

HIGH-END TECHNOLOGY RC

Electric ducted fan rafale



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

The Rafale 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: 850 mm

Length: 1060 mm

Weight: 1800-2200 gram

Ducted fans 2 x 72mm

Recommended 2 x 6904 fanunits with 2 x3W and 2 TS36

Items needed to complete:.

4 ch. Computer Radio system w/ 2 servos.

2 Electronic brushless speed controller

2 fan-units 6904 HETFAN or MF 480.

2 480 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

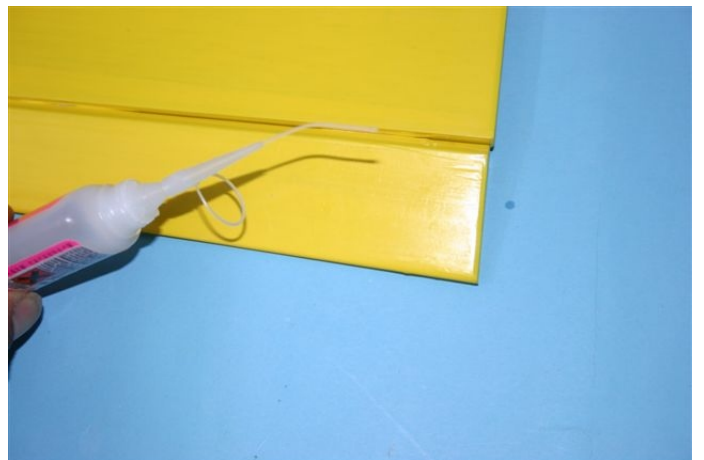
X acto Knife

Soldering iron.





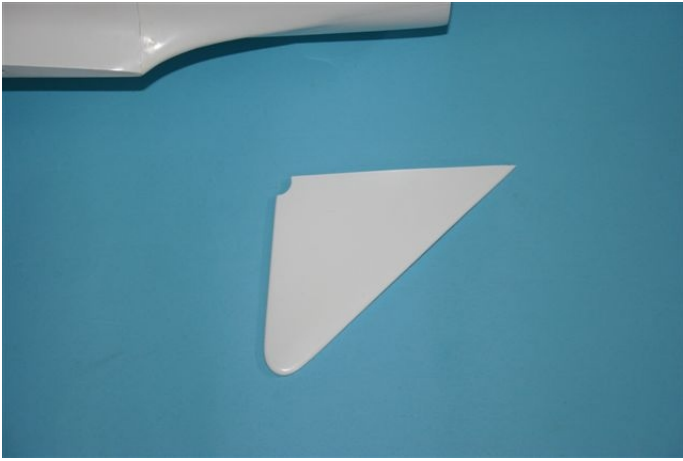
First open up the foam with a round file.
Install the servos in the wings, lengthen the servo cables to 300 mm. mark the hole on the fuselage to route the servo through.



Glue the hinges in place with thin CA glue. Fit the elevon and glue the hinge with CA glue. Look at the picture.



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. Place something under the wing tip like a box 50-52 mm. When the epoxy has cured you can do the other wing panel the same way.



Now we are going to install the canards. Glue the canards in place with 5 minute epoxy. Use box to lay under the canard. So both canards will have the same height. Only put glue inside the edge of the canard. Remove excess epoxy before it sets with cloth soaked with cleaning alcohol.



