

Before use, please carefully read the explanations!

The Red Arrows

BAe Hawk

The Finest Ready to fly Ducted Fan Model

Designed for use with the Turbax 48 fan and K&B .48
or OS .46 VX-DF engine



This airplane is designed for entry
level into ducted fans

Suitable for Dynamax fan unit and OS .91
(modification required by the builder)

Not suitable for use with turbine engines

INSTRUCTION MANUAL



SAFETY PRECAUTIONS

This radio control model is not a toy!

First-time builders should seek advice from people having building
experience in order to assemble the model correctly and to produce
its performance to full extent.

Assemble this kit only in places out of children's reach!

Take enough safety precautions prior to operating this model.

You are responsible for this model's assembly and safe operation!

Always keep this instruction manual ready at hand for quick
reference, even after completing the assembly.

AMD Aero Model Design

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1

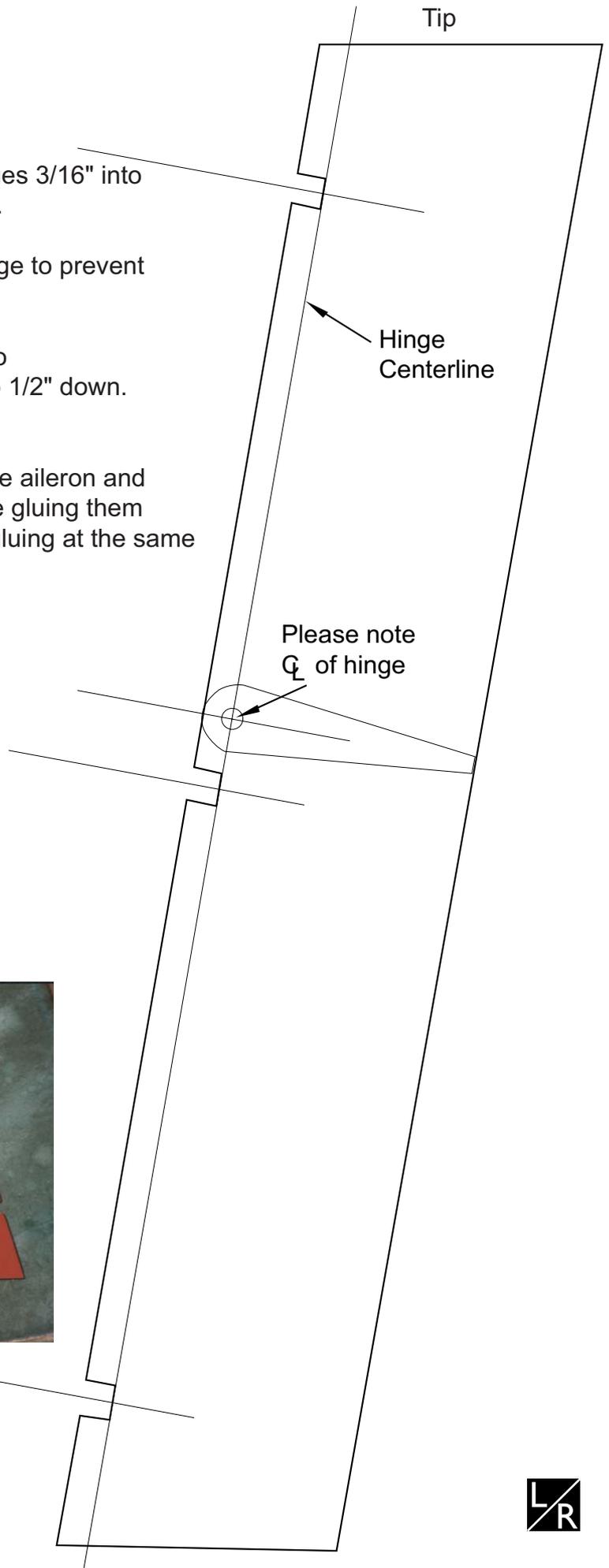
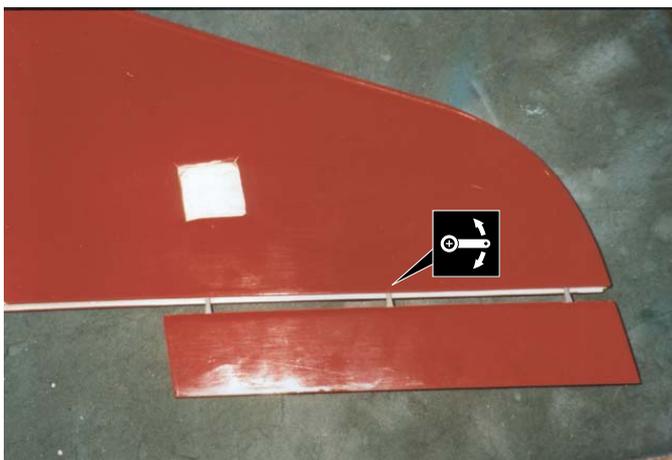
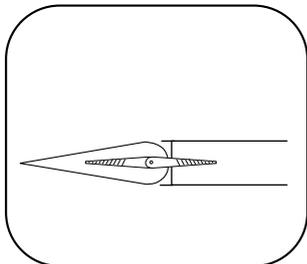
Aileron Assembly

1. Notch 3/16" sq for hinges.
2. Glue hinge into aileron recess hinges 3/16" into aileron. Cut hinge to fit into aileron.

White glue works very well. Oil hinge to prevent stiffness.

3. Glue aileron into wing. check for no binding in aileron. Travel 5/8" up to 1/2" down.

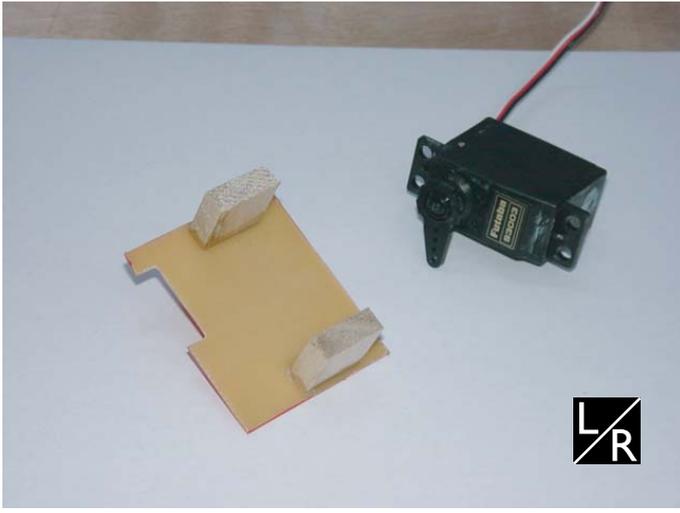
Note : The hinges should be glued into the aileron and flaps and allowed to dry first before gluing them into the wing. Do not to do all the gluing at the same time.



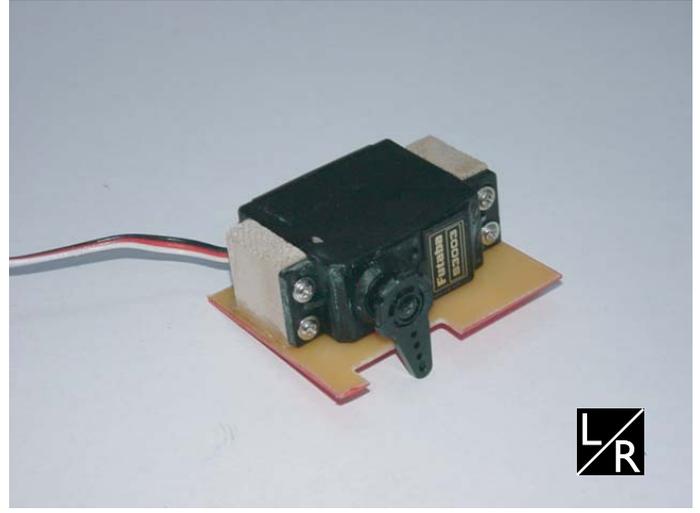
Securely glue together before flight, you lose control of your airplane which leads to accidents!



