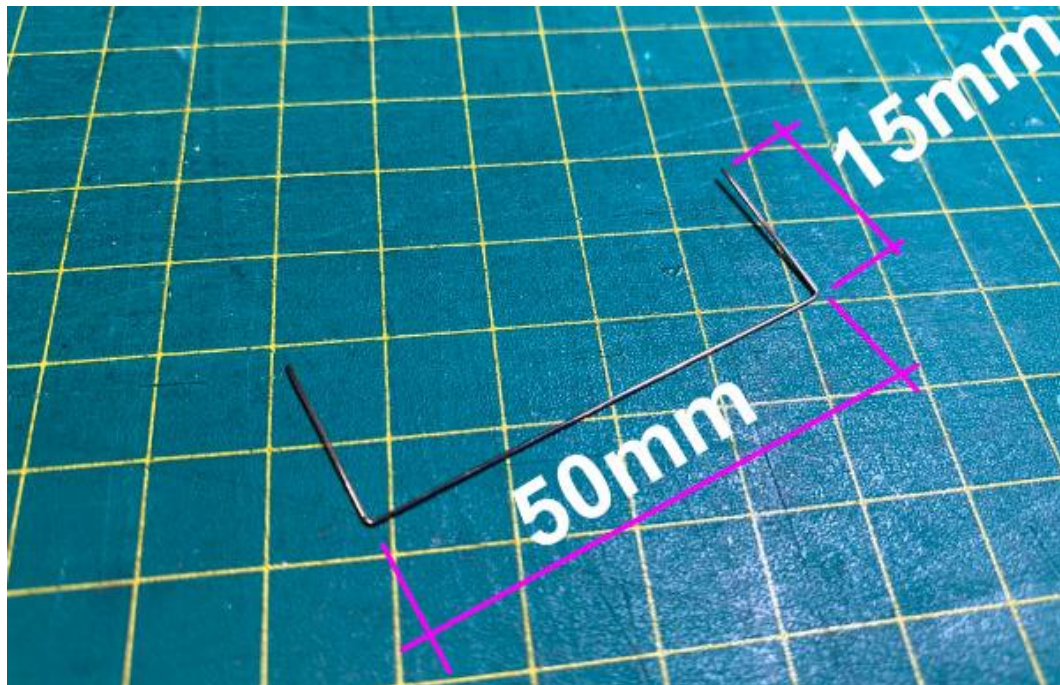


Cut the slot for the control horn on both tails, and remove the foam within the slot. Be careful to not cut through the opposite carbon skin.

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



Bend the two springs into a [____] shape, with the long centre (torsion) section at 50mm in length. Legs should be 10-15mm in length (each).



Bend the stabilizer 180 degrees around the hinge. Poke two holes into the rudder pre-faced hinge to insert the spring. Glue the spring with white Gorilla Glue. Repeat for stabilizer.

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.



Fuselage

Screw your servos on to the fuselage as shown. The two servos in the back are for the wings, and both output shafts should be towards the rear. The two servos in the front are for the tails, and the output shafts should also be towards the rear.

