

# LAZERTOYZ

## Fenix V-Trainer Foam & Value Kit Foam Kit



The V-Trainer was designed for the new learner in mind, its also great for more experienced pilots who want a stable flying model for aerial photography.

The V-Trainer is made from super tough EPP foam, it can be assembled using either CA Glue, Hot Glue or Foam Tac glue.

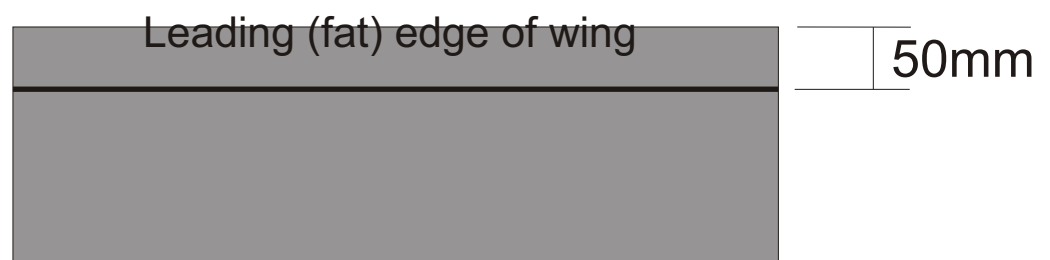
### Contents List:

EPP Foam Set  
Ply wing attachment plates  
Emax CF2812 Motor with 7x5 prop and adaptor  
18 amp Emax Brushless Speed Controller (ESC)  
Pushrods  
Hardware pack

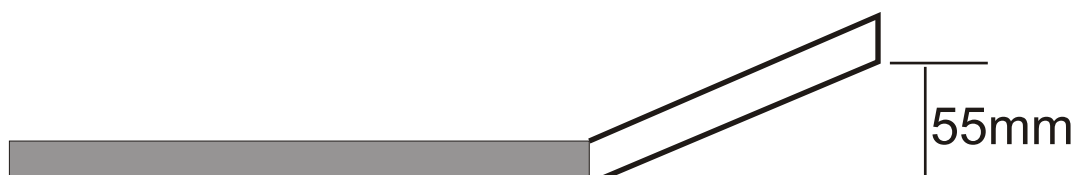
### Equipment required

2 x Emax ES08A (8.5g)  
1 x Small receiver  
1600-2200mah 2or 3 cell Lipo  
Transmitter with v-tail or  
elevon mixing  
Lipo Charger

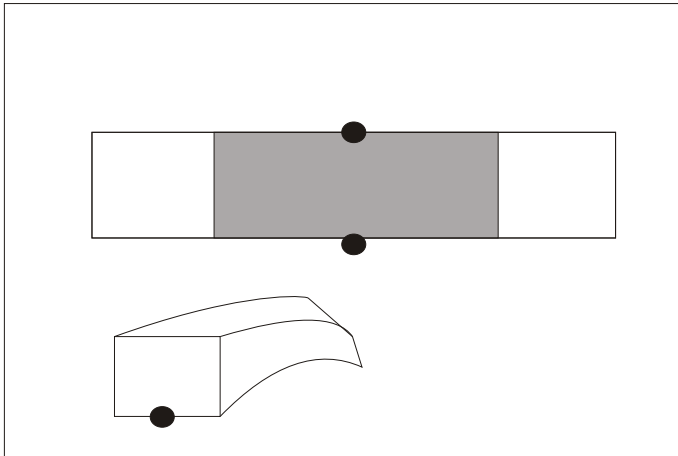
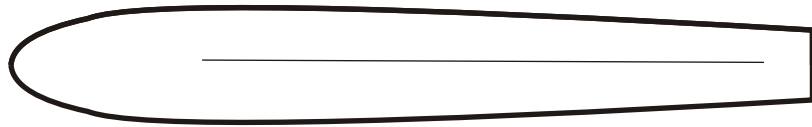
On the underside of the central colored wing, insert the 460mm FRP spar and glue in with hot glue or Foam Tac Also it is compatible with standard CA.



