

HIGH-END TECHNOLOGY RC

Electric ducted fan Starfighter



First we want to thank and congratulate you with your decision in buying one of our Kits.

The Starfighter puts together very easily so there is not much explanation needed. Just look carefully at the pictures .

This is not a plane for beginners, and you should have some experience with putting together ARFs.

DATA:

Wingspan: 670 mm

Length: 1160 mm

Weight: 1100-1400 gram

Ducted fans 1 x 72mm

Items needed to complete:.

4 ch. Computer Radio system w/ 3 servos.

1 Electronic brushless speed controller

1 fan-units 6904 HETFAN or MF 480.

1 480 size brushless motors e.g. EDF 2W , 3W, 4W or 2W20

Lipo battery

5 or 30 minute epoxy

micro balloons

CA Glue w/ accelerator

Velcro.

Standard tools:

Drill or Dremel tool

Plyer/cutter

Scissor

X acto Knife

Soldering iron.

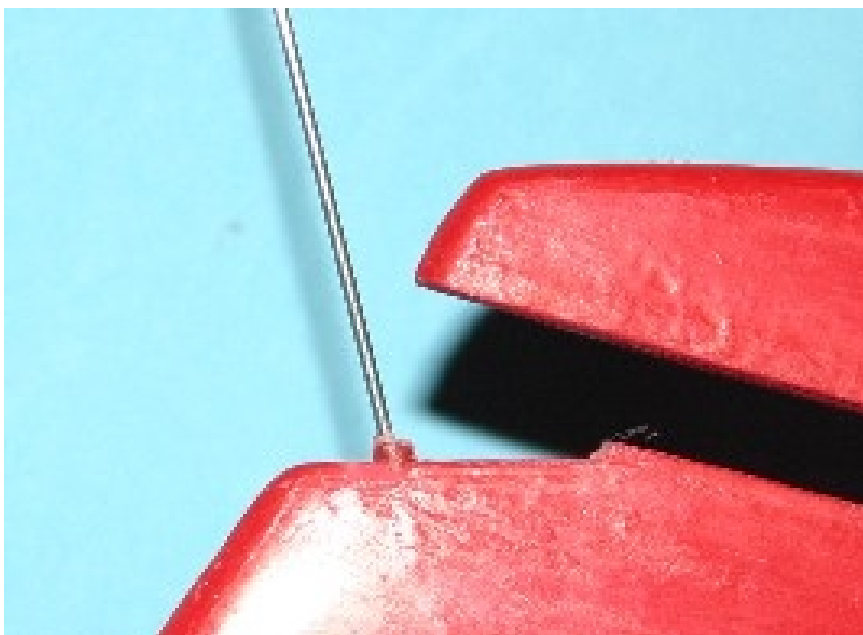




First thing to do is drill a 2.5 mm hole in the back of the top back fin. As you can see in the picture above it's just left above the tomahawk. This is where the pushrod with Bowden-tube should come out. Now glue the red Bowden tube between the 2 supplied balsa pieces with 5 minute epoxy or CA glue. See picture above right.

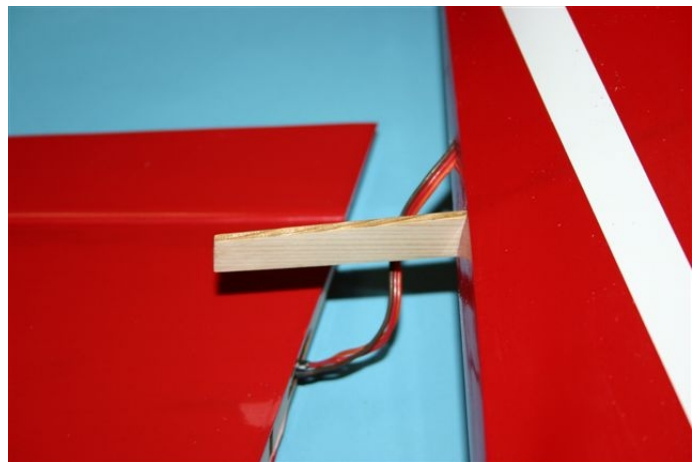


Now glue the Balsa bracket with the Bowden-tube inside the fin with 5 minute epoxy, glue it to one side of the fin. The red Bowden tube should come out the fin and should be trimmed flush with the slot-edge inside the fuselage the Bowden tube and 0.8 mm steel tube should run parallel with the fuselage top surface





First install the servos in the wings, lengthen the servo cables to 300 mm. mark the hole on the fuselage to route the servo through. Cut out the hole with a dremel tool or use a sharp knife.