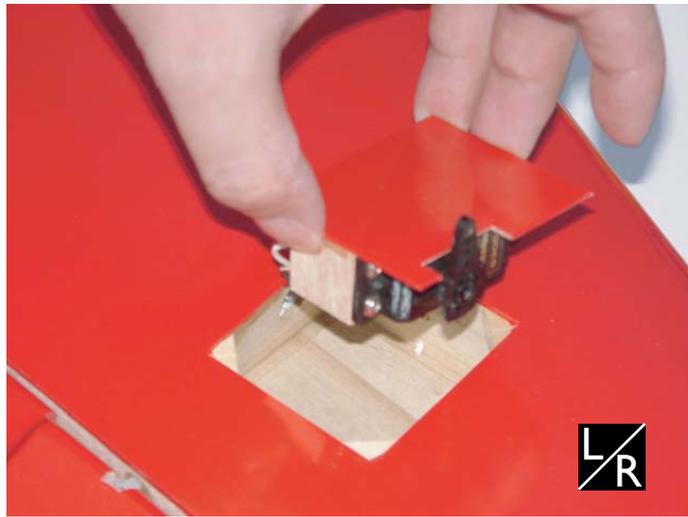
2 Glue the hardwood servo support with epoxy.



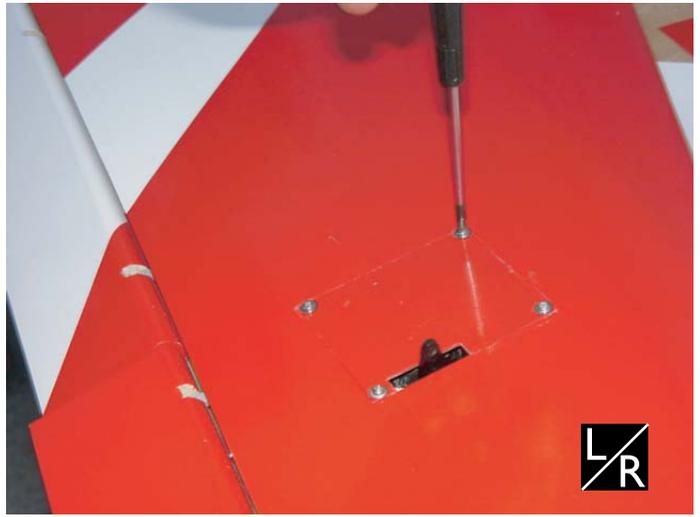
3 Install the aileron servo.



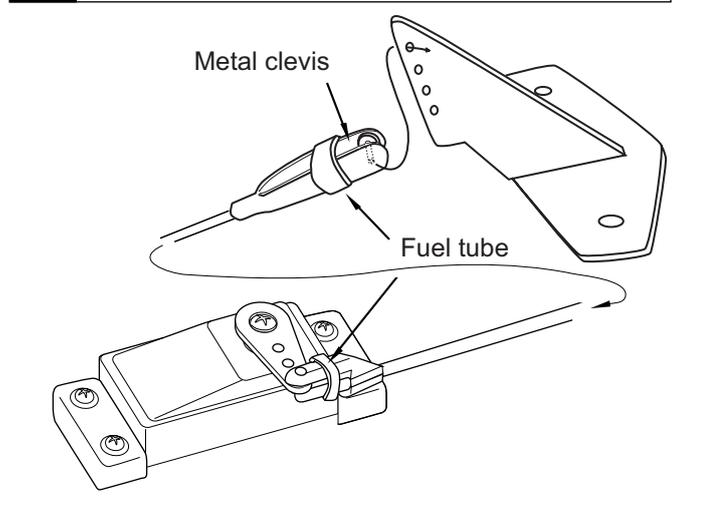
4 Connect the extension servo wire through the wing panel.



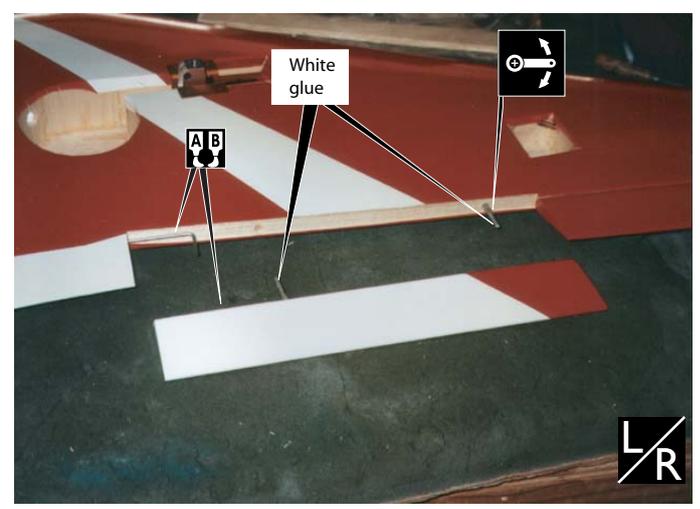
5 Secure the servo assembly in place.



6 Secure all the connector with a piece of fuel tube.



7 Install the flap hinge. Refer to the step 1 above.



A B Apply epoxy glue.

L/R Assemble left and right sides the same way.

Hand icon Pay close attention here!

C.A Apply instant glue (CA glue, super glue).

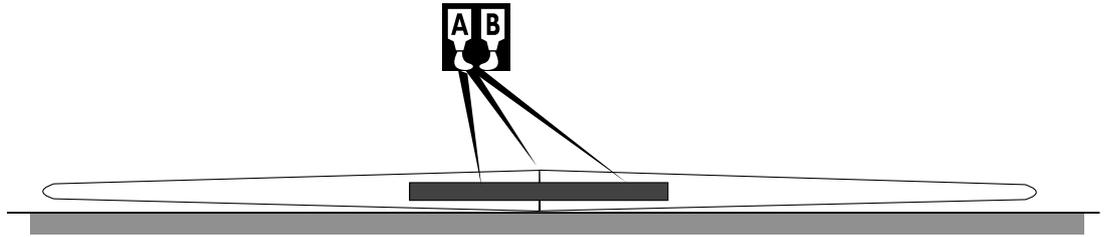
Hand icon Ensure smooth non-binding movement while assembling.

Hand icon Cut off shaded portion.

Do not overlook this symbol!



8 Be sure to apply enough epoxy glue to wing spar for joining the wing panel. Join the wing panel with 0¼ dihedral.

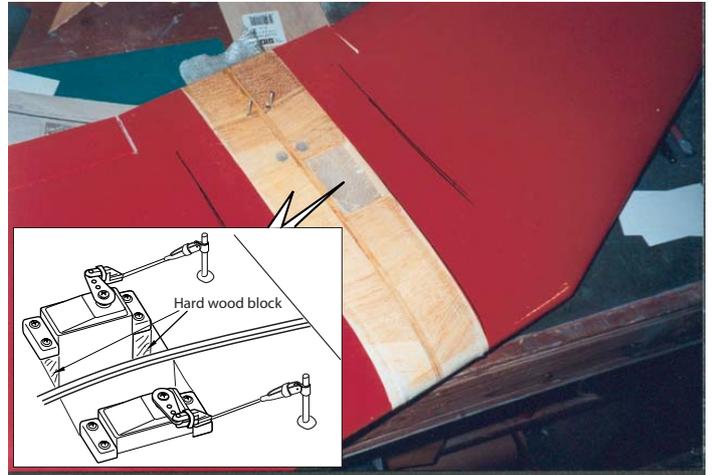


Securely glue together. If coming off during flights, you lose control of your airplane which leads to accidents!

9 Remove covering film for glass. Laminate one layer of 6 oz. glass cloth over the wing join.



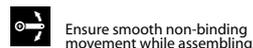
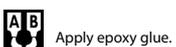
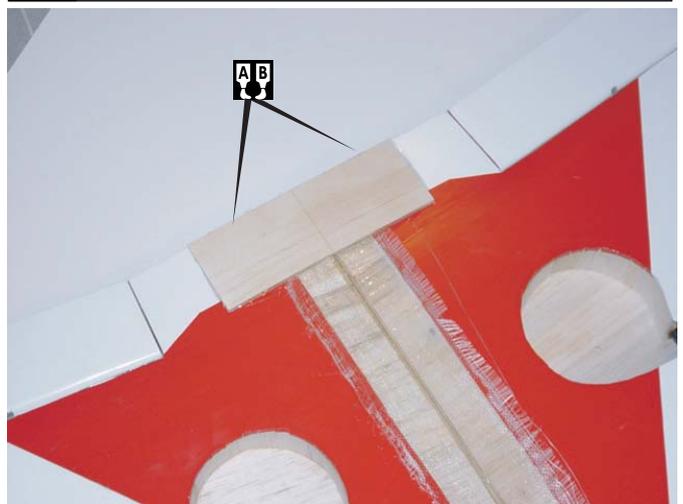
10 Install servo for both flap.



