Giant 1/4 Scale Super Chipmunk Aerobatic 99" wingspan ARF 60-76cc

Code: SEA410

ASSEMBLY MANUAL

"Graphics and specifications may change without notice".

Specifications:

Wingspan---------- 99 inches---------- 251.5 cm.
Wing area---------- 1559.3 sq.ins---------- 100.6 sq.dm.
Weight---------- 26.4 lbs---------- 12 kg.
Length---------- 81.8 in---------- 207.7 cm.
Engine size---------- 60cc - 76cc gasoline.
Radio---------- 8 channels 9 servos.

INTRODUCTION

Thank you for choosing the **Giant 1/4 Scale Super Chipmunk Aerobatic 99” wingspan ARF 60–76cc** ARTF by **SG MODELS** . The **Giant 1/4 Scale Super Chipmunk Aerobatic 99” wingspan ARF 60–76cc** was designed with the intermediate/advanced sport flyer in mind. It is a semi scale airplane which is easy to fly and quick to assemble. The airframe is conventionally built using balsa, plywood to make it stronger than the average ARTF, yet the design allows the aeroplane to be kept light. You will find that most of the work has been done for you already. The motor mount has been fitted and the hinges are pre-installed. Flying the **Giant 1/4 Scale Super Chipmunk Aerobatic 99” wingspan ARF 60–76cc** is simply a joy.

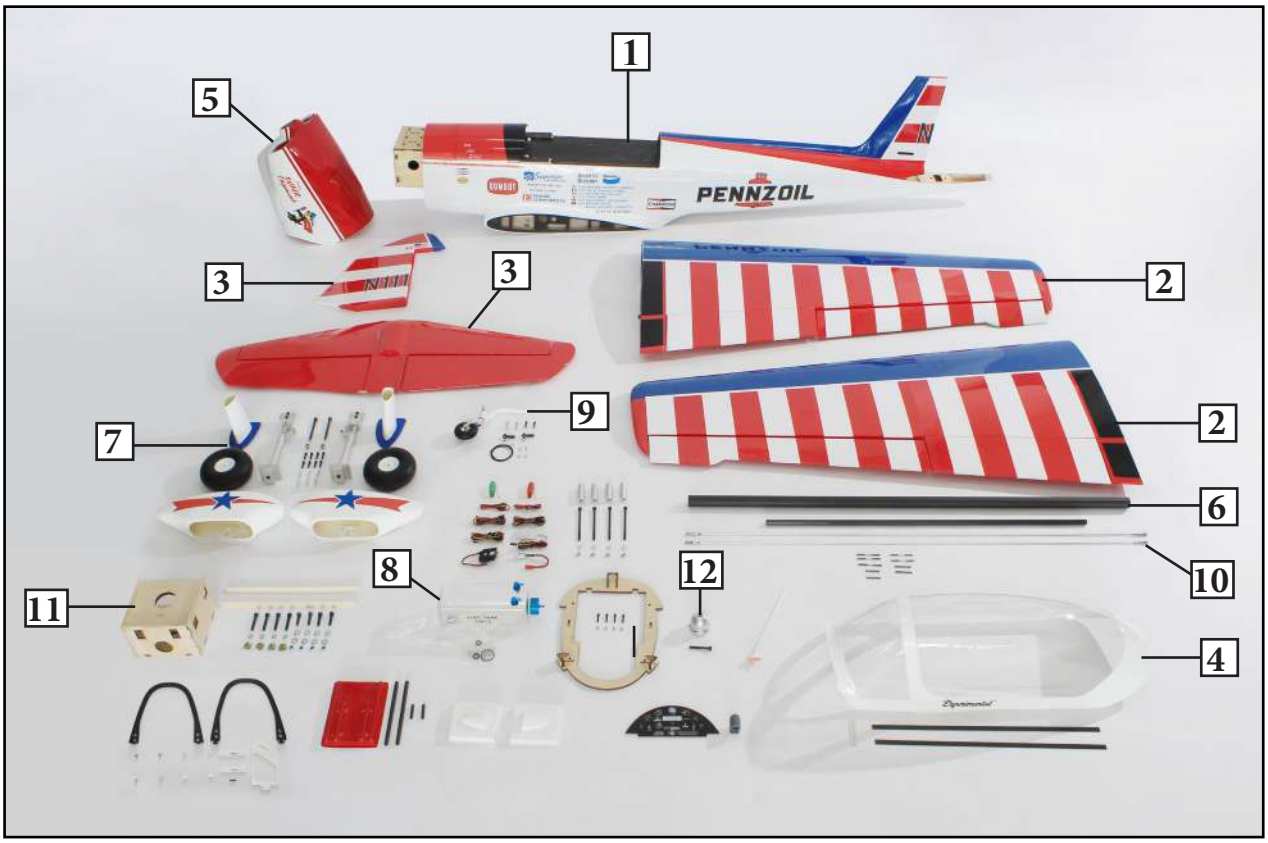
This instruction manual is designed to help you build a great flying aeroplane. Please read this manual throughly before starting assembly of your **Giant 1/4 Scale Super Chipmunk Aerobatic 99” wingspan ARF 60–76cc** Use the parts listing below to indentify all parts.

WARNING

Please be aware that this aeroplane is not a toy and if assembled or used incorrectly it is capable of causing injury to people or property. WHEN YOU FLY THIS AEROPLANE YOU ASSUME ALL RISK & REPONSIBILITY.

If you are inexperienced with basic R/C flight we strongly recommend you contact your R/C supplier and join your local R/C model Flying Club. R/C Model Flying Clubs offer a variety of training procedures designed to help the new pilot on his way to successful R/C flight. They will also be able to advise on any insurance and safety regulations that may apply.

KIT CONTENTS



KIT CONTENTS

SEA410: Giant 1/4 Scale Super Chipmunk Aerobatic 99” wingspan ARF 60–76cc.

1. Fuselage
2. Wing set (2)
3. Tail set (2)
4. Canopy
5. Cowling
6. Wing tube
7. Landing gear
8. Fuel tank
9. Tail wheel
10. Pushrod set
11. Ep Motor box
12. Spinner

ADDITIONAL ITEMS REQUIRED

- ☐ 60-76cc gasoline engine.
- ☐ Computer radio 8 channel with 9 servos.
- ☐ Glow plug to suit engine.
- ☐ Propeller to suit engine.
- ☐ Protective foam rubber for radio system.

TOOLS & SUPPLIES NEEDED

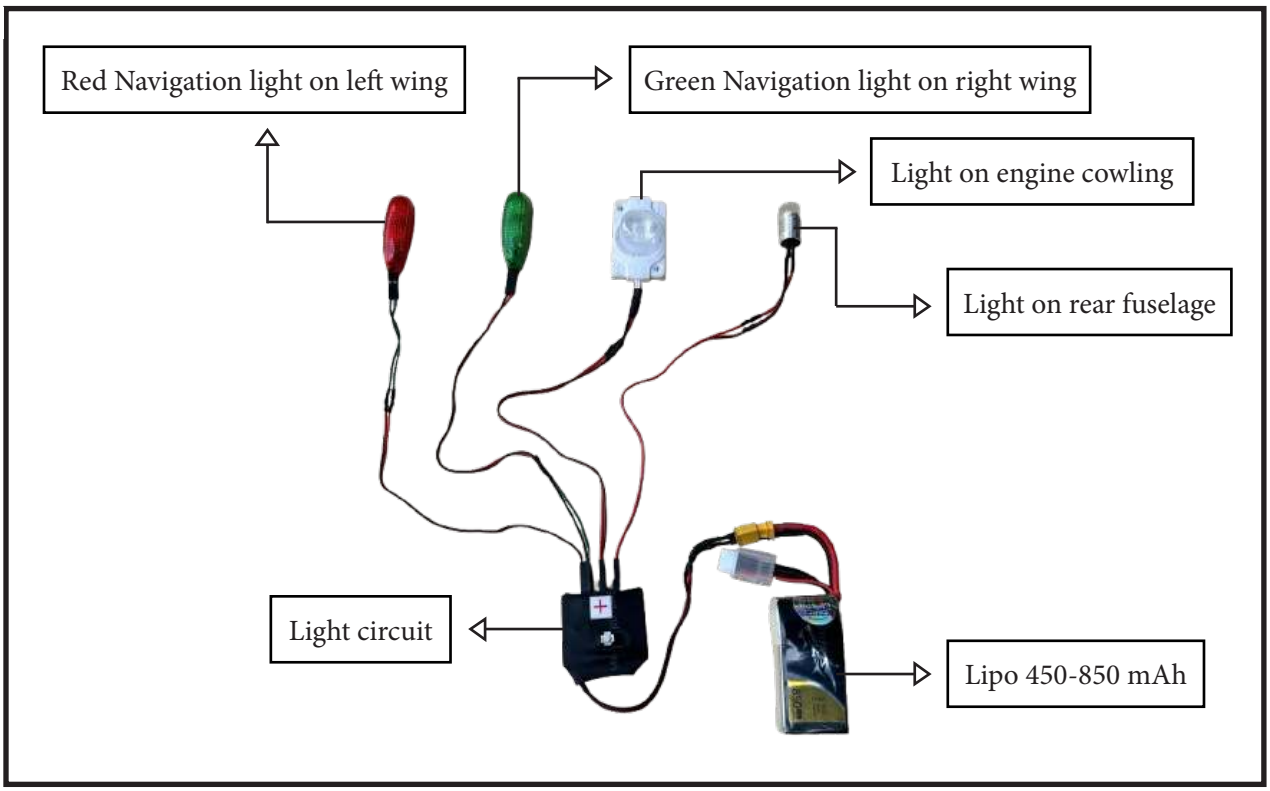
- ☐ Thin cyanoacrylate glue.
- ☐ Medium cyanoacrylate glue.
- ☐ 30 minute epoxy.
- ☐ 5 minute epoxy.
- ☐ Hand or electric drill.
- ☐ Assorted drill bits.
- ☐ Modelling knife.
- ☐ Straight edge ruler.
- ☐ 2mm ball driver.
- ☐ Phillips head screwdriver.
- ☐ 220 grit sandpaper.
- ☐ 90° square or builder’s triangle.
- ☐ Wire cutters.
- ☐ Masking tape & T-pins.
- ☐ Thread-lock.
- ☐ Paper towels.

LED LIGHT SET

Please see pictures below.

Lipo 3s 1500mAh LED light set.

1.



The red light is for the left wingtip, the green light is for the right wingtip.

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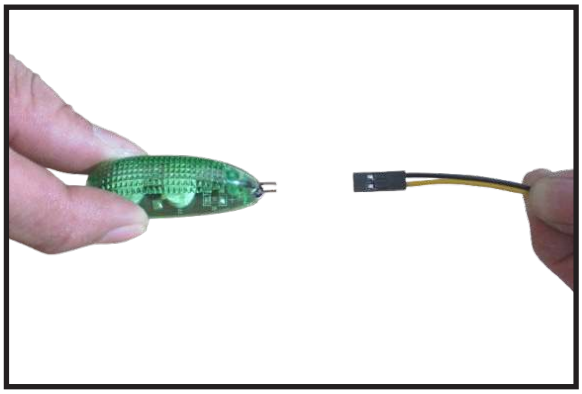

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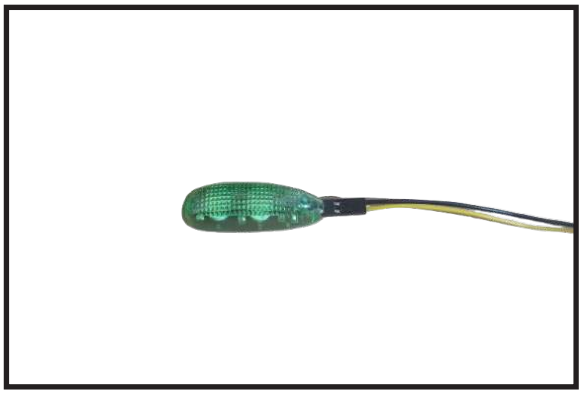

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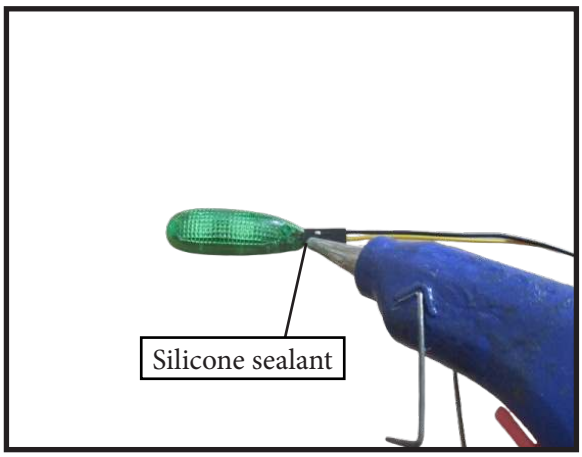

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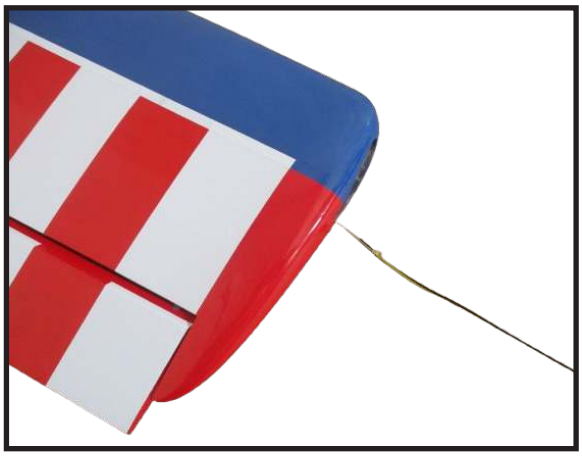

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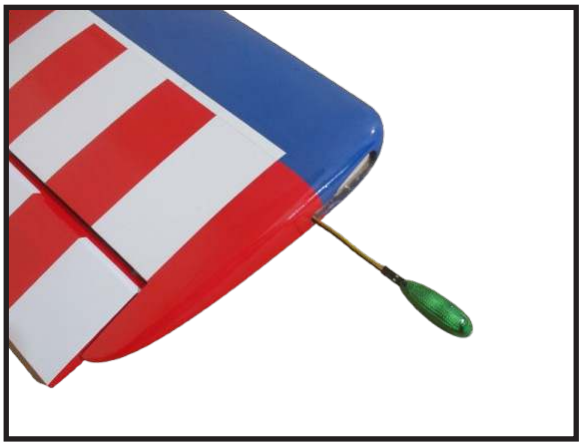

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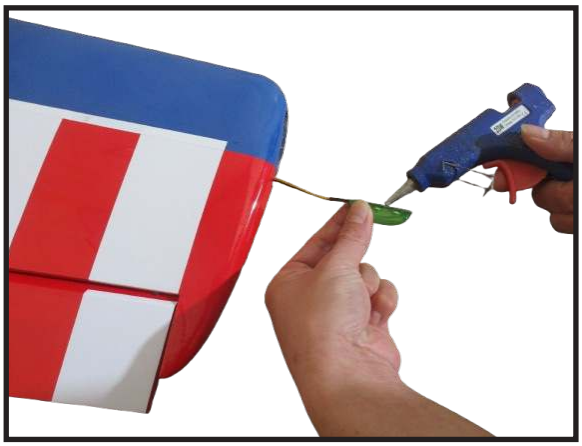


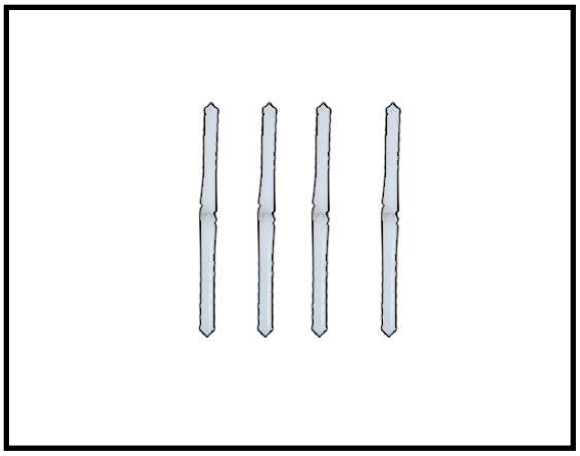
8.

HINGING THE AILERON

Note : *The control surfaces, including the ailerons, elevators, and rudder, are prehinged with hinges installed, but the hinges are not glued in place. It is imperative that you properly adhere the hinges in place per the steps that follow using a high-quality thin C/A glue.*

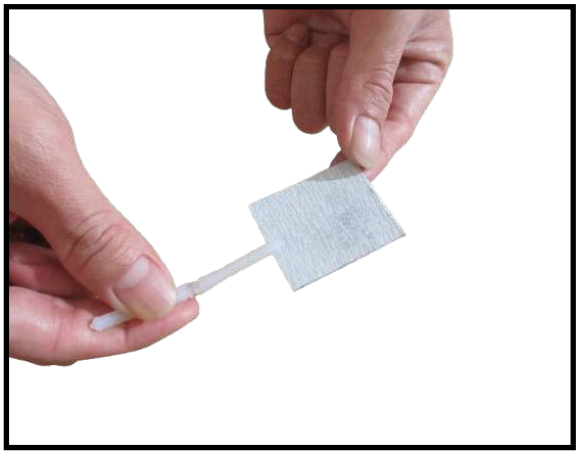
Carefully remove the aileron from one of the wing panels. Note the position of the hinges.

1.



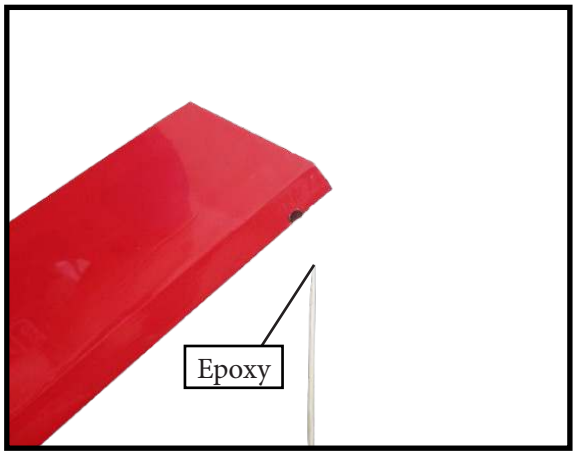
Prepare the aileron hinges by scuffing the area that will be inserted into the wing or flying surface with medium grit sand paper. Be careful not to remove too much material. Use isopropyl alchol, and a paper towel to remove any excess debris that remains on the hinges.

2.



Mix a sufficient amount of 30-minute epoxy in a cup, and with a toothpick, smear epoxy in the hinge pockets of the wing panel and aileron. Slowly and carefully, insert each hinge into the wing panel. Partially remove and reinstall the hinge to ensure that you've completely coated it with glue. Clean up any excess epoxy with isopropyl alcohol, and tape the aileron in place to cure.

3.



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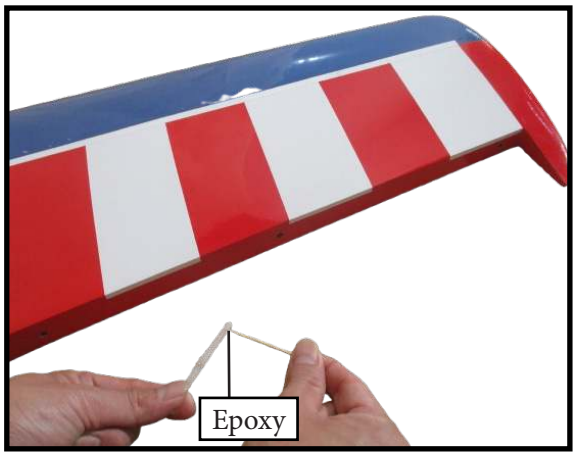

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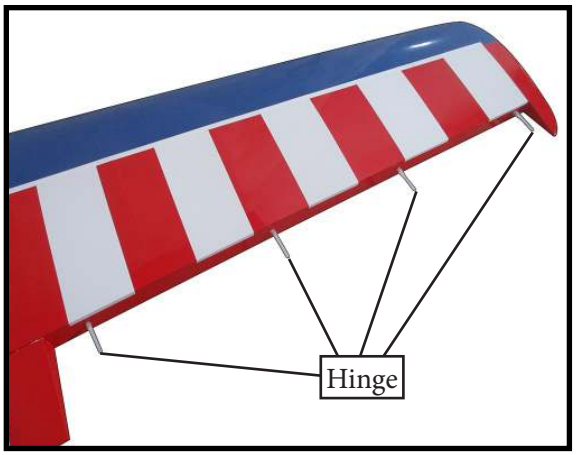

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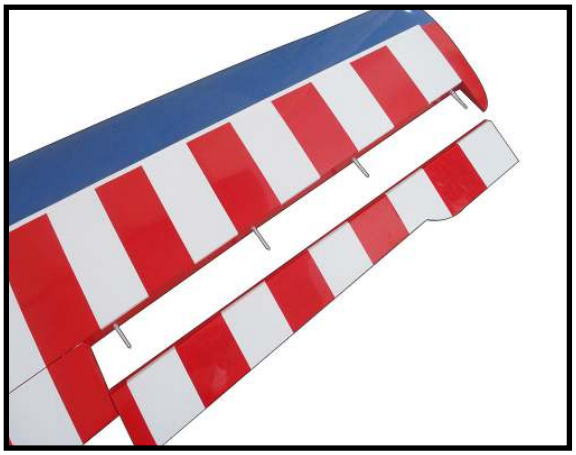

Press the aileron and wing together such that less than a 1/64” hinge line gap exists between the aileron and wing. The bevels should virtually touch. Use a paper towel and rubbing alcohol to wipe away any visible epoxy around the hinges.

Allow the glue to fully cure for at least 6 hours.

When fully cured, move each control surface throughout is travel range serveral times to break away any epoxy in the hinge. Be sure to deflect the surface fully.

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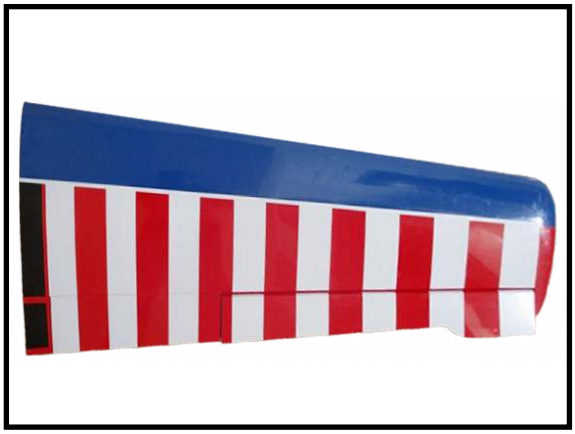
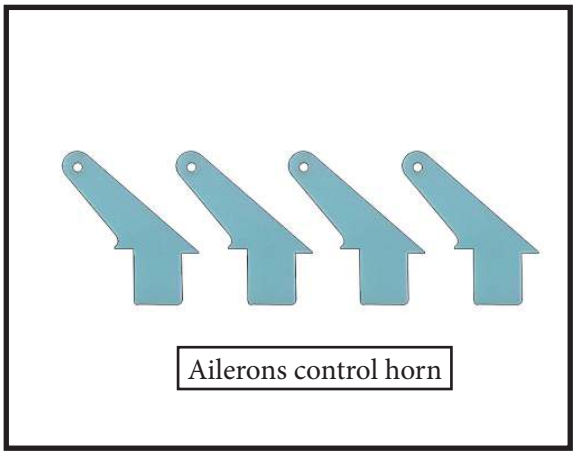


Note : *Work the aileron up and down several times to “work in” the hinges and check for proper movement.*

INSTALL THE AILERONS CONTROL HORN

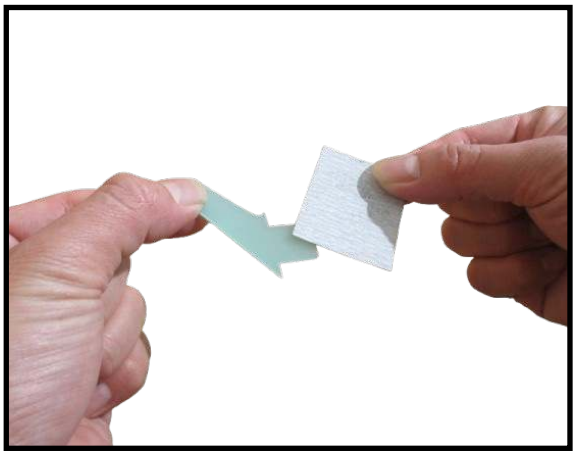
Locate the aileron and flap control horns. The taller control horn is used for the ailerons, and the shorter horn for the flaps.

1.



Use sandpaper to scuff the bottom of the aileron and flap control horns. Use a paper towel and isopropyl alcohol to remove any oils or debris from the control horns.

2.

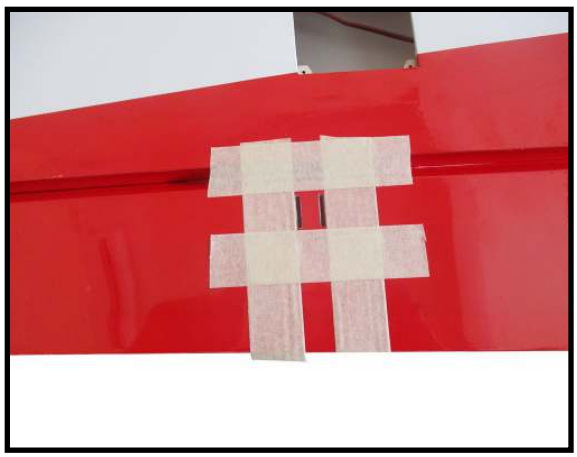


Check the fit of the control horns to the aileron and flap. They should rest flush against the control surface as shown.

3.

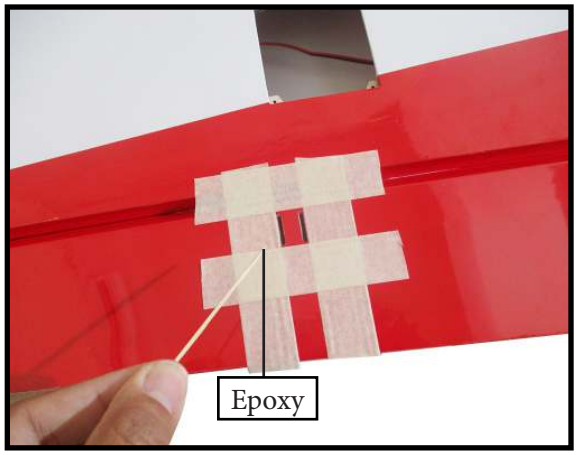
Place low-tack tape 1/32 inch (1mm) from the control horn slot. This will prevent epoxy from getting on the control surface when the control horns are glued in place.

4.



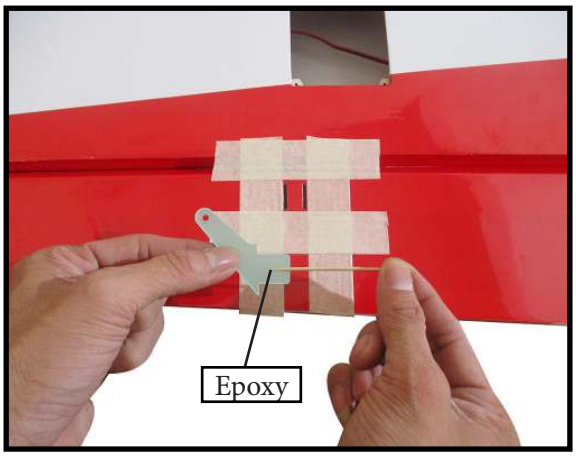
Remove the control horns from the control surfaces. Apply epoxy to the slot in the aileron and flap. Make sure the epoxy gets into the slot for a good bond between the surfaces and control horn.

5.



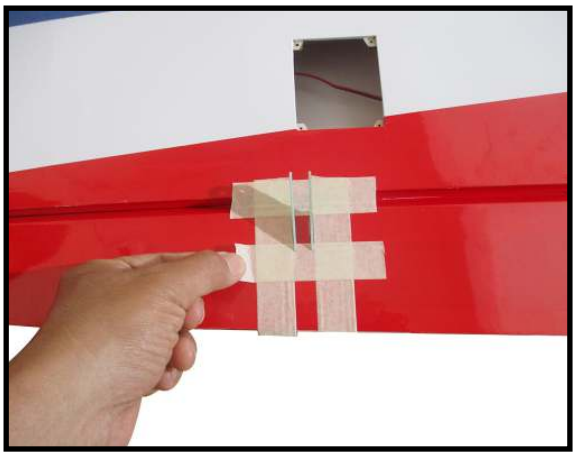
Apply epoxy to the area of the control horns that fist into the slots. Use enough epoxy so the control horns will be fully bonded to the fied surfaces.

6.



Before the epoxy fully cures, remove the tape from around the control horn. This will allow the epoxy to flow around the control horn, creating a small filet between the control horn and surface for a fiished look and secure bond.

7.



INSTALL FLAP CONTROL HORN

Install the flap control horn using the same method as same as the aileron control horns.

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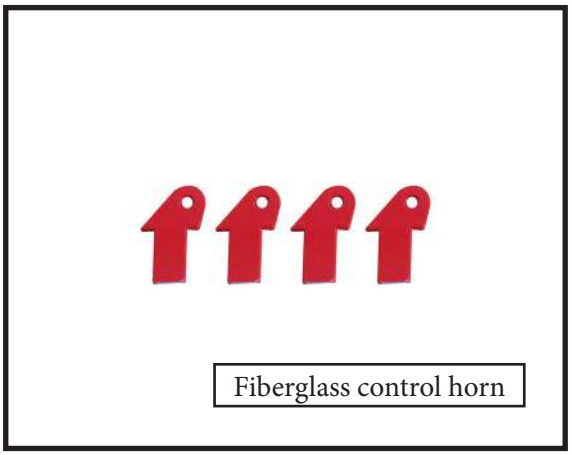

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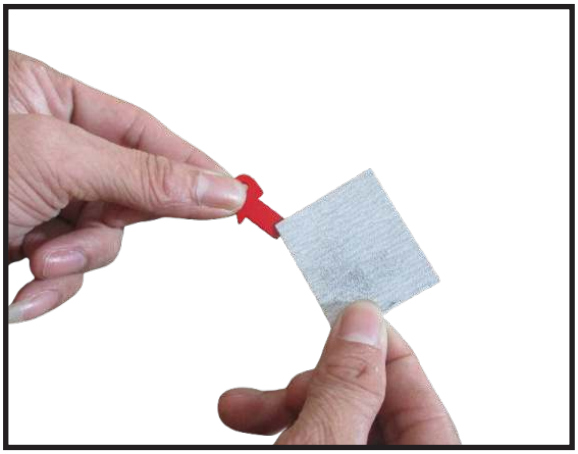

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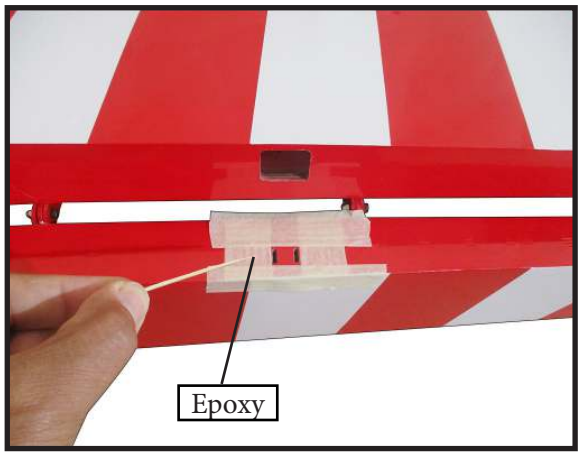
4.