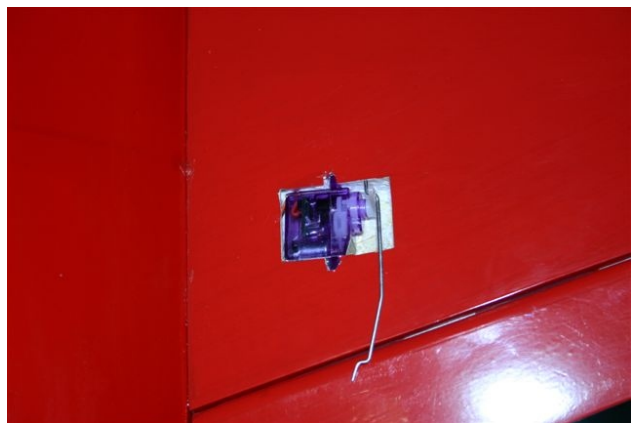


Fit the hardwood wing joiner in the fuselage and wing and see if the wing fits nicely. Sand the fuselage root first .

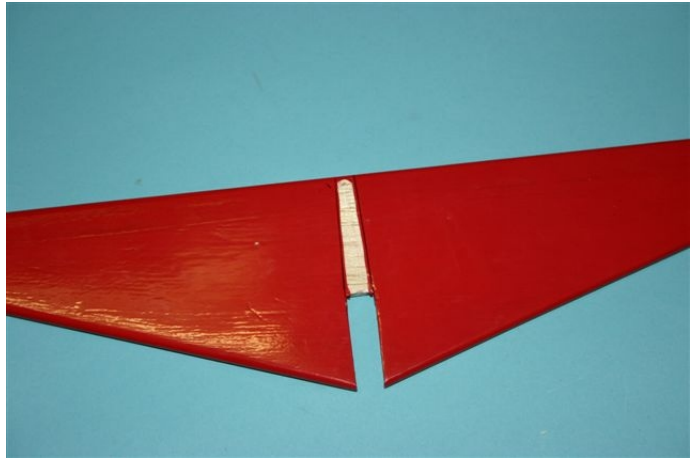
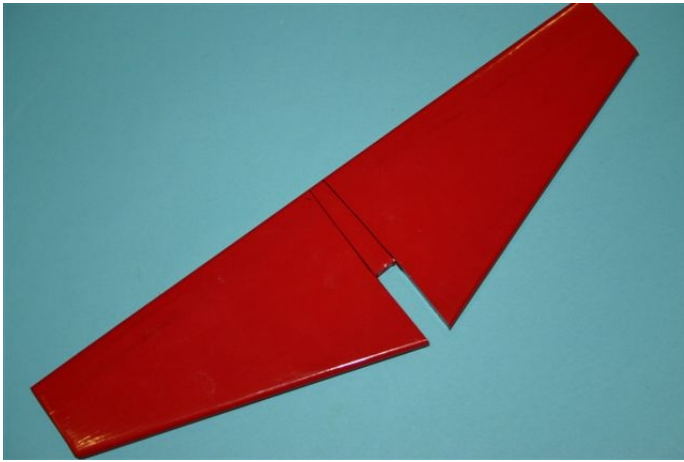
Start by gluing one wing panel with 5 or 30 minute epoxy. First apply some epoxy inside the wing joiner slot in the fuselage. Press the wing joiner inside the fuselage.

Remove excess epoxy. Now apply epoxy in the wing joiner slot in the wing root and also apply epoxy on the wing root. Slide the wing over the hard wood wing joiner and press the wing against the fuselage. Make the leading- and trailing edge align with the fuselage. Remove the excess epoxy with a clean cloth and cleaning alcohol.

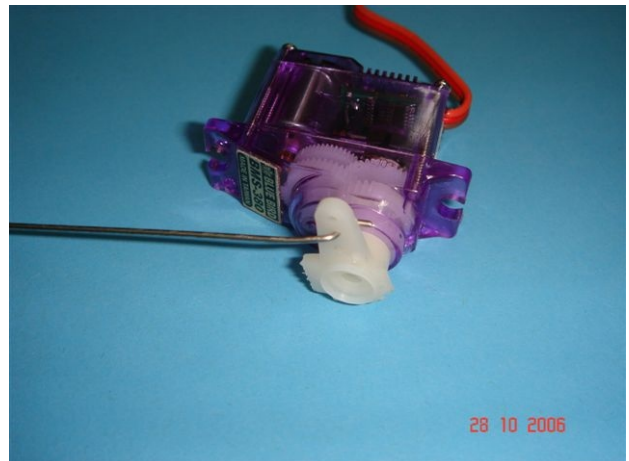
When the epoxy has cured you can do the other wing panel the same way.