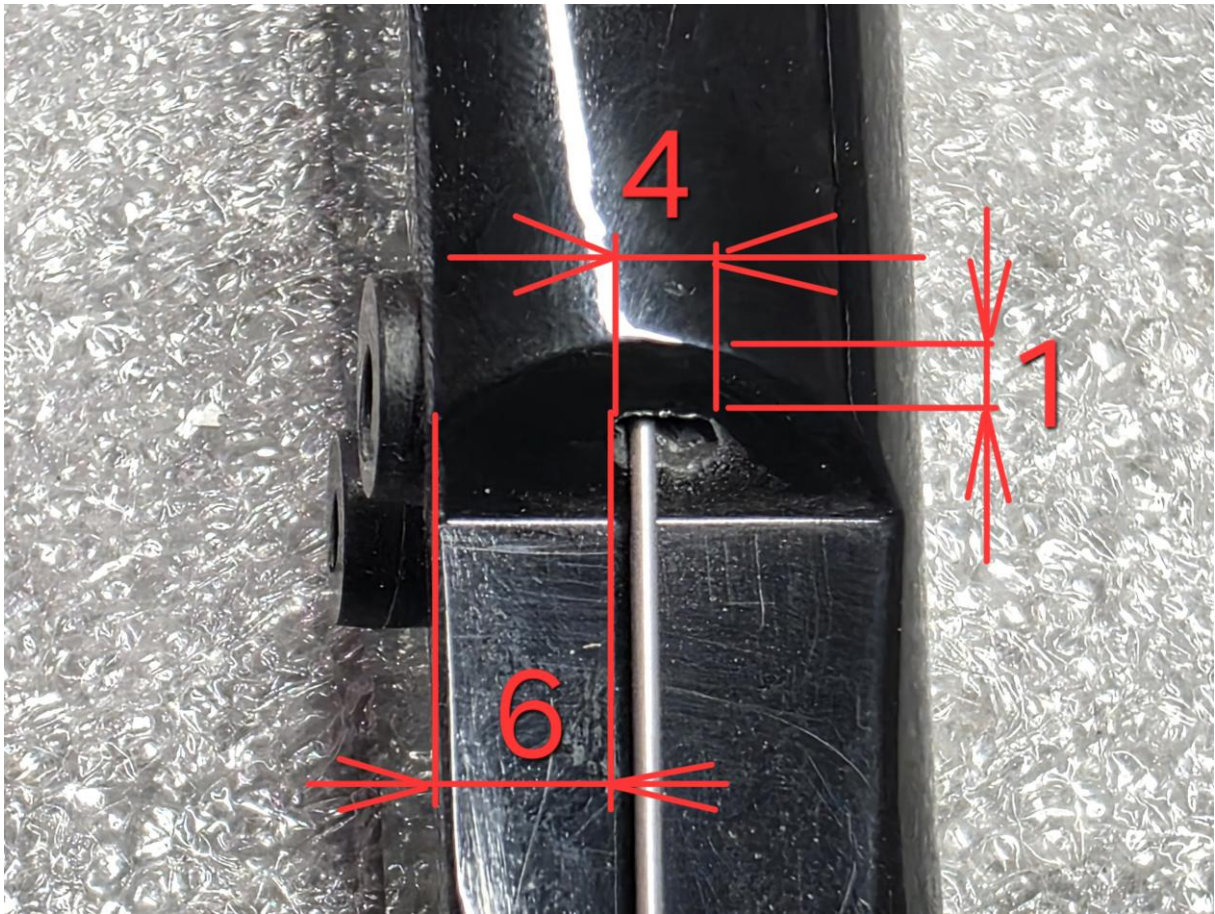


If you are using optional pulleys for the front servos which move the tails, stagger the servos so one output shaft is to the rear and one output shaft is to the front.

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 fairing on the fuselage for the QuikLink pushrods, and draw the hole contour according to the following dimensions.

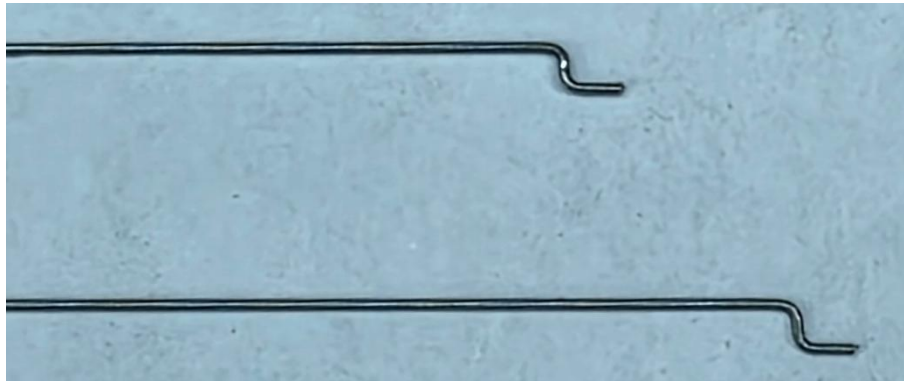


Make a hole 1mm wide using Dremel. It's good practice to make the hole smaller in the beginning, and further refine with a small file after fitting on the wing/pushrods to make sure the hole is only as large as it really needs to be.