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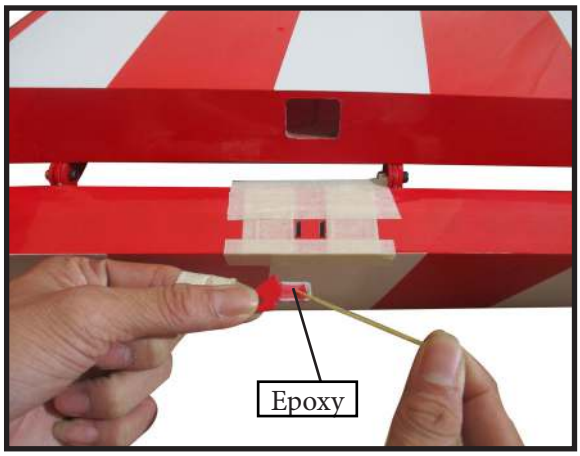

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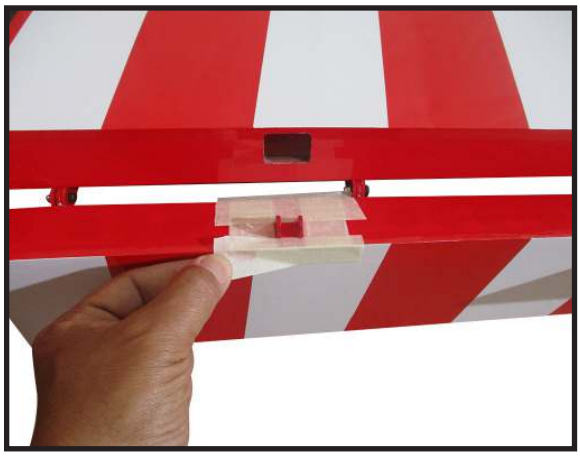
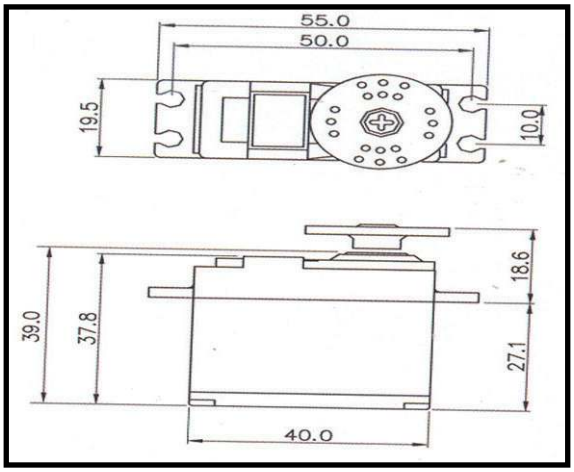


INSTALLING THE AILERON SERVOS

1.



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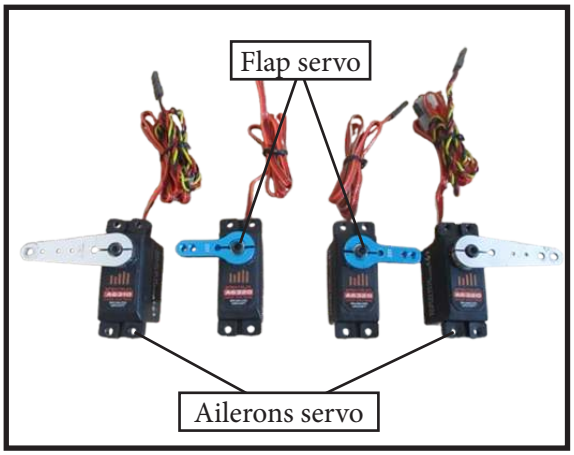

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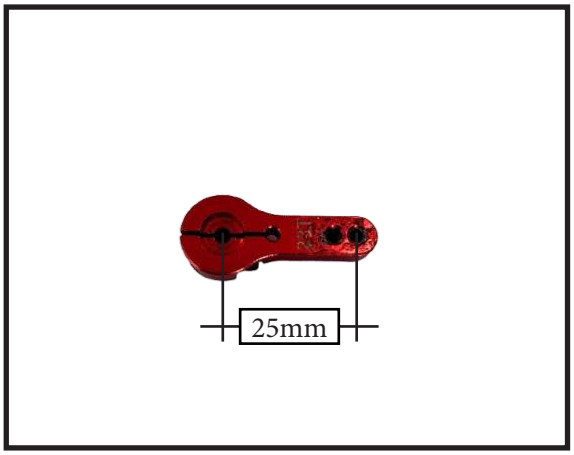
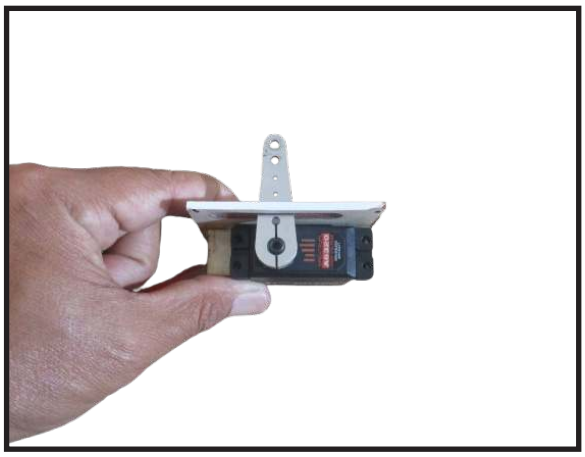


Maximum Servo spec.
Torque : 192,4 oz-in (13,8 kg-cm) @ 6,0V; 302,1 oz-in (21,8 kg-cm) @ 7,4V; 350,0 oz-in (25,2 kg-cm) @ 8,4V

⚠ Because the size of servos differ, you may need to adjust the size of the precut opening in the mount. The notch in the sides of the mount allow the servo lead to pass through.

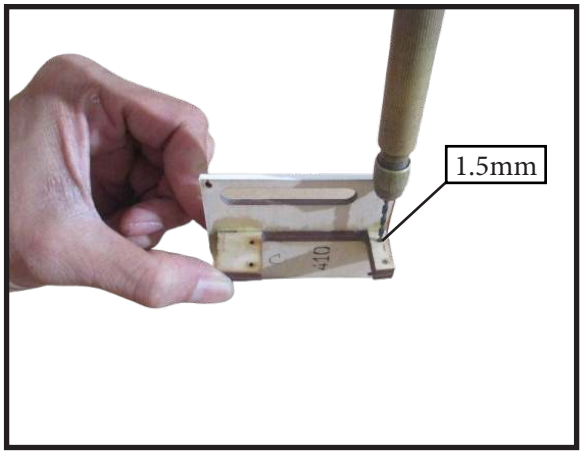
Place the servo between the mounting blocks and space it from the hatch. Use a pencil to mark the mounting hole locations on the blocks.

4.



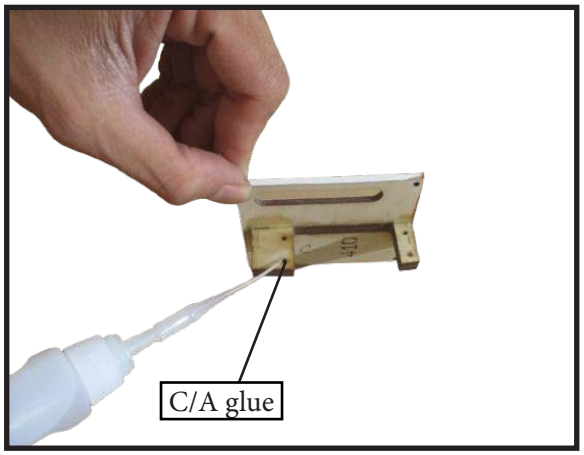
Use drill bit in a pin vise to drill the mouting holes in the blocks.

5.



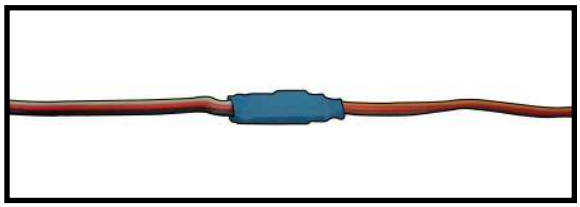
Apply 2-3 drops of thin C/A to each of the mounting holes. Allow the C/A to cure without using accelerator.

6.



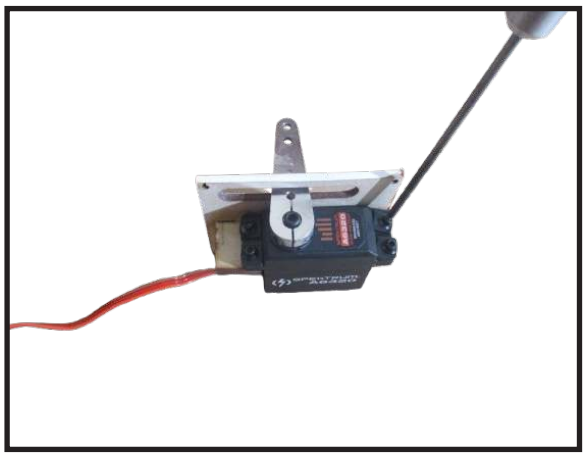
Use dental floss or heatshrunk tube to secure the connection so they cannot become unplugged.

7.



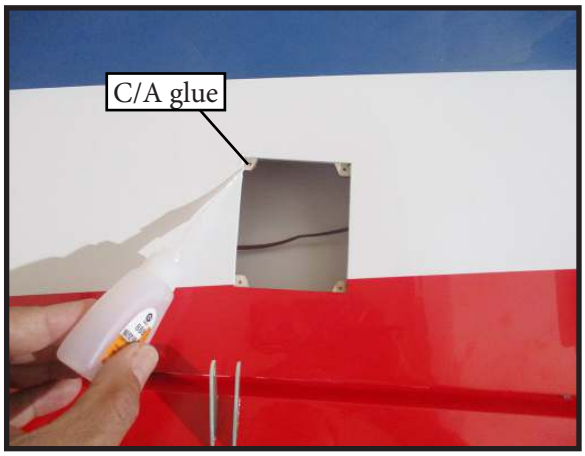
Secure the servo to the aileron hatch using Phillips screwdriver and the screws provided with the servo.

8.



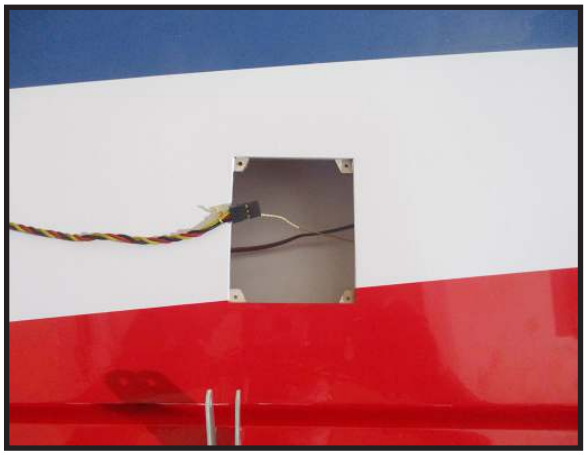
Apply 1-2 drops of thin C/A to each of the mounting tabs. Allow the C/A to cure without using accelerator.

9.



Remove the string from the wing at the servo location and use the tape to attach it to the servo extension lead. Pull the lead through the wing and remove the string.

10.



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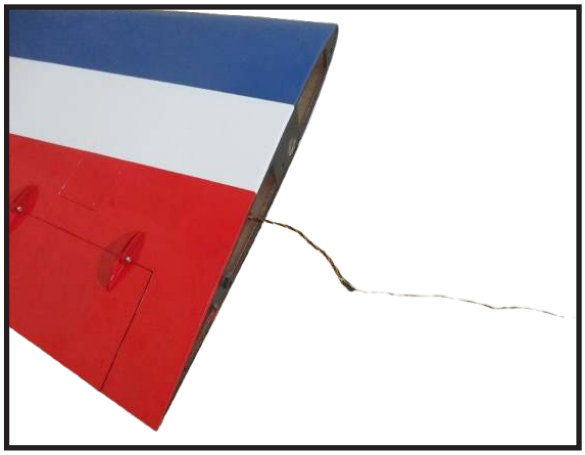

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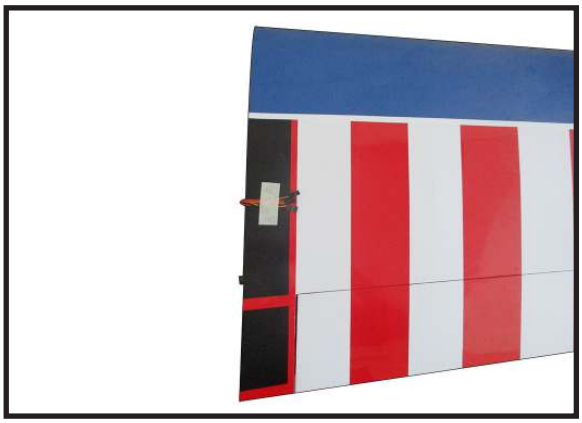

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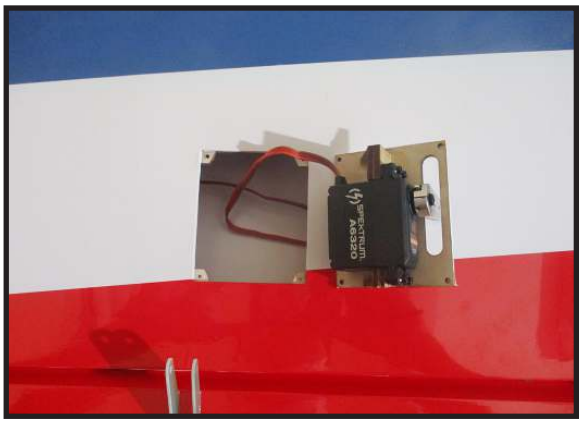
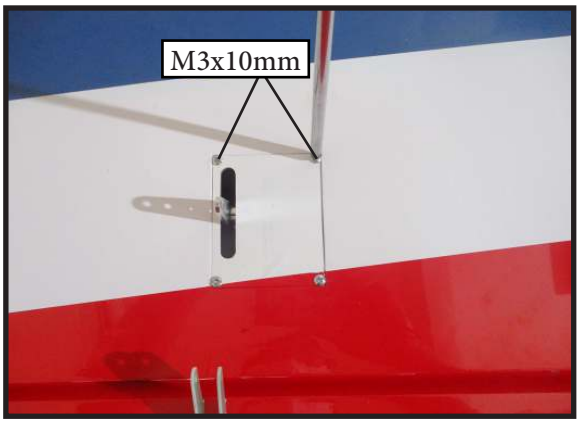


Set the aileron hatch in place and use a Phillips screw driver to install it with four wood screws.

14.



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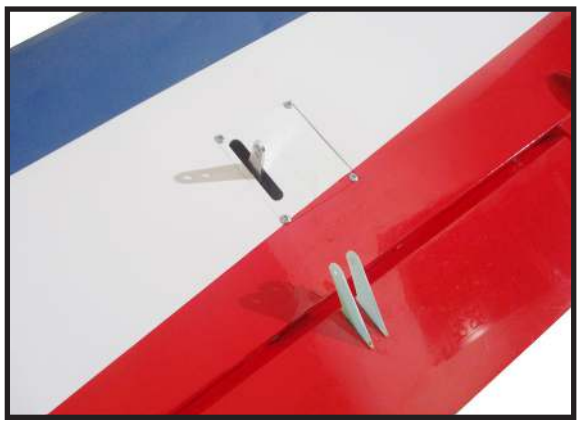
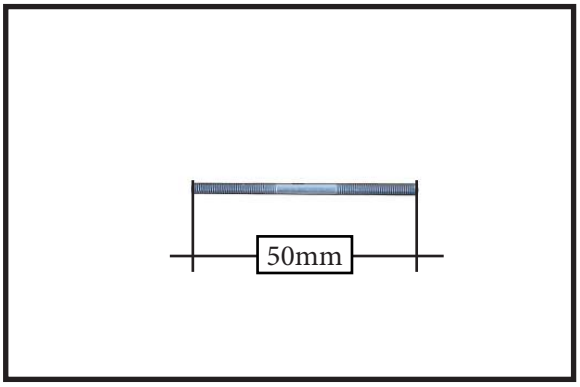


AILERON PUSHROD INSTALLATION

Please see below pictures.

1.



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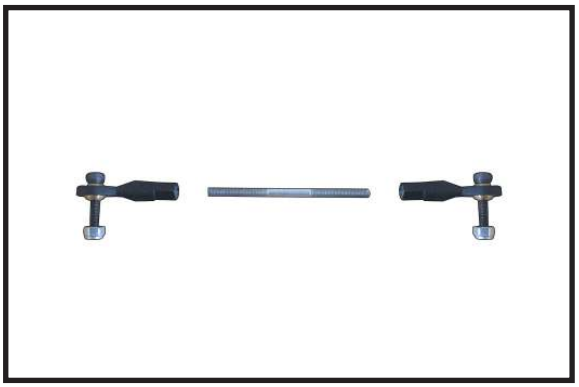

3.

4.

INSTALLING THE FLAP PUSHROD

Please see below pictures.

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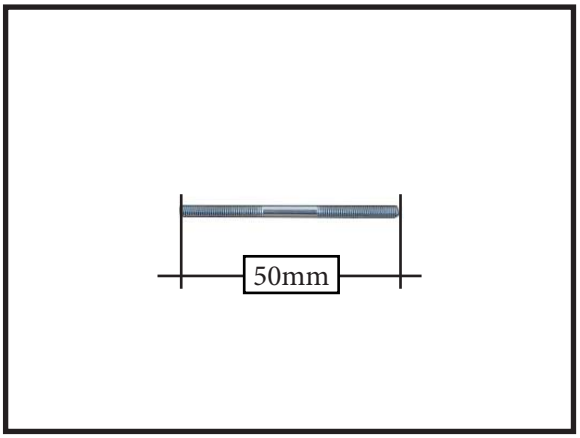

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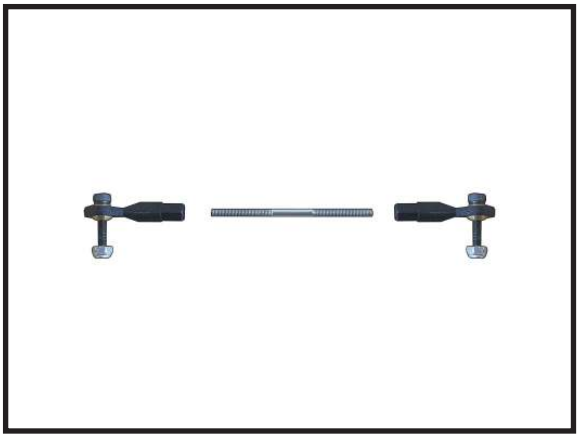

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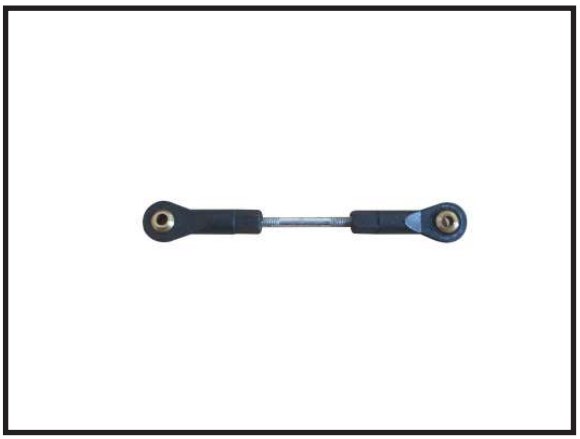
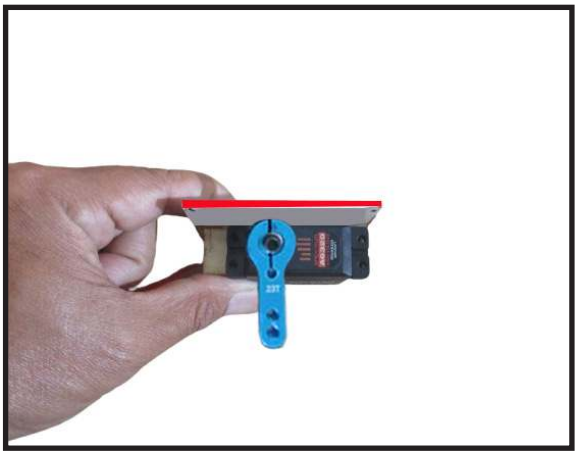


Attach the flap servo to the flap servo cover. Center the flap servo (or set the values to 0 for both up and down) and install the servo arm perpendicular to the servo centerline. The clevis will attach to the arm 13/16 inches (21mm) from the center of the arm.

4.



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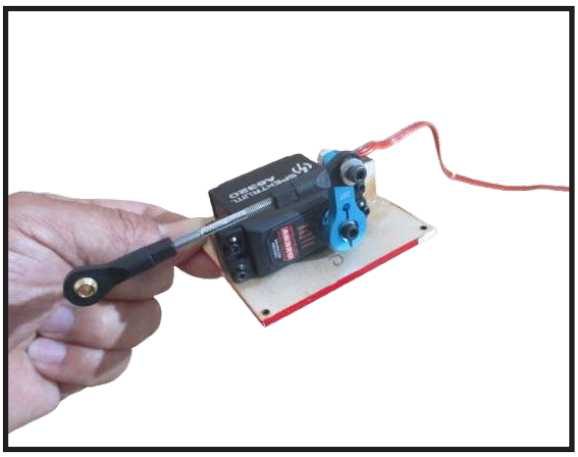
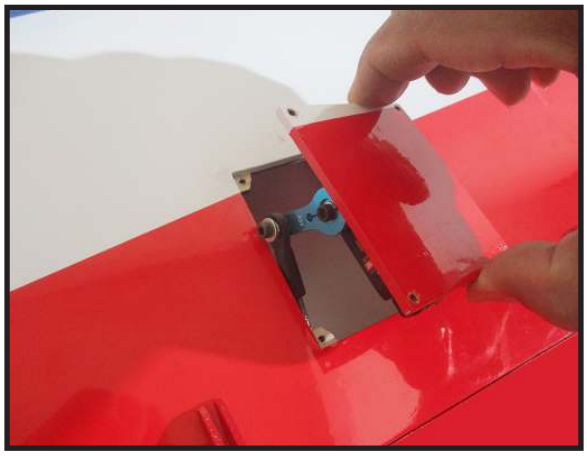


Attach the flap linkage to the control horn. Slide the clevis retainer over the forks of the clevis.

6.

Attach the clevis to the flap servo arm.

7.

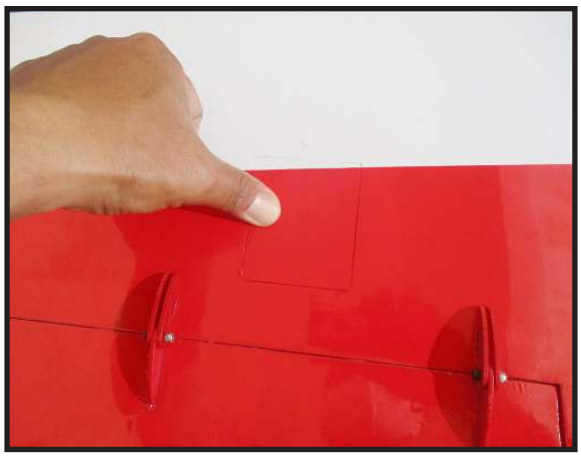


Use a pin vise and 3/32-inch (2mm) drill bit to clear the paint from the flap control horn.

8.

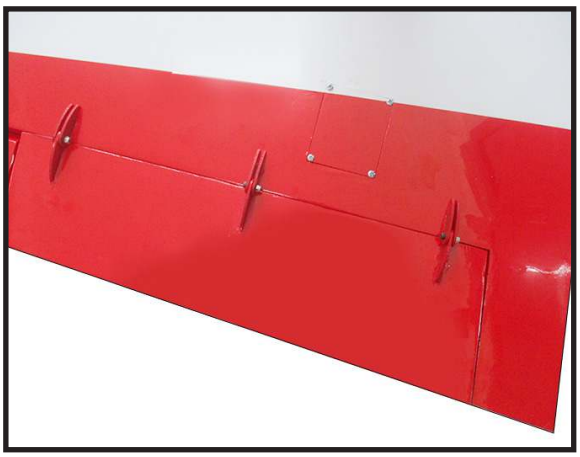
Route the servo lead for the flap servo out at the root of the wing. Connect the flap servo to the radio system. With the radio system on, place the flap servo into position.

9.



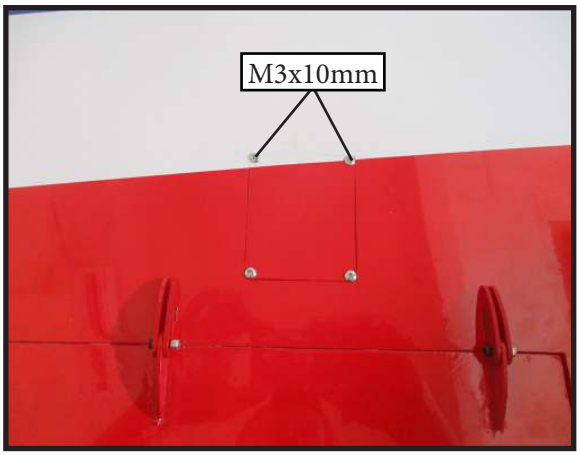
Adjust the linkage so the flap is in the mid-flap position. It may take a few tries to properly adjust the linkage.

10.



Once adjusted, make sure all clevis retainers are in position. Apply a drop of threadlock near the clevis, then tighten the nut against the clevis to keep the linkage from changing length inside the wing.

11.

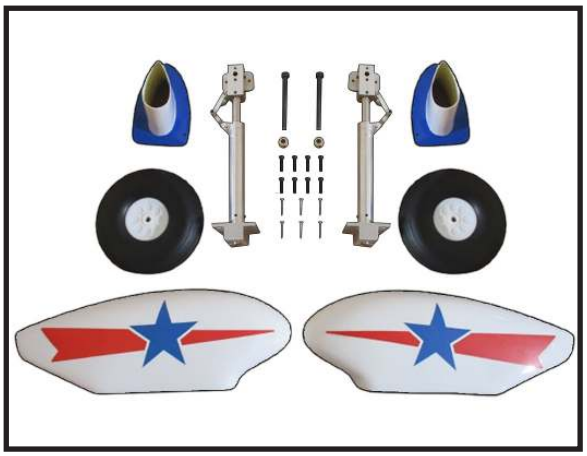


12.

INSTALLING LANDING GEAR

Locate items necessary to install Sprin Landing Gear.

1 .