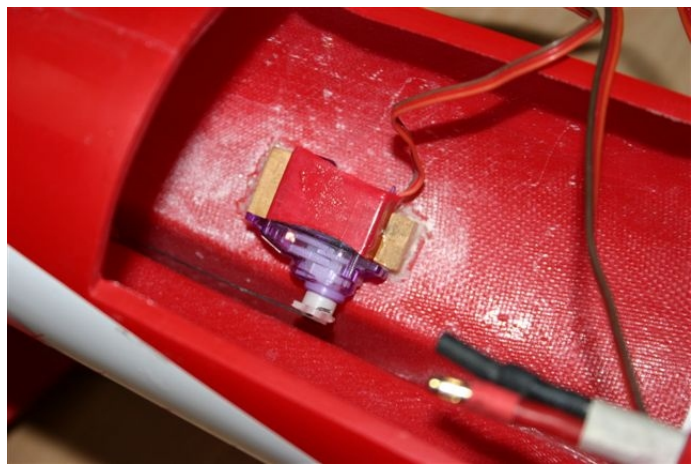
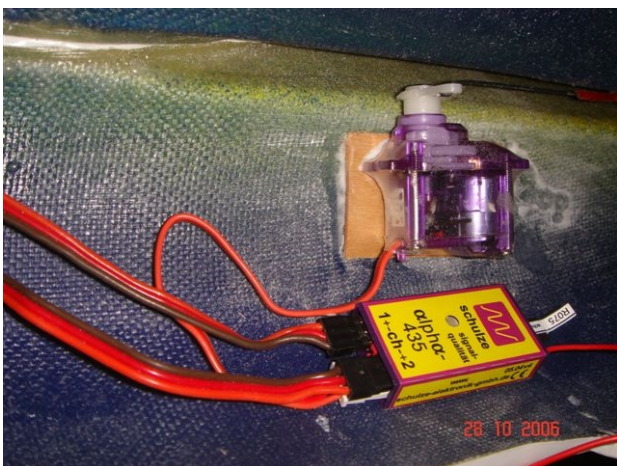
After the wings the wings are glued one. It is possible to cover the joint between the fuselage and wings with a 3-4 mm wide white or red trim. (Oracover) depending on the model.



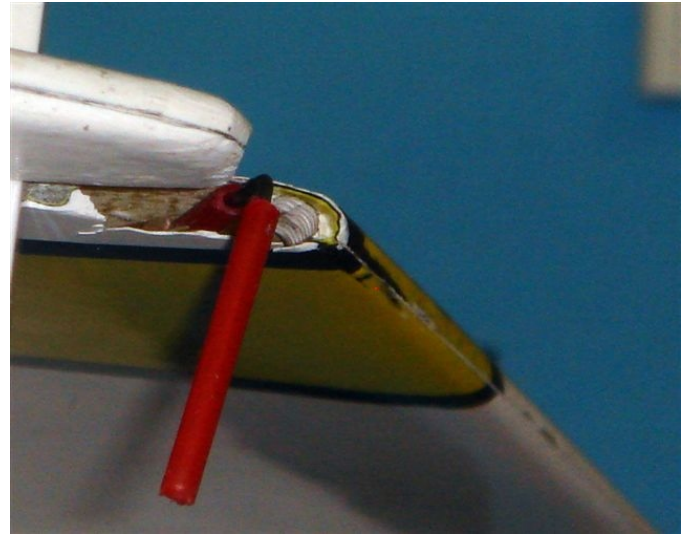
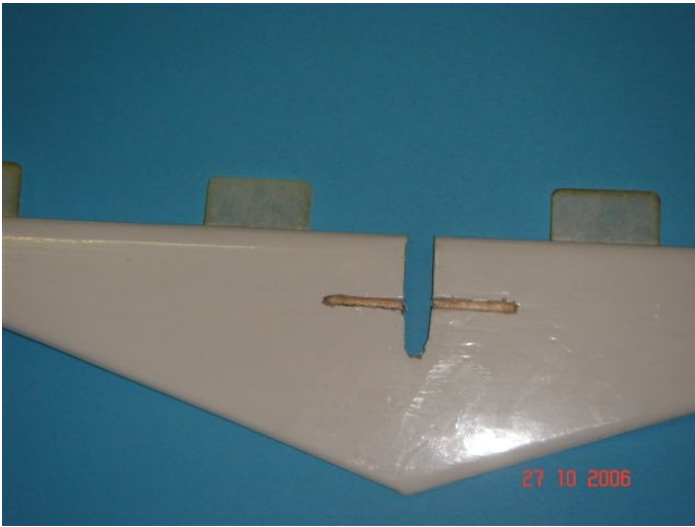
Now we are going to install the elevator, mark the outline of the fin on the elevator as in the above picture. Then trim inside the marked lines the covering and remove it .