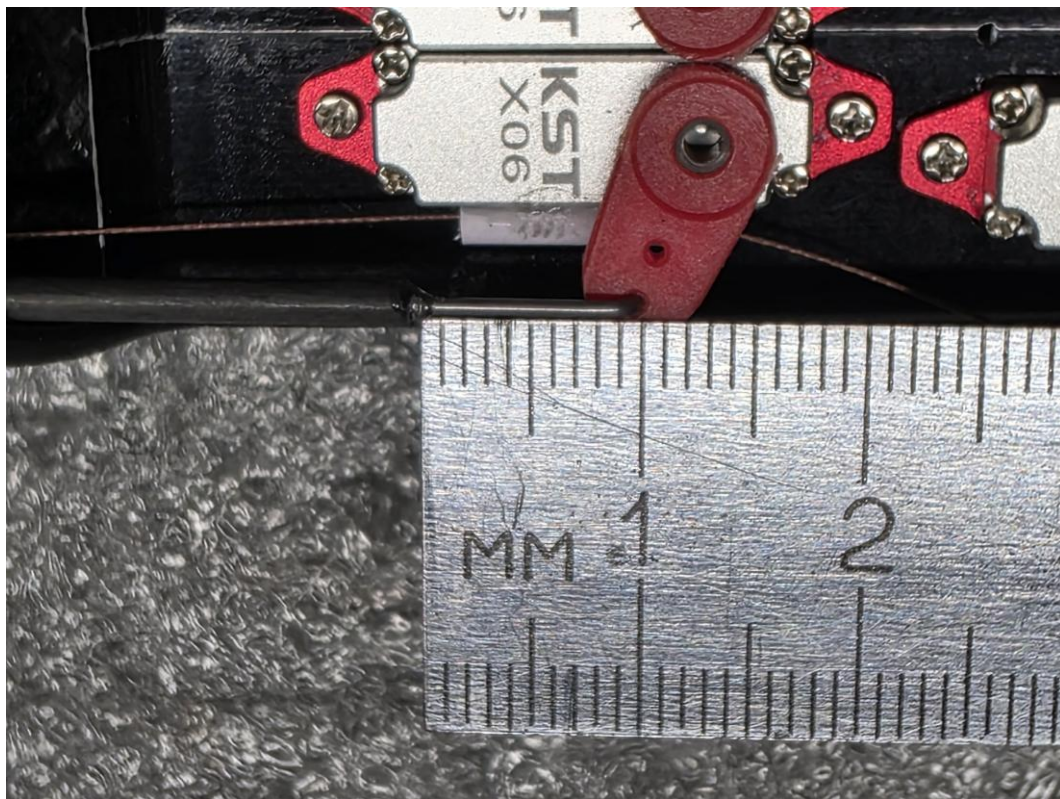
Choose the cross-shaped servo horn that comes with the KST X06 servos for the wing pushrods. Center the servos, and from the two wider arms, select the one that is closer to 90 degrees with the servo.

Cut and trim the extra material from the servo arm, and repeat for the other wing servo.

Bend the wing pushrod front ends as shown. This end hooks to the servos arms.