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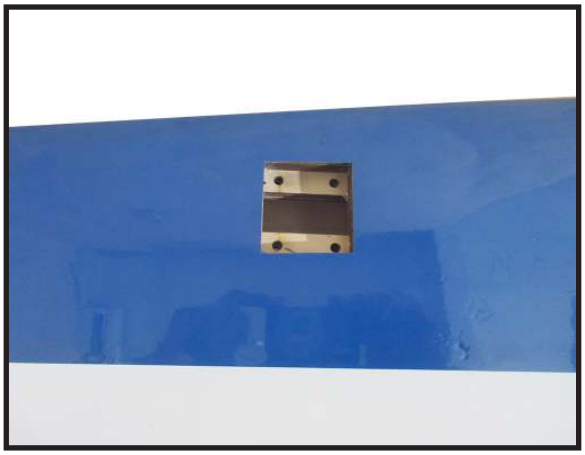

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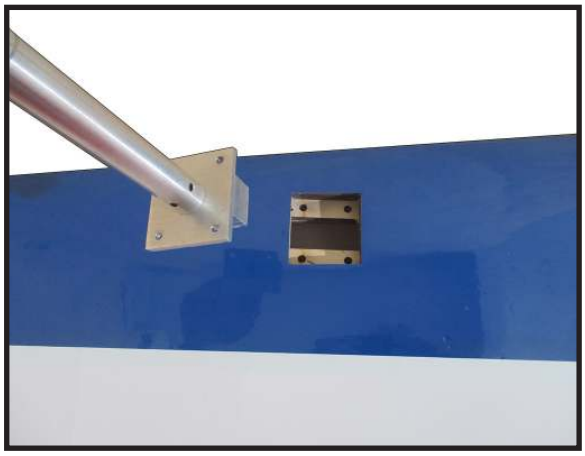

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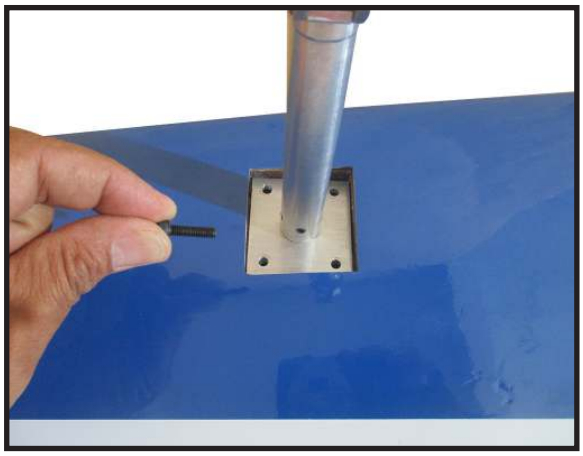

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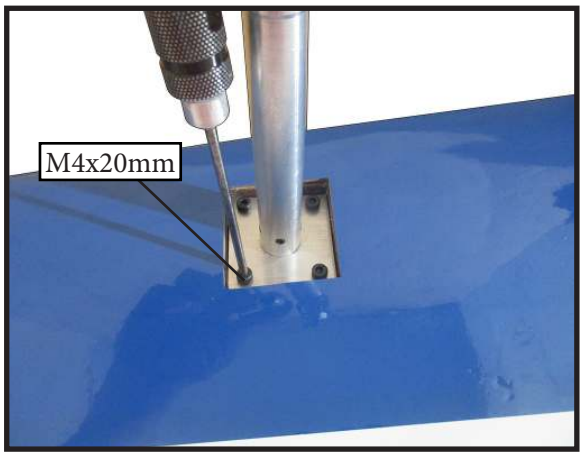

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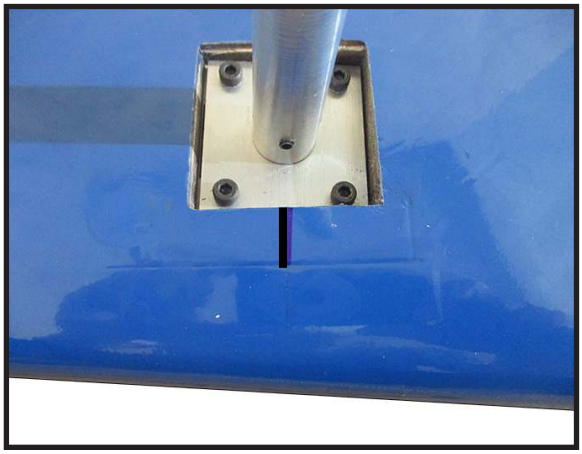

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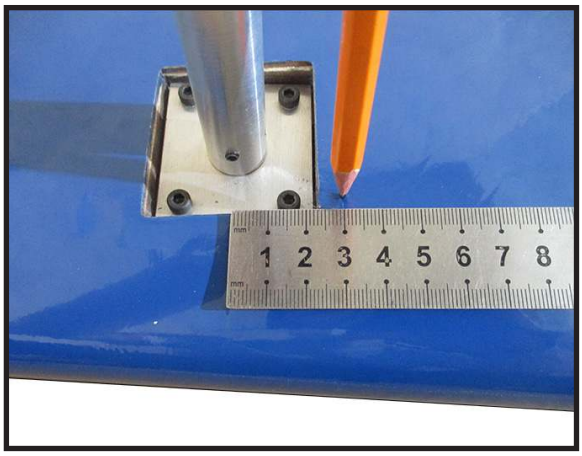

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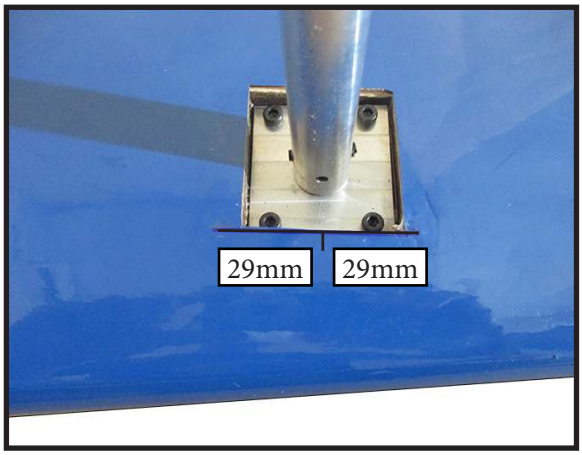

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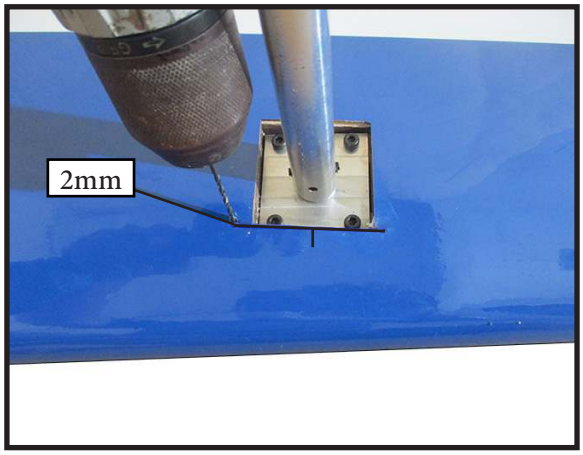

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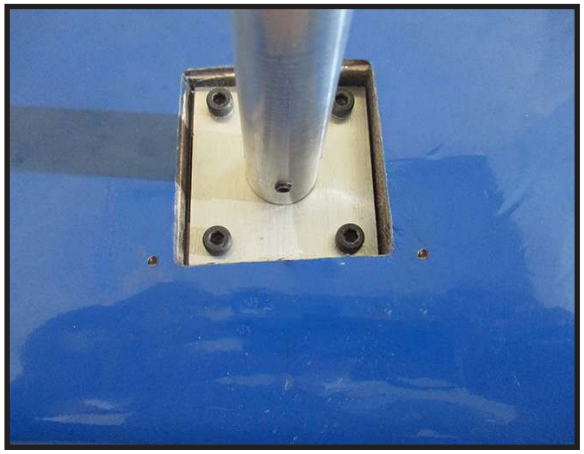

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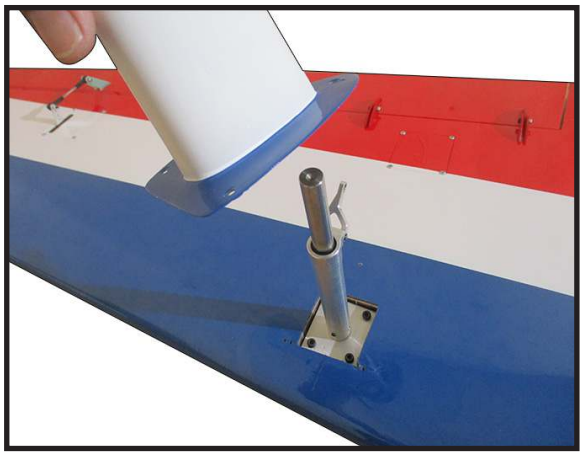

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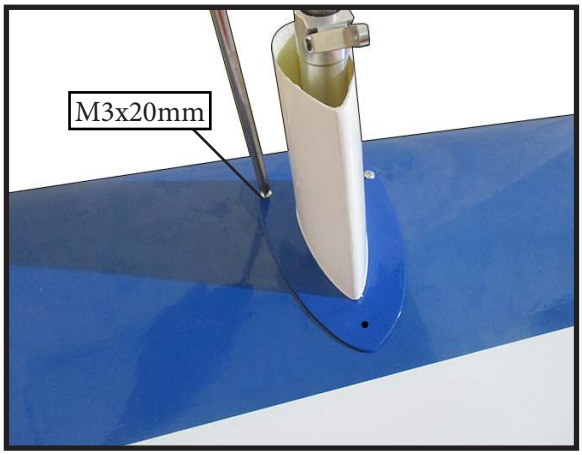

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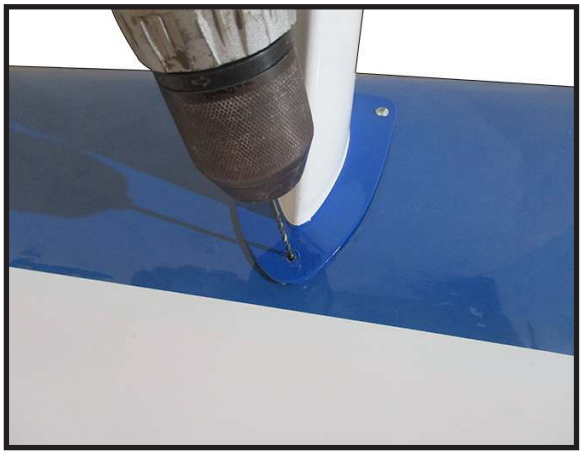

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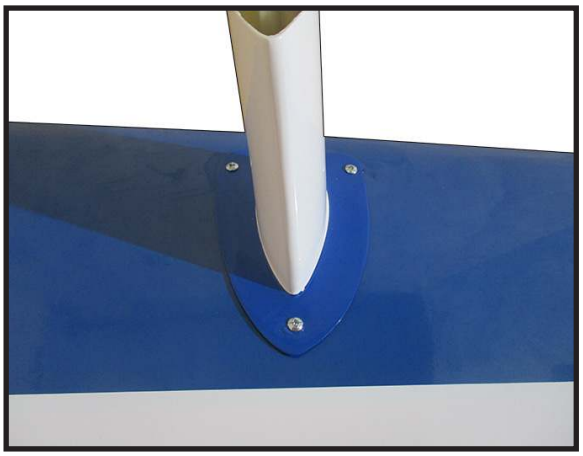

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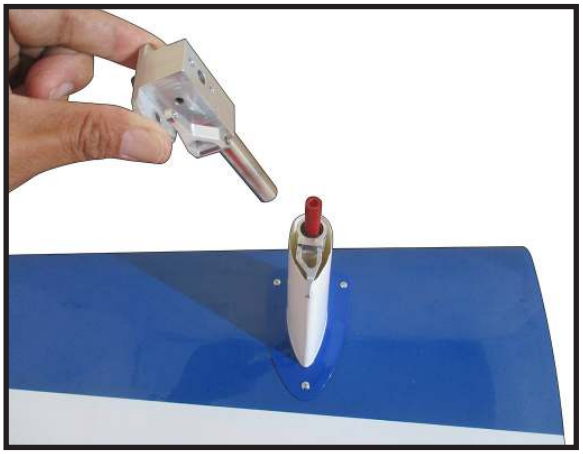

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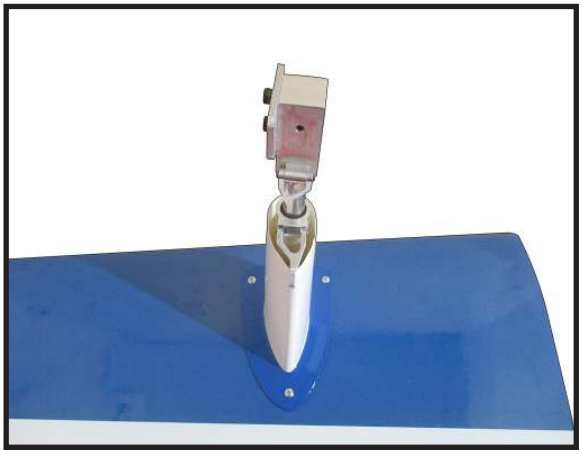

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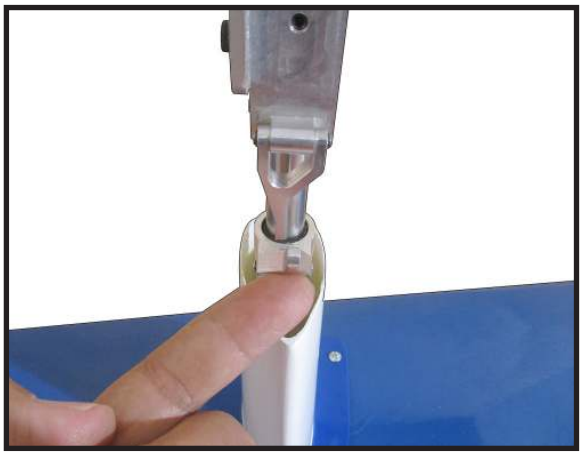

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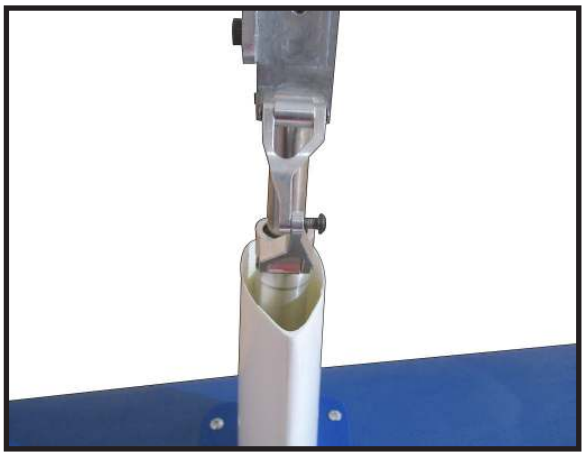

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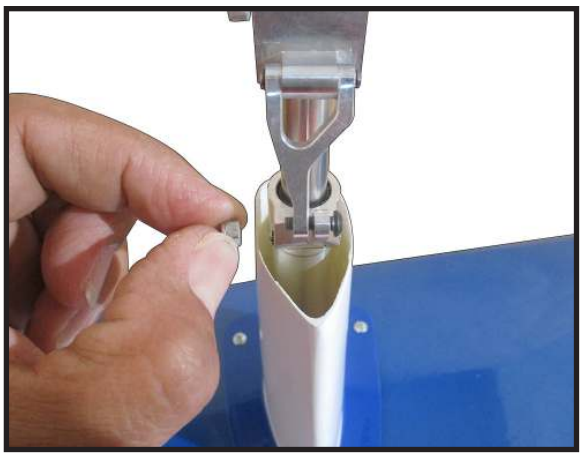

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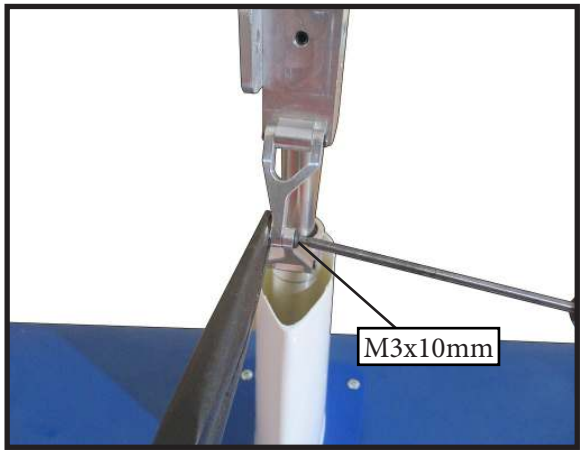

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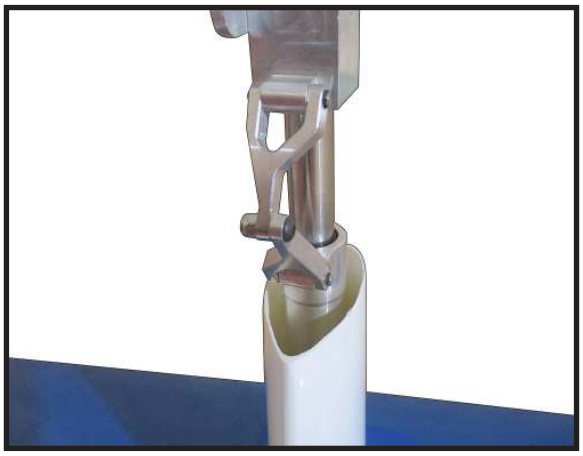

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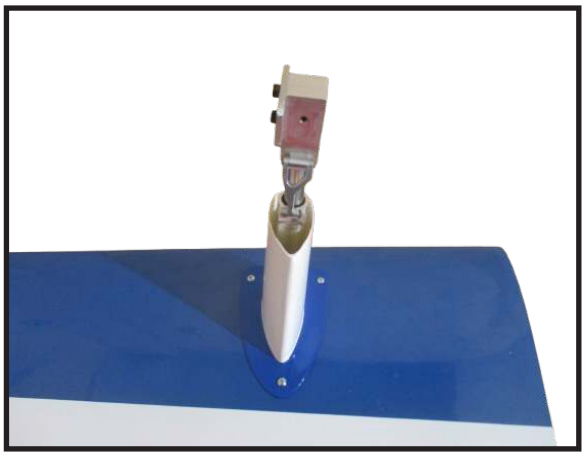

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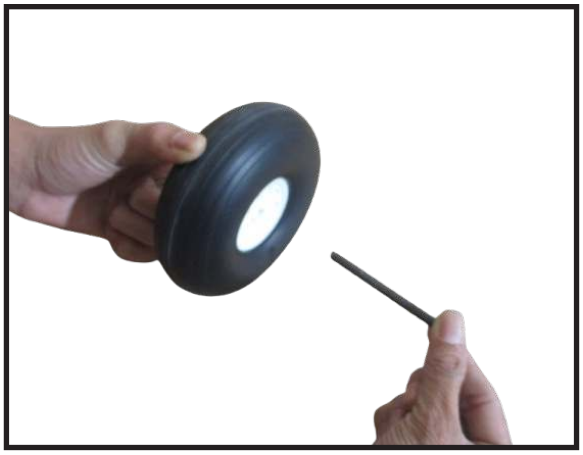

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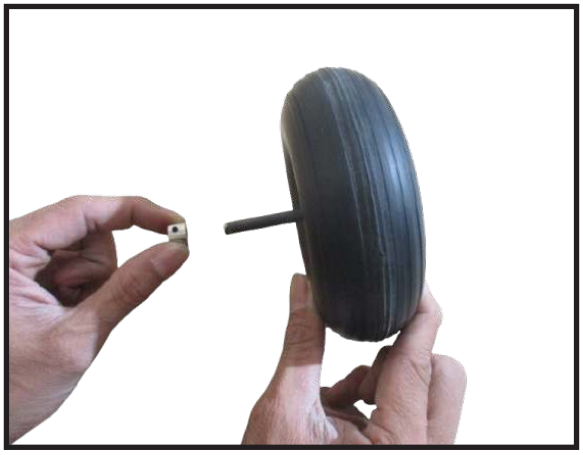

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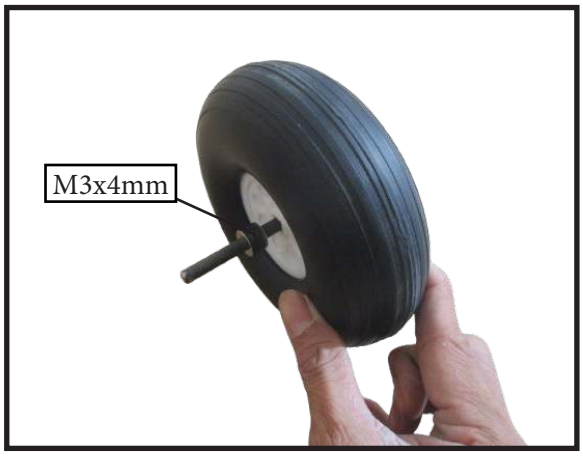

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30.

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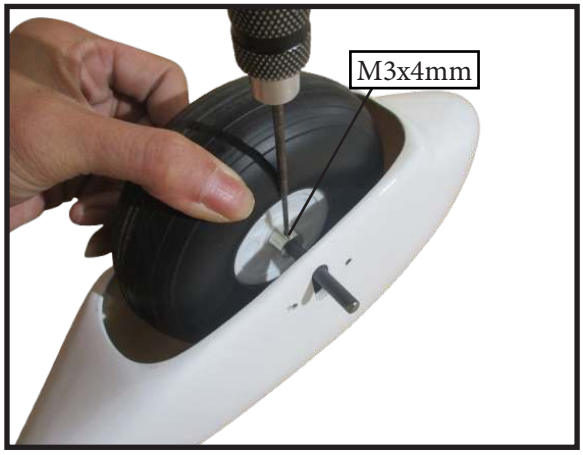

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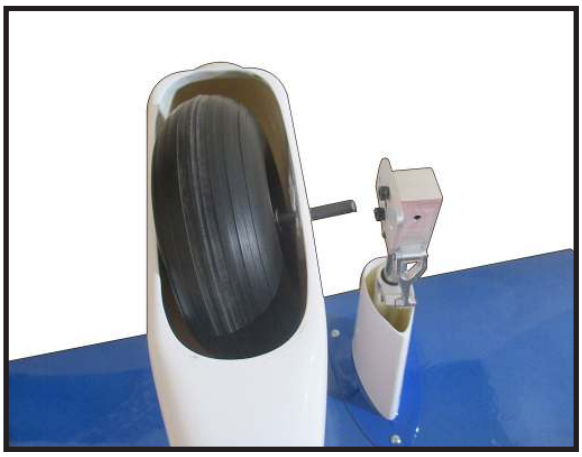

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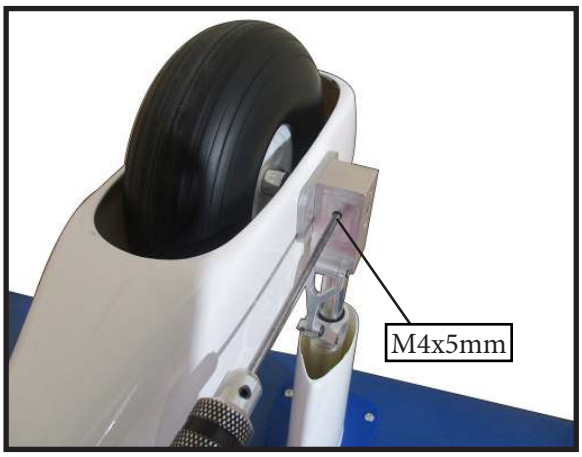

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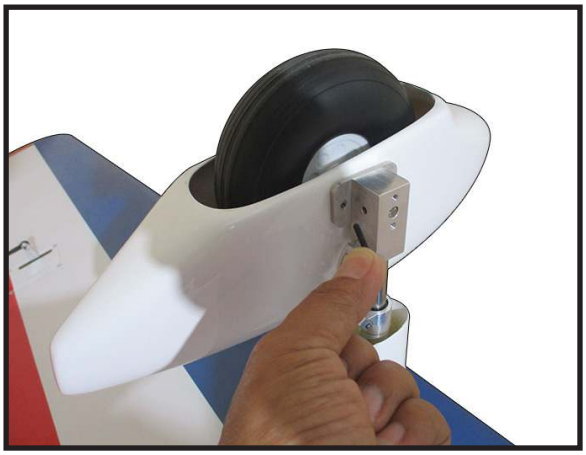

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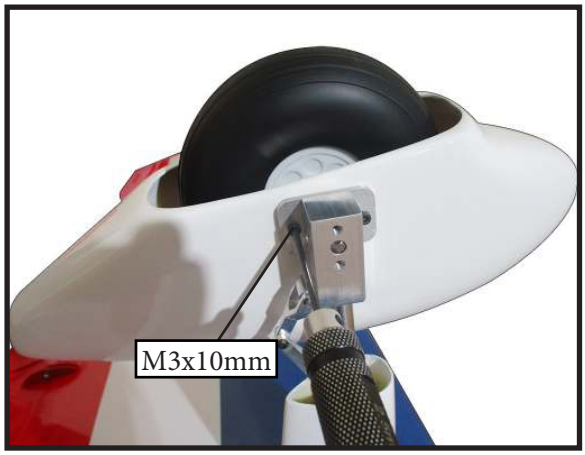


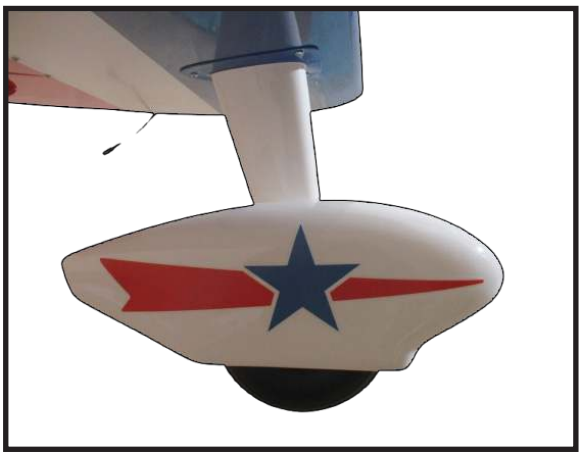
37.

38.

39.

40.

41.



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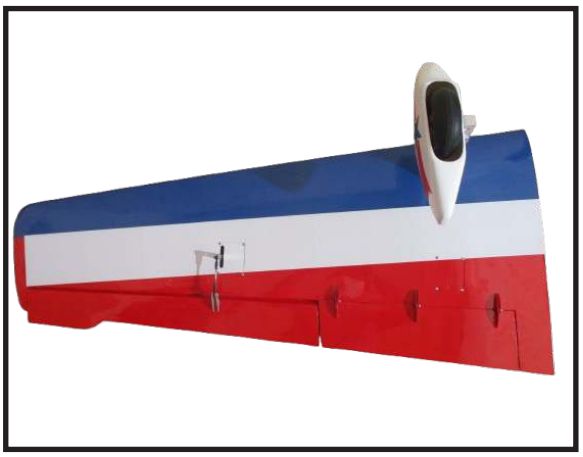
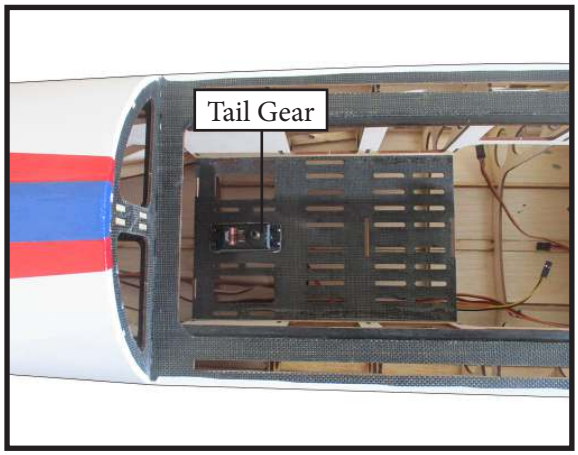


INSTALLING THE FUSELAGE SERVOS

⚠ Because the size of servos differ, you may need to adjust the size of the precut opening in the mount. The notch in the sides of the mount allow the servo lead to pass through.

Secure the servos with the screws provided with your servo.

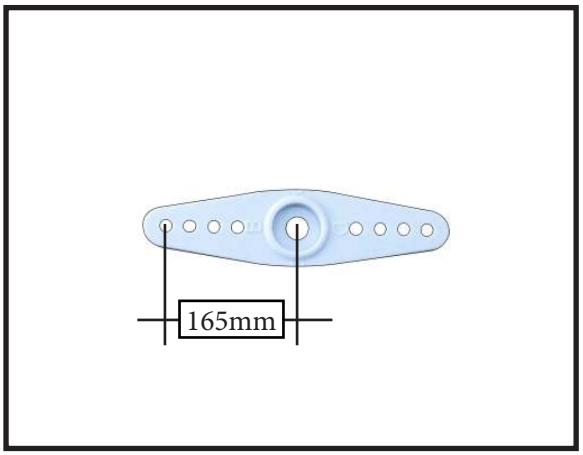
1.



THROTTLE SERVO ARM INSTALLATION

Install adjustable servo connector on the servo arm and set aside for now.

1.



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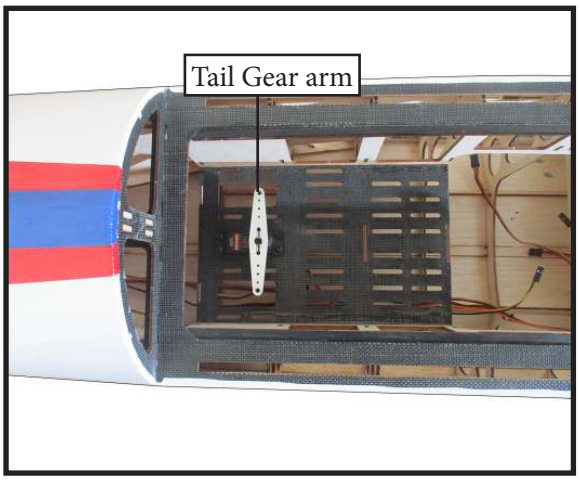


Install the rudder and elevator servo arms as shown above.

INSTALLING THE STOPPER ASSEMBLY

Using a modeling knife, carefully cut off the rear portion of one of the 3 nylon tubes leaving 1/2” protruding from the rear of the stopper. This will be the fuel pick up tube.

Using a modeling knife, cut one length of silicon fuel line. Connect one end of the line to the weighted fuel pick up and the other end to the nylon pick up tube.

1.

Carefully bend the second nylon tube up at a 45º angle. This tube is the vent tube.

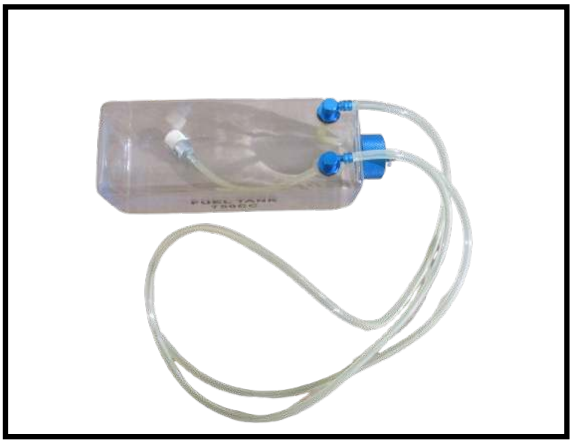
Test fit the stopper assembly into the tank. It may be necessary to remove some of the flashing around the tank opening using a modeling knife. If flashing is present, make sure none falls into the tank.

With the stopper assembly in place, the weighted pick-up should rest away from the rear of the tank and move freely inside the tank. The top of the vent tube should rest just below the top of the tank. It should not touch the top of the tank.

When satisfied with the alignment of the stopper assembly tighten the 3 x 20mm machine screw until the rubber stopper expands and seals the tank opening. Do not over-tighten the assembly as this could cause the tank to split.

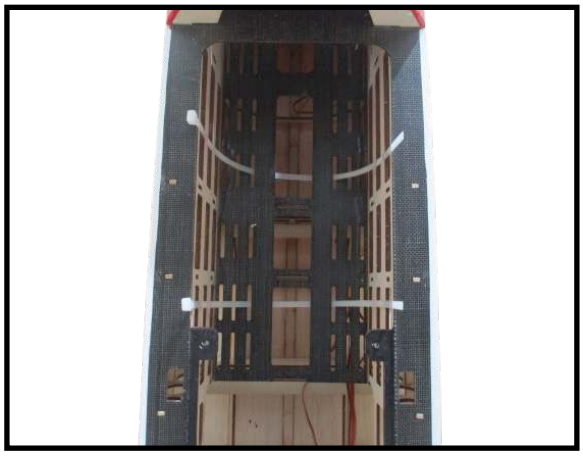
FUEL TANK INSTALLATION

1.



- ⚠ *You should mark which tube is the vent and which is the fuel pickup when you attach fuel tubing to the tubes in the stopper. Once the tank is installed inside the fuselage, it may be difficult to determine which is which.*

2.