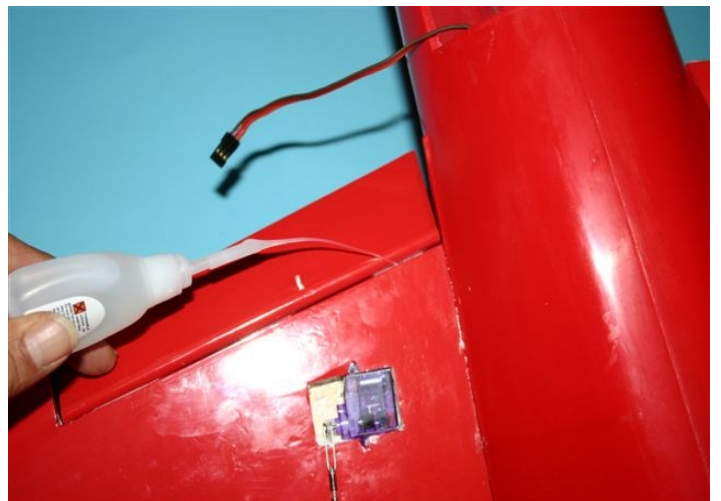
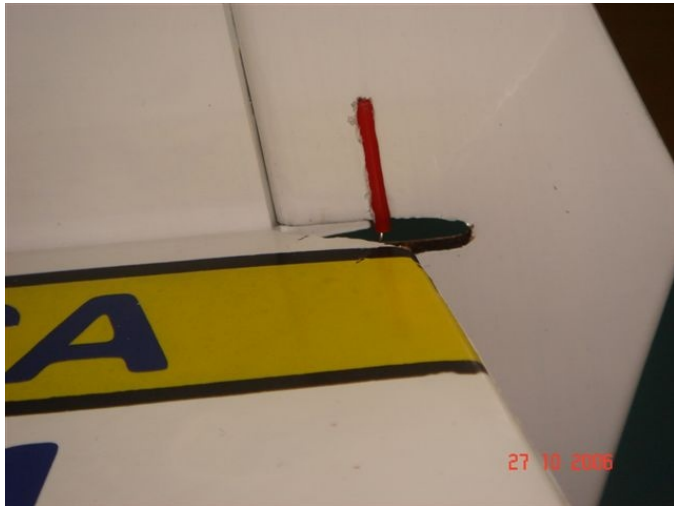
Now glue the stabilizer in the fin with 5 minute epoxy. Remove the excess epoxy with a cloth soaked with cleaning alcohol. After this you must make a Z-bend in the 0.8mm steel push-rod See page 7 how to make Z-bend.



Here you see how the servo is mounted (glued) servo should be taped in or put in a heat shrink tube and then glued on the plywood tray, or glued between two plywood blocks 6x6x 10 mm.



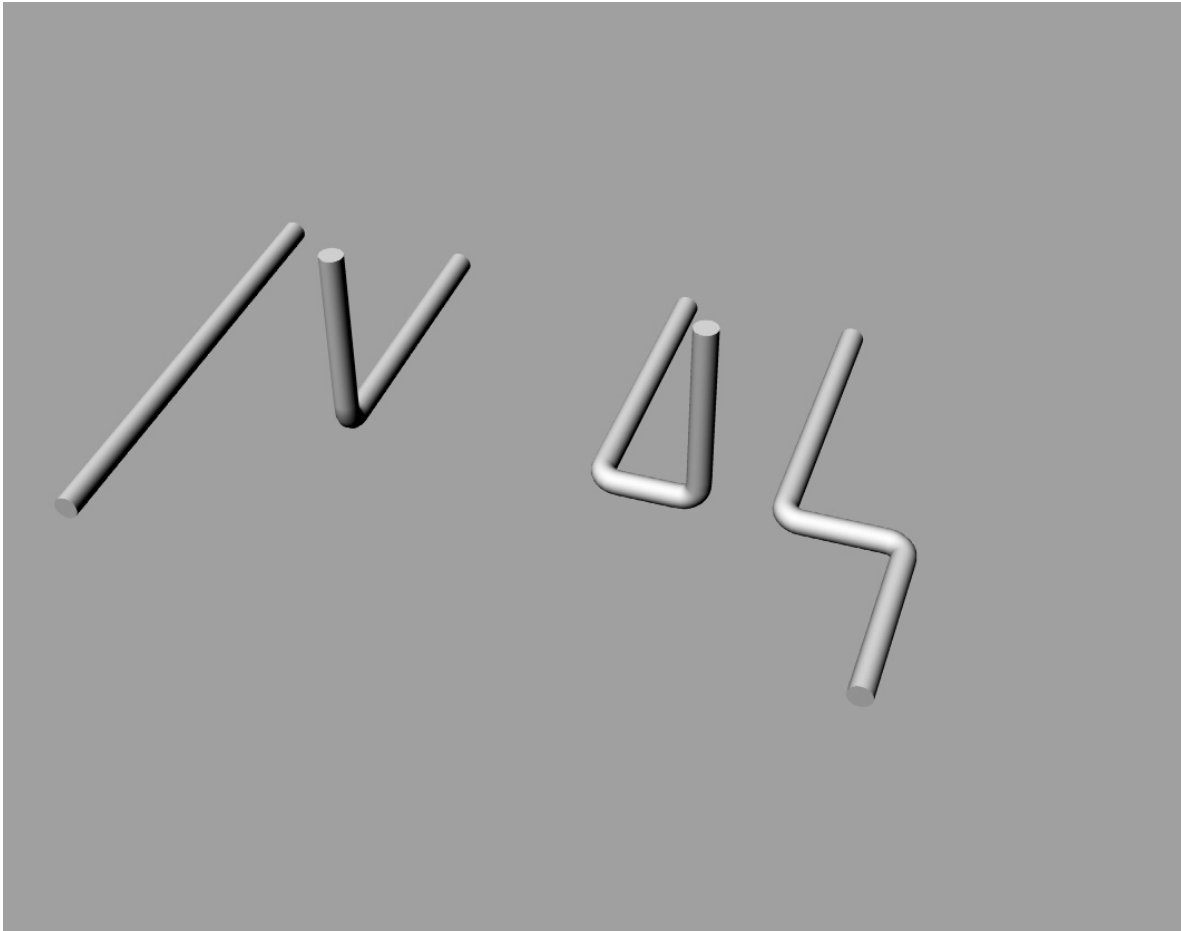
Now make slot on the bottom side of the elevator 2 mm 25mm long only on one side to fit a piece of the red Bowden tube. Make sure your servo is in the middle position. Now bend the steel rod 90 degrees as in the above picture and slide the Bowden tube on.