11 Install retract landing gear and wheel well. SPRING AIR retract being used in the diagram.



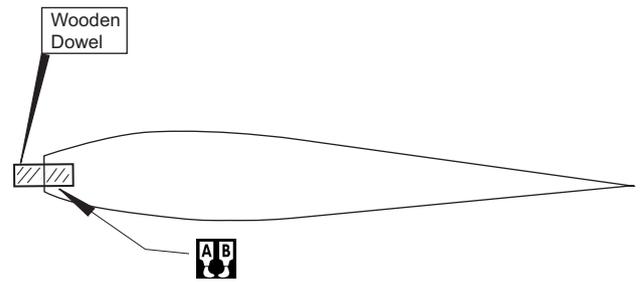
12 Remove the covering film and glue the plywood doubler.



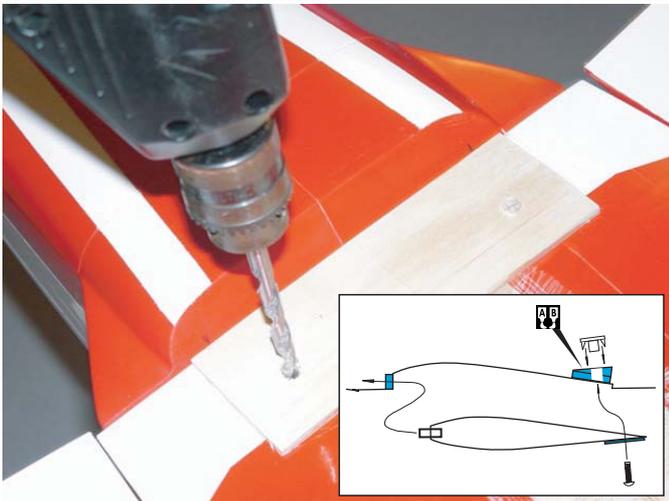
13 Drill the hole to the fuselage. Mark the hole in the wing leading edge while the wing attached.



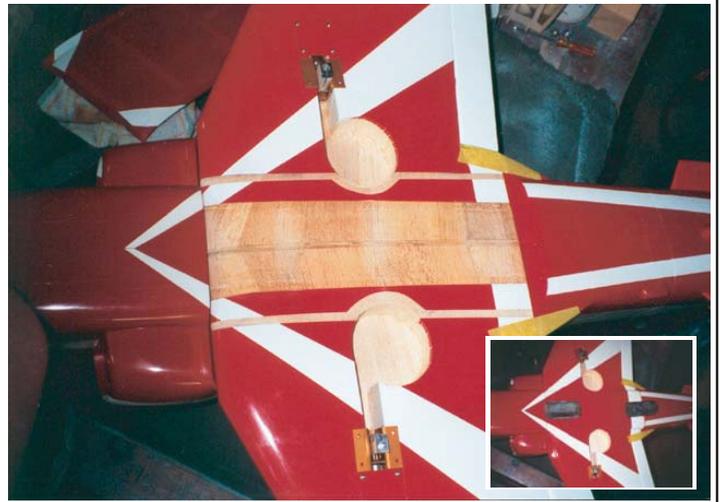
14 Drill the hole on leading edge and epoxy two pieces wooden dowels in place.



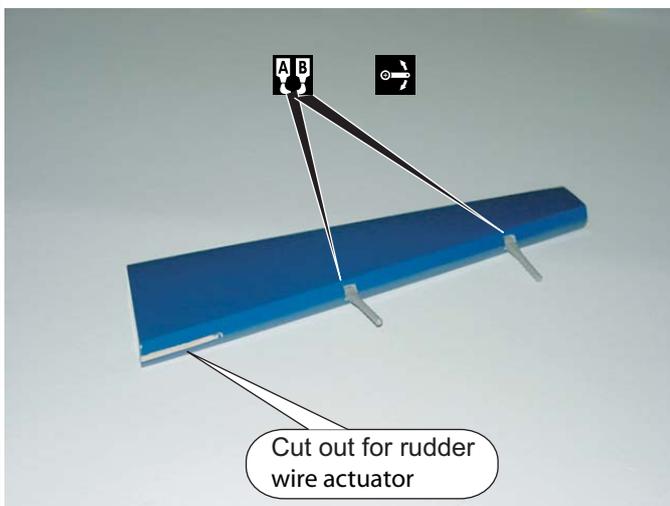
15 Drill 4.5mm hole while wing panel attached and well aligned. Epoxy the blind nuts.



16 Remove covering film for epoxy the belly pan.



17 Glue the hinge to the rudder. Refer to step 1 for the detail. Also see drawing on next page for detail.



18 Pre-assemble the rudder wire actuator



A B Apply epoxy glue.

L/R Assemble left and right sides the same way.

Hand icon Pay close attention here!

C.A Apply instant glue (CA glue, super glue).

Hand icon Ensure smooth non-binding movement while assembling.

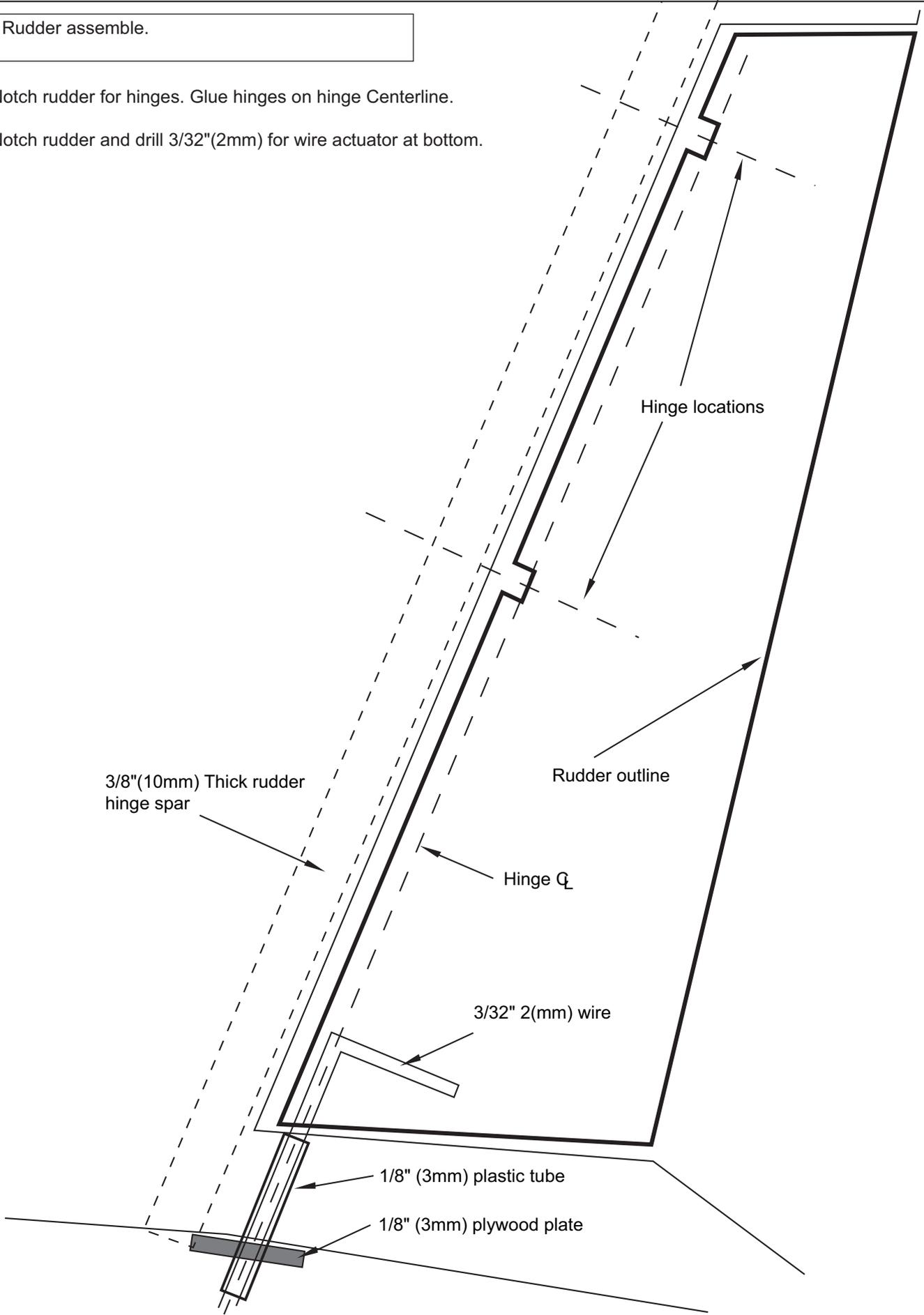
Hand icon Cut off shaded portion.