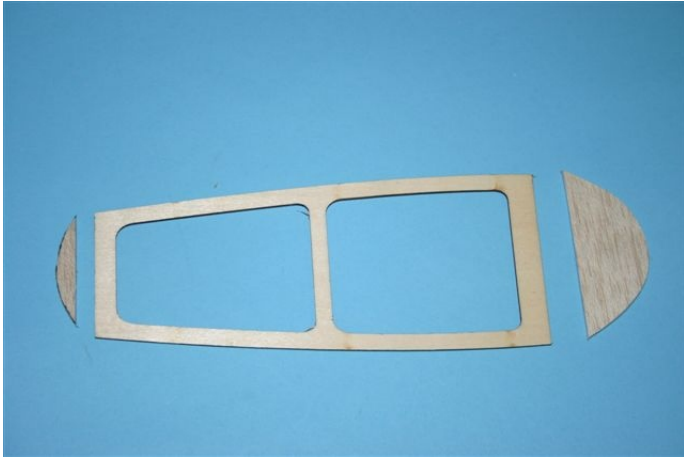
Trim the 2 control-horns for the ailerons as shown in the above picture, don't trim the top. Now make a slot in each aileron size as the tab from the control-horn, the slot should be inline with the servo horn. Now glue the control horn in the aileron with 5 minute epoxy. Next step is the actuator arm, Cut the pushrod to length and solder a clevis to the not treaded end. Turn on one ends of the tread a clevis, adjust the length and insert the clevises in the pushrods.



Now we are going to install the vertical fin. Glue the fin in place with 5 minute epoxy. Only put bead of glue inside the edge of the canard. Remove excess epoxy before it sets with cloth soaked with cleaning alcohol. In the left picture we use 2 strips of balsa wood taped together to act as a clamp. This clamp will also help you to glue the fin on the stub.

CANOPY:

Don't get confused about the below pictures because we also show the canopy of our F15 and F104



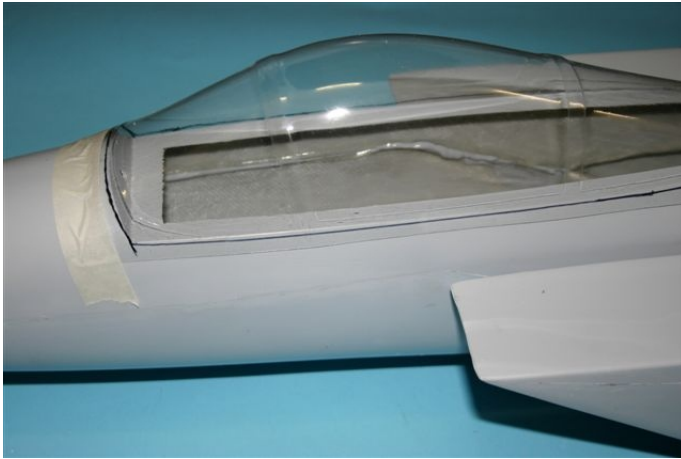
Get the canopy bottom, front and the back plate, place on the fuselage. secure the bottom plate with some tape. Now glue the front and back plate to plywood canopy bottom.



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.



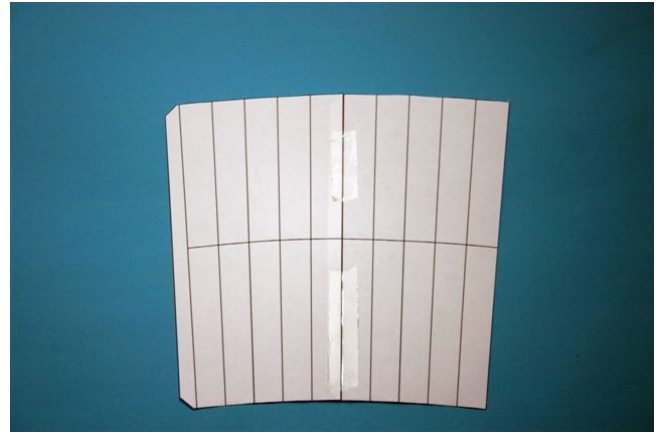
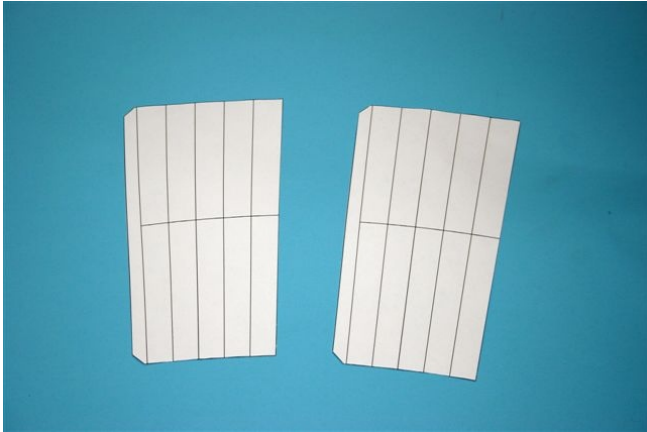
Put masking tape around the frame line on the canopy and spray paint the top. After removing the masking tape your cockpit should look like this.