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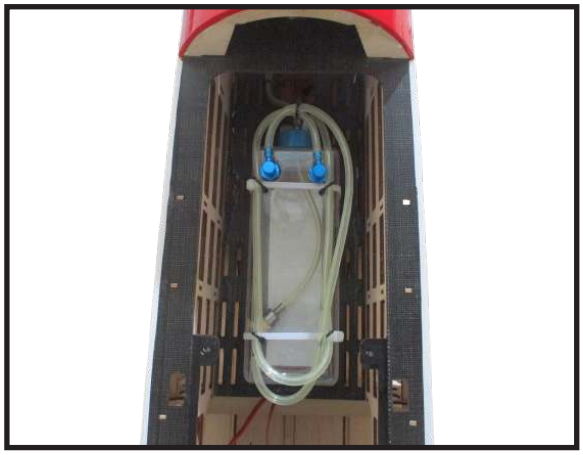

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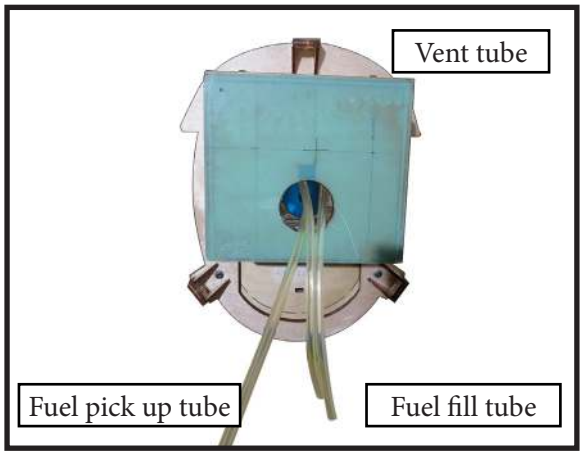
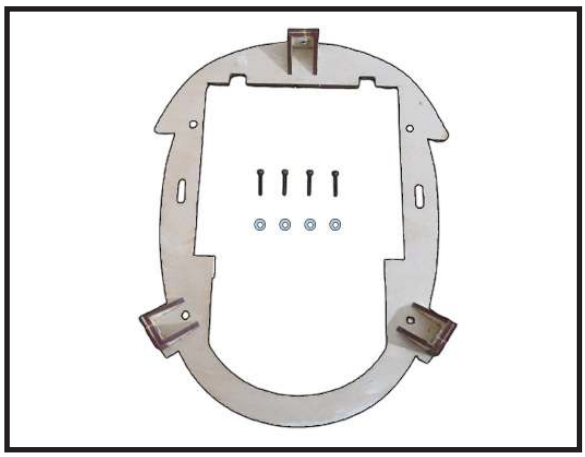


Later you with connect the lines from the tank to the engine and muffler. The vent line will connect to the muffler and the line from the clunk to the carburetor.

MOUNTING THE ENGINE

Please see below pictures.

1.



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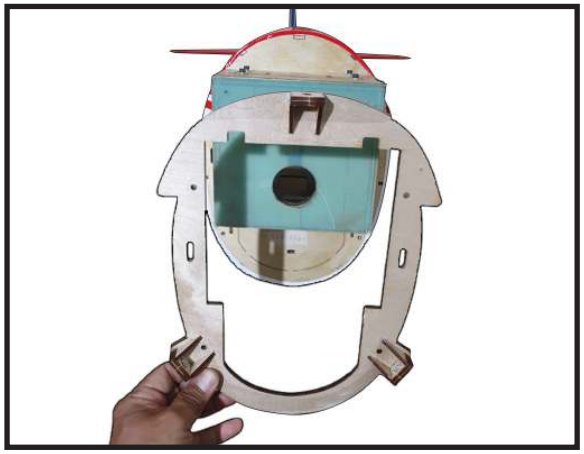

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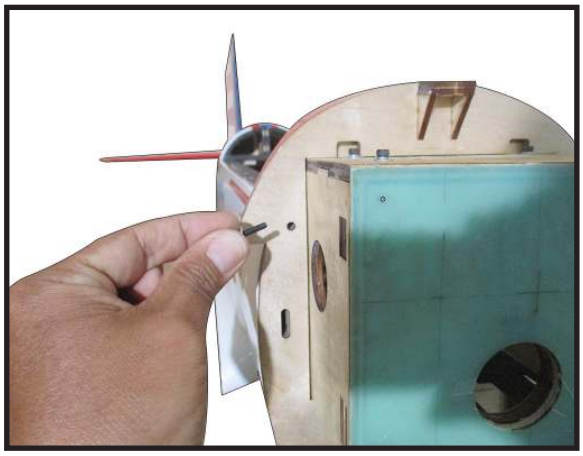

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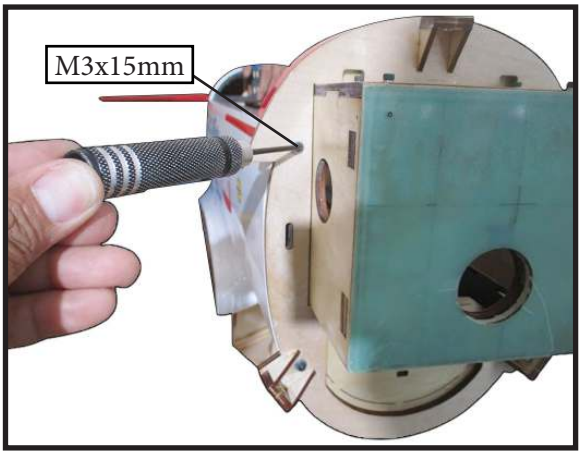

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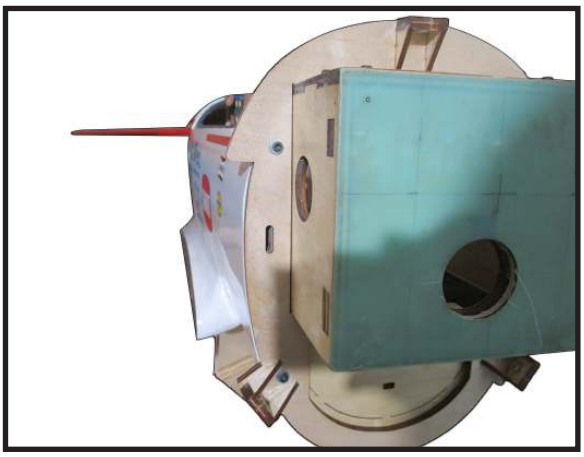

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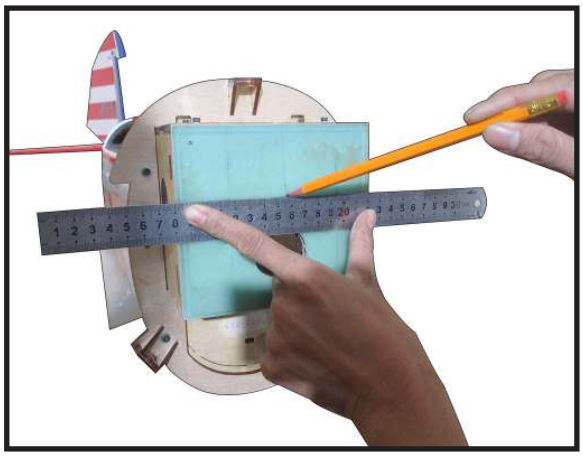

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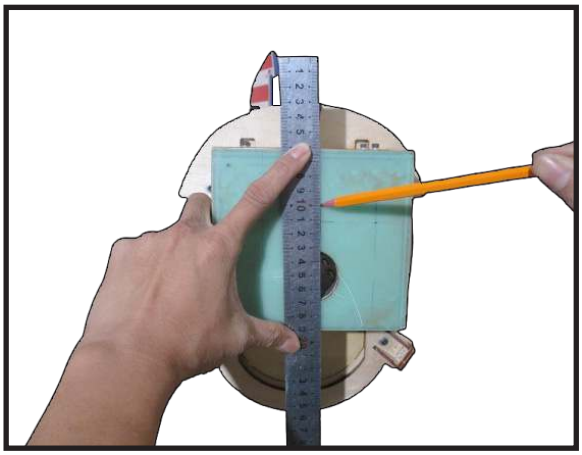

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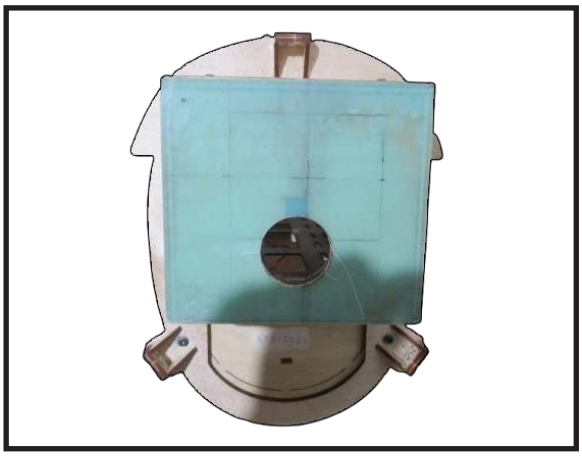

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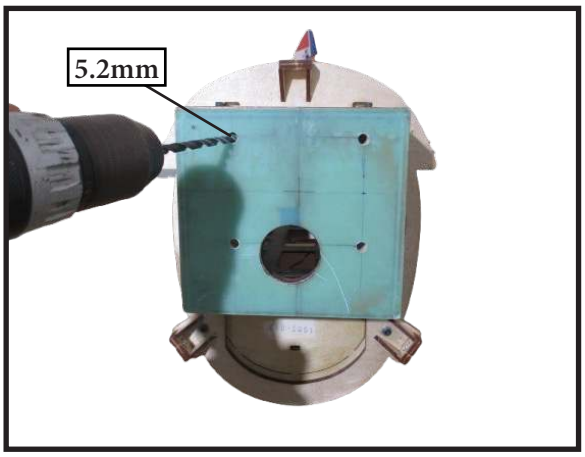

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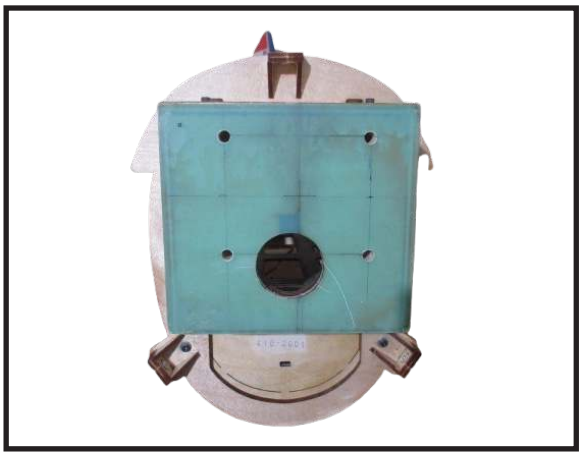

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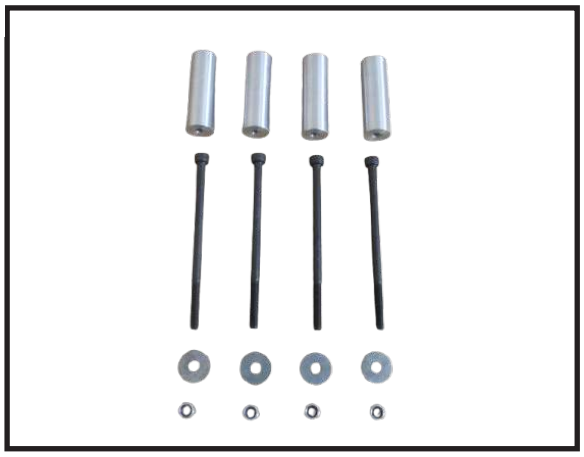

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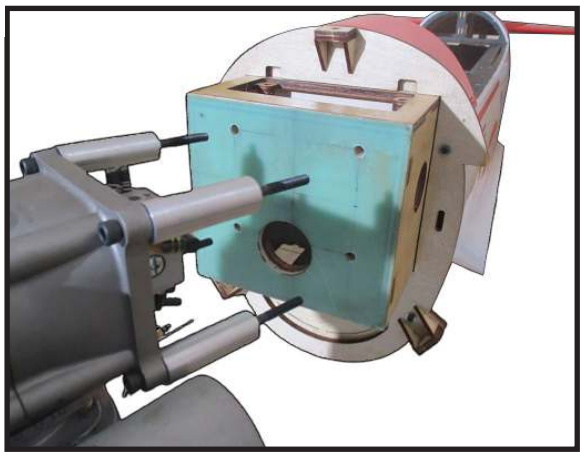

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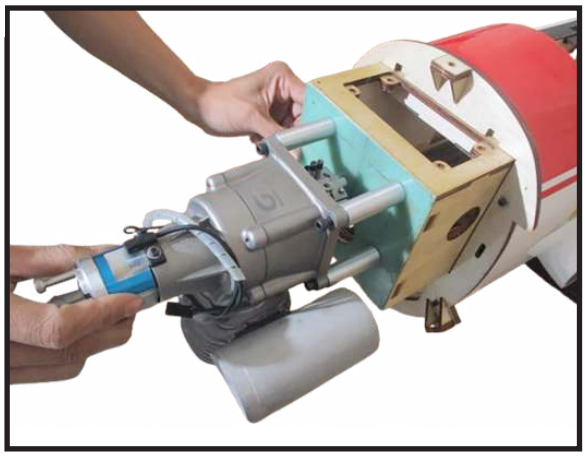

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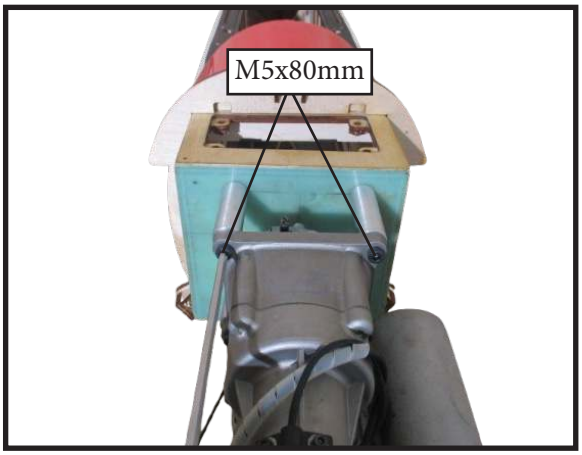

16.

THROTTLE SERVO INSTALLATION

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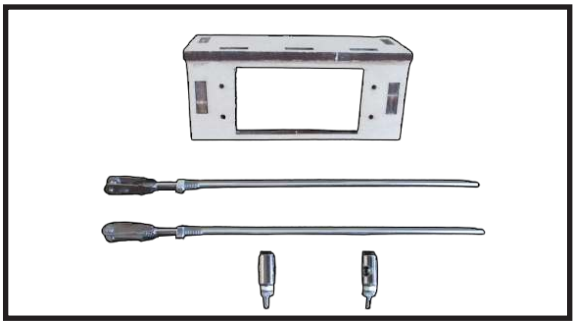

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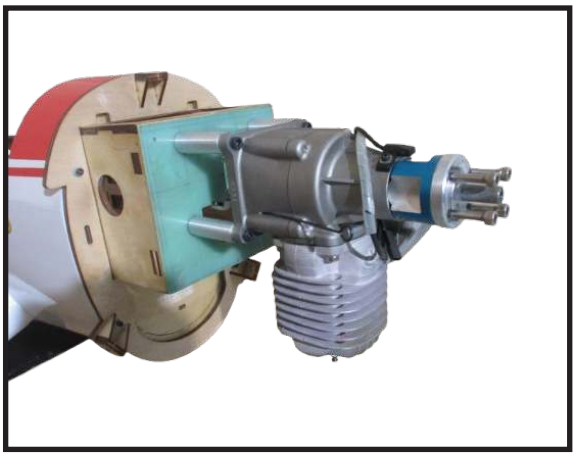
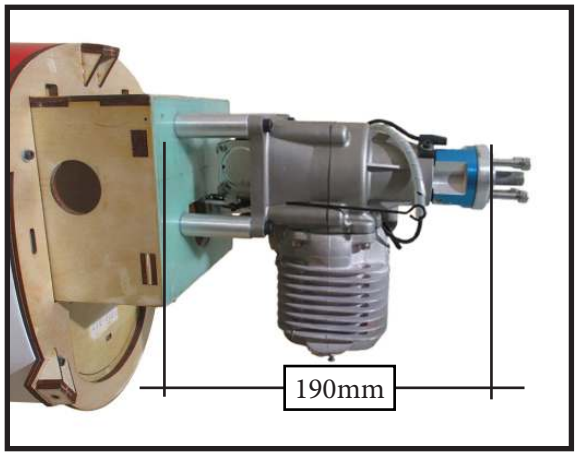


Attach throttle pushrod to the carburetor throttle arm with the ball link.

3.



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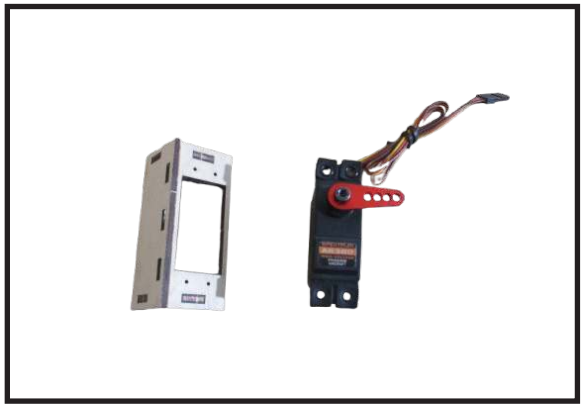

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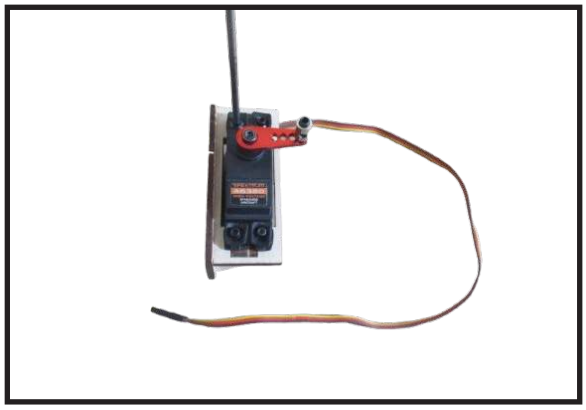

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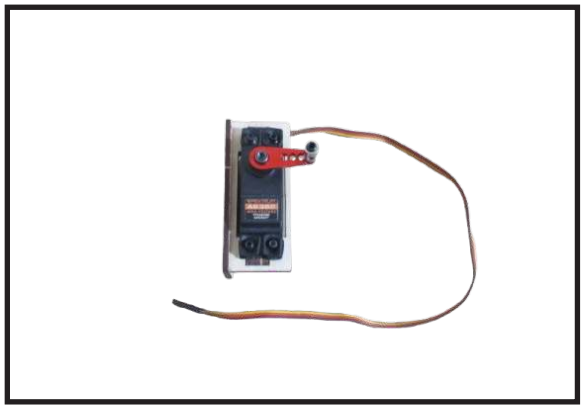

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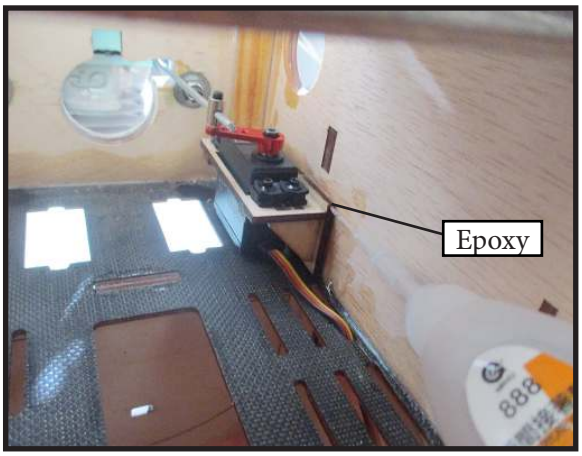

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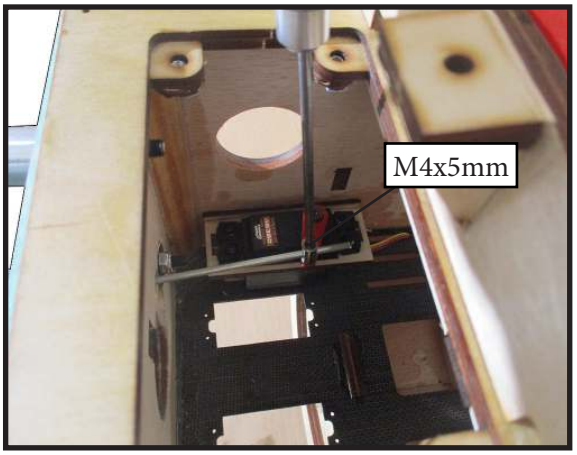
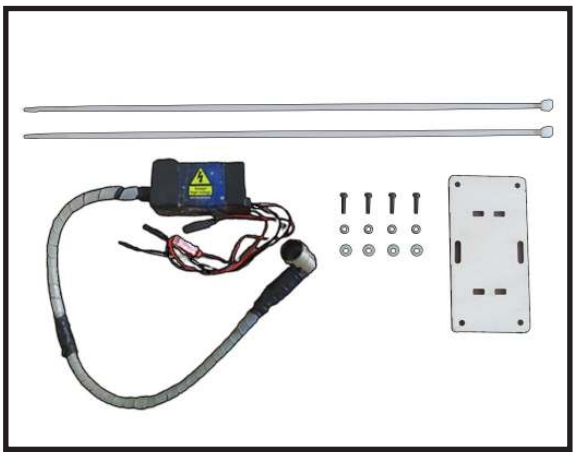


Move the throttle stick to the closed position and move the carburetor to closed. Use a 2.5mm hex wrench to tighten the screw that secures the throttle pushrod wire. Make sure to use threadlock on the screw so it does not vibrate loose.

11.

IGNITION INSTALLATION

1.



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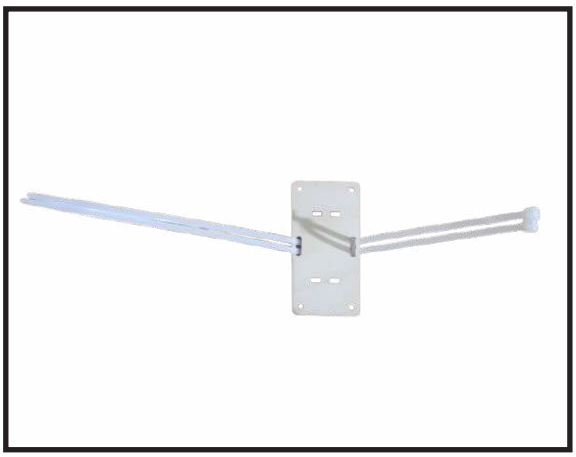

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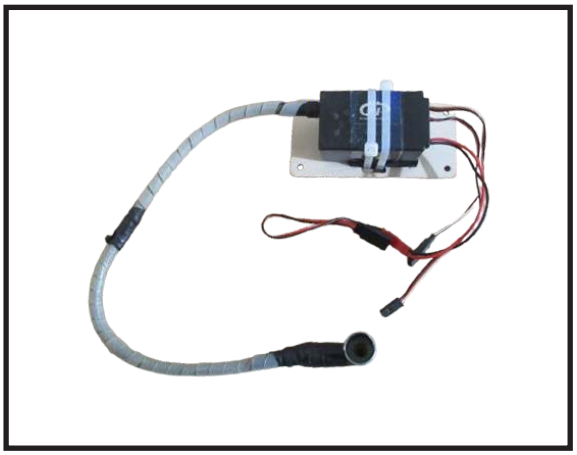
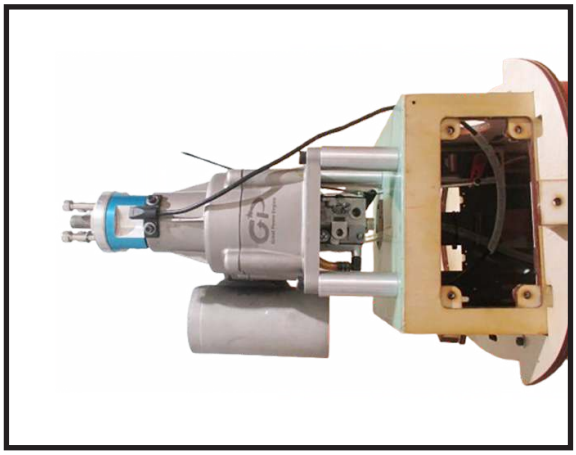


I Thread nylon tie through mounting holes.

4.



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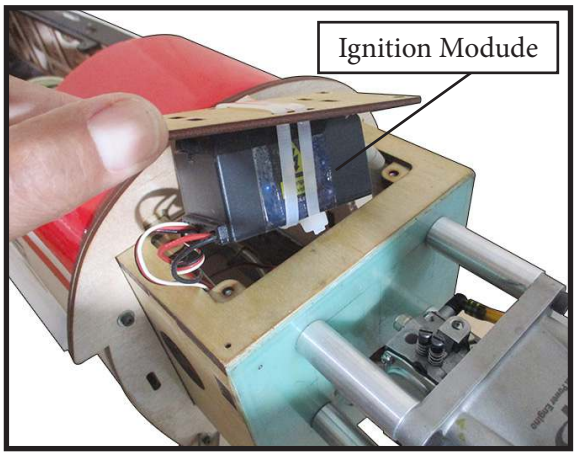

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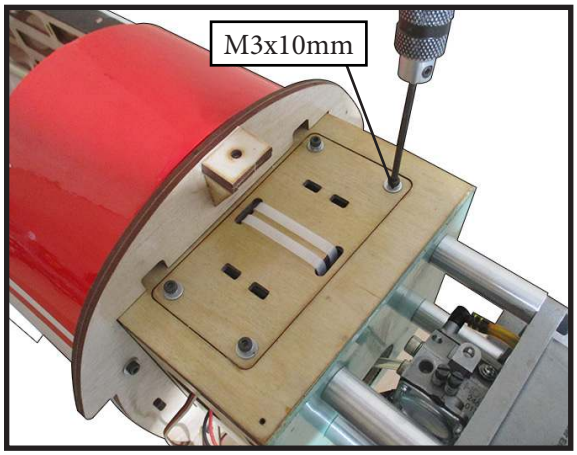

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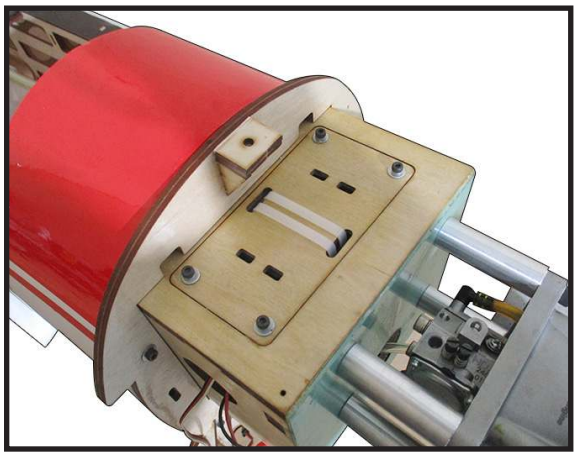

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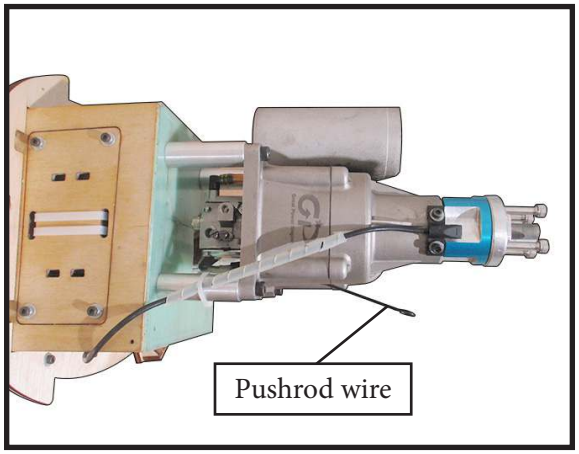

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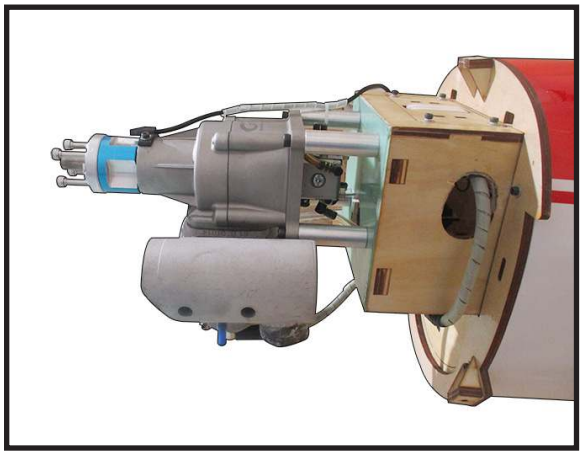

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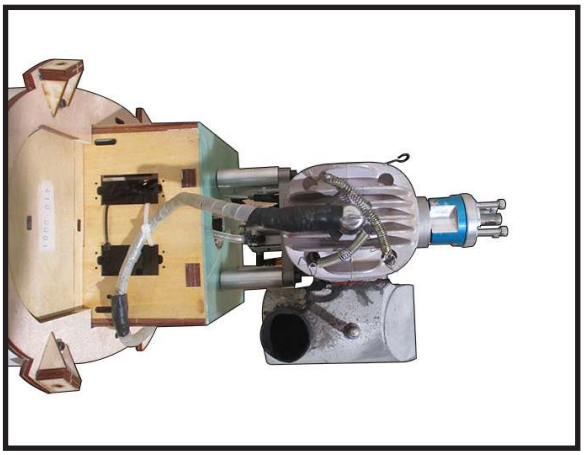
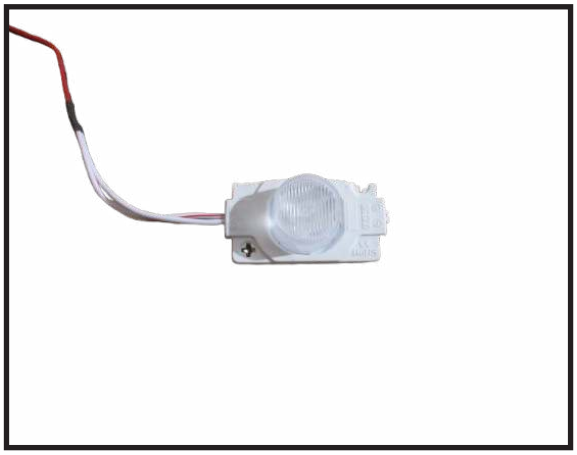


COWLING

Please study images below.

1.

2.