Do not overlook this symbol!



19 Rudder assemble.

1. Notch rudder for hinges. Glue hinges on hinge Centerline.
2. Notch rudder and drill 3/32"(2mm) for wire actuator at bottom.



A B Apply epoxy glue.

L R Assemble left and right sides the same way.

Hand icon Pay close attention here!

C.A Apply instant glue (CA glue, super glue).

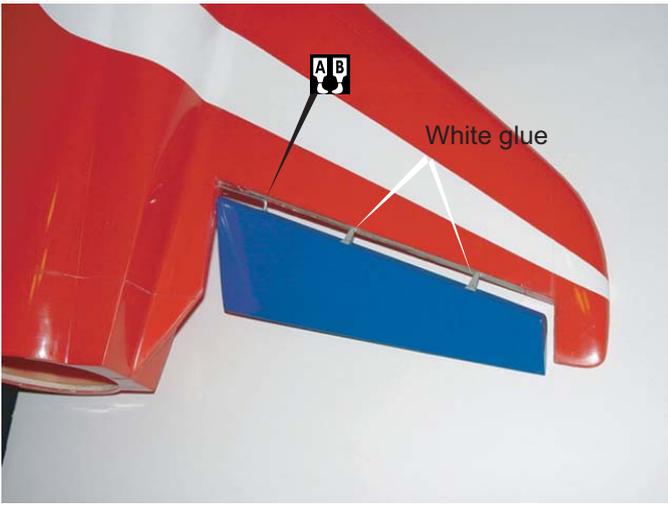
Hand icon Ensure smooth non-binding movement while assembling.

Hand icon Cut off shaded portion.

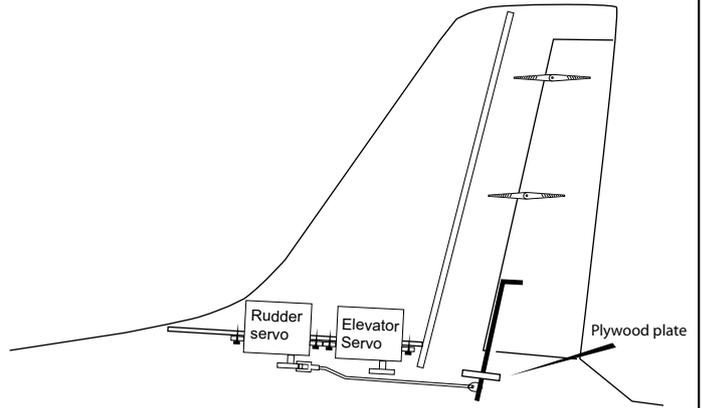
Do not overlook this symbol!

Warning! 警告

20 Glue the hinge to fin. Used white glue for hinge and epoxy for rudder wire actuator.



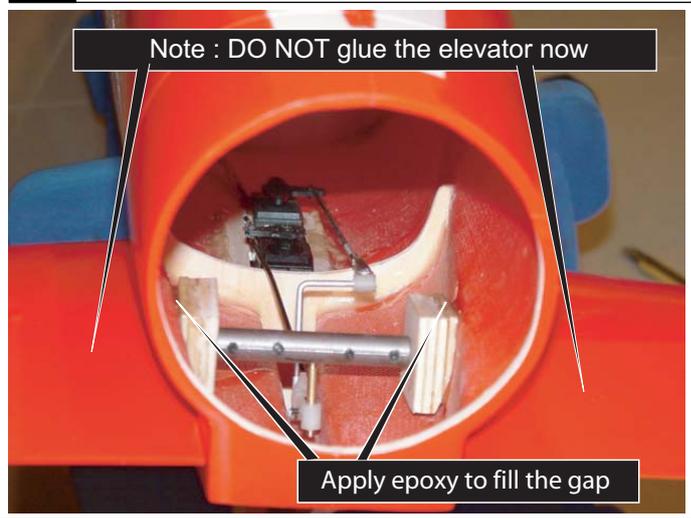
21 Install the rudder and elevator servo. Connect the rudder linkage.



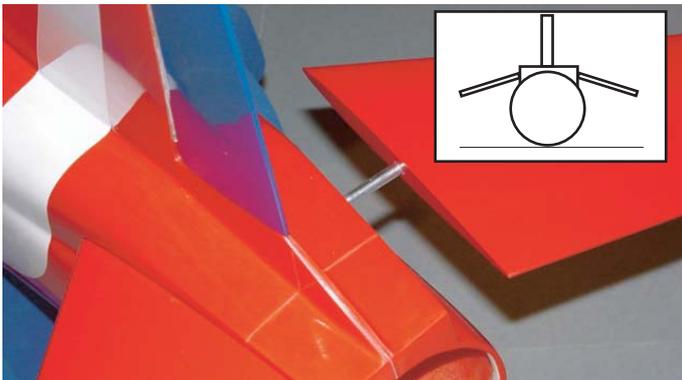
22 Trial fit the elevator control mechanism.



23 Connect the elevator linkage. Trial fit the elevator.



24 Epoxy the elevator to the aluminum rod. Work on the left first and then following by right.



Note :
 - Sand the rod before apply epoxy.
 - 30 mins epoxy is recommended.
 - Use masking tape to hide the pivot to prevent stiffness.
 - Never work on both side on same time.

25 Trial fit the fan unit and mark the position on the wooden fan rails.



Photo shown is the OS .46 VX-DF engine and Turbax 48 fan. Turbax 48 fan and K&B .48 ducted fan engine may be used as alternatives.

A B Apply epoxy glue.

L R Assemble left and right sides the same way.

Hand icon Pay close attention here!

C.A Apply instant glue (CA glue, super glue).

Hand icon Ensure smooth non-binding movement while assembling.

Hand icon Cut off shaded portion.

Do not overlook this symbol!



26 Insert the rear exhaust liner.



27 The exhaust liner should come out from the fuselage for 1/4".



28 Insert the front exhaust liner. It should fit on the bell mouth of the rear liner.



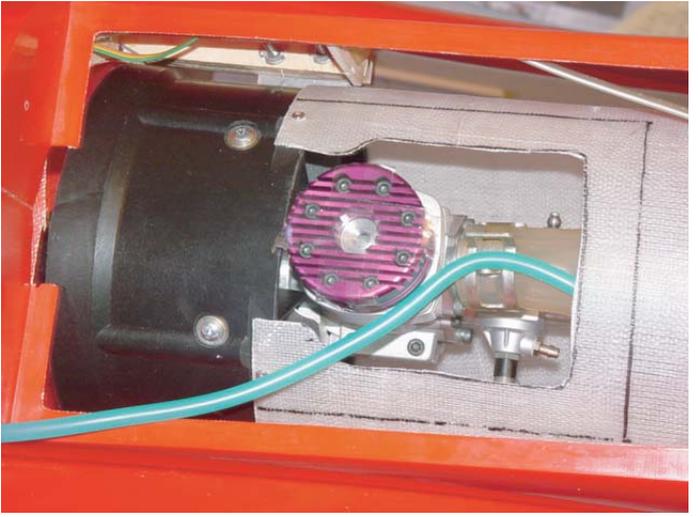
29 Mark the exceed portion on the front liner and cut it out.



30 Cut out the hole on the front liner for engine cap. Refer to Fig #1 for detail.



31 Trial fit the fan unit and the complete exhaust liner. Refer to drawing#1 for detail.



A/B Apply epoxy glue.

L/R Assemble left and right sides the same way.

Hand icon Pay close attention here!

C.A Apply instant glue (CA glue, super glue).

Hand icon Ensure smooth non-binding movement while assembling.

Hand icon Cut off shaded portion.

Do not overlook this symbol!