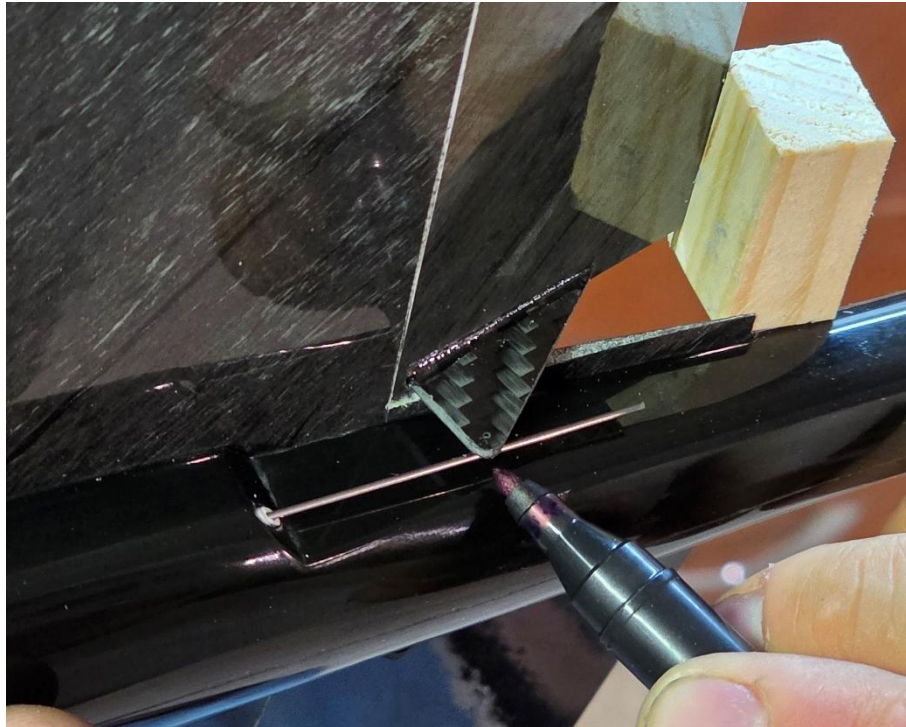
Slip the pushrod into the carbon sleeve to the indicated length, and glue with superthin CA.



Hook both pushrods to the servo arms. Slip the pushrods into the fuselage and out the QuikLink slots and attach the servo arms to servos in neutral position then bolt the wing to the fuselage.

Make a small piece of balsa for offsetting the flaperons to their maximum UP deflection. If you want a maximum of 10mm max UP deflection, make your block 20*10mm. If you want 12mm max UP deflection, make your block 20*12mm. 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.



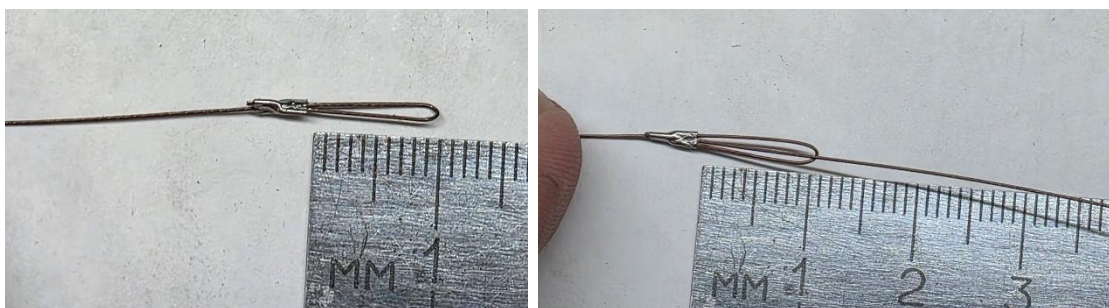
Return the servos to their center position. Use a small set of pliers to bend the pushrod at your marked positions, and cut the excess. Hook up the pushrods to the control horns.