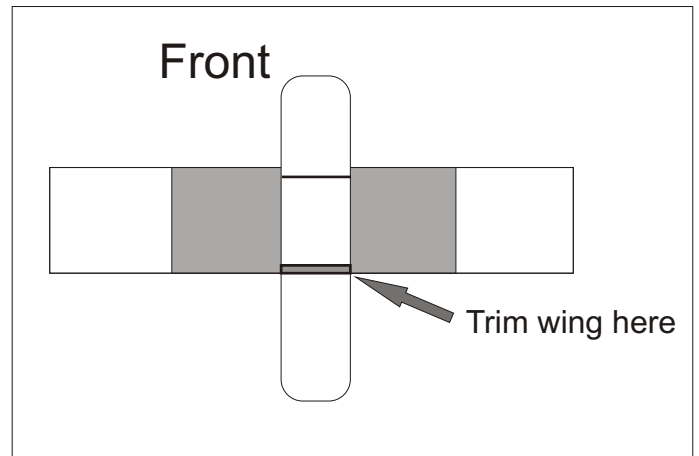
Attach wing tips with hot glue or FoamTac. Use plenty of glue to ensure a strong joint.



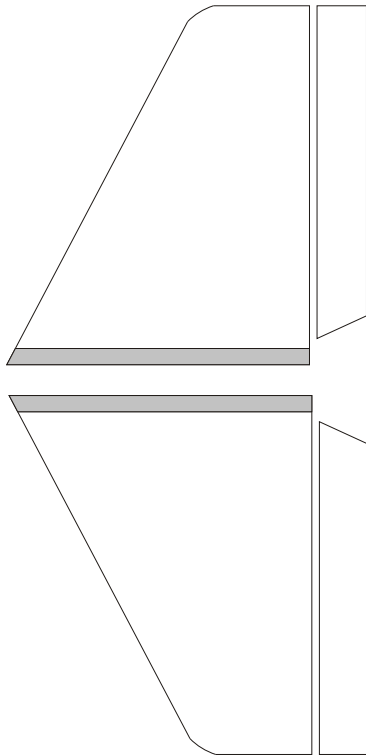
Use the 540mm length of FRP strip, glue in with hot glue or Foam Tac. Check that the fuselage is not twisted and straight.



Step1: Measure the centre point of the wing back and front and mark with a felt tip pen. Mark the centre point of the wing top.

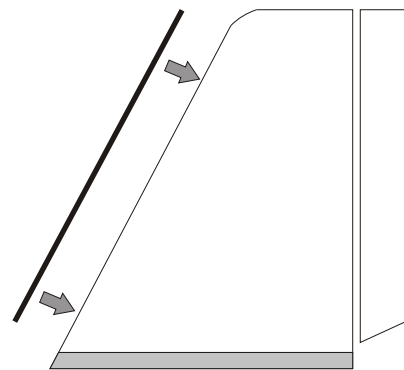


Step 2: Dry assemble (no glue) the wing onto the fuselage and then the wing top. You will notice that the wing is slightly wider than the top (approx 3mm), trim this to the width of the fuselage.



Hinging elevator/rudder, make matching pair

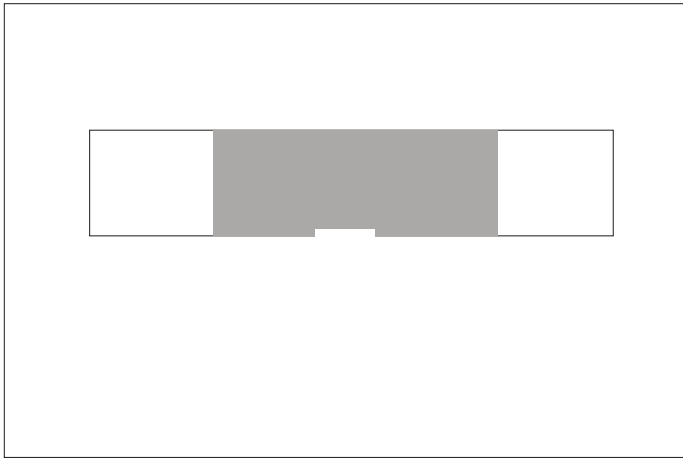
Method , FoamTac hinge. Run a small bead of glue along the rear top edge of the tailplane and the same on the leading edge (LE) of the elevator. Push together and apart a few times . On a flat surface bring the two edges together for 10 minutes, the glue fuses together giving a strong flexible hinge, magic. You can coat the top afterwards and smear it in making a thin layer.



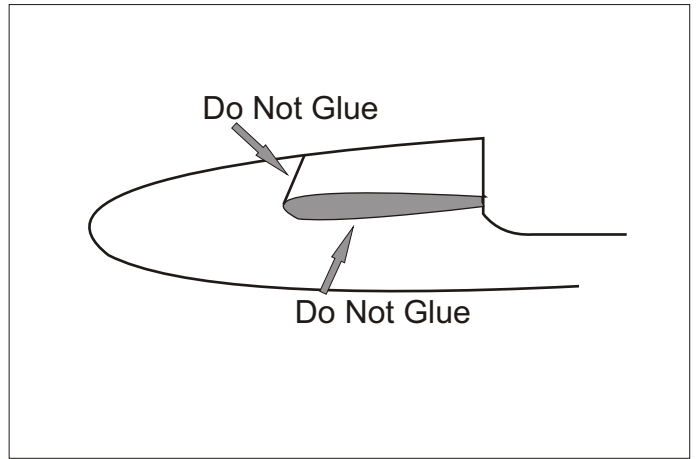
Tailplane stiffeners

Using the 2 small FRP strips, smear a layer of Foam Tac to the front edge of each tail plane and one side of each of the strips, allow to dry for 5 minutes.