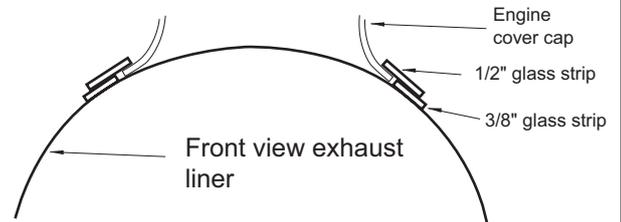


32 Cut 3/8" and 1/2" glass sheet (supplied) for installing of engine cap on step 33.



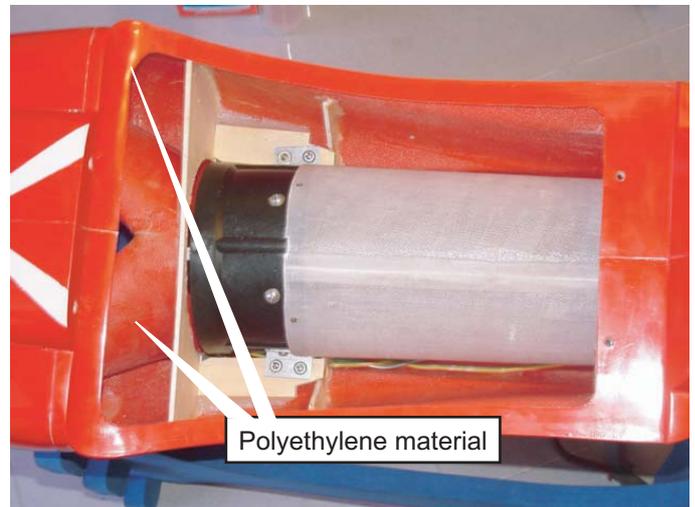
33 Installation of the engine cap. Refer to drawing #1 for more details.

1. Draw engine cover cap on liner. Cut 3/8" strips of glass, sand and glue around perimeter of cap
2. Cut 1/2" glass strips, sand then glue over 3/8" strips. Leaving a 3/16" overlap towards the engine.



34 Cut out the engine open on front liner.

1. The engine cover cap is help with this overlap and is contained on 3 sides. See drawing on 35 for detail.
2. Use template to cut out glass liner inside engine cover cap area. Besure to center template while flush with leading edge of exhaust liner. Draw and cut out this area. Test fit cover cap, adjust to fit.
3. Use polyethelene material (supplied) to attach liner to the fan unit. Cut material to shape as shown in Fig 1. Sand and glue to liner with CA glue.

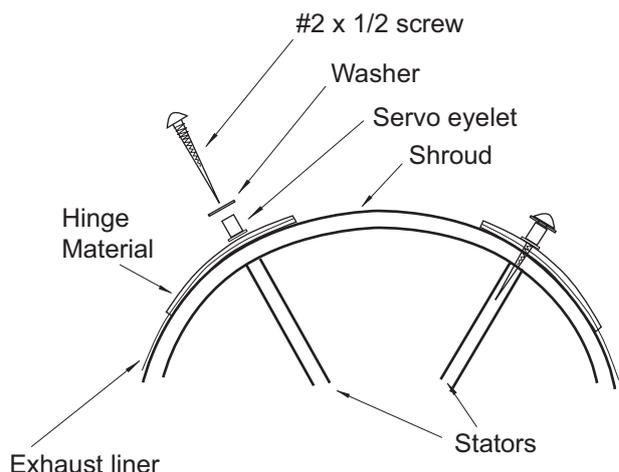


35 Attach engine cap.

Hold exhaust liner tight around fan shroud. Drill 0.04" hole through hinge material and shroud. Aligning on stator.

Drilled hold must be into center of stator for best results. use #2x1/2 screw washer and servo eyelet to attach liner to shroud.

Use a #62 rubber band to hold engine cover cap into and on to exhaust liner. Remove rubber band to remove cover cap.



A B Apply epoxy glue.

L R Assemble left and right sides the same way.

Hand icon Pay close attention here!

C.A Apply instant glue (CA glue, super glue).

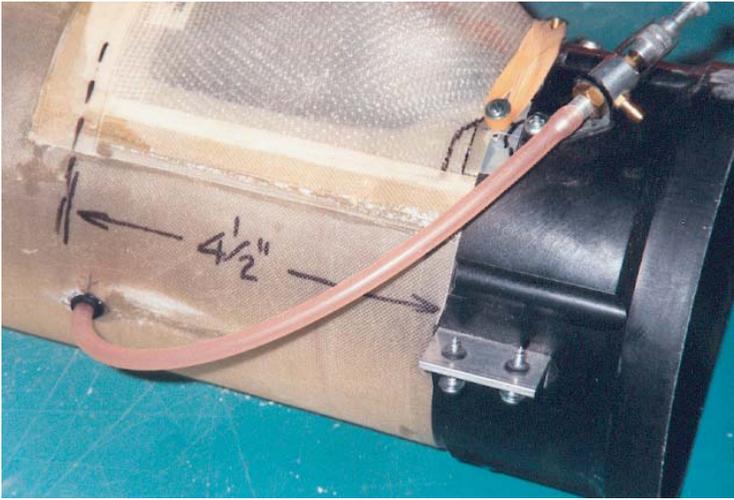
Hand icon Ensure smooth non-binding movement while assembling.

Hand icon Cut off shaded portion.

Do not overlook this symbol!

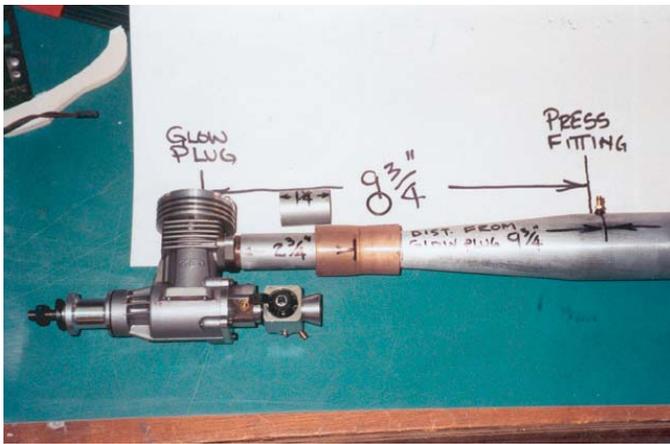


36 Installing fuel line.



Add fuel and pressure lines for the fuel system by drilling holes in exhaust liner. Rubber grommet are used to prevent chaffing or cutting of the fuel lines.

37 Measure the distance between the glow plug and press fitting achieve 9-3/4" for best RPM.



Drill #36 hole in Macs#1250 tuned pipe for pressure fitting.

Fitting goes on the Apex of the pipe. The Apex of pipe is about 9-1/4" from rear of pipe and is noted as a faint gray line around it.

When pipe is attached to engine, the distance from the glow plug to the pressure fitting is 9-3/4" to properly tune the engine for maximum R.P.M.

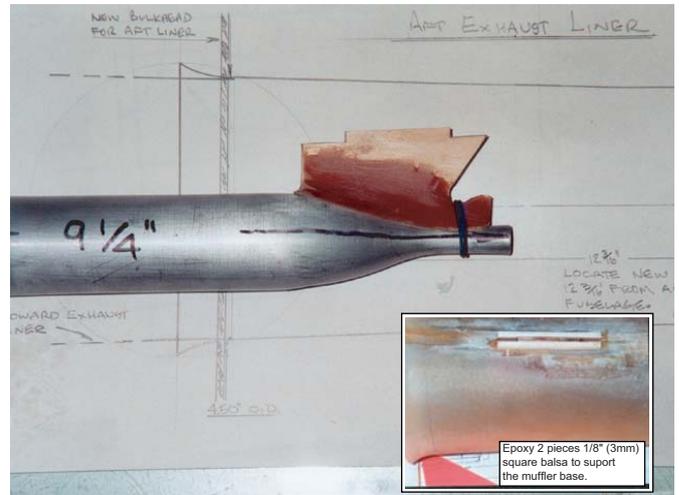
To adjust length for tuned pipe , do the following :

- A) Push medium pipe coupler over header 1/2 the length of coupler. A bittle oil may help make task easier.
- B) Put tuned pipe into rear of coupler. Pushing inward to correct length of 9-3/4" distance from glow plug to Apex of pipe.

38 Install the muffler, throttle control, and fuel tube. Refer to drawing#1 for detail.



39 Epoxy the muffler support to the rear liner. Refer to drawing#1 for detail.



A/B Apply epoxy glue.

L/R Assemble left and right sides the same way.

Hand icon Pay close attention here!

C.A Apply instant glue (CA glue, super glue).