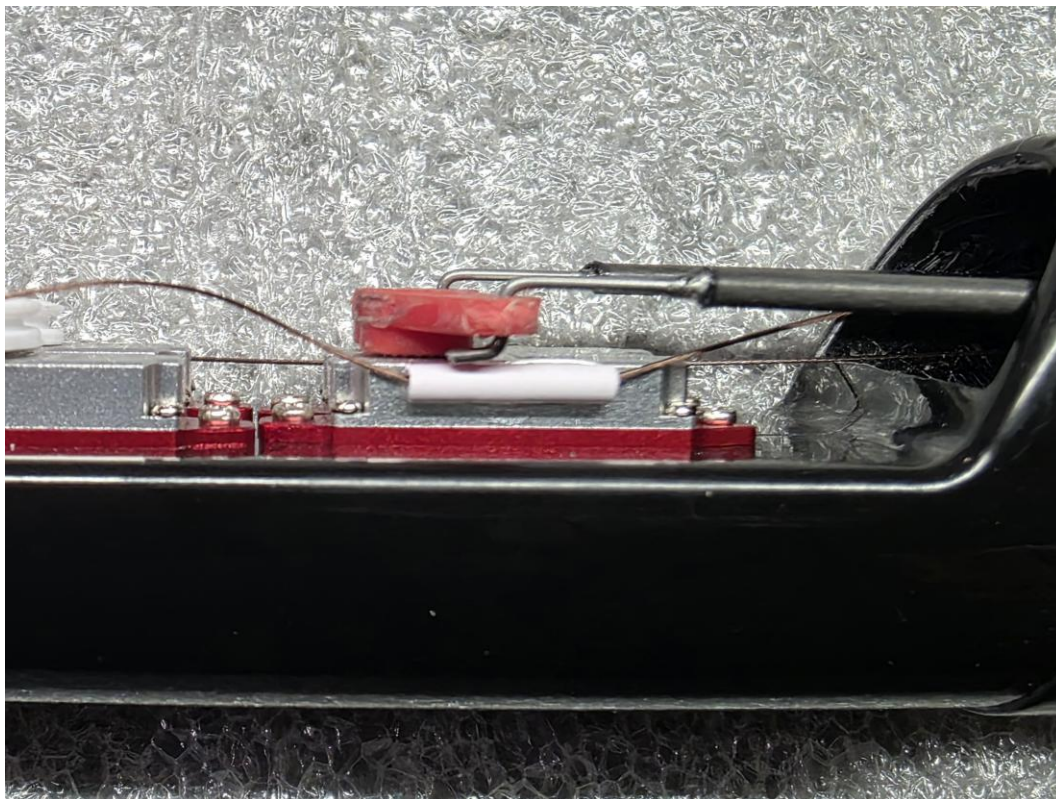
Tip, to ensure both flaperons are symmetrical, place the marked line on the pushrod right to the edge of your pliers. Repeat for second pushrod.



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.



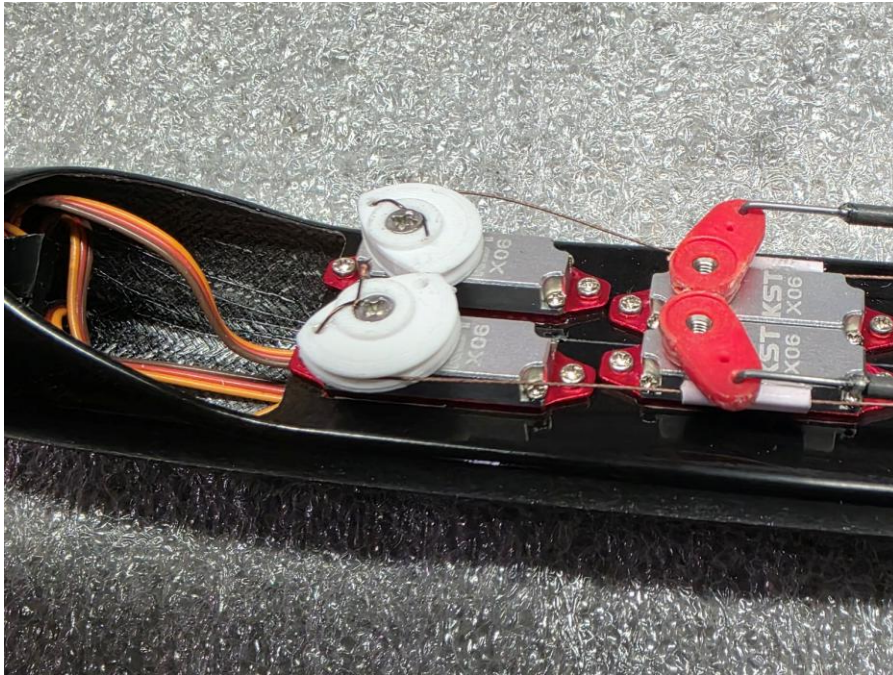
Thread the line into the fuselage from the elevator pylon to the opening under the nosecone. Glue 10mm plastic tube to the aileron servos as shown and thread the wire.