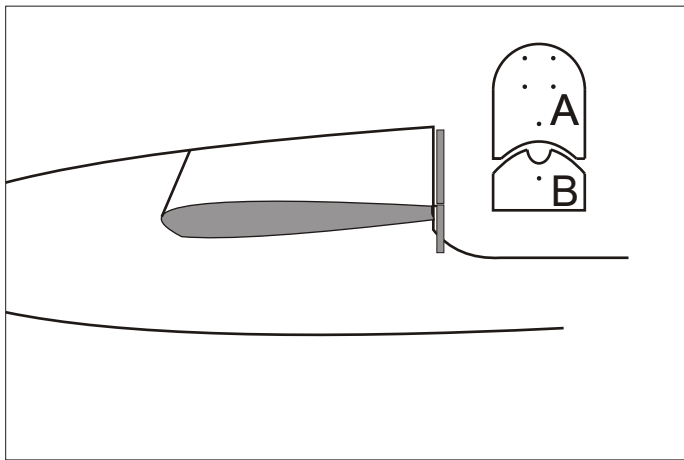
With the tailplane flat attach the strips to the centre of the front facing edge of the tail plane



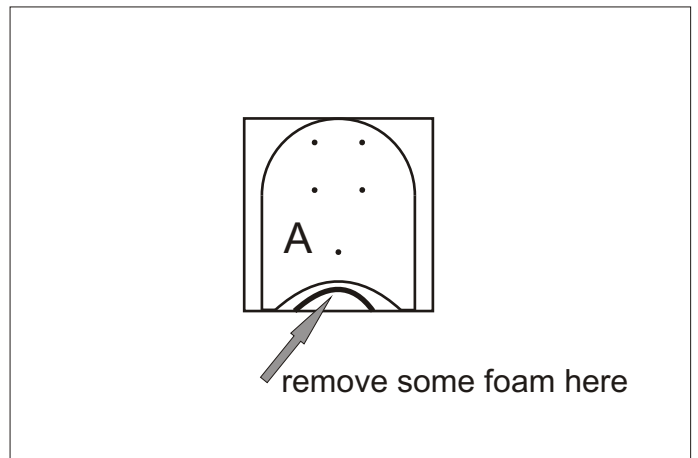
Step 3: The wing should look like this. Using the centre marks done in step 1, glue the wing top to the wing. Do this with the wing on the fuselage to get the correct fit, **but be careful not to glue the wing or top to the fuselage.**



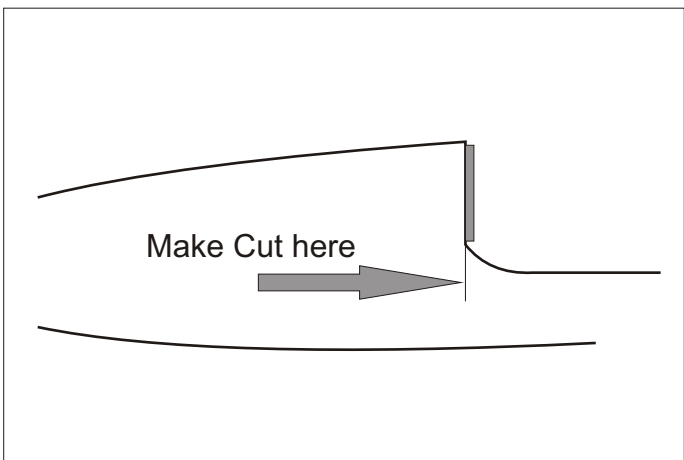
Step 4: Make sure that the wing, top and fuselage fit snugly.