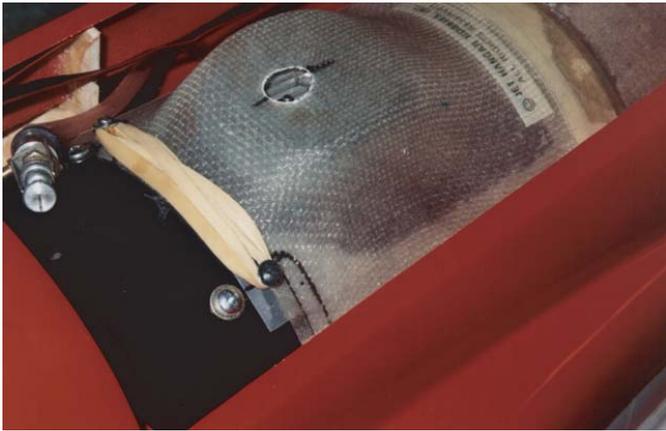
Hand icon Ensure smooth non-binding movement while assembling.

Hand icon Cut off shaded portion.

Do not overlook this symbol!



40 Secure the engine cap with rubber band.



41 Install the engine cover.

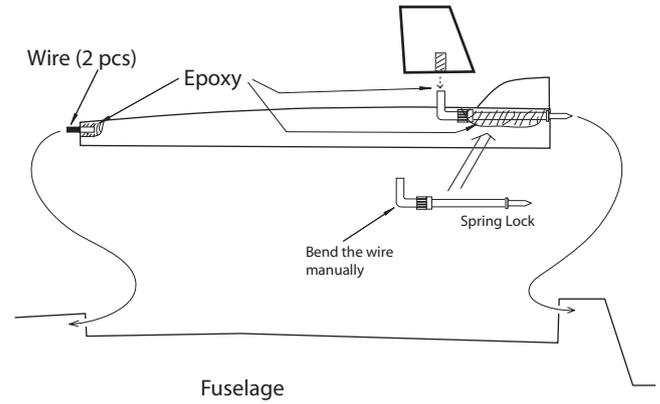
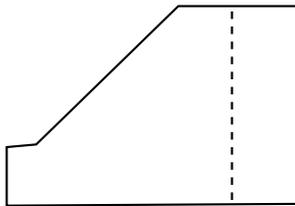


Fig #1

Rocket City 21
Polyethylene



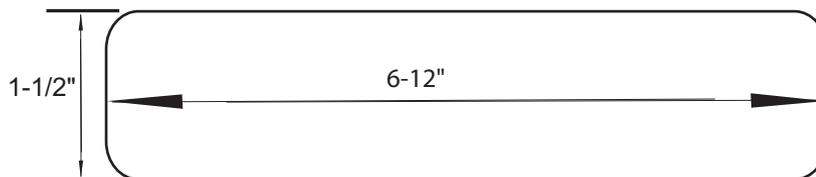
2 each required

Template for engine cut out
in forward exhaust liner

Leading edge
of exhaust liner

42 Nose gear installation.

1. Glue 3/8" Hardwood plate to retract plate, 1 left and 1 right.
2. Test fit plate assembly into aircraft.
3. Fit 5/32" wire into Spring Air nose gear. Attach 2-1/4" nose tire with wheel collar. Tire should be Robart 2-1/4" tire.
4. Using #4x1/2" screws attach nose gear to plywood plate assembly and install into nose for test fitting. Cut out wheel well if not previously done. See drawing for scale door outline. Door must be 6-1/2" long!



A/B Apply epoxy glue.

L/R Assemble left and right sides the same way.

Hand icon Pay close attention here!

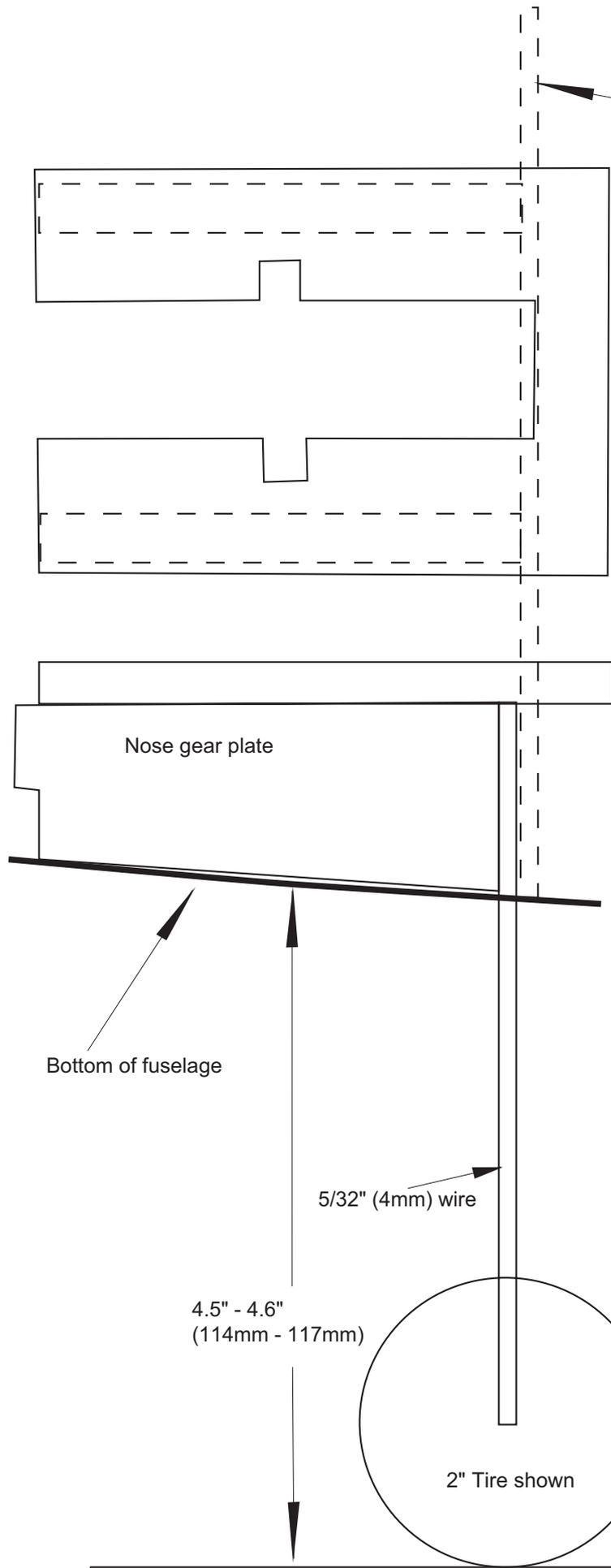
C.A Apply instant glue (CA glue, super glue).

Hand icon Ensure smooth non-binding movement while assembling.

Hand icon Cut off shaded portion.

Do not overlook this symbol!





Bulkhead in nose

Note : Diagram shown for installing of Spring Gear retract. Other retract may slightly difference.