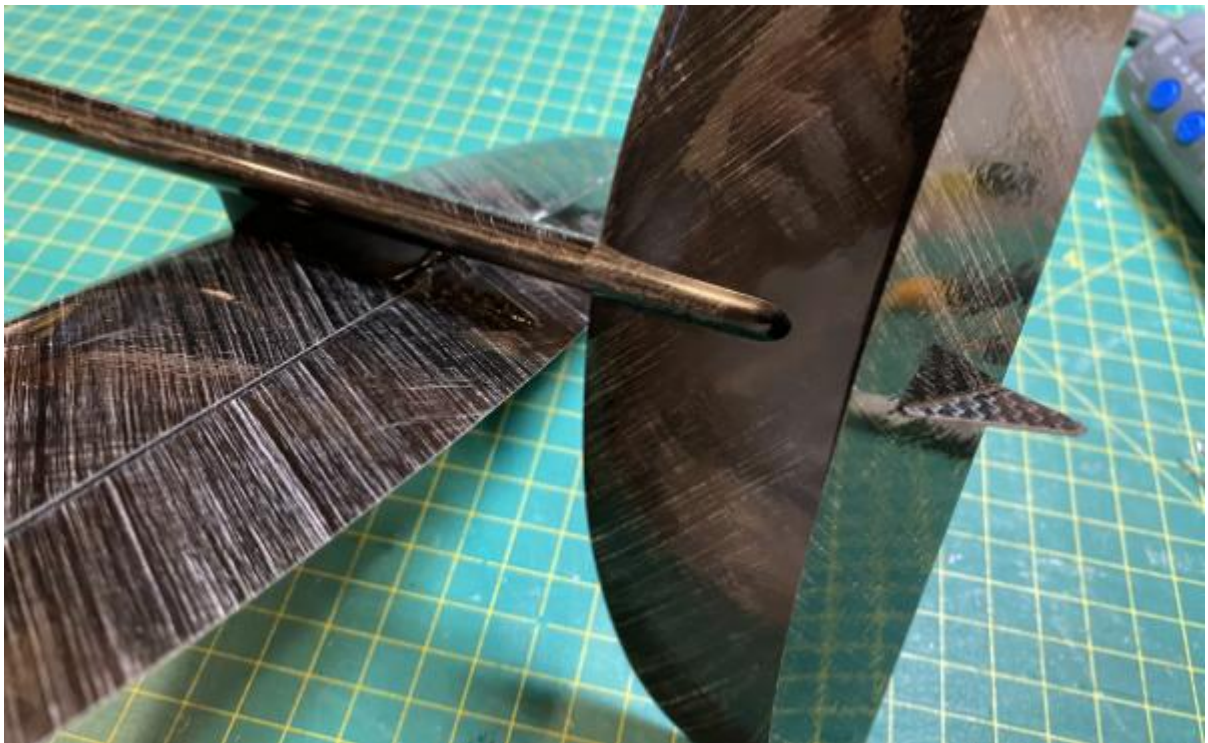
Hook the elevator control horn into the wire loop, and bolt stab to fuselage.



Thread the wire through the pulley (or servo arm) as shown, pull the wire and wrap it around the screw 2-3 times. Ensure servos are powered and the elevator servo at max travel of elevator DOWN deflection (note the stab is top-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. Trim wire length, and glue with a drop of medium CA as shown.



Insert vertical into boom, making sure the rudder control horn is on the side facing away from the throwing blade.



Drill a small hole as shown. This is for the wire to pass through.



Thread the wire into the fuselage. Then repeat with the servo pulley same as for elevator with the exception that the servo and rudder should be in neutral position.

Initial Setup

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

CG:

- Regular conditions: 65mm

Camber:

- Preset: 0mm down
- Zoom: 2mm up
- Speed: 0mm (flush)
- Cruise: 2mm down
- Float: 5mm down

Aileron deflection:

- 8mm up / down with no differential

Rudder deflection:

- 10mm each way

Elevator deflection:

- 5mm each way