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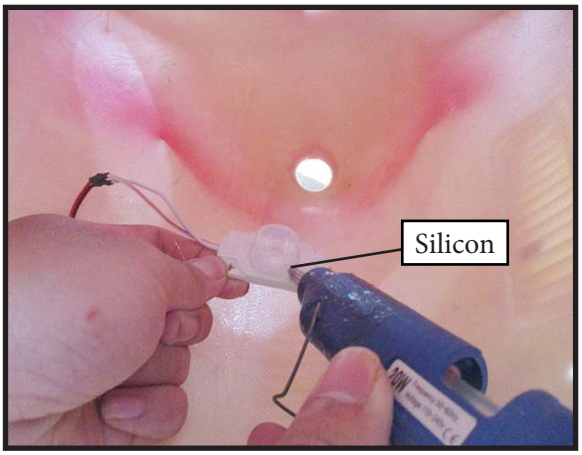

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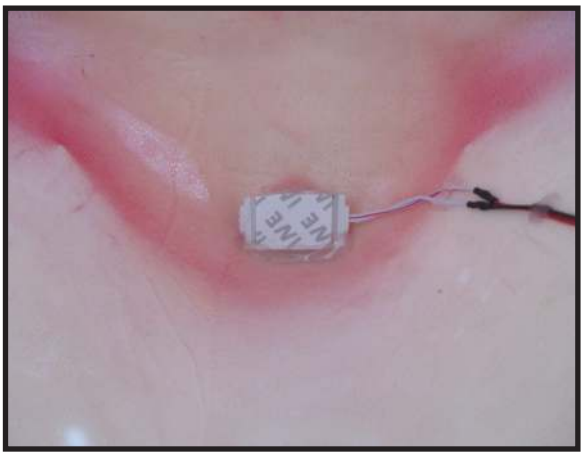
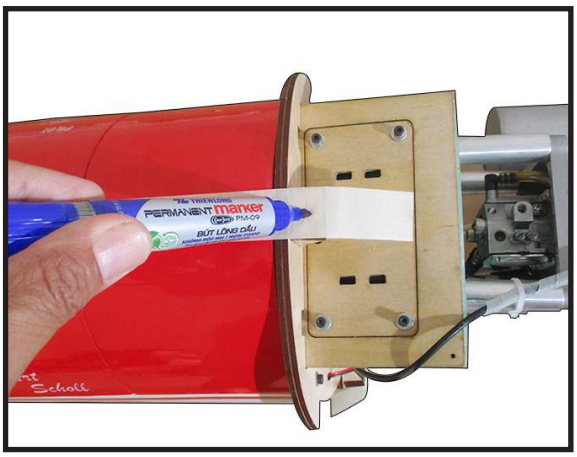


5.

6.

Tape the cowl to the fuselage using low-tack tape.

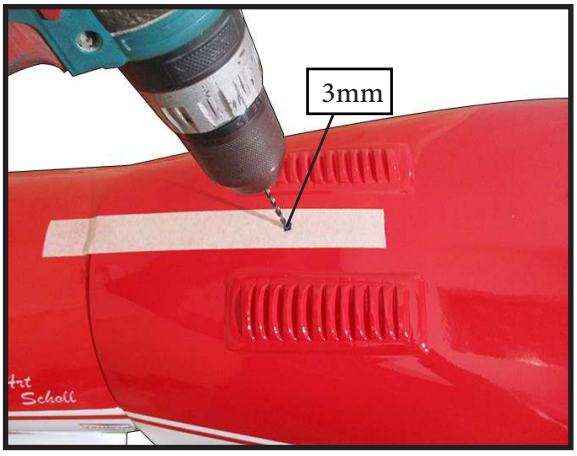
7.



8.

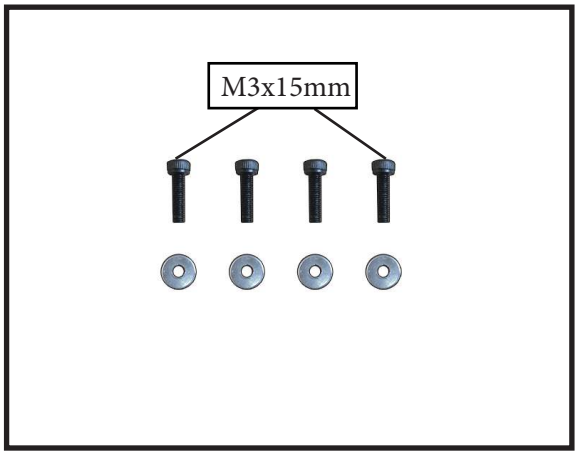
Use a drill and drill bit to drill the holes for the cowl mounting screws. Make sure the cowl position is correct before drilling each hole.

9.



Install the muffler onto the engine and make the cutout in the cowl for muffler clearance. Connect the fuel and pressure lines to the carburetor, muffler and fuel filer valve. Secure the cowl to fuselage using the M3x15mm socket head screws. Putting a small length of silicone fuel tube under the head of the screw helps with vibration.

10.



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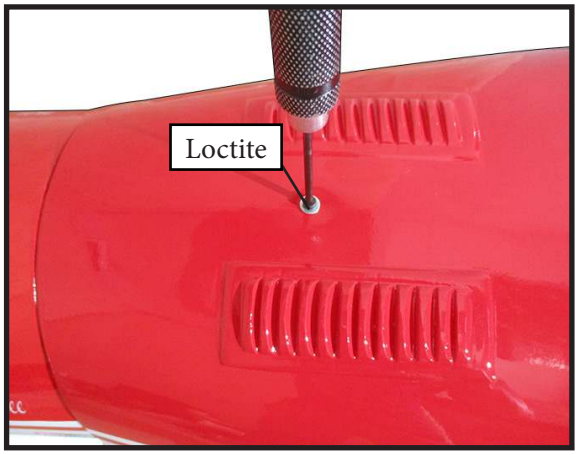

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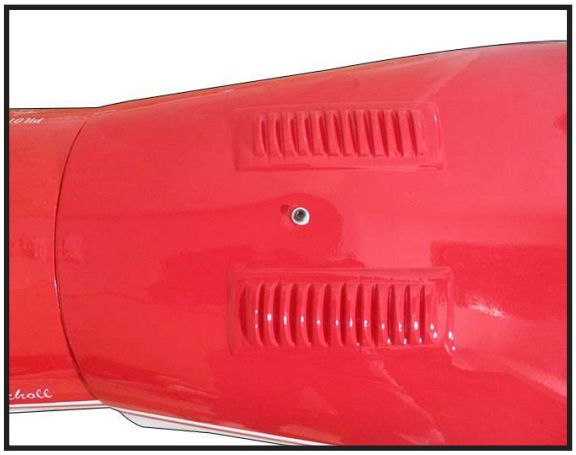


13.

14.

15.

ELECTRIC POWER CONVERSION

Locate the items neccessary to install the electric power conversion included with your model.

1.

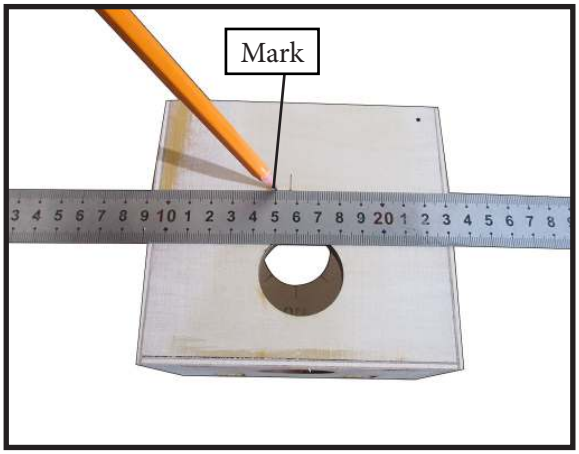
Recommend the items necessary to install the electric power conversion parts included with your model.

- **Motor: 360 - 6000 Watts**
- **Propeller: 24x10 ~ 25x12**
- **ESC: 160A - 200A**
- **12S Lipo**

Attach the electric motor box to the firewall centered with the cross lines drawn on the electric motor box and firewall. Using M5x35mm to secure the motor box to the firewall. Please see pictures below.

2.

3.



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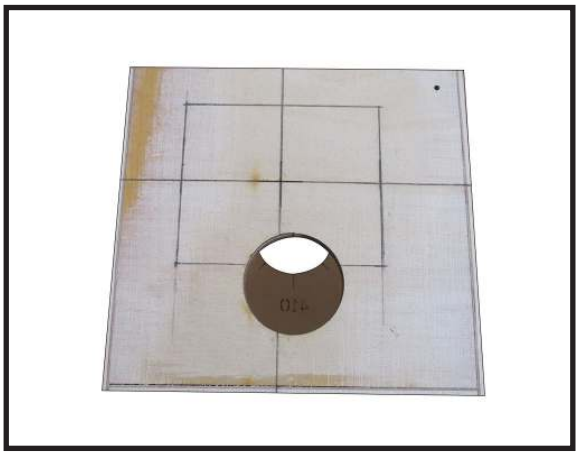

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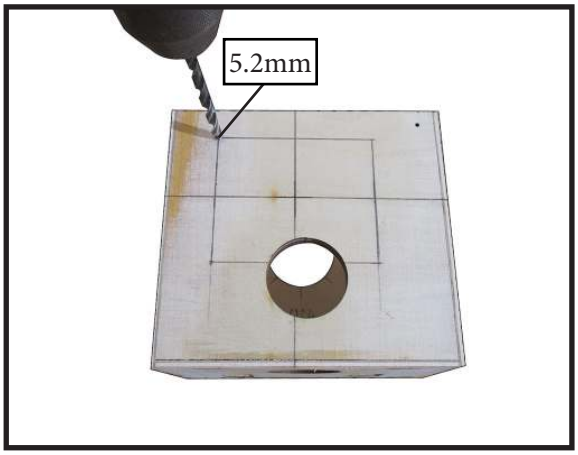

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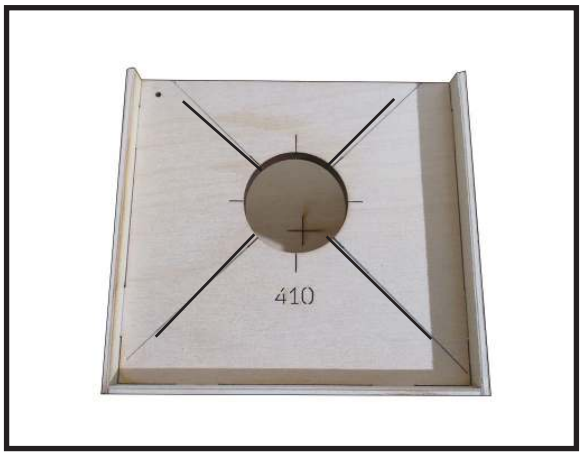
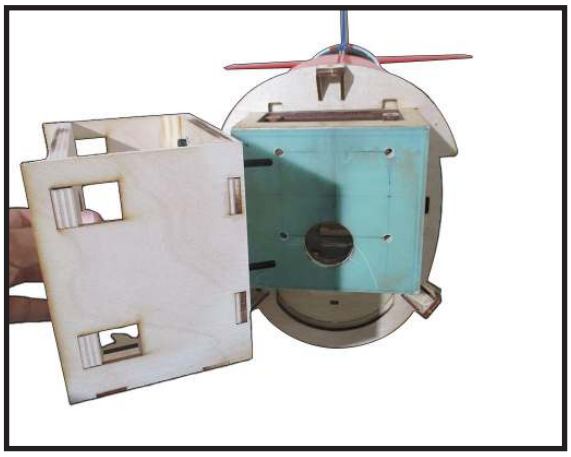


Attach the motor mount to the front of the electric motor box using four 5.2mm blind nut, four M5x35mm hex head bolts to secure the motor. Please see picture shown.

8.



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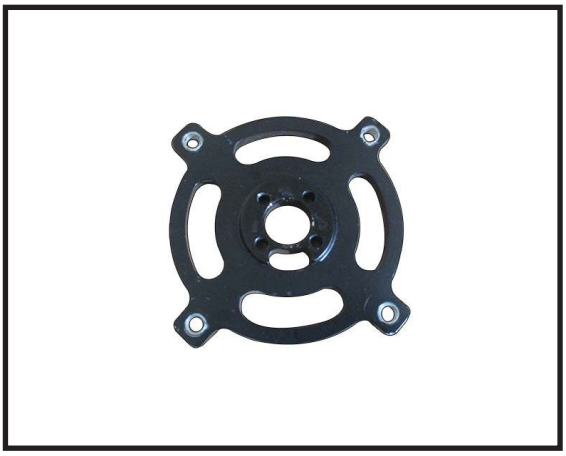

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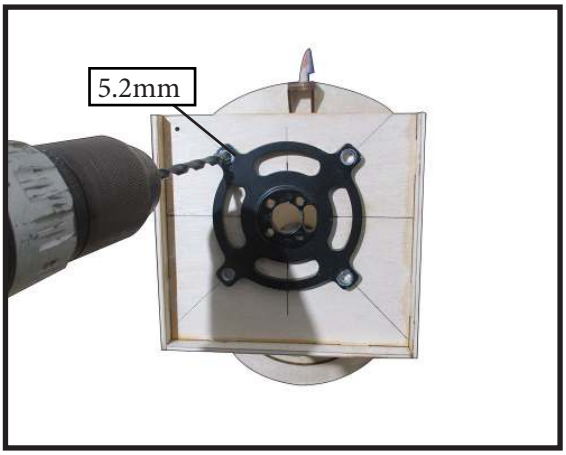
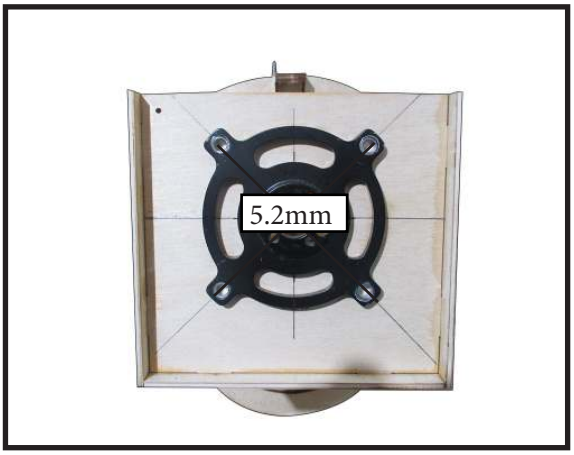


Then, use 5.2mm drill bit to enlarge the holes on the electric motor box.

12.



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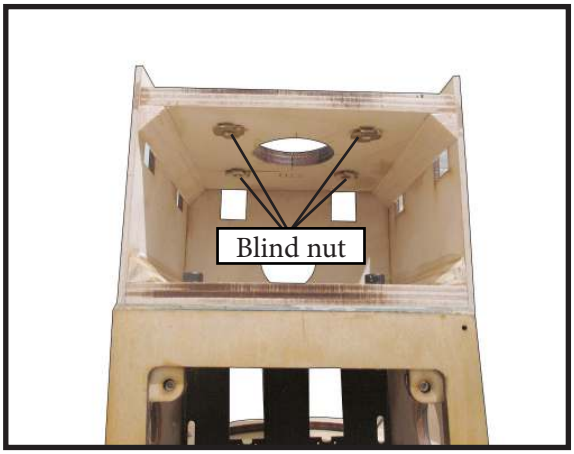

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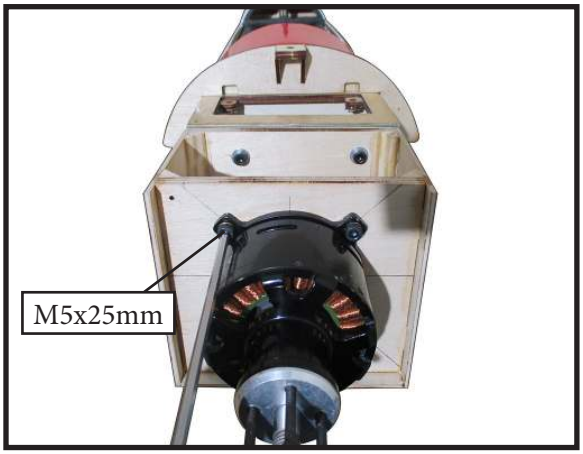

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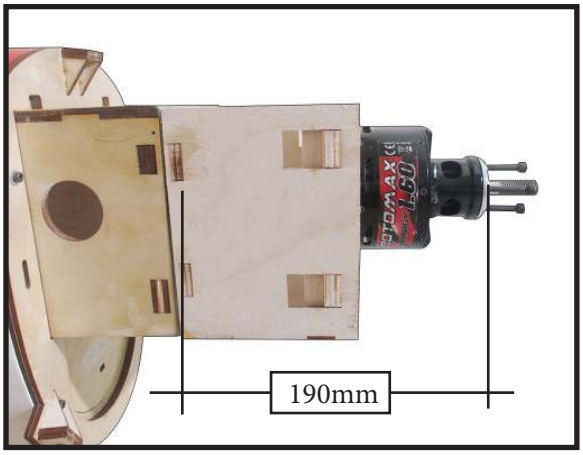

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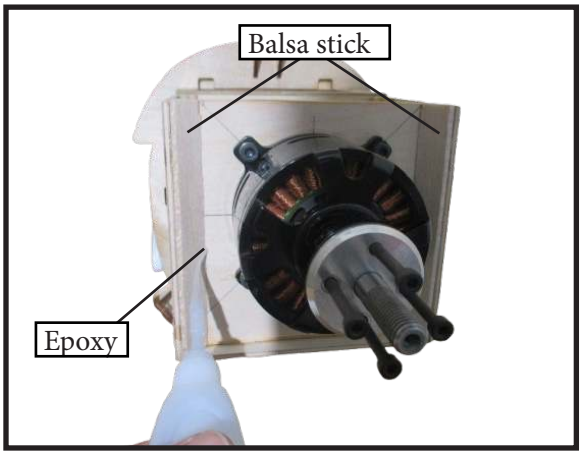
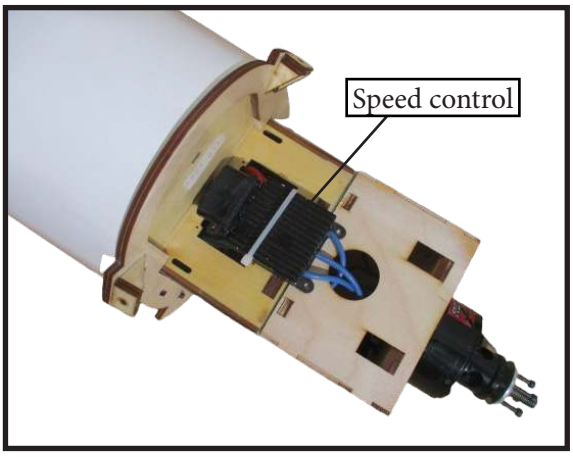
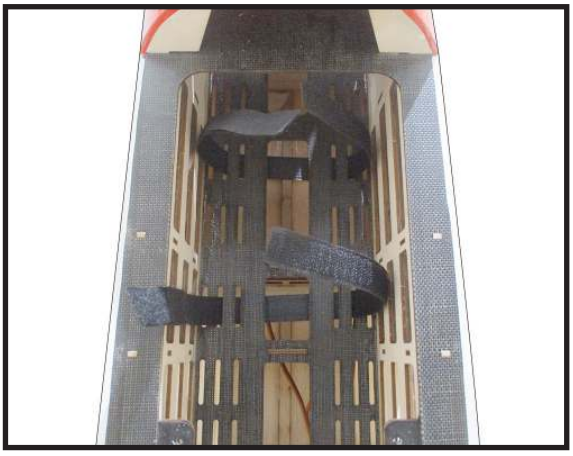


Attach the speed control to the side of the motor box using two-sided tape and tie wraps. Connect the appropriate leads from the speed control to the motor. Make sure the leads will not interfere with the operation of the motor.

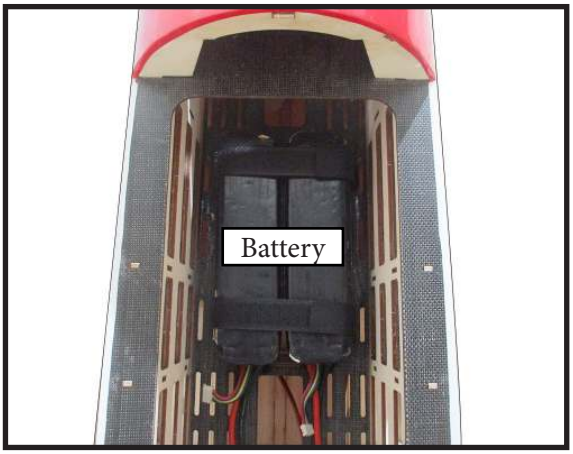
17.



18.



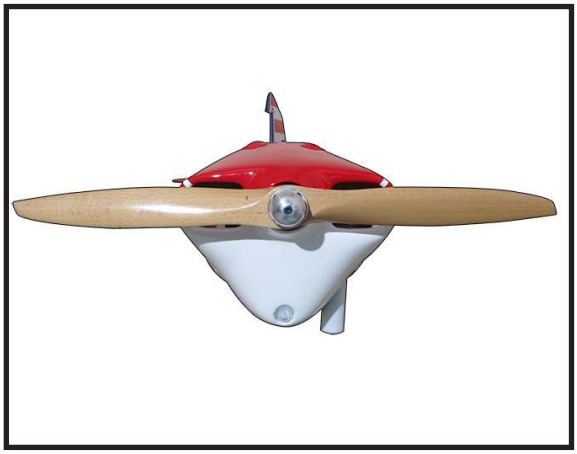
19.



INSTALLING THE PROP/HUB

Install the spinner backplate, propeller and proper hub of your choice.

1.



⚠ The propeller should not touch any part of the cowling. If it does, check and adjust engine mounting/cowl spacing as needed to where the propeller will not come in contact with the cowling.

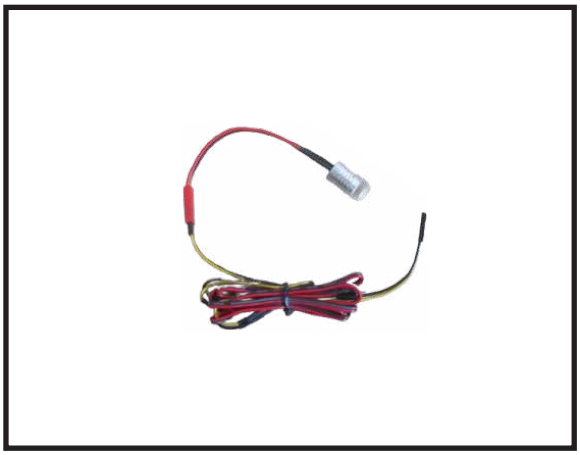
2.

INSTALL LED BULB FOR FUSELAGE

Please study images below.

The light is located at the back of the same fuselage.

1.



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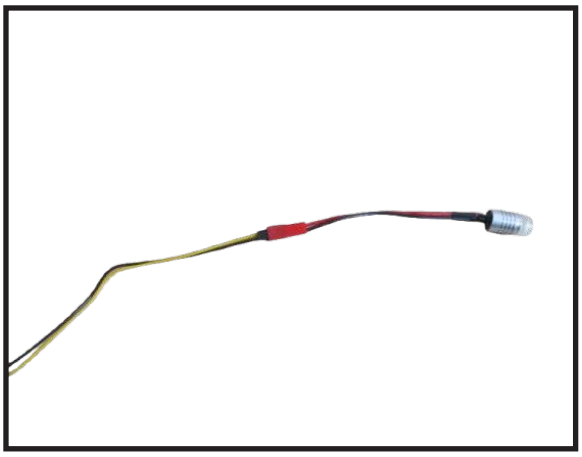
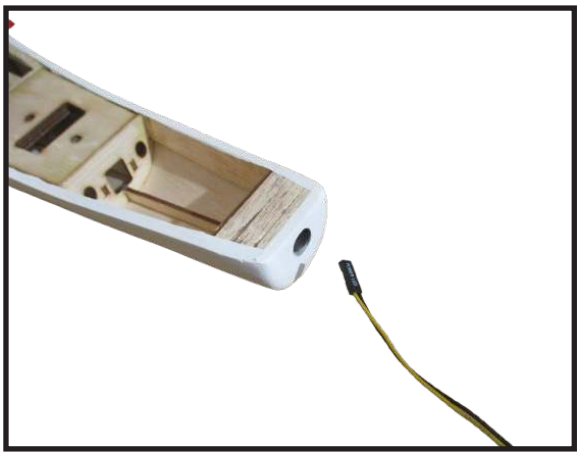
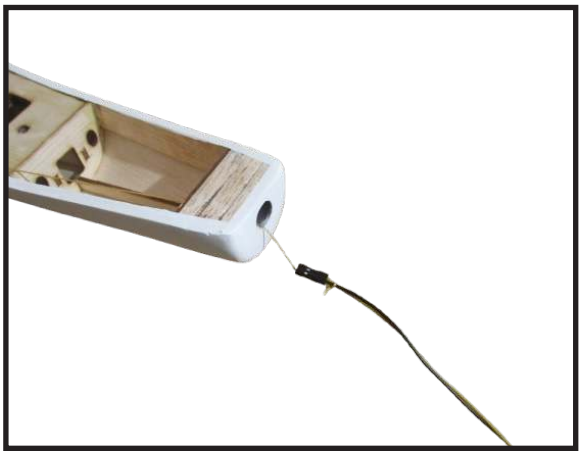


3.



4.



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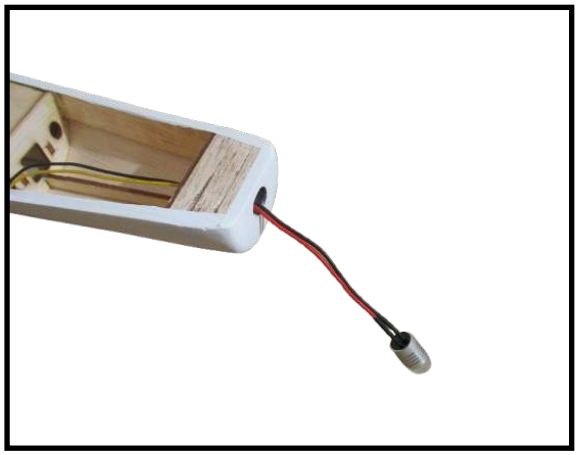

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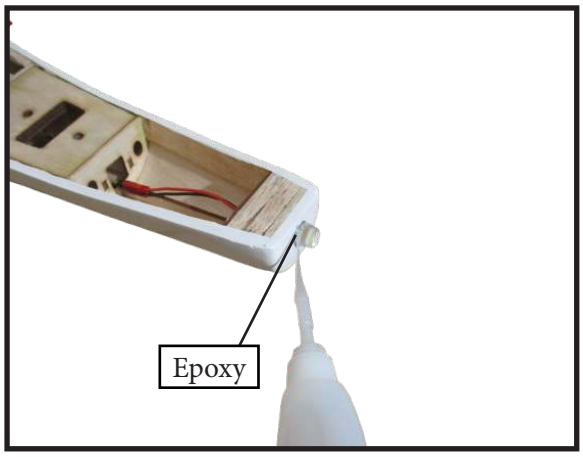
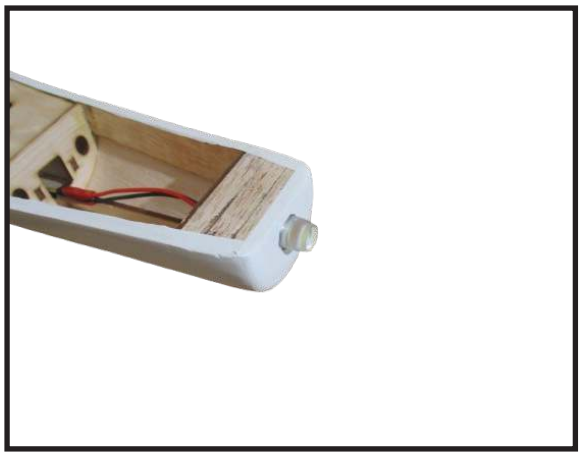


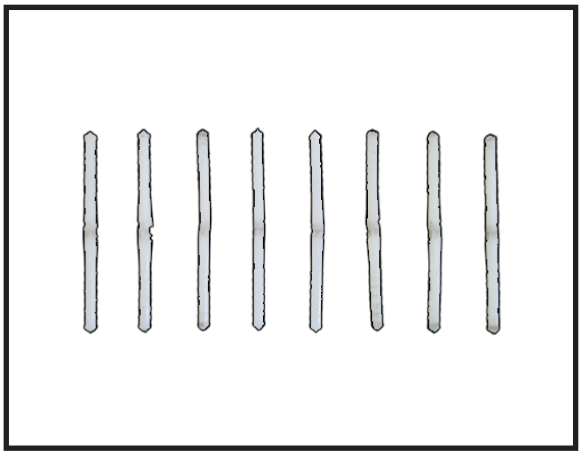
7.



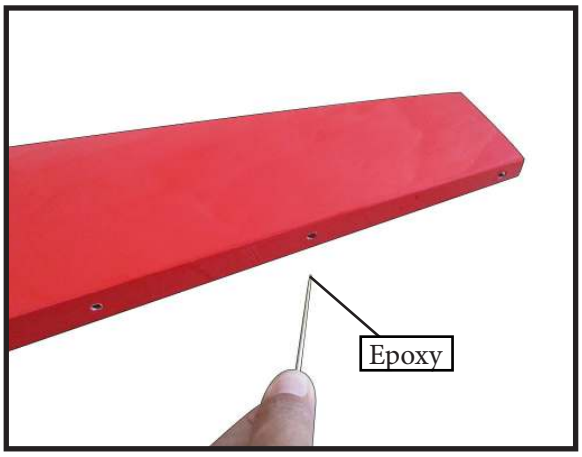
INSTALL ELEVATOR HINGES

Test fit the hinges into the elevator, and then the hinges into the horizontal stabilzer. Ensure that the hinge pockets line up, and that the hinges move freely. Epoxy hinges the same way you did the aileron hinges.

1.



2.



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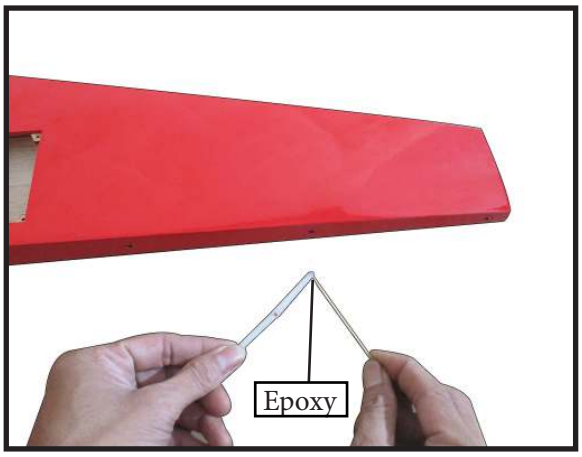
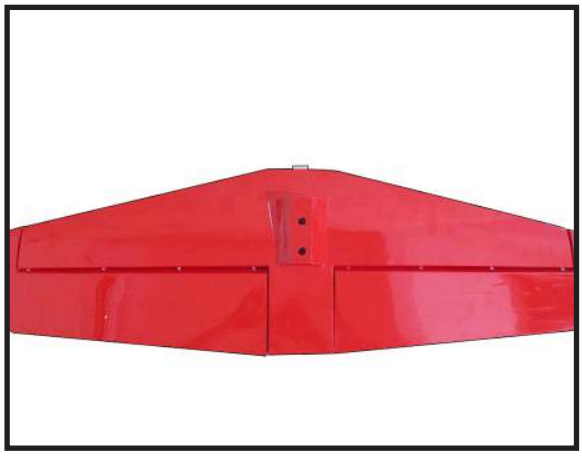


4.