Fuselage outline

Bulkhead

Remove

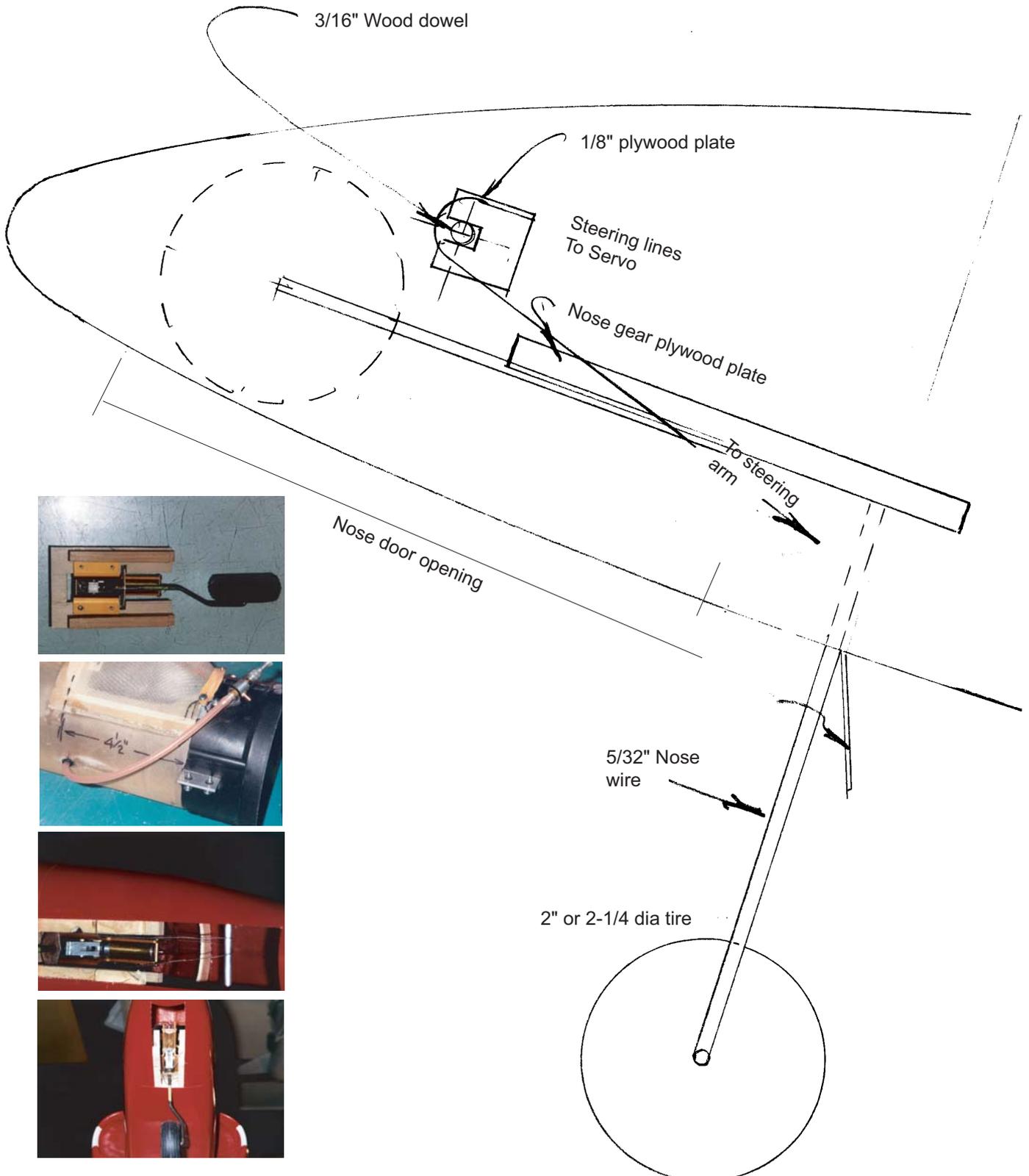
Nose gear plate



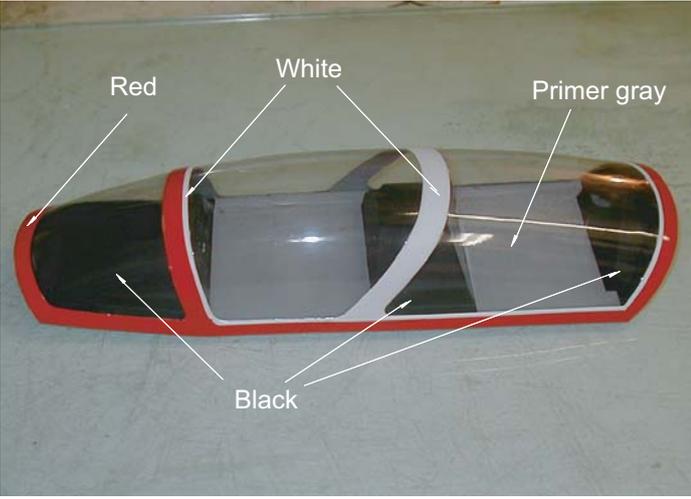
Cut away from bulkhead for steering arm and strut wire

2" Tire shown

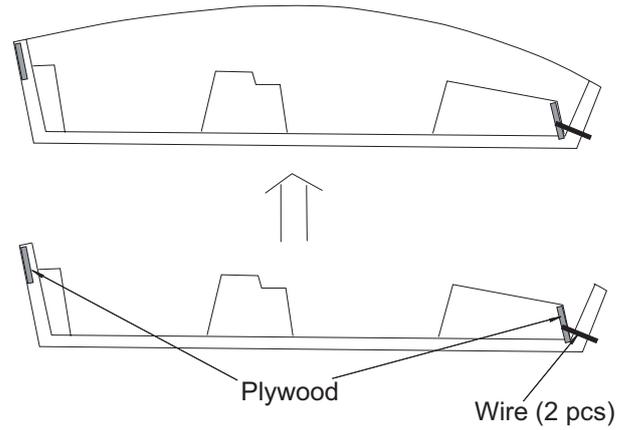
1. Hook up line for steering. Add 15" of airline tubing for Up and Down operations.
2. Glue nose gear assembly to nose bulkhead with 30 minutes epoxy. Be sure to clear lines from touching the glue.
3. Steel tiller bar 3/16" wood dowel must be installed because gear rotates forward. This allows for nose gear steering.
4. Steering servo will be mounted under front of Cockpit.
5. Steering lines go forward, under and around steering dowel back to the servo. Hook up when servo is installed and check for steering direction. Hence left stick is left turn.



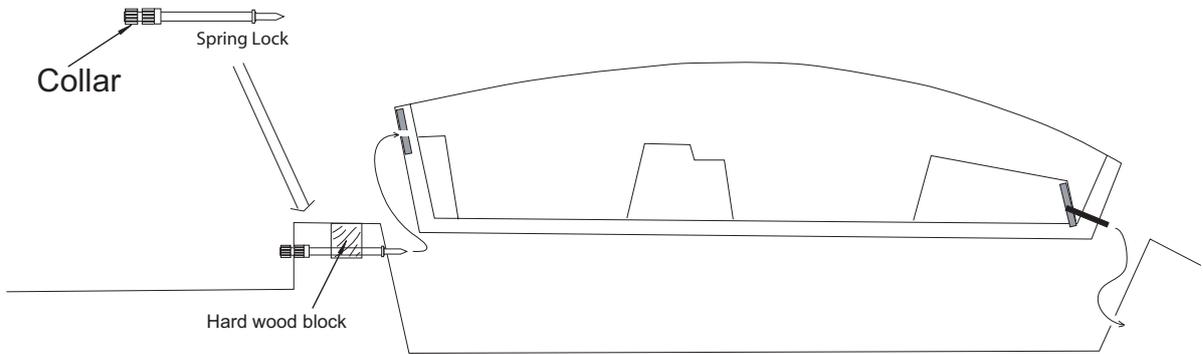
45 Paint the interior cockpit and the canopy.



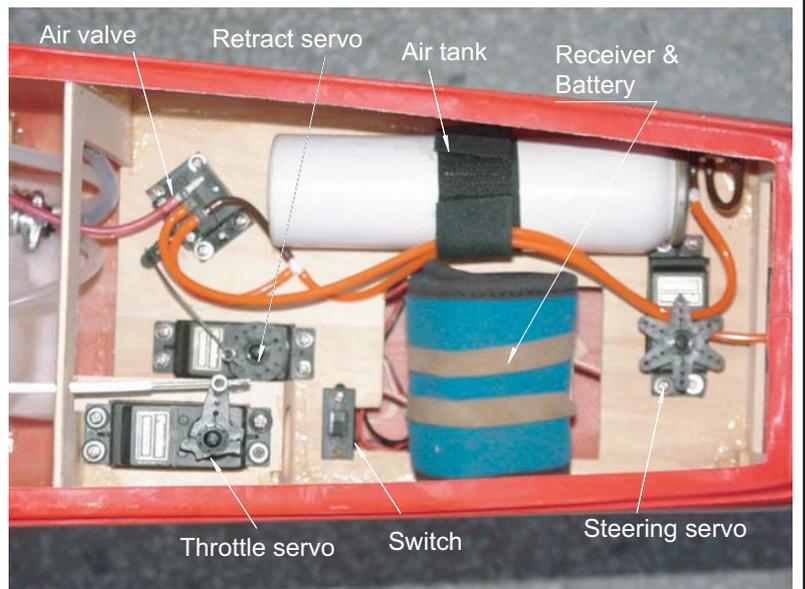
46 Glue the cockpit to canopy.



47 Install the spring lock to secure the canopy.



48 Install retract, steering, throttle servo and radio. Cut a hole in the fan bulkhead to allow the extension cords of elevator and rudder servo to be brought forward.



A B Apply epoxy glue.

L R Assemble left and right sides the same way.

Hand icon Pay close attention here!

C.A Apply instant glue (CA glue, super glue).