Trusttube
template

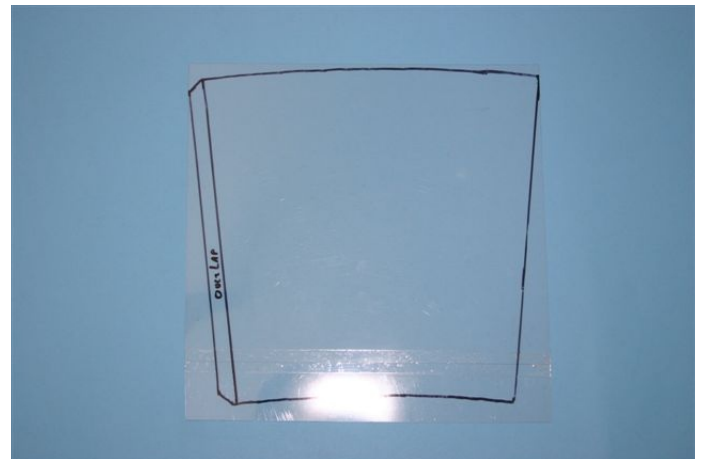


Glue overlap area

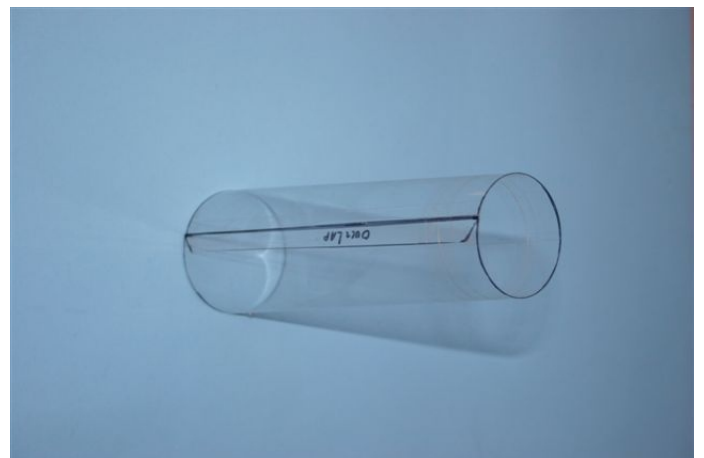
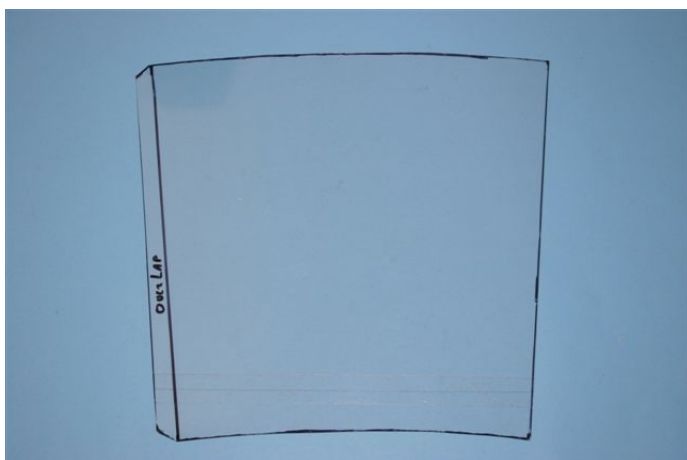
Print out twice