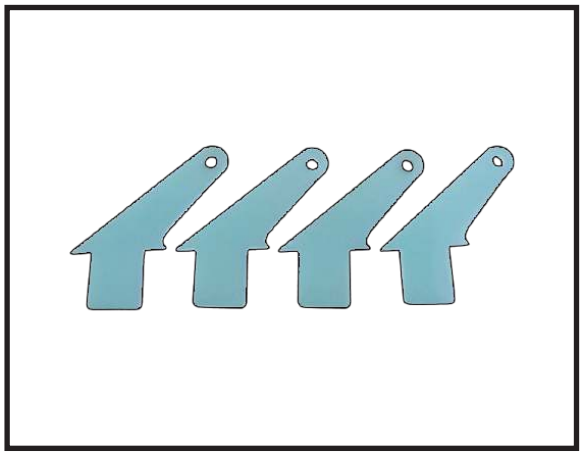
5.



INSTALL ELEVATOR CONTROL HORN

Install the elevator control horn using the same method as same as the elevator control horns.

1.



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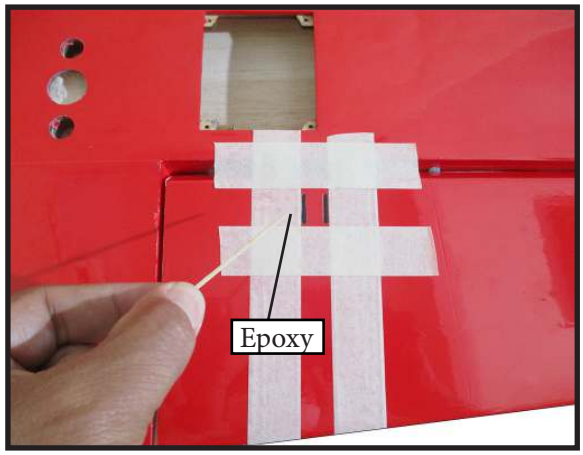

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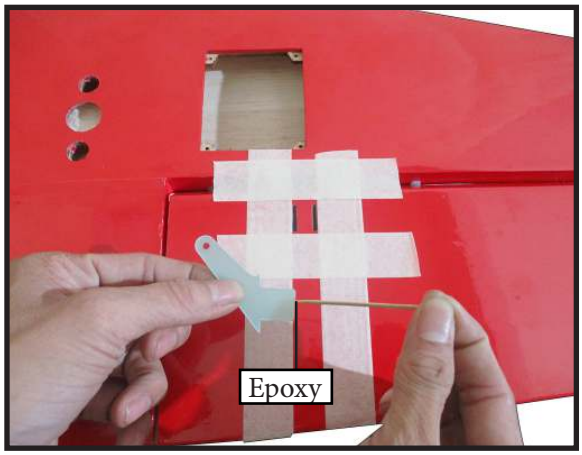
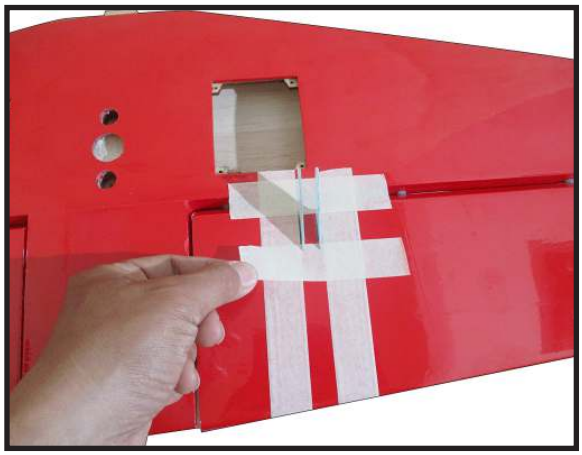


4.



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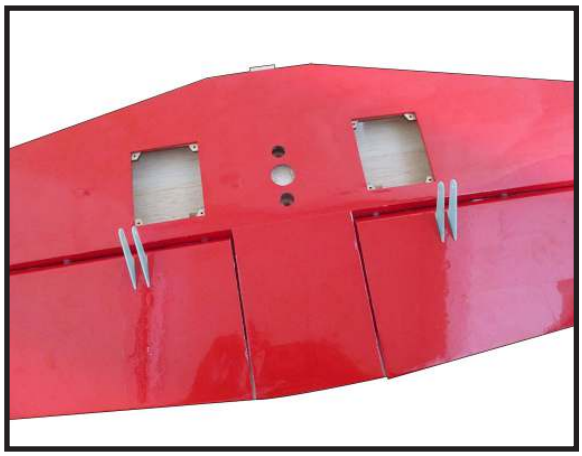


ELEVATOR SERVO INSTALLATION

The elevators have been pre-hinged and glued to the stabs and are ready for flight. No other steps are necessary for hinging.

NOTE : servos arm for elevator is not provided from manufacturer.

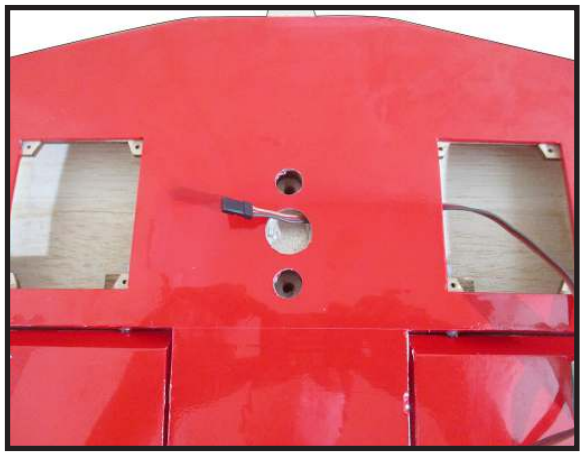
1.

Maximum Servo spec.
Torque : 192,4 oz-in (13,8 kg-cm) @ 6,0V; 302,1 oz-in (21,8 kg-cm) @ 7,4V; 350,0 oz-in (25,2 kg-cm) @ 8,4V

Attach the extension to the servo lead and secure with Safety Clip, safety wire, tape or other method. Ensure the plugs will not come apart from vibration orlight tension.

Feed servo extension through the elevator servo mounting hole.

2.



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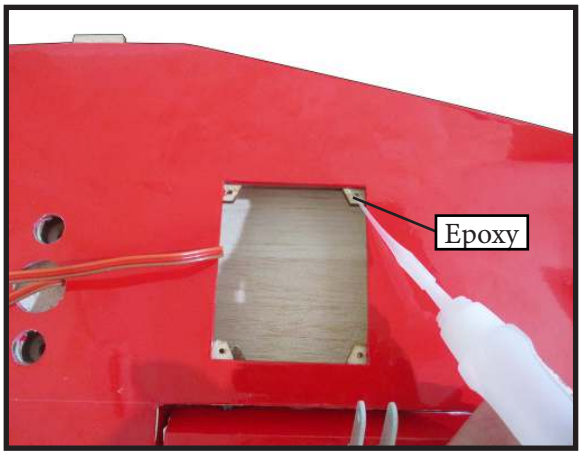

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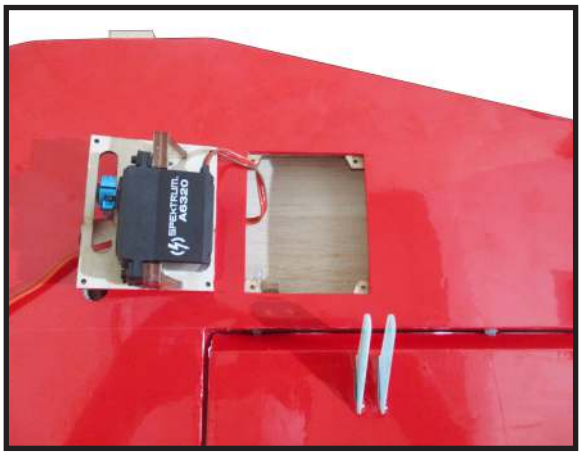

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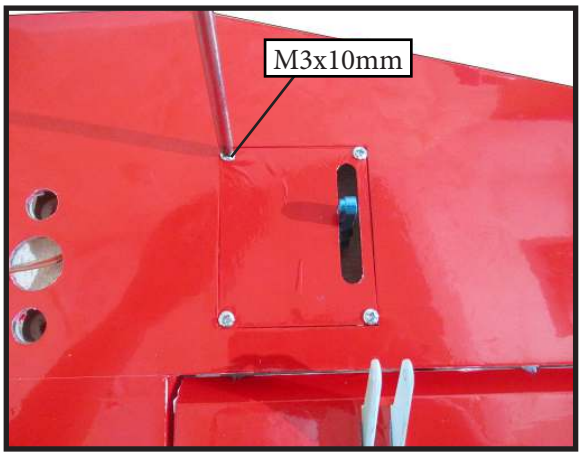
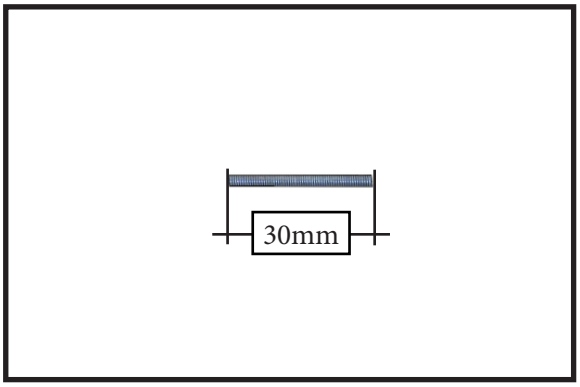


6.

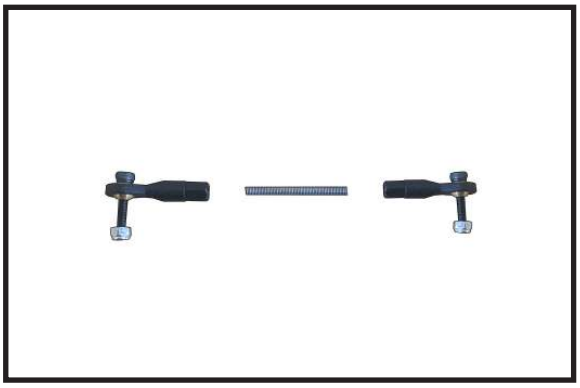
ELEVATOR PUSHROD INSTALLATION

Please study images below.

1.



2.



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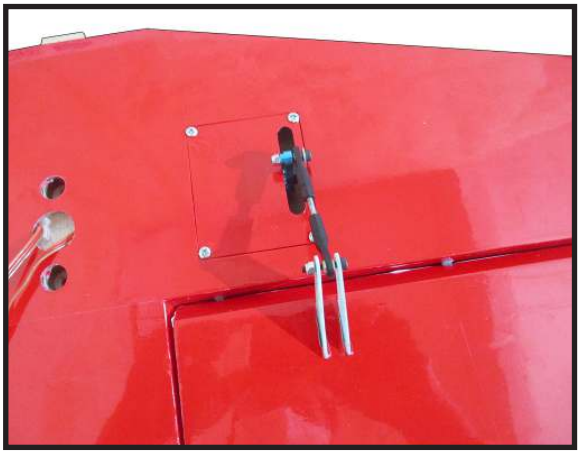
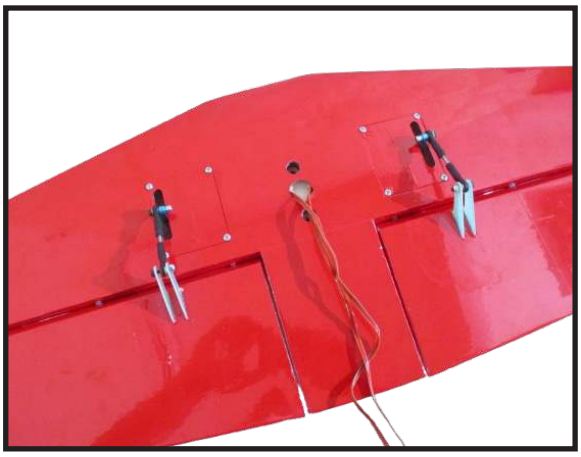
4.



5.



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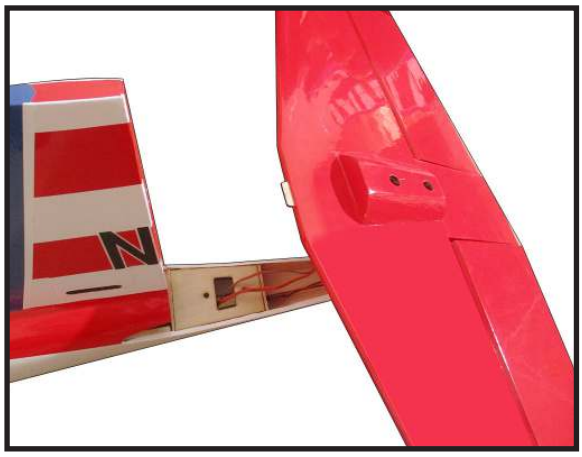
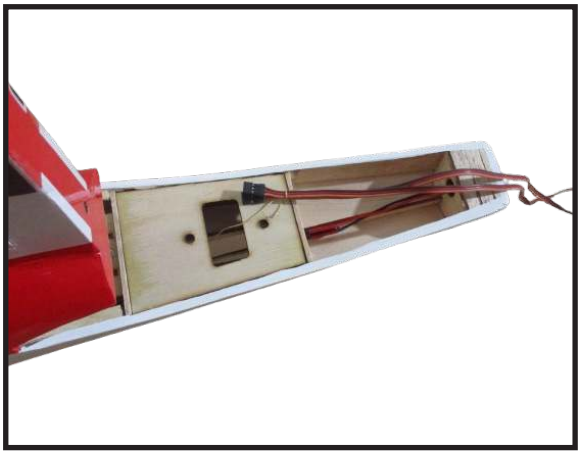


HORIZONTAL TAIL INSTALLATION

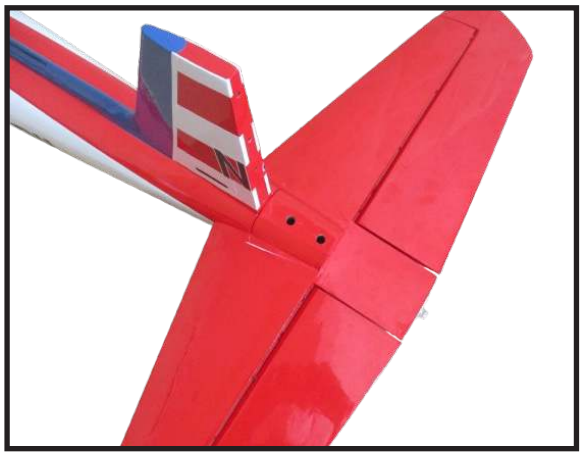
Please study images below.

1.

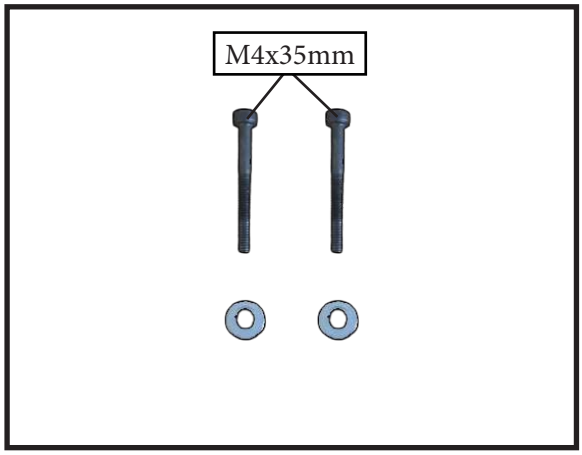


2.

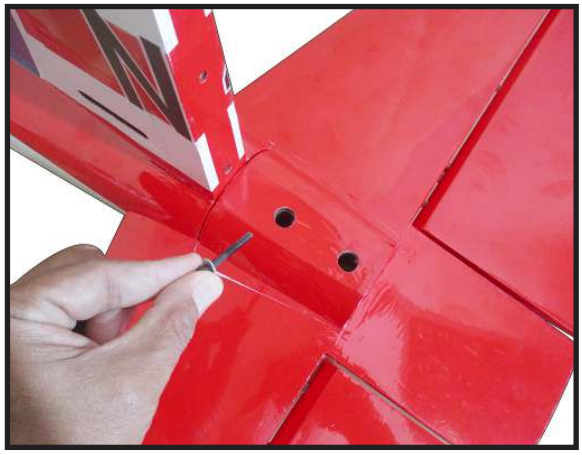
4.



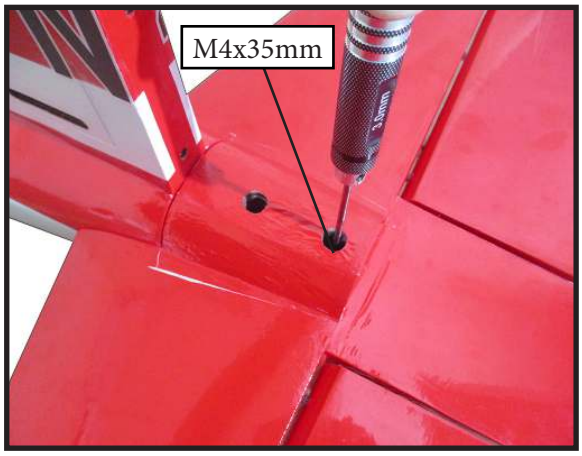
5.



6.



7.

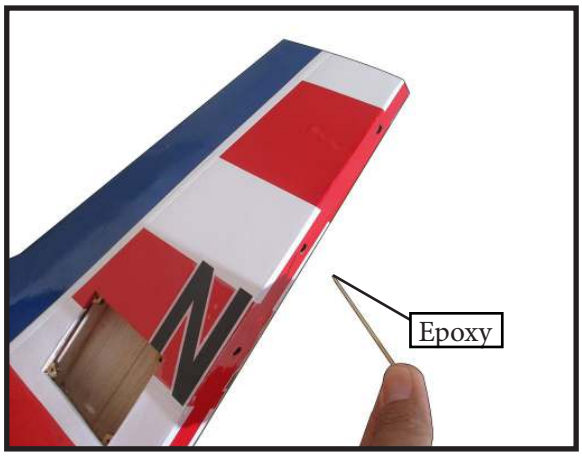


8.

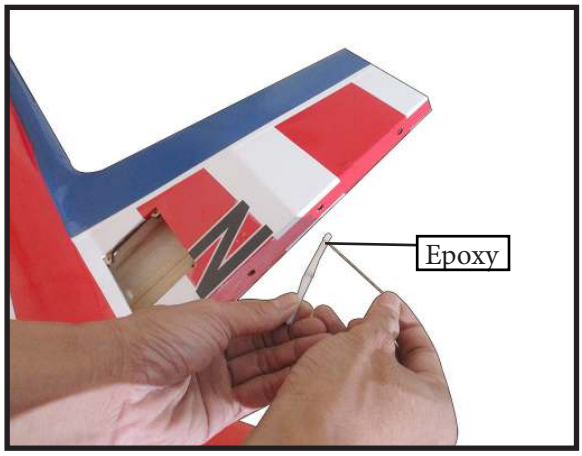
INSTALL NAIL HINGE RUDDER

Test fit the hinges into the rudder, and then the hinges into the tail. Ensure that the hinge pockets line up, and that the hinges move freely.

1.



2.



3.

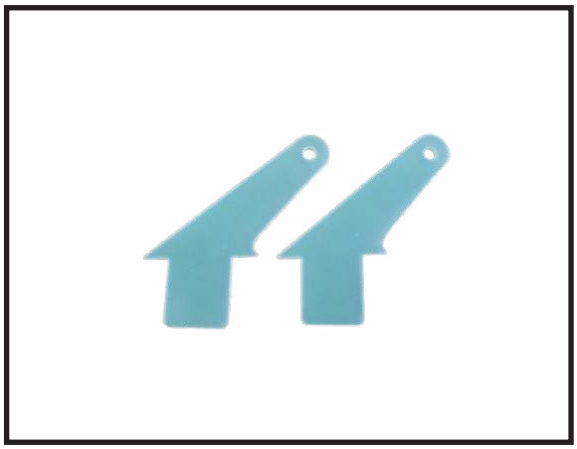
4.

5.

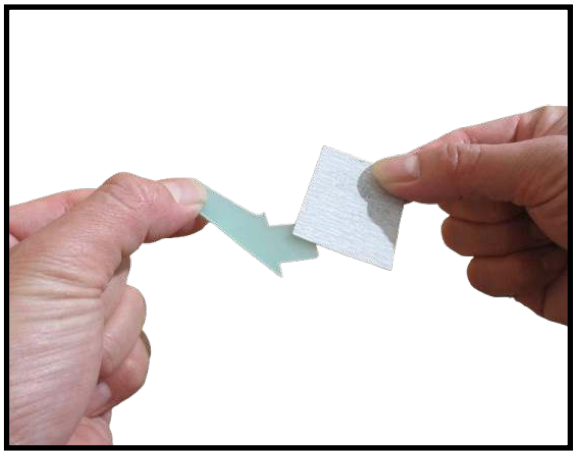
INSTALL RUDDER CONTROL HORN

Install the elevator control horn using the same method as same as the aileron control horns.

1.

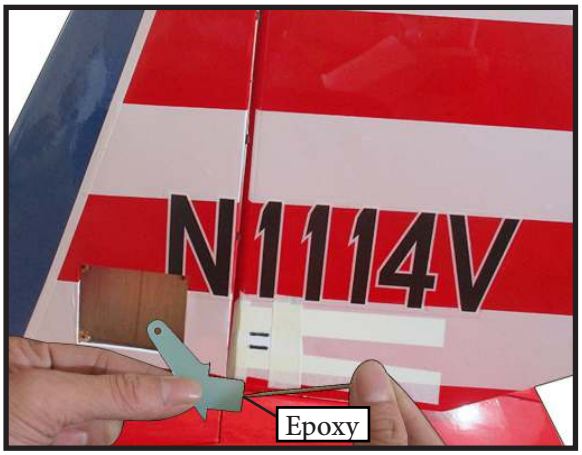


2.



3.

4.



5.

6.

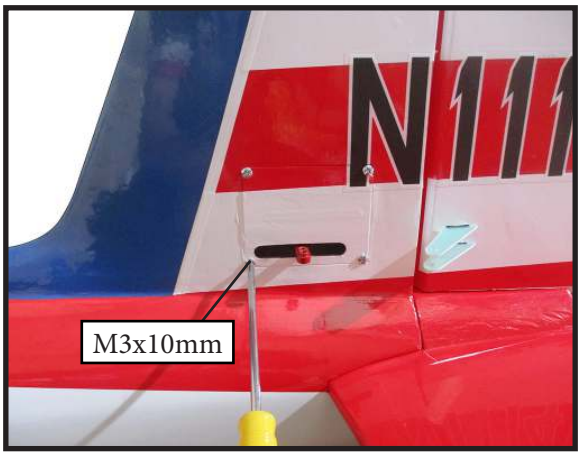
7.

8.

9.

10.

11.

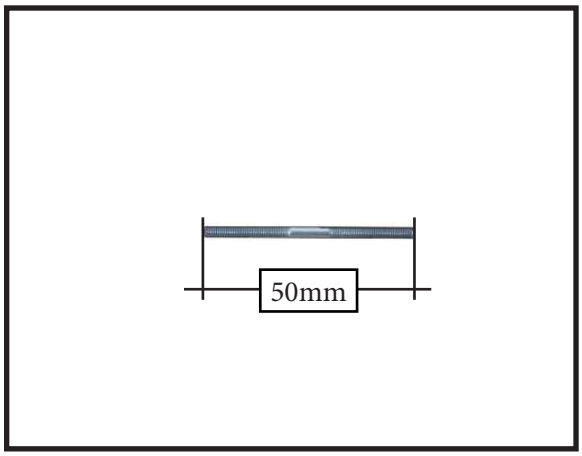


12.

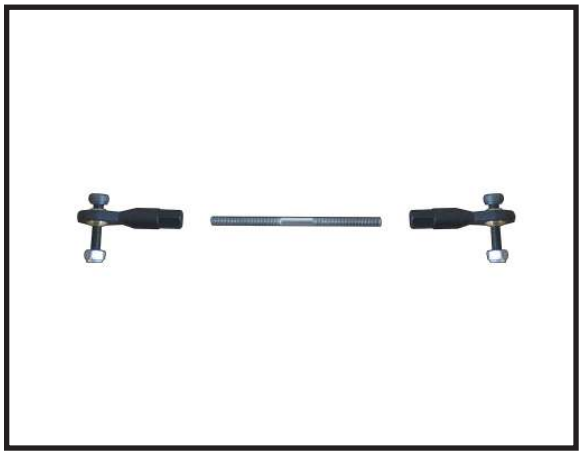
RUDDER PUSHROD INSTALLATION

Locate items necessary to install rudder pushrod.

1.



2.



3.

4.

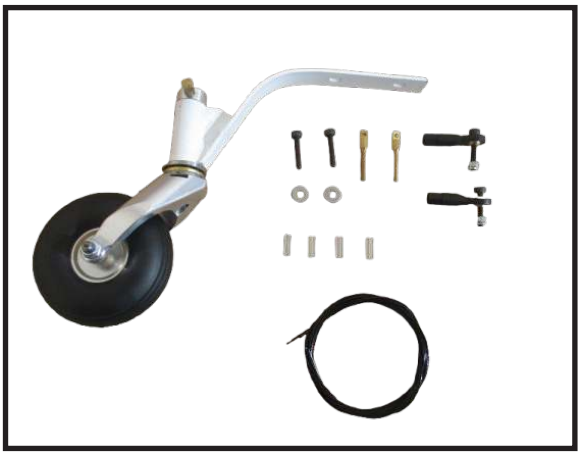
5.

6.

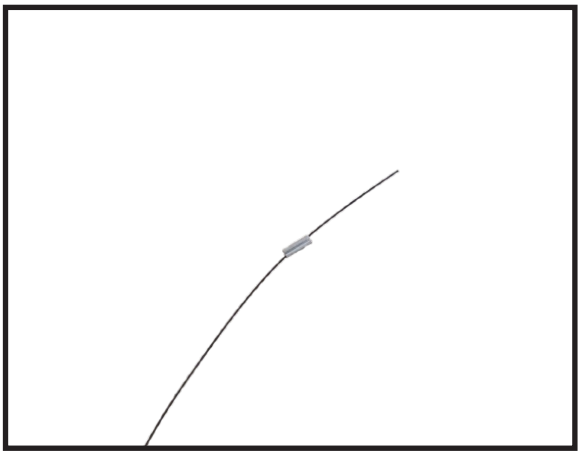
MOUNTING THE TAIL WHEEL

Locate items necessary to install tail wheel.

1.



2.



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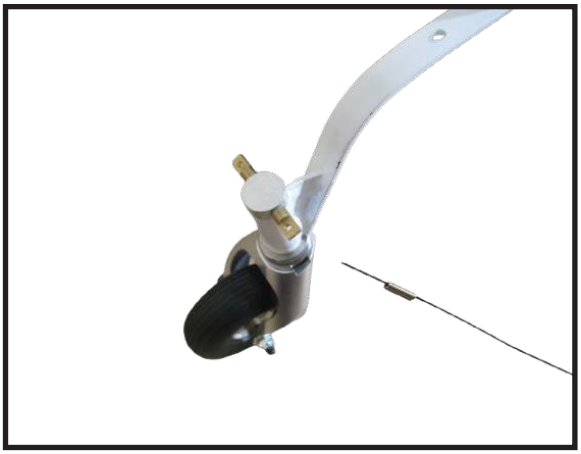
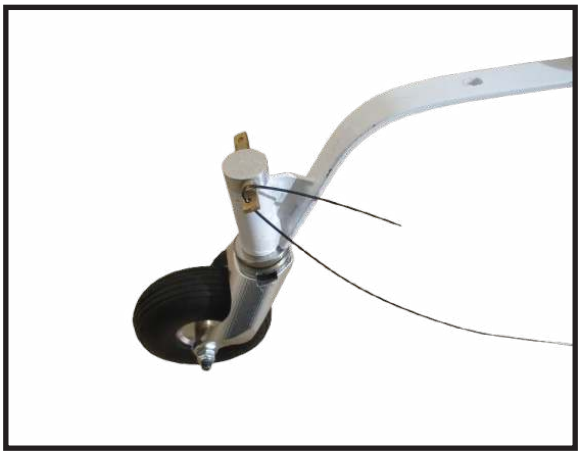
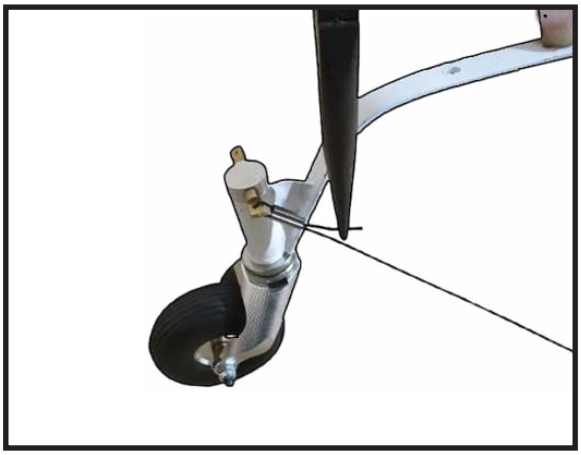


4.



5.