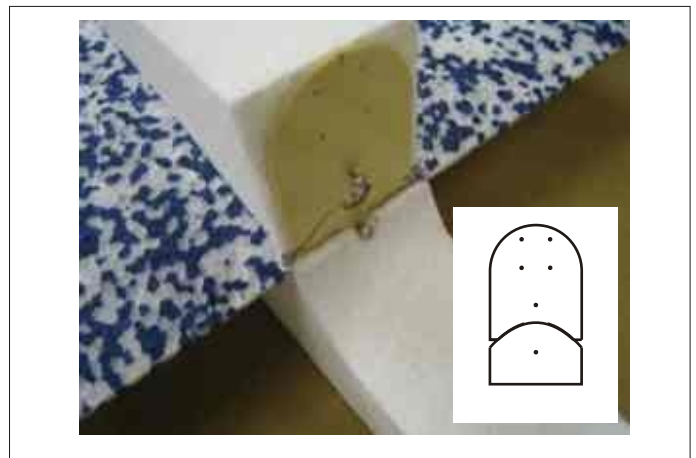
Step 5: Remove the ply plate from the set. The plate with 6 dots on it, as shown.



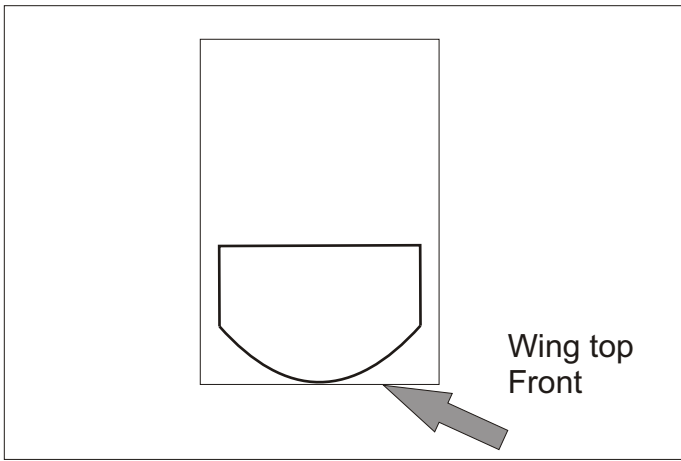
Step 6: Glue the motor plate, to the back of the wing top as shown. remove some foam where shown, this is for the motor cables.



Step 7: Make a cut approx 15mm where shown. Cut in line with the plate part A, so that the two parts align vertically.



Step 8: The two plates should line up, then glue in part B into the cut slot. Attach self tapping screws leaving 3mm proud.



Step 9: Glue the front wing plate to the wing top, as shown.



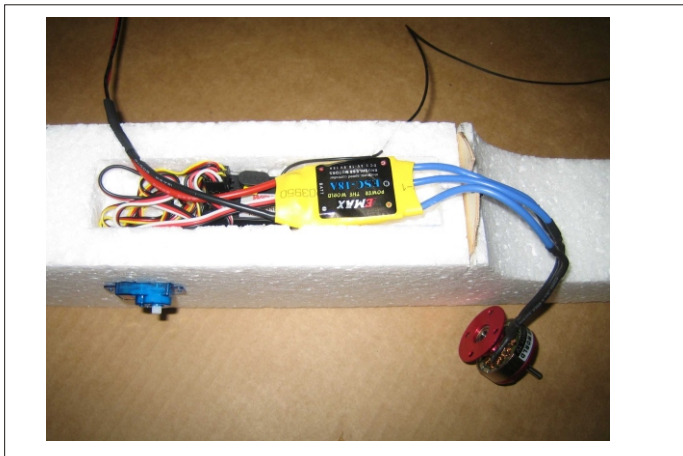
Step 10: Glue on the other plate, lined up with the front plate as shown, attach self tapping screws leaving 3mm proud.



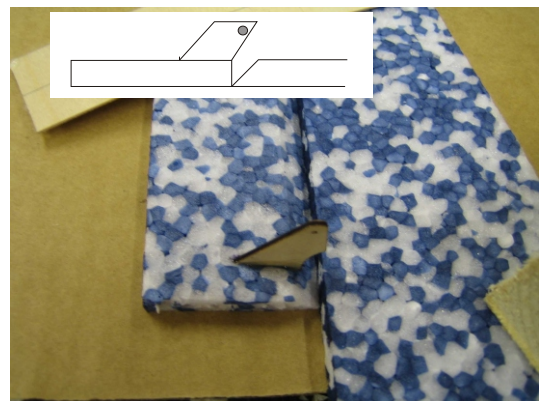
Step 11: Put the wing aside. Now cut out the radio bay on the fuselage beneath where the wing sits. This is marked out. Follow the marked lines, the depth to cut should be around 20mm, this may vary according to the size of your receiver.