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



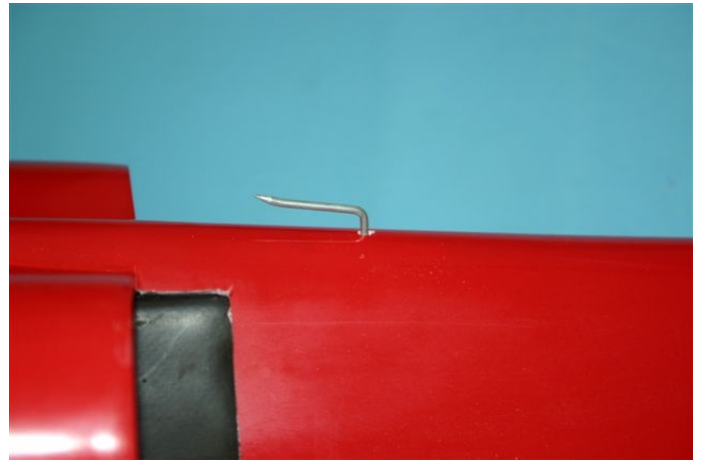
Place the template under the supplied pvc sheet and trace the outline with a marker. Do this twice as there are 2 fanunits.



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.



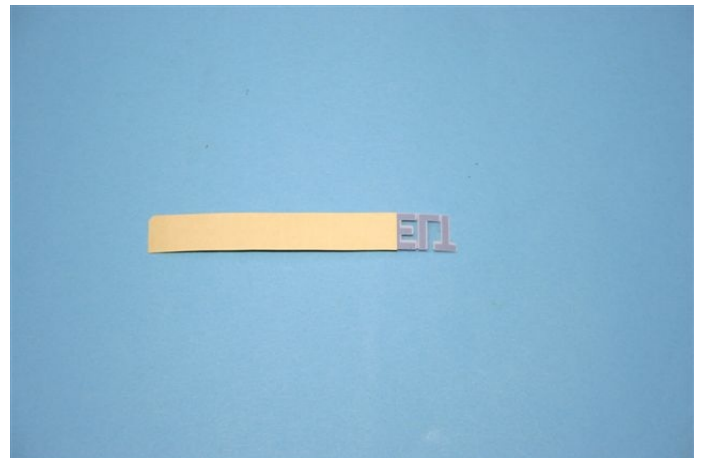
Drill a 2 mm hole in the middle of the plywood. Now glue the bungee hook in the hole with 5 minute epoxy.

Battery is secured with Velcro in the fuselage. Battery shown is a YT 4200 4S1P



On the right picture you see the 4 channel micro receiver attached to the fuselage 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.

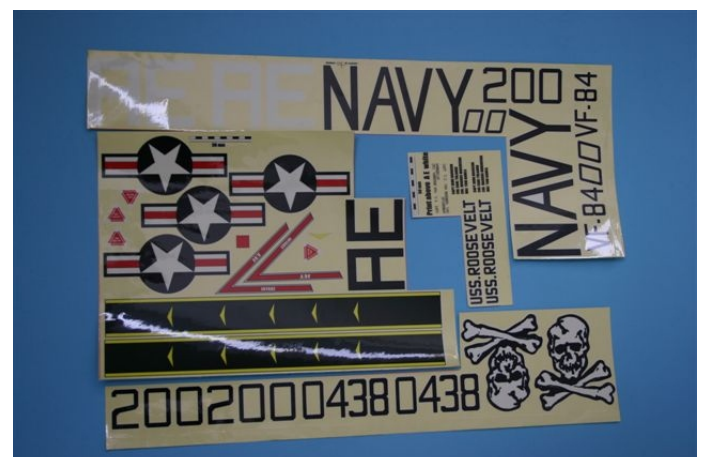
This page shows you how to apply decals (our phantom is shown here)



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. 55-65 mm from the leading edge of the wing.

Elevons should be set 5-6 mm up

Elevator throws 8 mm up 8 mm down. Use 30% exponential

Ailerons throws 8 mm up 8 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 Rafale 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 Rafale 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.