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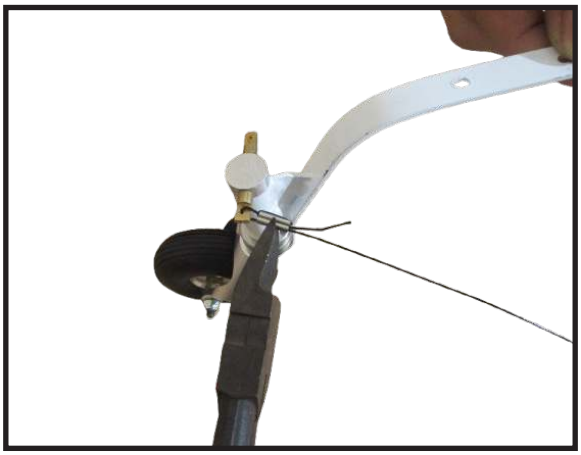
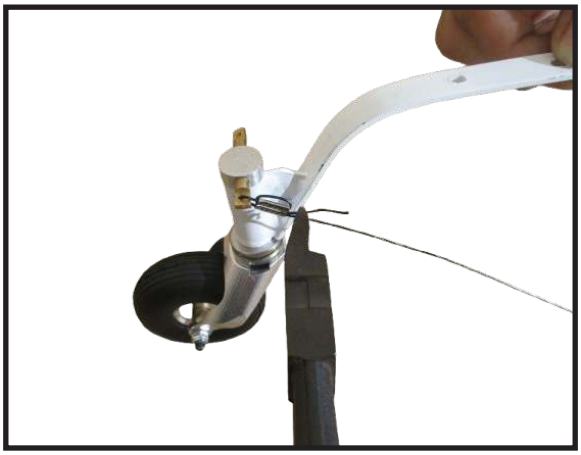
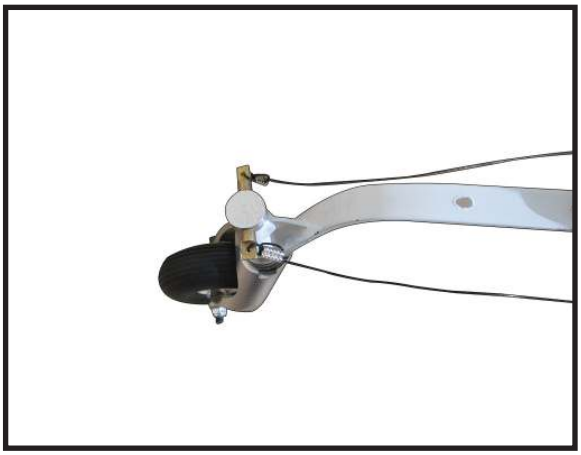


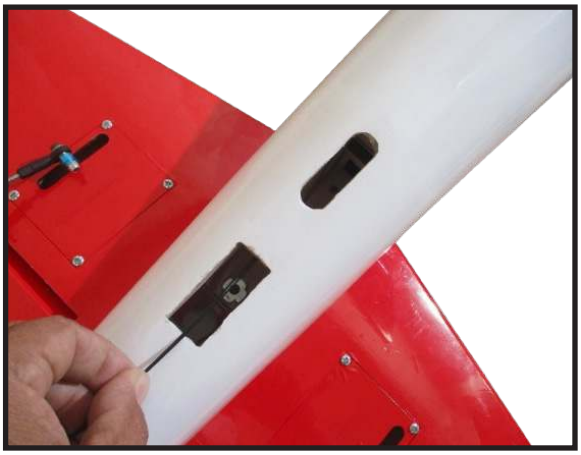
7.



8.

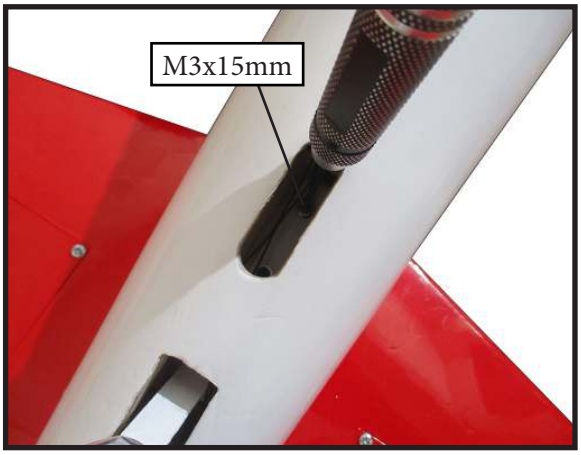


9.



10.

11.



12.

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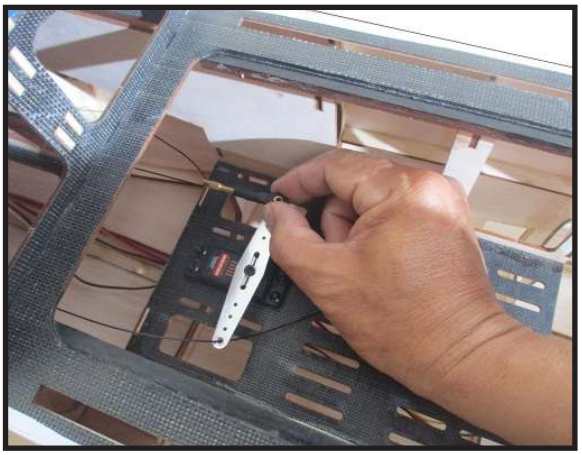

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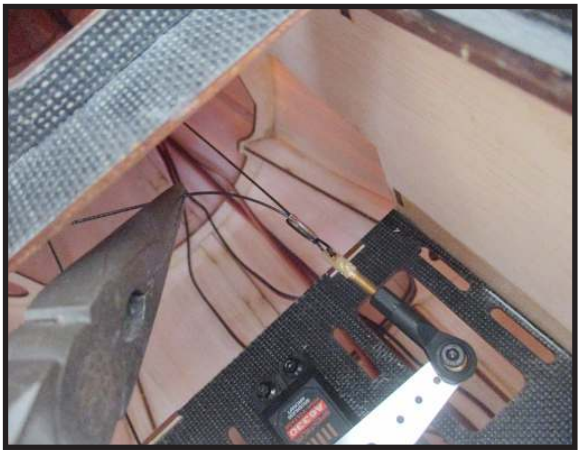

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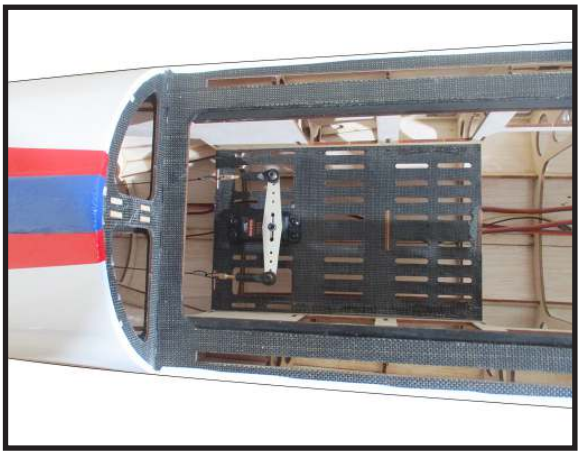


20.

21.

STABILIZER PITOT TUBE INSTALLATION

Please study images below.

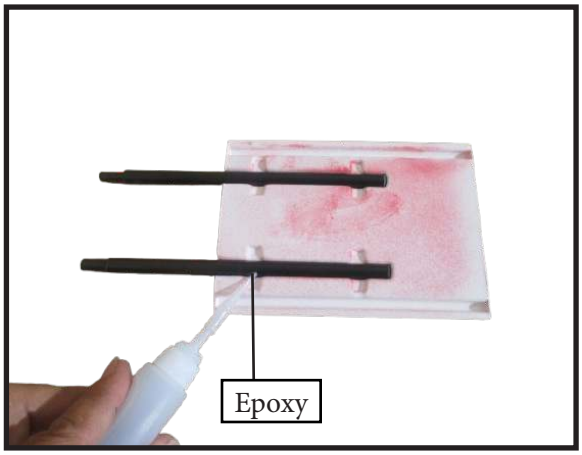
1.

2.

3.

4.

5.



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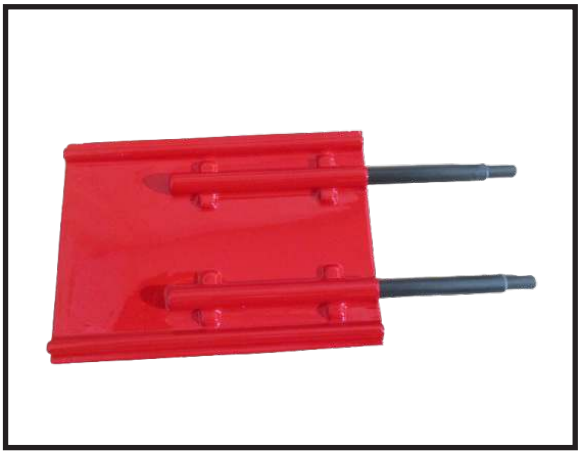

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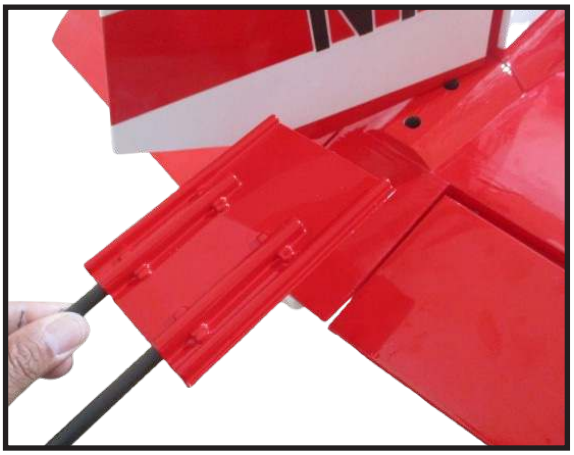

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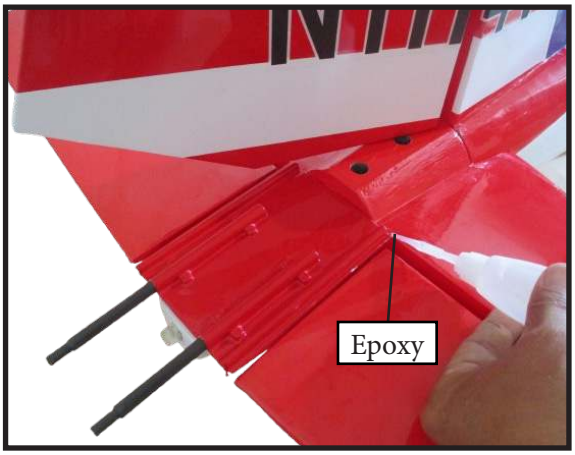

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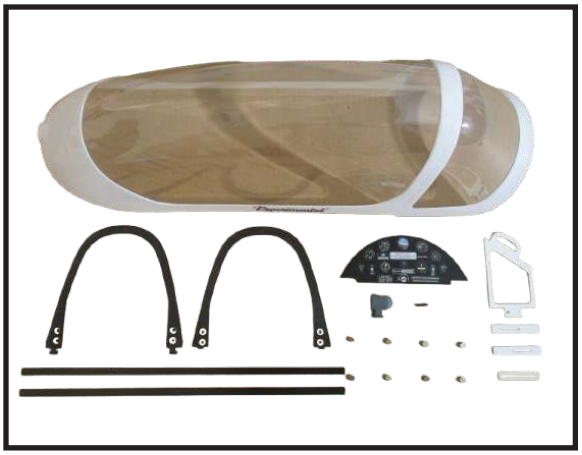
10.

INSTALLATION COCKPIT, AND CANOPY

Locate items necessary to install.

1.



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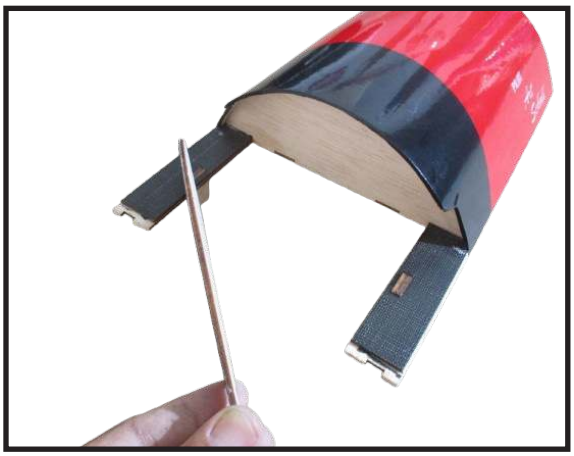

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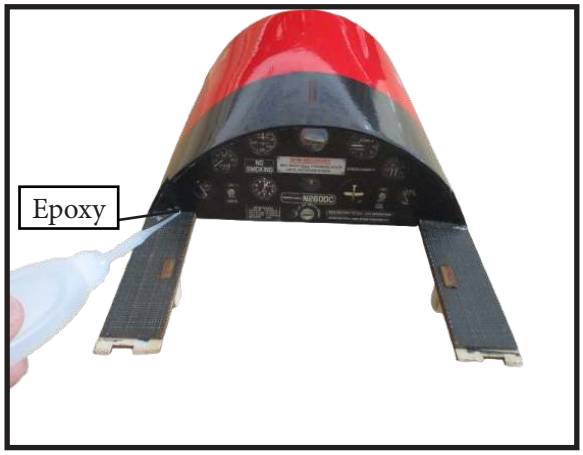

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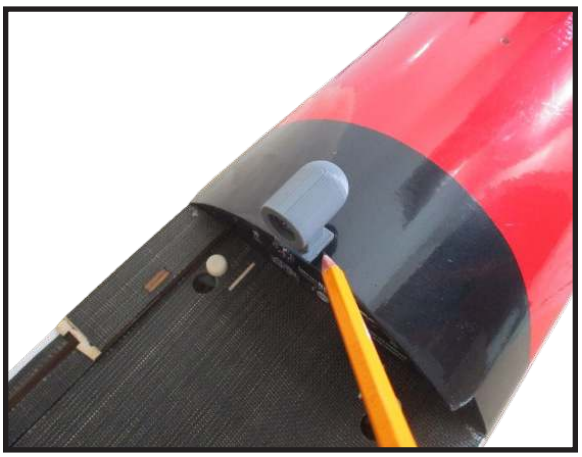

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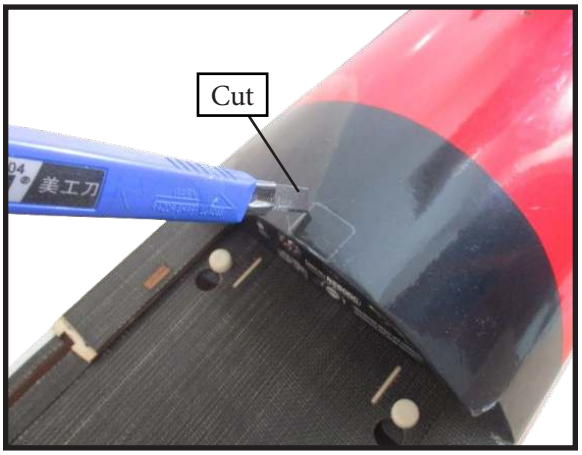

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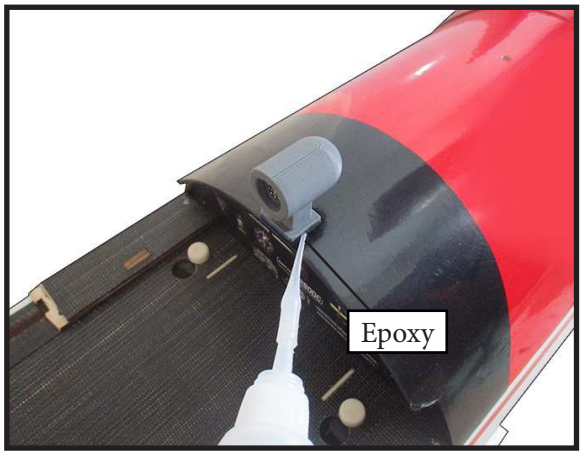

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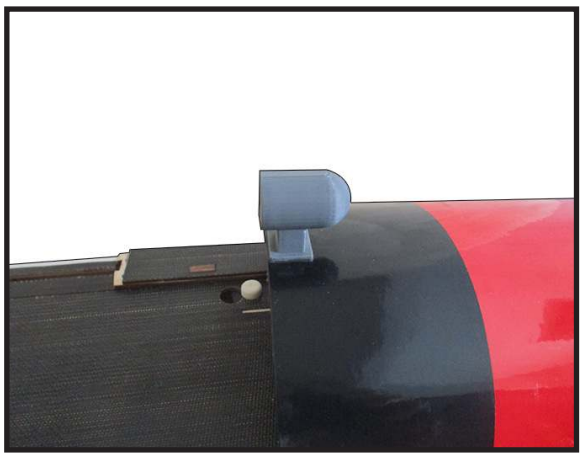

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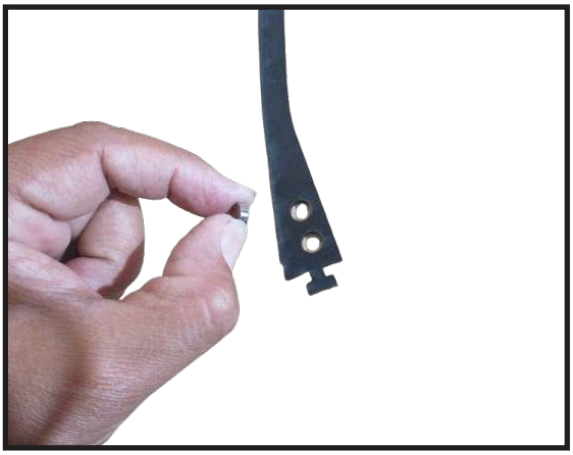

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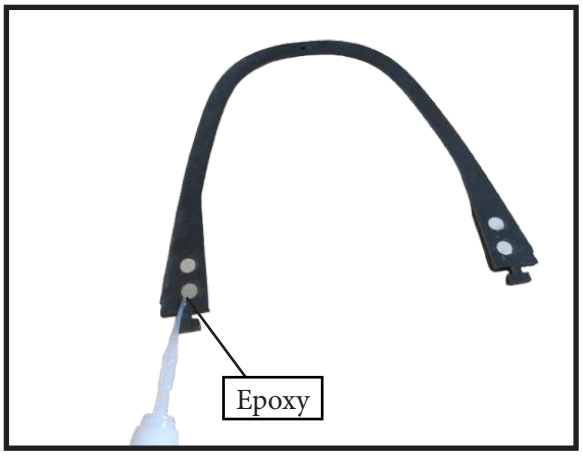

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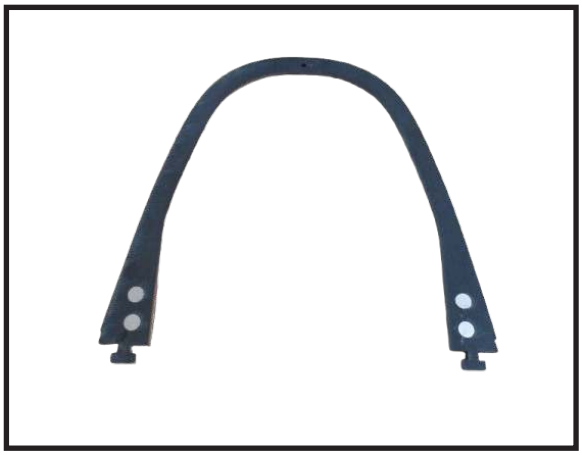

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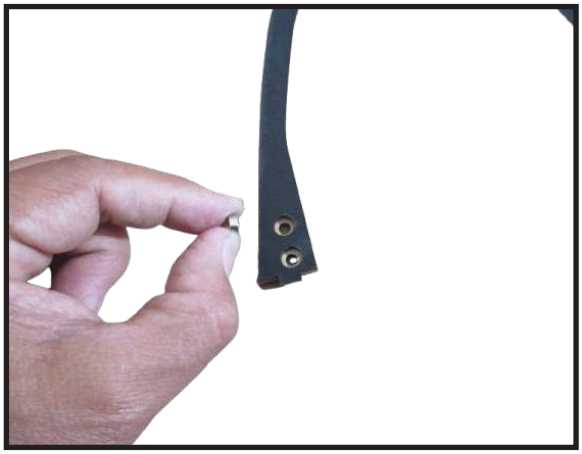

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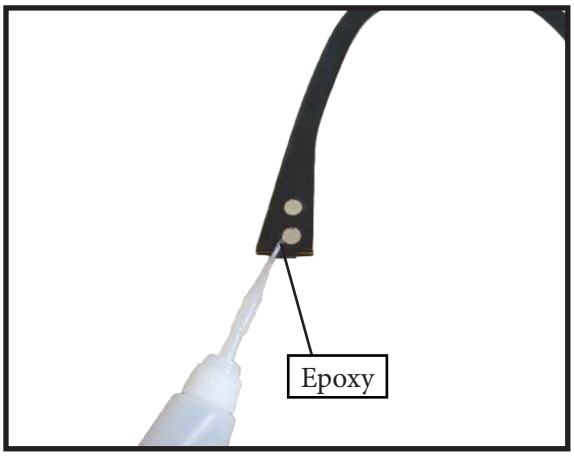

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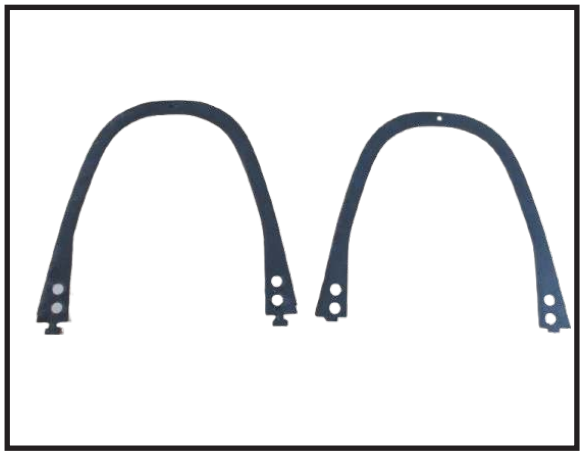

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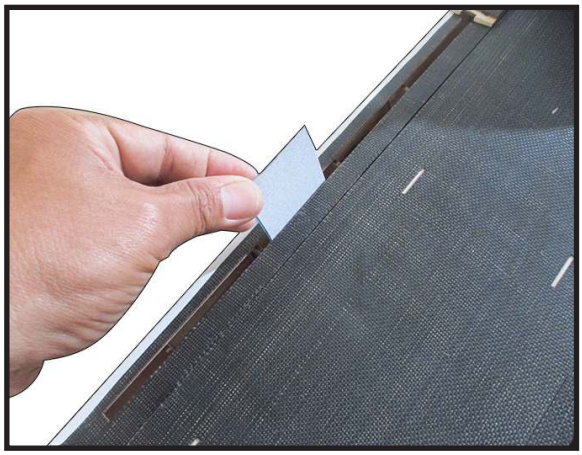

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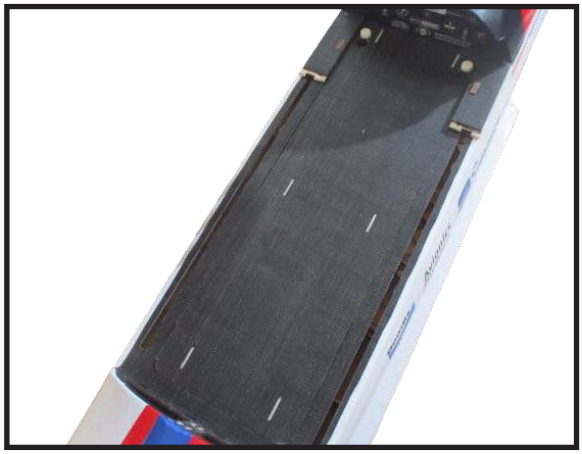

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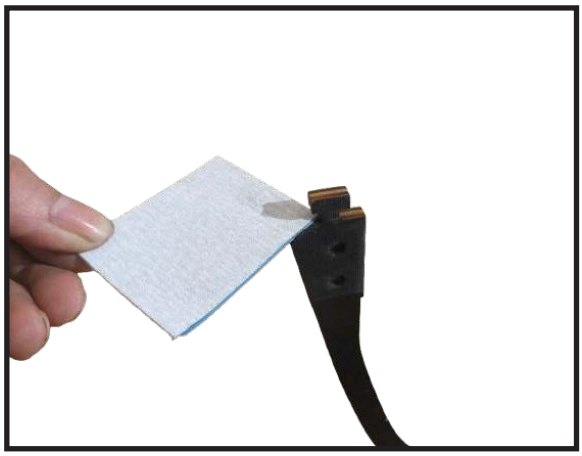

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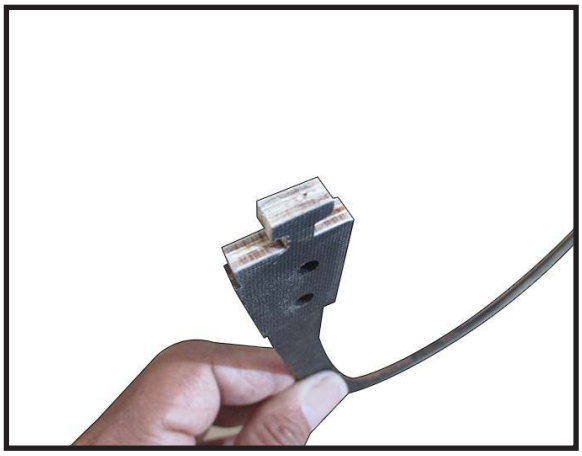

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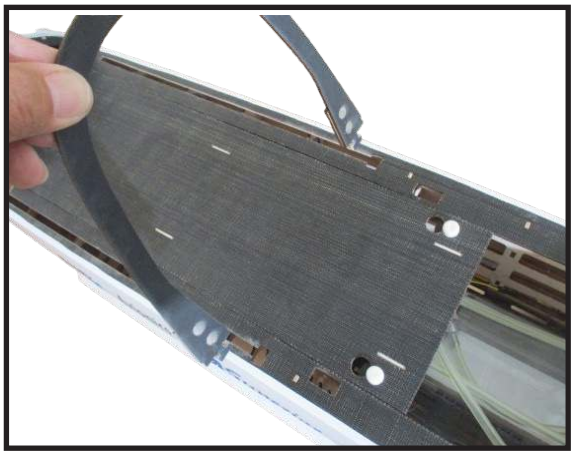

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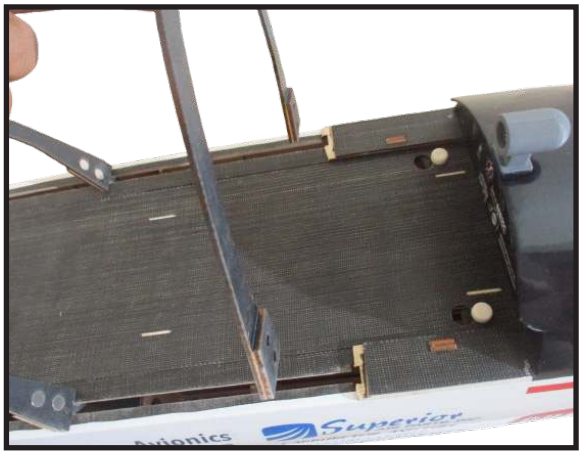

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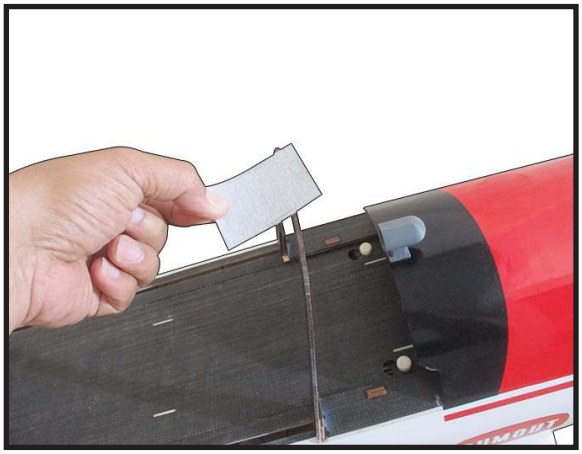

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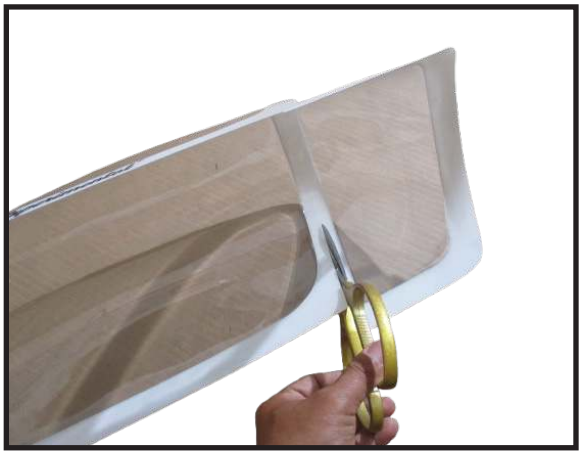

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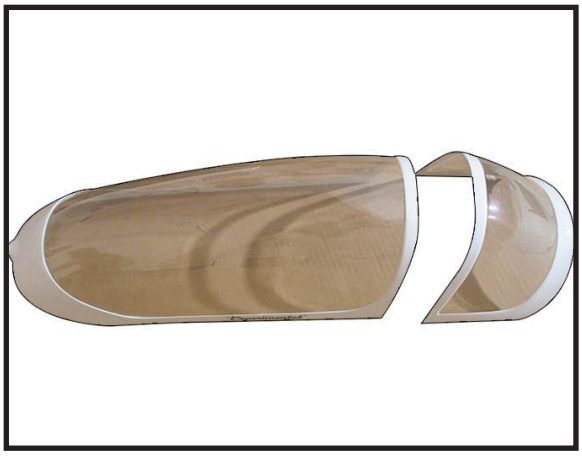

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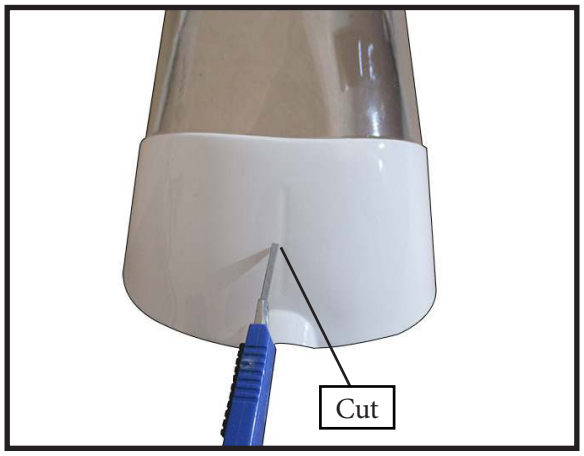

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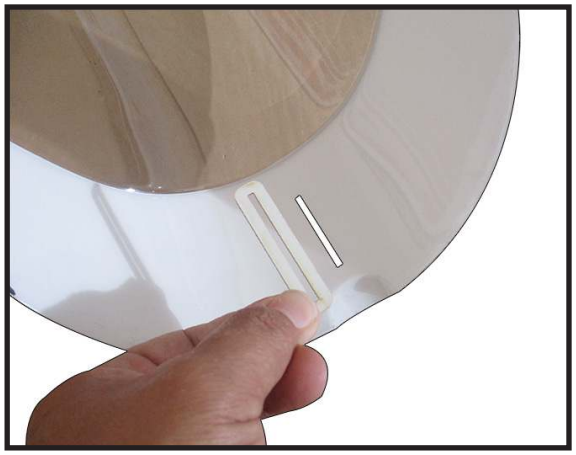

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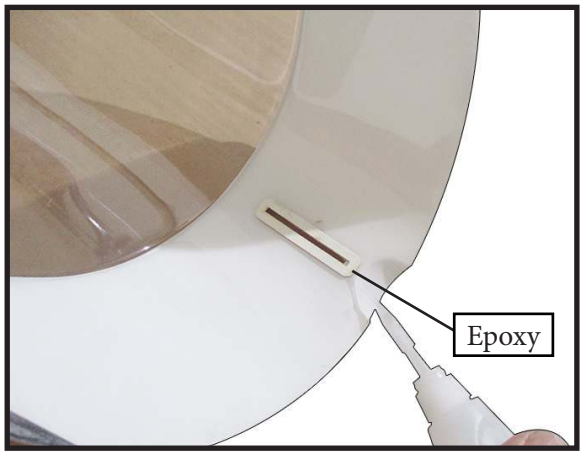