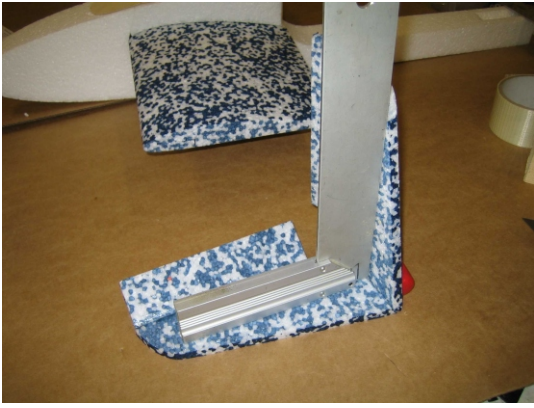
Step 12: Cut around the line drawn on the fuselage, make criss cross cuts in side the pattern. Use a small screwdriver to pick out the foam, bit by bit until the receiver and ESC fit well.



Step 13: The picture shows a typical radio installation.



Step 14: Cut a small slot and glue in horns as shown on both elevators on the side of the v channel in the hinge.



Step 15: V-Tail Assembly. Use a set square or a CD case to join the v-tail together at 90 degrees.



Step 16: Glue in the tail assembly into the V cut in the rear of the fuselage, with the elevators facing rearwards.



Step 17: Measure the depth of your servos from the bottom to the servo lugs as shown.



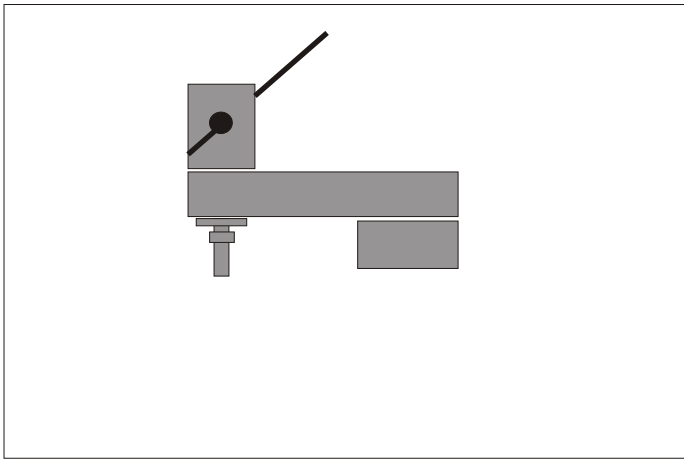
Step 18: Cut out servo holes as marked in the side of the fuselage. Check fit of servo and make changes as required.



Step 19: Use a small screwdriver to pierce a hole from inside the servo hole to the radio compartment made earlier

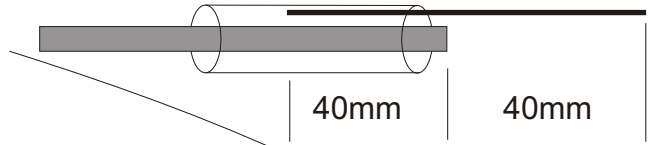


Step 20: Feed the servo plug through to the radio compartment. Seat the servo in the hole and glue the lugs with CA glue.



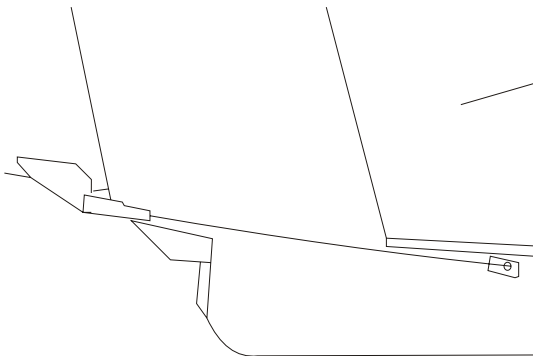
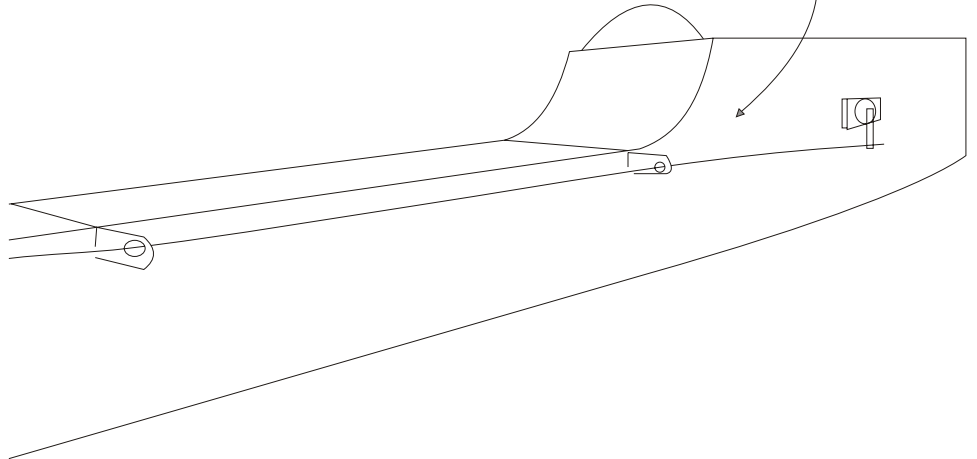
Step 21: Attach the pushrod adaptor to the servo arm, note it should be able to rotate in the arm.