Now install the elevator Glue the Bowden tube (see above picture) in the stabilizer with CA glue . make sure the elevator is in it's neutral position. Now you can fixate (glue) all the hinges form the elevator and ailerons in place. Do this from the bottom side , use thin CA.



Trim the 2 control-horns for the ailerons as shown in the above picture. Now make a slot in each aileron size as the tab from the control-horn, the slot should be inline with the servo horn. Now glue the control horn in the aileron with 5 minute epoxy. Next step is the actuator arm, Cut off the treaded part from the treaded steel 2mm pushrod . Turn on both ends of the tread a clevis, adjust the length and insert the clevises in the pushrods.

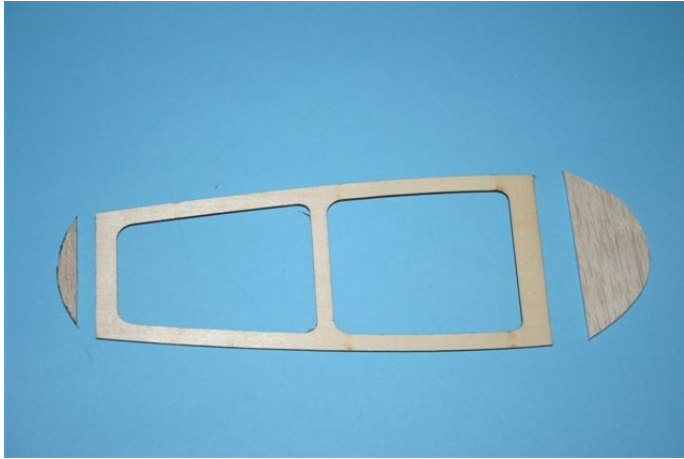


This picture shows the steps how to make a Z-bend.
Steps are from left to right. You need 2 ordinary pliers.
Practice first on a scrap steel rod.

- 1 Make the straight steel rod.
- 2 Make a 90 degree bend.
- 3 Now make a new 90 degrees bend with about the thickness of the control horn as distance. As in the picture
- 4 Now twist the vertical end horizontal as in the picture and the z-bend is ready.

CANOPY:

Don't get confused about the below pictures because we also show the canopy of our F15.



Get the canopy bottom, front and the back plate, place on the fuselage. secure the bottom plate with some tape. Now glue the front and back plate to plywood canopy bottom.



Drill a 3 mm hole through the front plate and fuselage. Let the dowel stick out a couple of mm and glue the dowel to the plywood front former. Remove canopy frame from the fuselage. Now sand the edges of the canopy frame so that it fits within the outlines of the fuselage.



Trim the front, back and bottom edges from the ABS canopy now align it and tape it on the fuselage.



Mark the Outline from the fuselage on the Canopy with a marker. Now trim of the plastic along the marked line. Repeat this step until you have a good fit of the ABS canopy