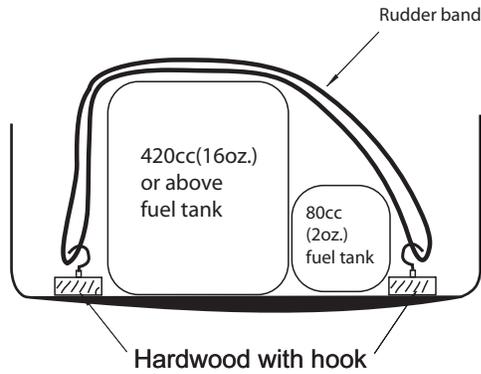
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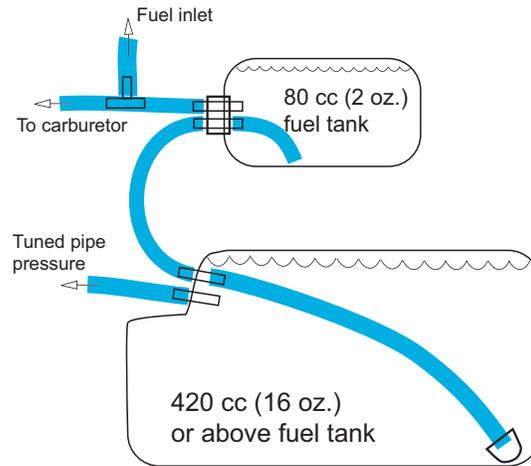
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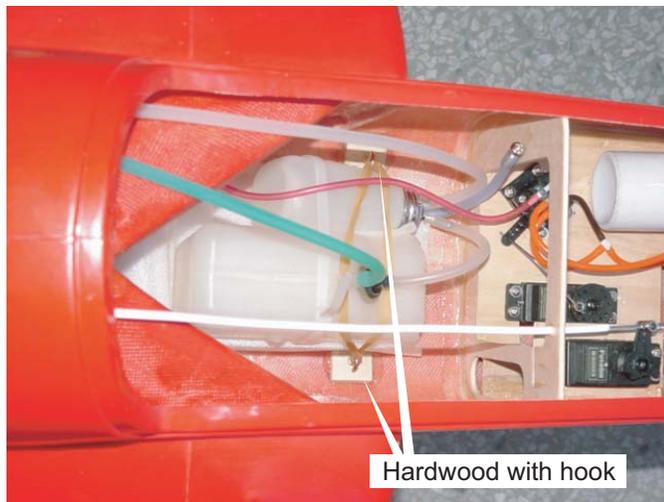
49 Epoxy the hardwood and attach the hook.



50 Connect the dual fuel tank as below.



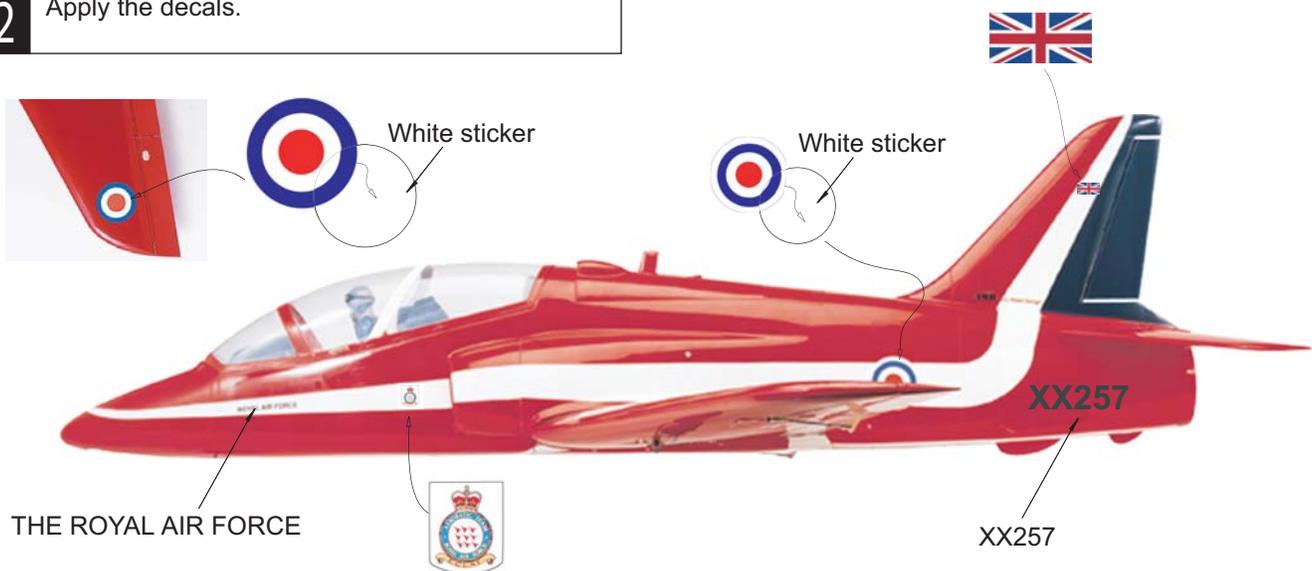
51 Secure the fuel tank by rubber band.



Alternatives of fuel tank:

Use the Sullivan SS-12 12 oz. rectangular tank on the fuselage floor and glued a Sullivan SS-10 10 oz. tank on top of it. There is still room for the starter probe to enter.

52 Apply the decals.



AB Apply epoxy glue.

L/R Assemble left and right sides the same way.

Hand icon Pay close attention here!

CA Apply instant glue (CA glue, super glue).

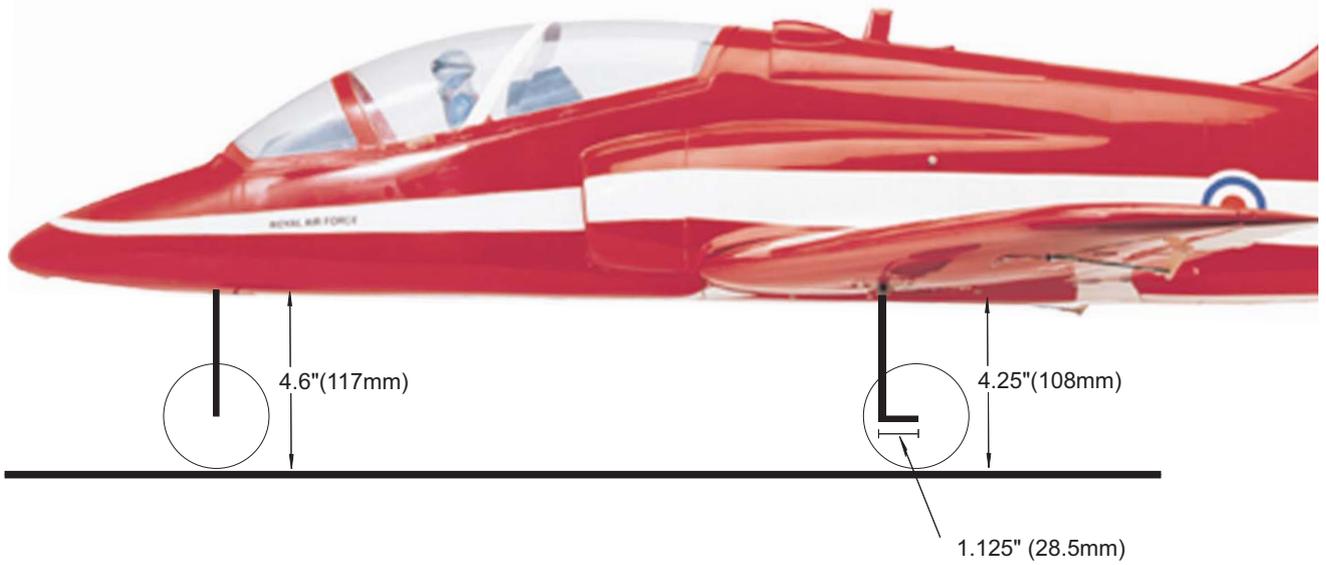
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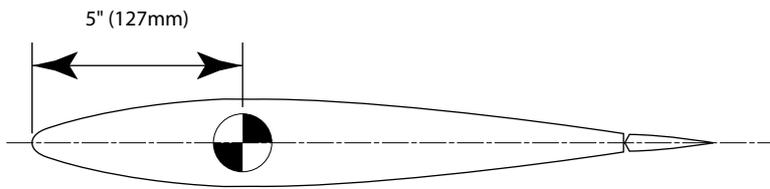
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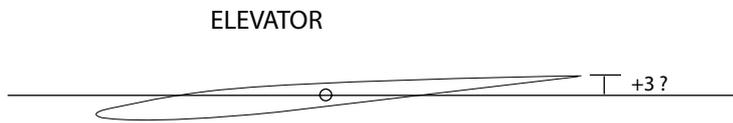
Landing gear position



C.G.



Neutral Position



Movement