Step 22: At one end of each carbon rod, assemble the heatshrink and piano wire as shown, glue the wire to the carbon rod with CA glue then, sleeve it with the heat shrink and heat to shrink, allow to dry



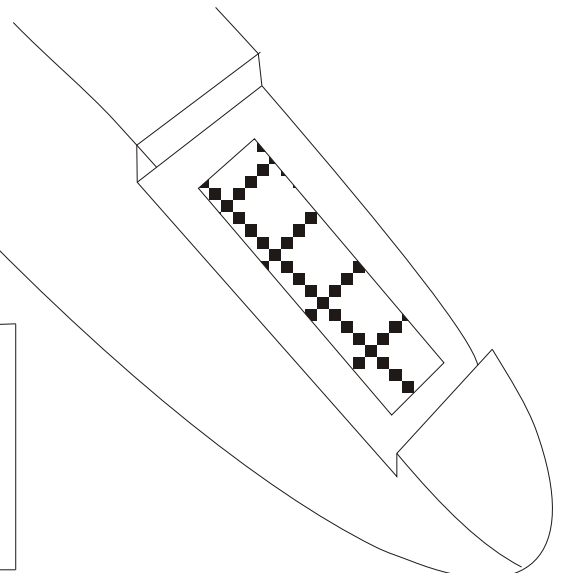
Thread the other end through the guides to the tail