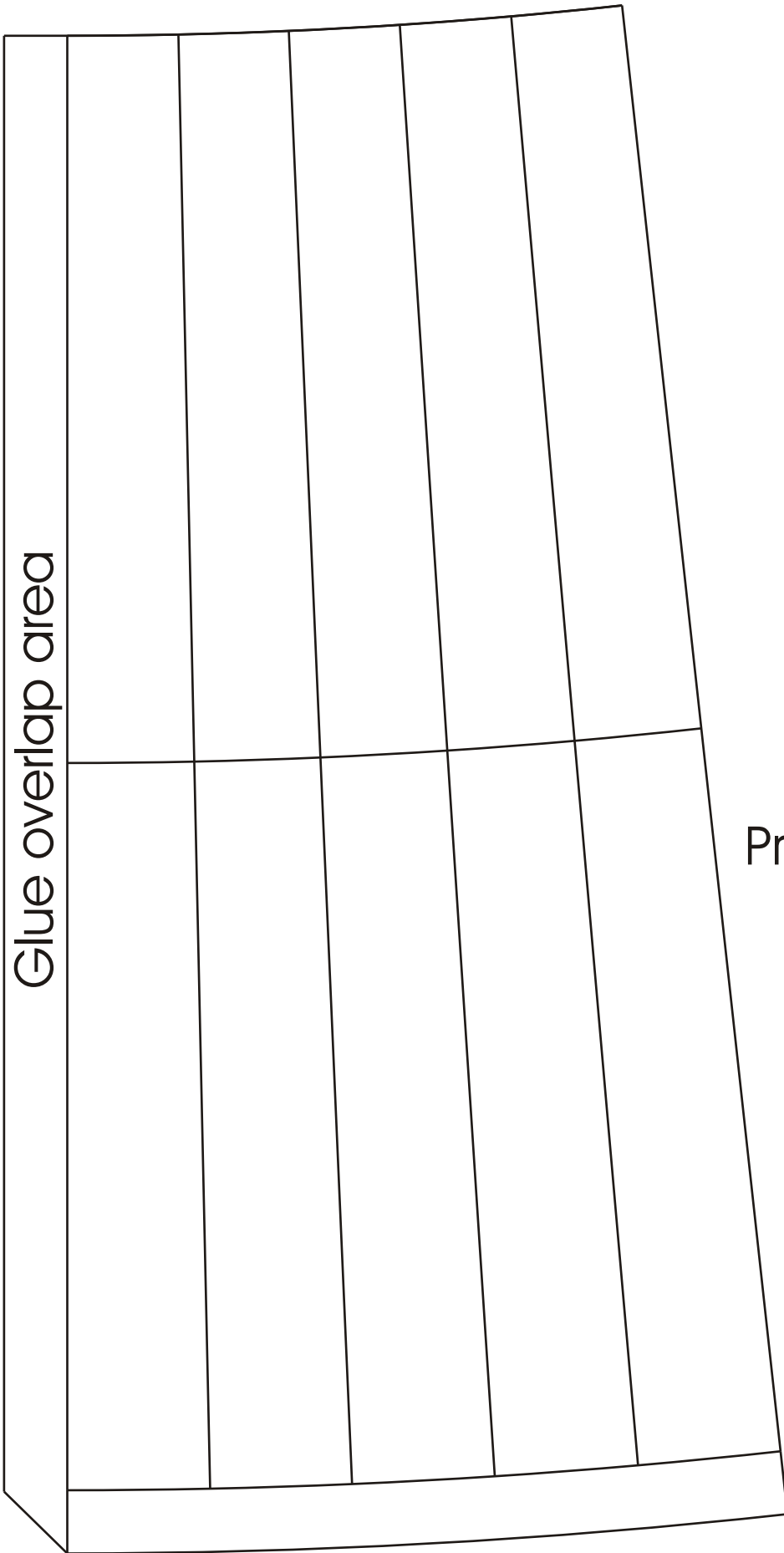


Put the Canopy floor on the fuselage, and do some last adjustments to the canopy floor and ABS canopy. Glue 2 magnets in the back edges of the cockpit floor. Also glue them inside the fuselage direct under the other magnets. Paint the floor in the colour you want. Now place (after the paint has dried) a piece of plastic film (cut-open plastic bag) under the frame . Now you can glue the abs canopy in place with 5 minute epoxy or canopy glue.

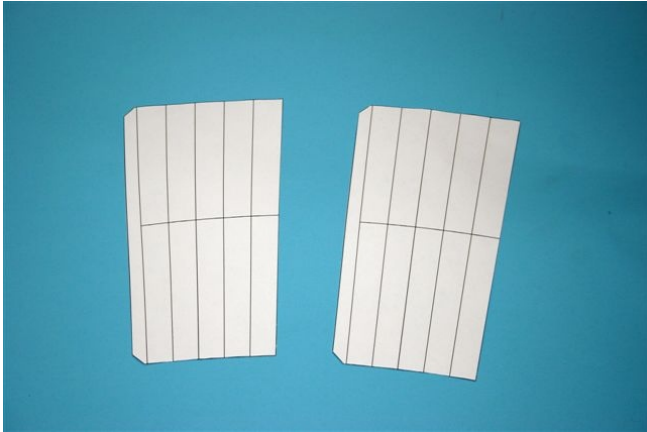


Put masking tape around the frame line on the canopy and spray paint the top. After removing the masking tape your cockpit should look like this.