Step 23



Glue the clevis onto the rod and connect to the

Step 24

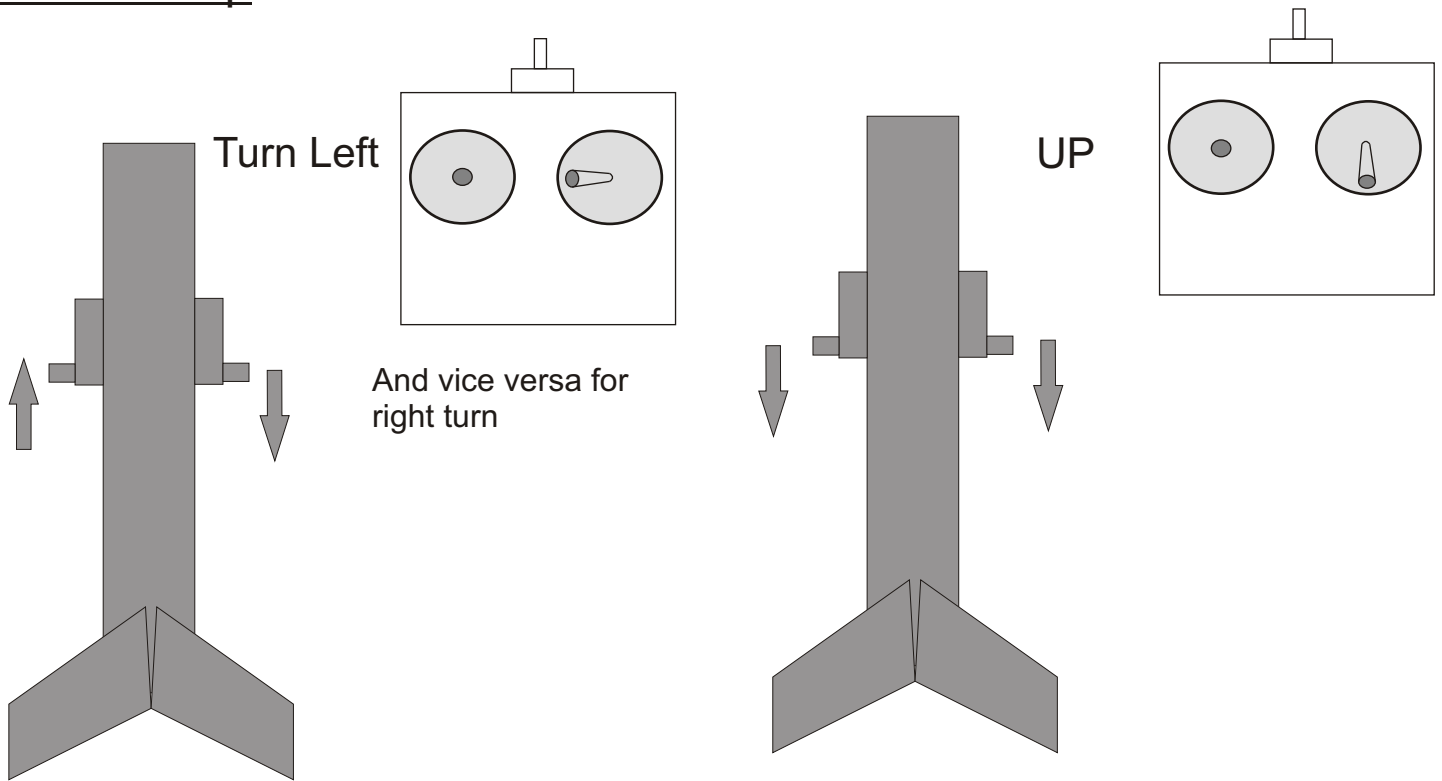


Step 25: Whether you use a 2 cell or 3 cell Lipo, you can mount it on the top with velcro and if you wish use a rubber band for extra security.



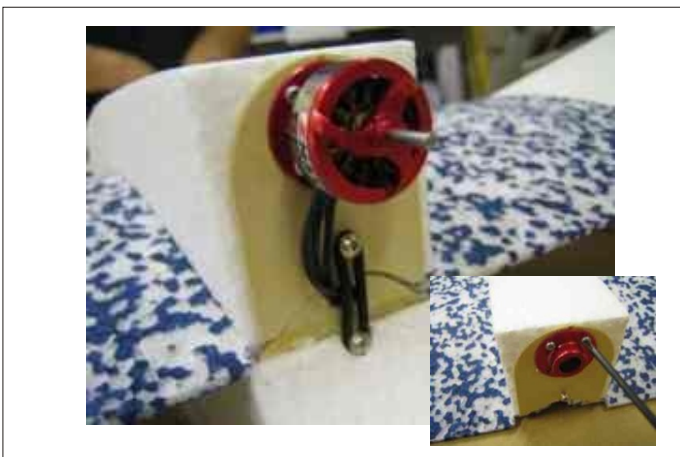
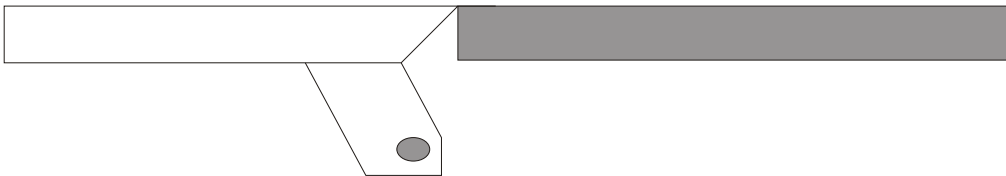
## Radio Setup

### SERVO MOVEMENT



You will require a transmitter capable of V-Tail mixing, elevon or delta mixing also works. Your manual will tell you whether your transmitter has this function. If it does not, a small mixing module can be supplied.

### Neutral position of elevator



Step 27: Remove the motor back plate, screw it onto the motor plate, then re-attach the motor. See wiring diagram for motor wire connection.



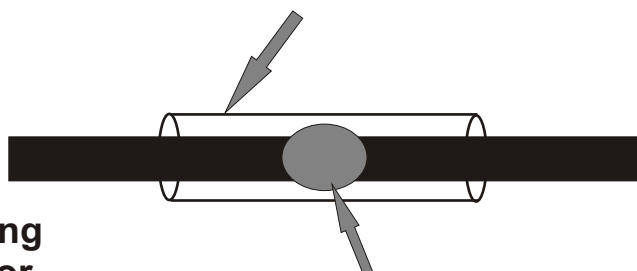
Step 28: Cut a small slot in one of the fins, push the end of the aerial into it. Route the aerial along the fuselage away from the prop.

## SPEED CONTROLLER TO MOTOR WIRING (FOR PUSHER).

If you wish to change the direction of the motor, swap the two outer cable around.

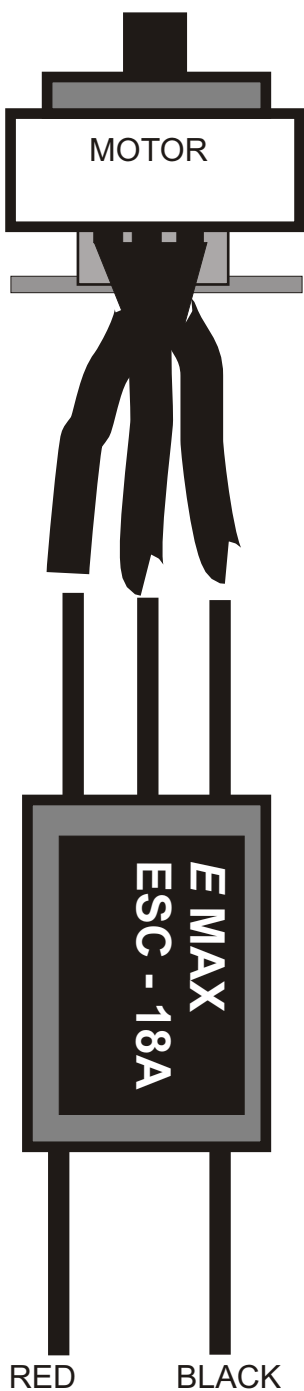
**The speed controller requires no programming to work with 2 or 3 cell Lipo batteries (2cell for VTrainer).**

HEAT SHRINK

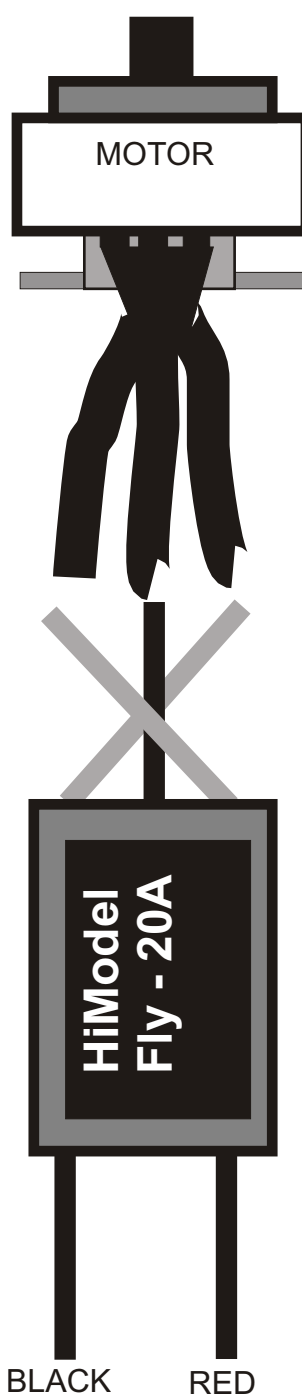


SOLDER

Motor with Emax 18A speed controller



Motor with HiModel Fly 20A speed controller





## FINAL SETUP AND FLYING

### Achieving the correct “centre of gravity”

Hold the model, under the wing, touching the carbon spar embedded in the wing. This is where the model should balance. It is very important to achieve the correct balance.

There is a small compartment under the nose of the V-Trainer for lead ballast. Add ballast to the nose and retain with some tape until balance is achieved, around 50 grams is usually enough, but this depends on the size of Lipo cell used.

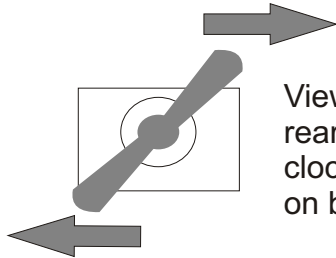
When you are satisfied that the balance is correct use the spare piece of EPP block to create a plug for the ballast box and glue in place.



### Flying

Double check all the controls.

1. The v-tail is operating as it should and that the neutral position is set.
2. The servos, pushrods and horns are firmly attached or screwed in.
3. The propeller is on correctly (normally writing facing forward)



Viewing the model from the rear, the motor should run clockwise with propeller put on backwards.

4. Motor rotation is clockwise when viewed from the rear.
5. “Centre of gravity” is correct.

The V-trainer is best hand launched directly into wind, you may want to try a few hand launches without power to adjust to the model, it glides quite far without power.

Slowly build up to powered launches.

Help Line 01908 615163  
Email: [sales@flyingwings.co.uk](mailto:sales@flyingwings.co.uk)

**Check [WWW.FLYINGWINGS.CO.UK](http://WWW.FLYINGWINGS.CO.UK)**  
**For more great aircraft and accessories**

#### **Spares Available:**

- > Complete wing with spar
- > Complete Fuselage with tail & Spar
- > Wing & Motor plates
- > CF2805 Motor
- > 18 Amp ESC
- > 1700-2200mah Lipo Flight Packs
- > V-Tail Mixer
- > Propellers