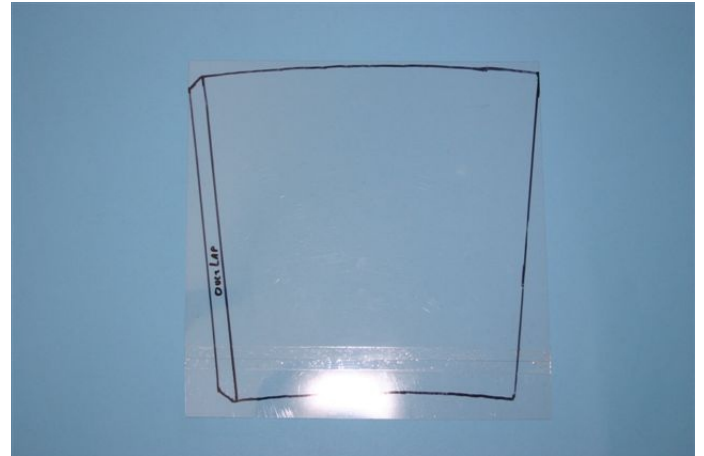
Trusttube
template



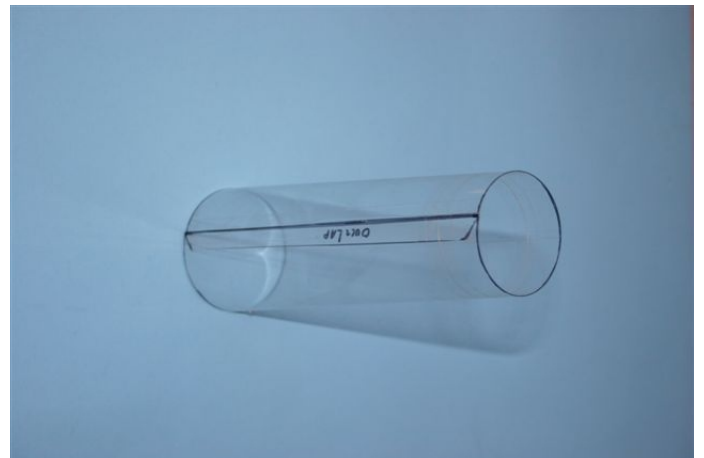
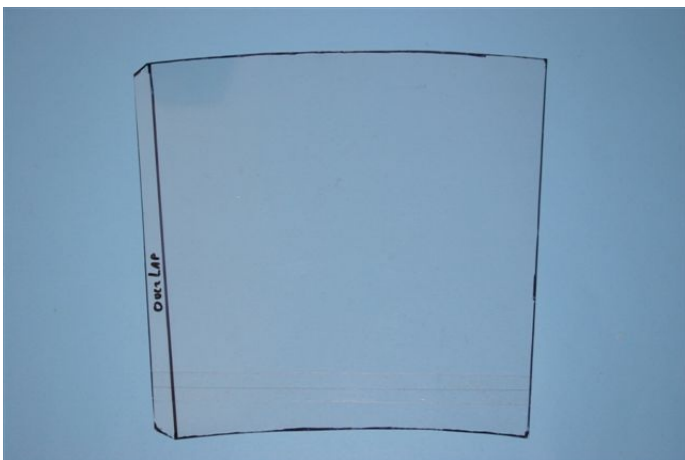
Print out twice



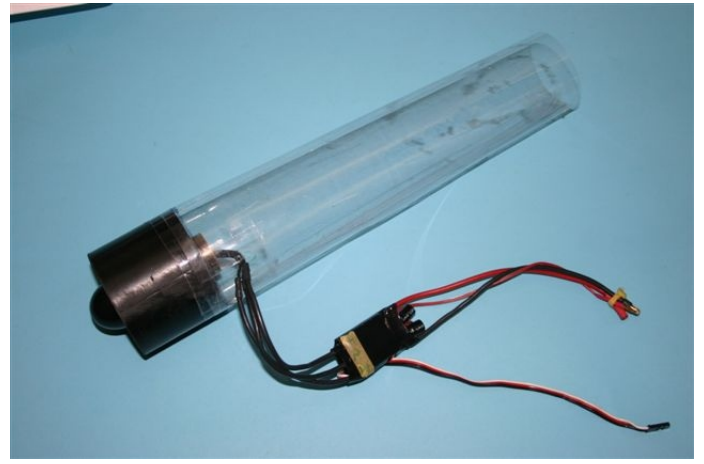
Print out the template 2 times cut them out and glue or tape them together. This template is A4 size.



Place the template under the supplied pvc sheet and trace the outline with a marker. Do this twice as there are 2 fanunits.



Cut out the unrolled surface for both trust tubes. Put the overlap area inside. Roll the pvc to a tube and apply outside adhesive tape. The Edge should match the innerline of the overlap area. Now you have a perfect conical trust tube.



Read the installation instruction from your fan-unit first. Install motor and ESC first. You can either install the ESC inside the thrust tube or outside. We recommend to place the ESC behind the motor inside the thrust tube.



On the left picture you see the 4 channel micro receiver attached next to the servo with Velcro. You can also tape the servo wires to the top. So the wires will not be in the way when you install the ducted fan.



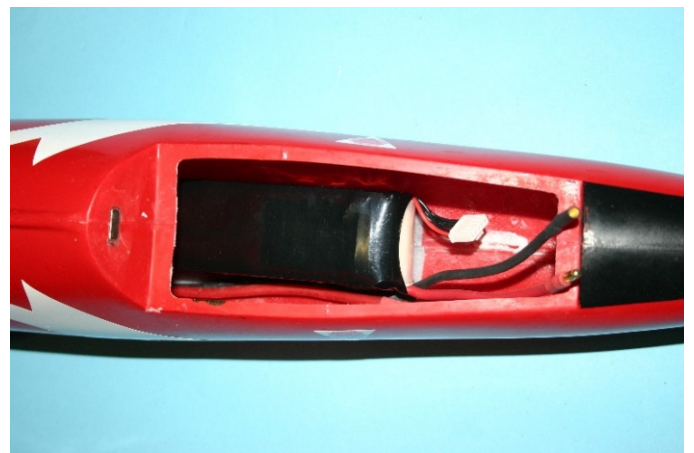
Before you install the fan-unit you must add some tape to the front off the shroud, so that the shroud will fit tight in the intake tube. Also the battery extension wires should be routed first through the fuselage.



The wires from the ESCs need to be extended all the way to the front. Use at least 4mm² wires. Because of the length we advise to put in the middle of the extension wire 1 or 2 capacitors e.g. 470 uf 40V. Strip some of the insulation of wire and solder the capacitor(s) to the wires, than insulate with shrink tube.

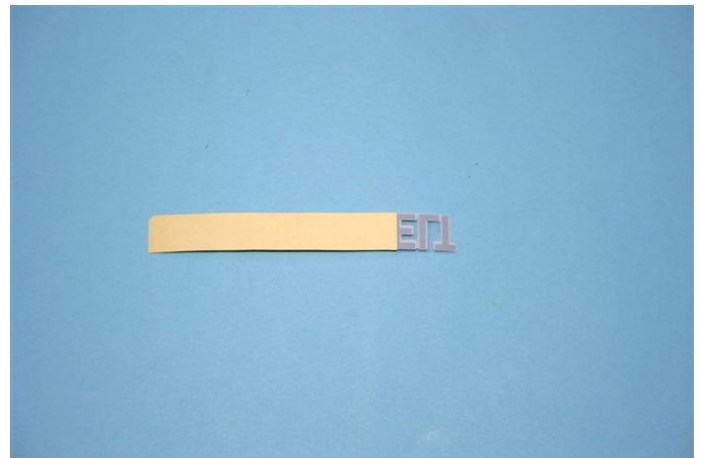


For the installation of the bungee hook you must align a ruler with the front of the bottom intakes like in the above picture, mark the middle with a marker. This is the bungee hook location.



Drill a 2 mm hole at the marked location (the former from the battery-tray in right under here) . Now glue the bungee hook in the hole with 5 minute epoxy. Battery is secured with Velcro in the fuselage. Battery shown is a PQ2500 4S1P

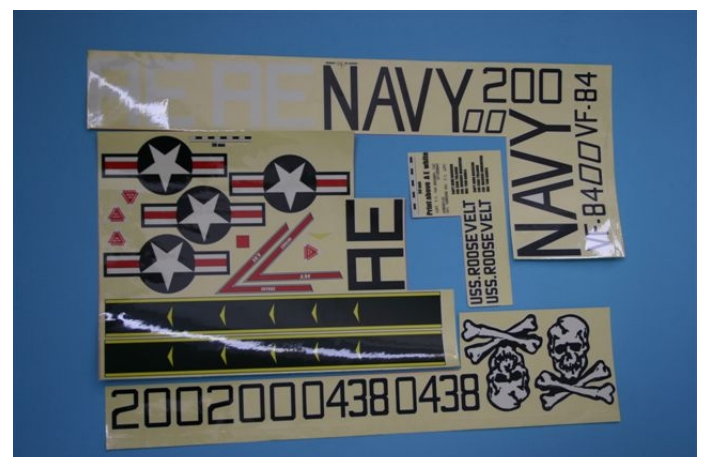
This page shows you how to apply decals (our phantom is shown here)



Cut the decal from the decal sheet leave the protective back on the decal. Trim of 10 mm from the protective back.



Line out the decal on the area where you want to put the decal. Press the adhesive part. Check if the decal is lined out and remove the rest of the protective back.



Do this for all the decals

Settings:

C.G. 48-52 mm from the leading edge of the wing.

Elevator throws 14 mm up 10 mm down. Use 60% exponential

Ailerons throws 12 mm up 6 mm down. Use 30% exponential.

First Flight.

Use a bungee to start the plane. Before start is good to use some up trim. After start level the plane don't attempt to turn, climb and trim the plane. The Starfighter can be flown very slow with a high AOT But never make turns with a high angle of attack (nose high position) You risk to drop a wing.

You will find the airplane is very nimble but has excellent stability. Loops and snap rolls are easily obtained with adequate entry speeds.. **Just remember to land level; as to avoid damage to the plane** . Happy Flying.

WARNING!

Although the Starfighter is a stable airplane, it is not a trainer or first EDF airplane. This airplane is capable of very high speeds and therefore can cause serious personal injury and property damage. We strongly urge you to seek the help of an AMA approved instructor if this is your first aircraft of this type.

Please use common sense

Fly in suitable areas for a high-speed aircraft such as an AMA approved field.

High-end Technology Holland assumes no liability for the operation or performance of this product. It is the responsibility of the operator to use this product in a safe and responsible manner.