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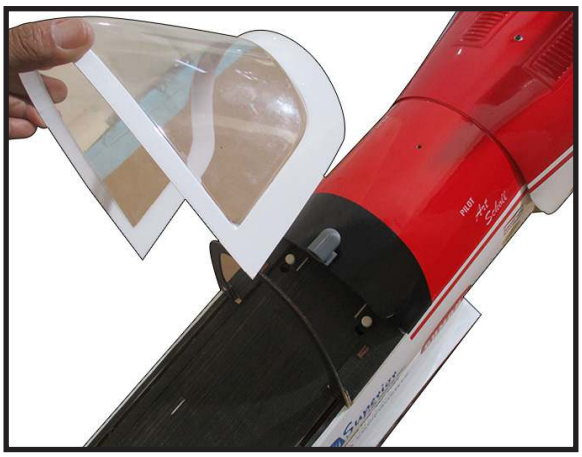

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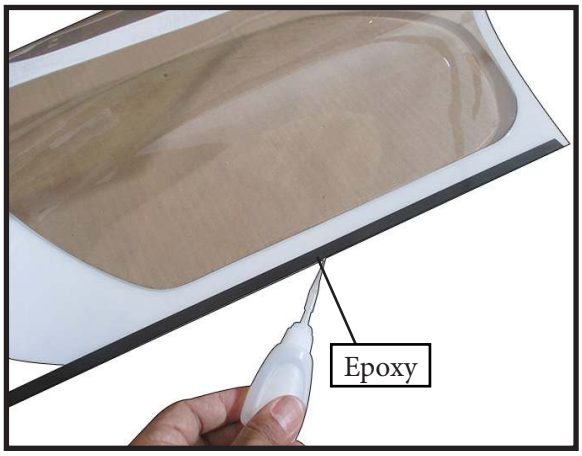

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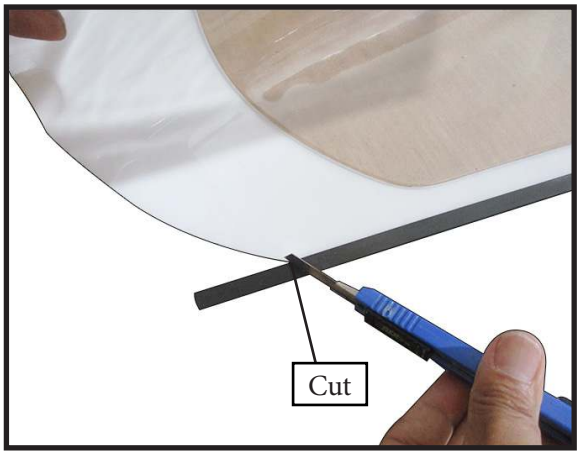

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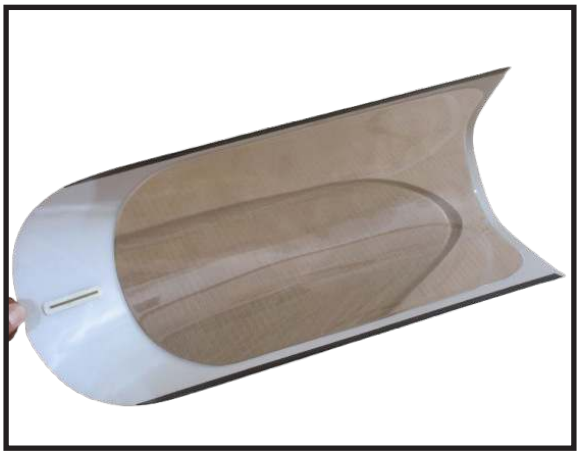

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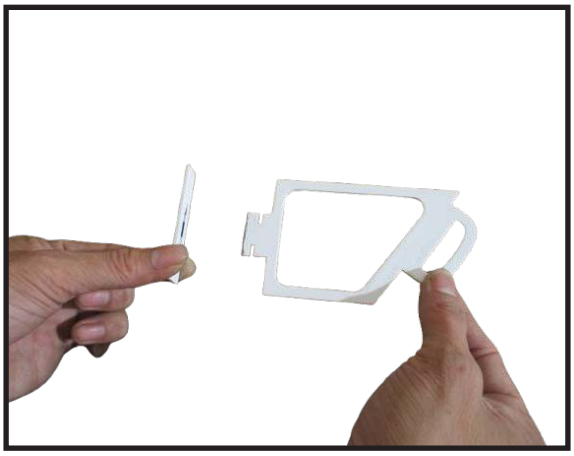

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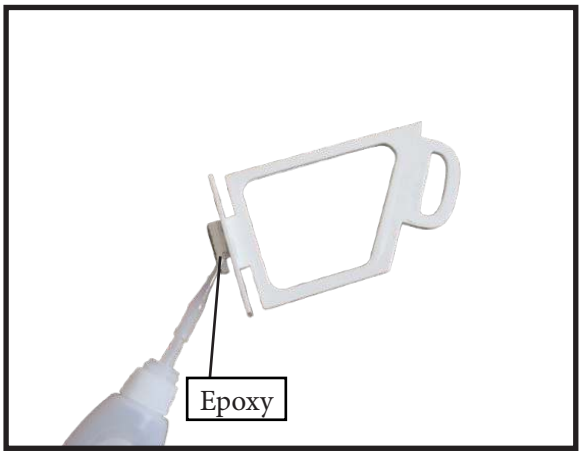

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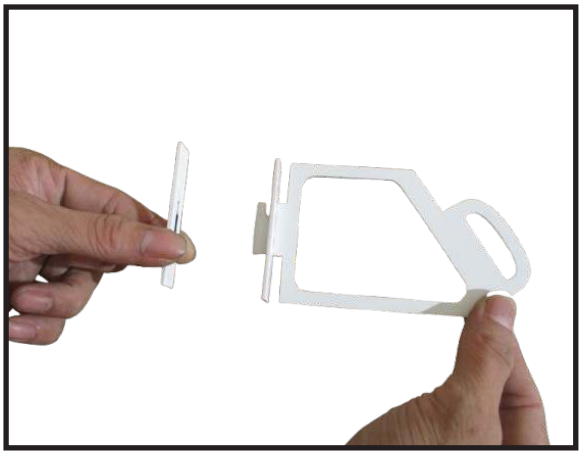

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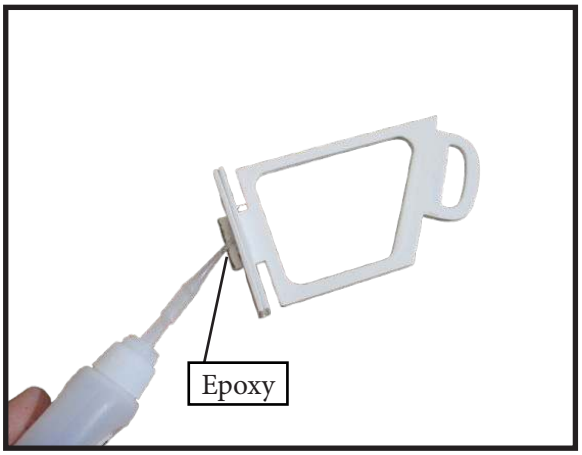

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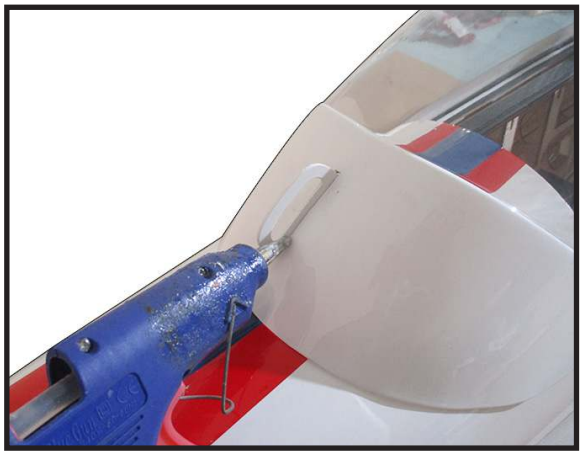

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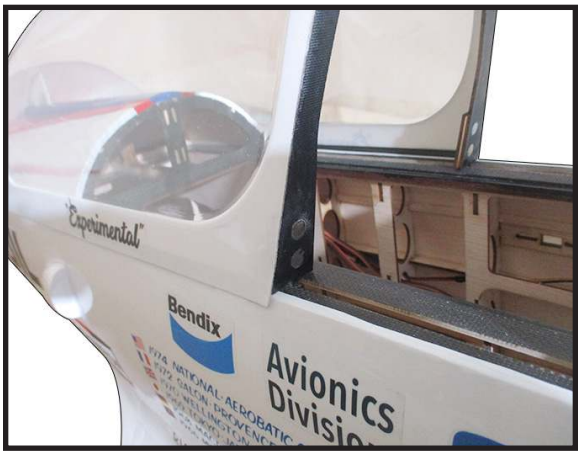

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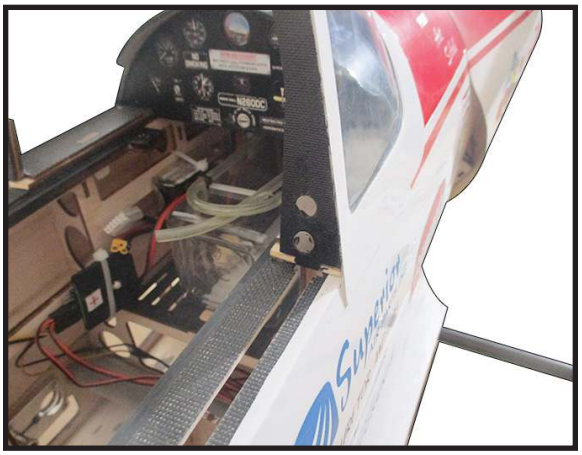

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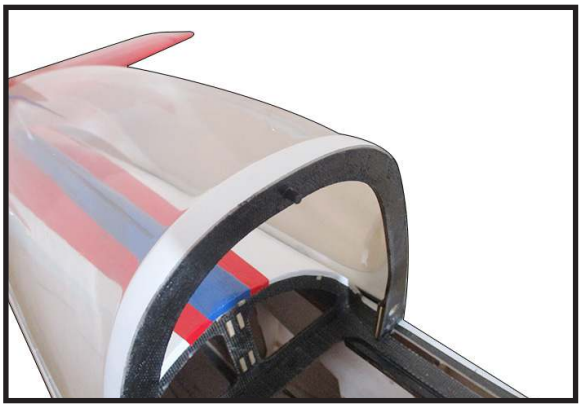


56.

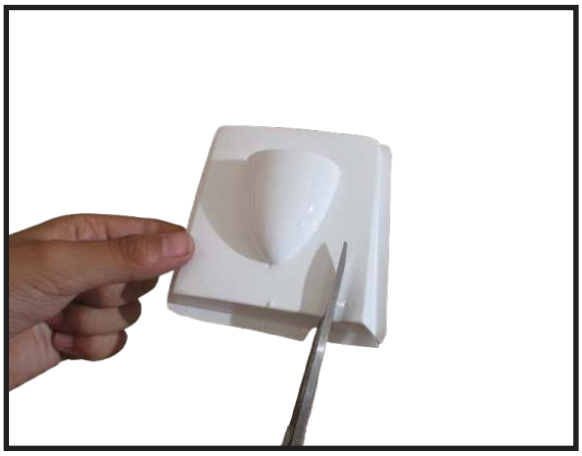
57.

INSTALLING THE VACUUM SYSTEM ON SIDE

Please study images below.

1.

2.



3.

4.

5.

6.

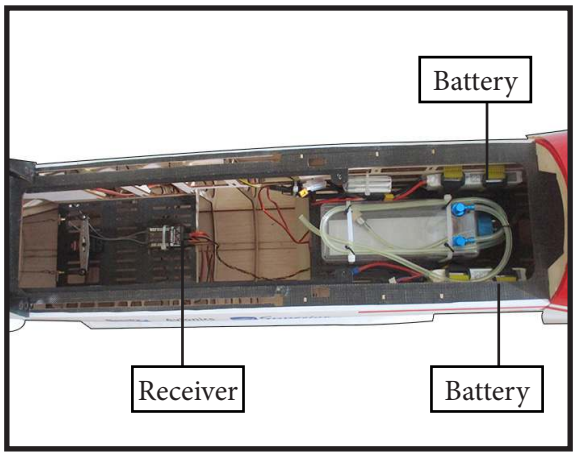
7.

INSTALLING BATTERY - RECEIVER

Plug the servo leads and the switch lead into the receiver. Plug the battery pack lead into the switch also.

Wrap the receiver and battery pack in the protective foam rubber to protect them from vibration.

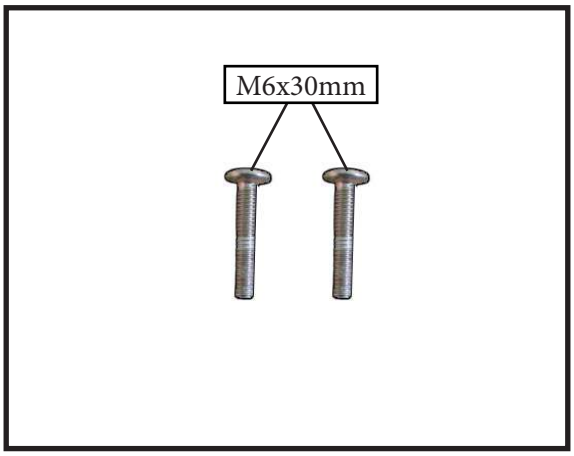
1.



ATTACHMENT WING - FUSELAGE

Please study images below.

1.



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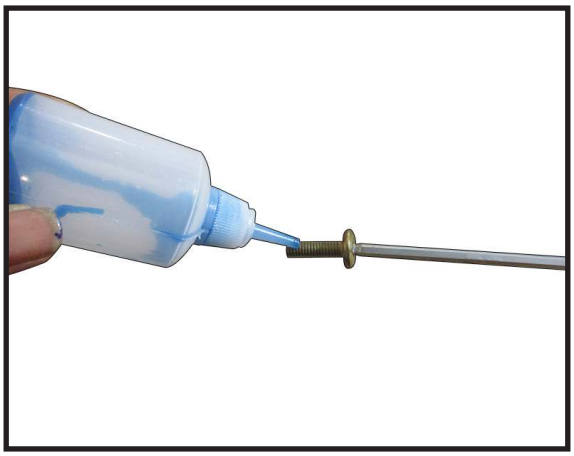

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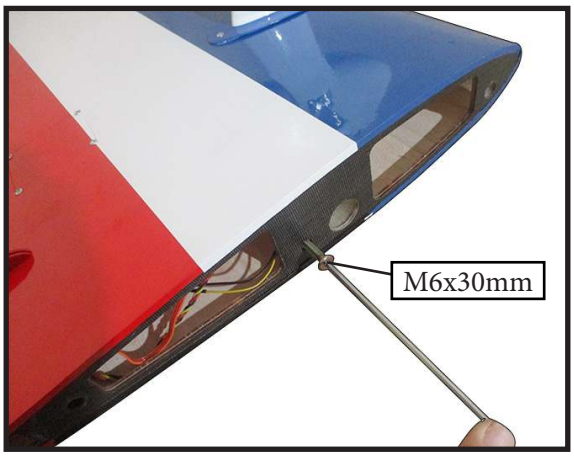

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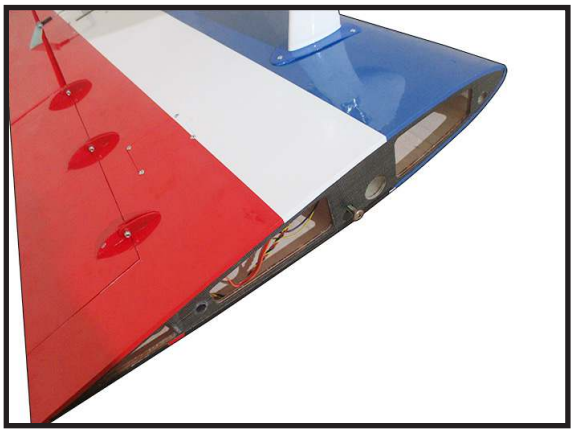
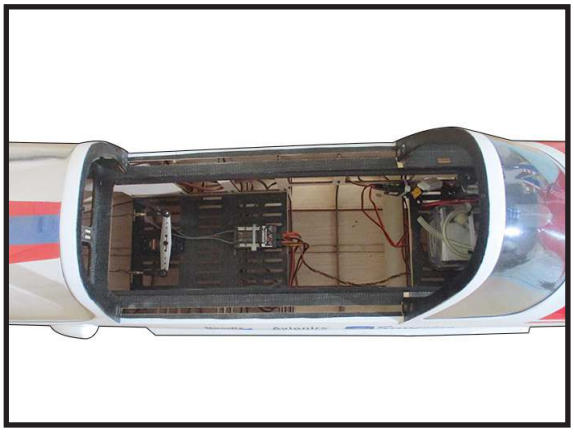


Attach the aluminium tube into fuselage.

5.



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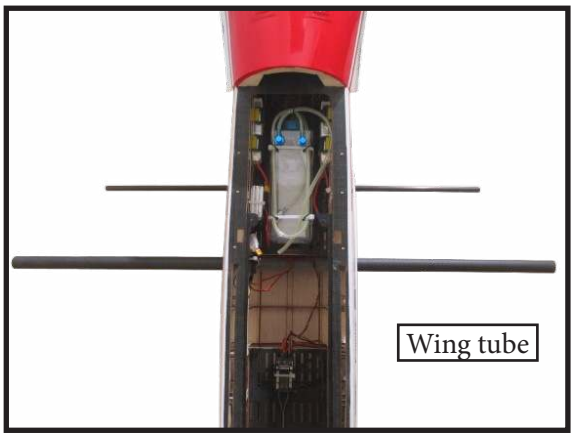

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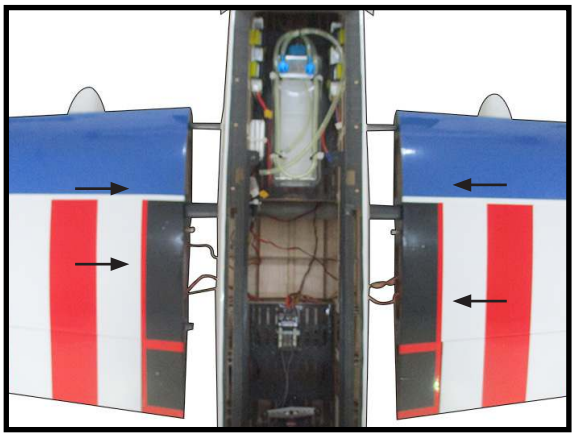

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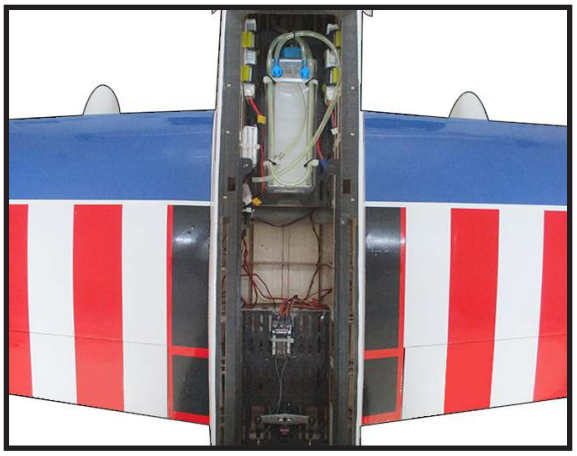

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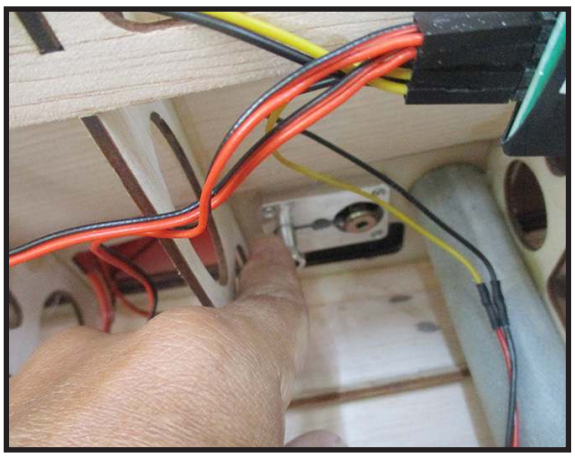

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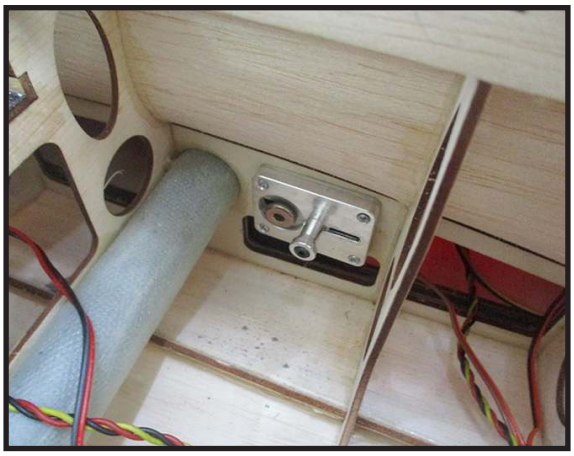
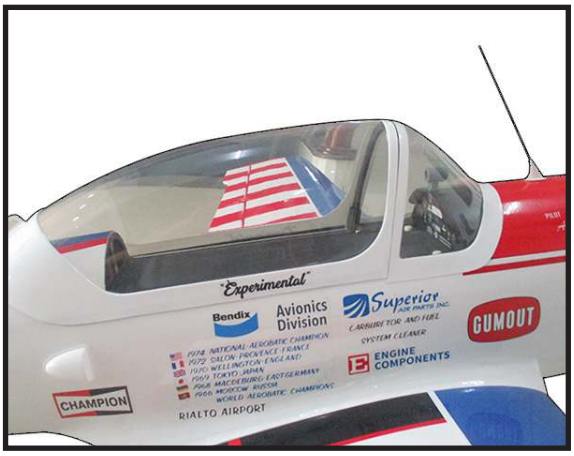


11.

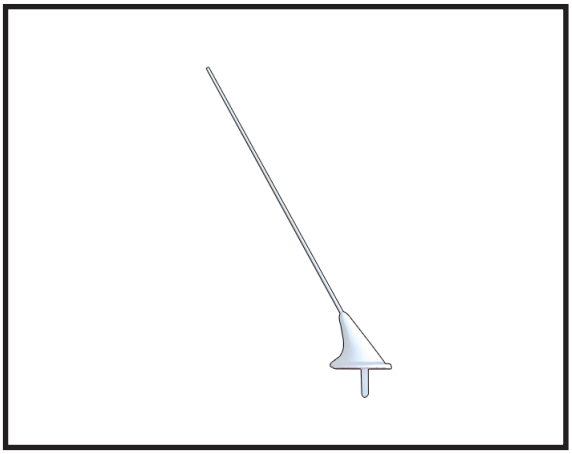
12.



INSTALLING ANTENNAS

Antennas feature banana plugs for easy installation and removal.

1.



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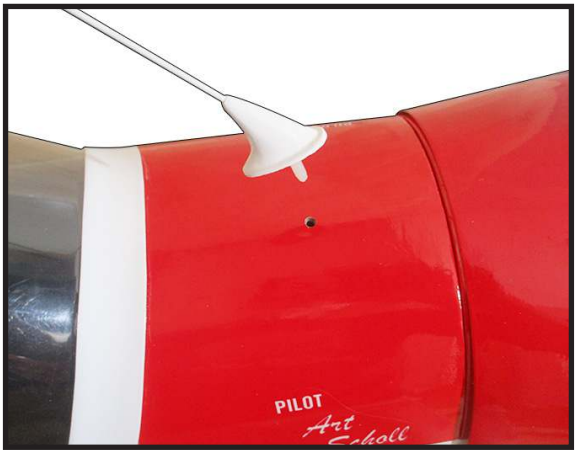


3.

APPLY THE DECALS

If all the decals are precut and ready to stick. Please be certain the model is clean and free from oily fingerprints and dust. Position decal on the model where desired, using the photos on the box and aid in their location.

If all the decals are not precut, please use scissors or a sharp hobby knife to cut the decals from the sheet. Please be certain the model is clean and free from oily fingerprints and dust. Position decal on the model where desired, using the photos on the box and aid in their location.

BALANCING - DO NOT SKIP THIS !

It is **critical** that your airplane be balanced correctly. Improper balance will cause your plane to lose control and crash. THE CENTER OF GRAVITY IS LOCATED **180MM** BACK FROM THE LEADING EDGE OF THE WING AT THE WING ROOT.

Landing gear should be in the "up" retracted position when balancing.

Mount the wing to the fuselage. Place a piece of masking tape on the top of each wing 150mm back from the leading edge at the wing root.

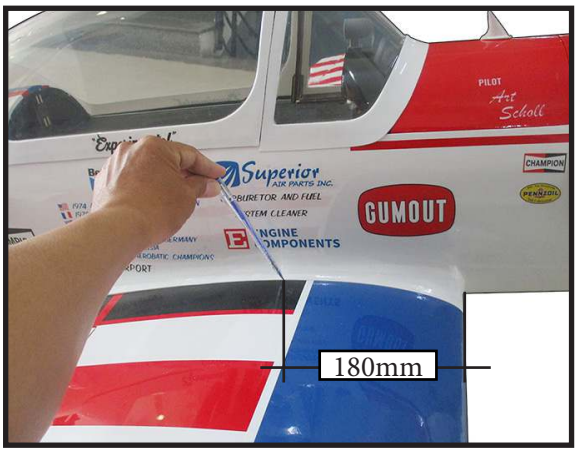
With the model inverted, place your fingers on the masking tape and carefully lift the plane. This is the point at which your model should balance for your first flights. Later, you may wish to experiment by shifting the balance up to 10mm forward or back to change the flying characteristics. Moving the balance forward may improve the smoothness and arrow- like tracking, but it may then require more speed for take off and make it more difficult to slow down for landing. Moving the balance aft makes the model more agile with a lighter and snappier "feel". In any case, please start at the location we recommend.

* If possible, first attempt to balance the model by changing the position of the receiver battery and receiver. If you are unable to obtain good balance by doing so, then it will be necessary to add weight to the nose or tail to achieve the proper balance point.

With the wings attached to the fuselage, all parts of the model installed (ready to fly), and empty fuel tanks, hold the model at the marked balance point with the stabilizer level.

Lift the model. If the tail drops when you lift, the model is "tail heavy" and you must add weight* to the nose. If the nose drops, it is "nose heavy" and you must add weight* to the tail to balance.

1.



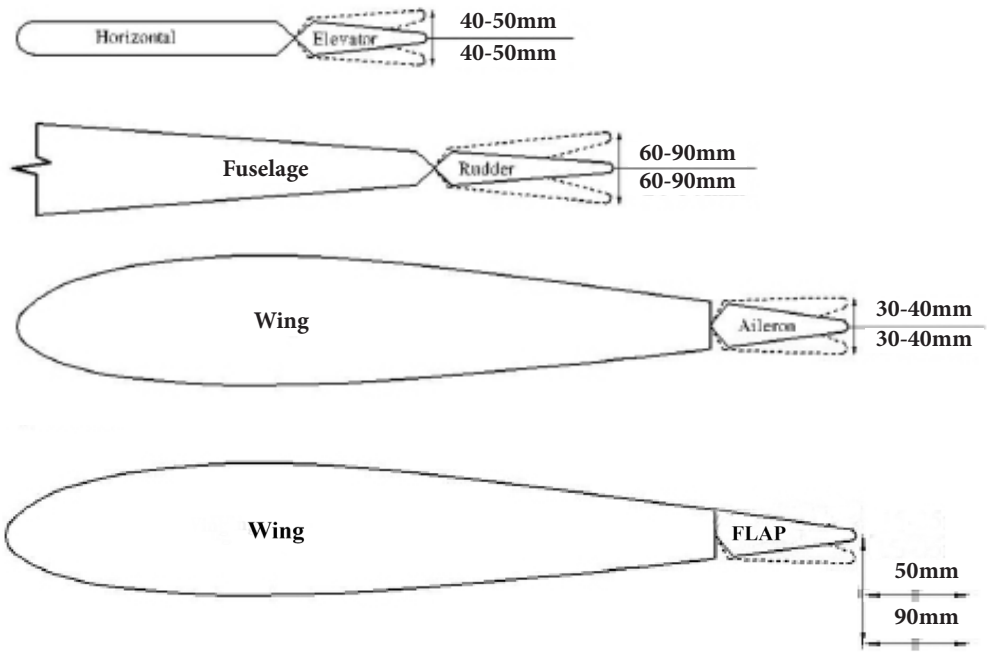
CONTROL THROWS

Ailerons:
High Rate :
Up : 40 mm
Down : 40 mm
Low Rate :
Up : 30 mm
Down : 30 mm

Elevator:
High Rate :
Up : 50 mm
Down : 50 mm
Low Rate :
Up : 40 mm
Down : 40 mm

Rudder:
High Rate :
Right : 90 mm
Left : 90 mm
Low Rate :
Right : 60 mm
Left : 60 mm

Flap:
Mid : 50mm
Full : 90mm



FLIGHT PREPARATION

Check the operation and direction of the elevator, rudder, ailerons and throttle.

☐ A) Plug in your radio system per the manufacturer's instructions and turn everything on.

☐ B) Check the elevator first. Pull back on the elevator stick. The elevator halves should move up. If it they do not, flip the servo reversing switch on your transmitter to change the direction.

☐ C) Check the rudder. Looking from behind the airplane, move the rudder stick to the right. The rudder should move to the right. If it does not, flip the servo reversing switch on your transmitter to change the direction.

☐ D) Check the throttle. Moving the throttle stick forward should open the carburetor barrel. If it does not, flip the servo reversing switch on your transmitter to change the direction.

☐ E) From behind the airplane, look at the aileron on the right wing half. Move the aileron stick to the right. The right aileron should move up and the other aileron should move down. If it does not, flip the servo reversing switch on your transmitter to change the direction.

PREFLIGHT CHECK

☐ 1) Completely charge your transmitter and receiver batteries before your first day of flying.

☐ 2) Check every bolt and every glue joint in the **Giant 1/4 Scale Super Chipmunk Aerobatic 99" wingspan ARF 60–76cc** to ensure that everything is tight and well bonded.

☐ 3) Double check the balance of the airplane. Do this with the fuel tank empty.

☐ 4) Check the control surfaces. All should move in the correct direction and not bind in any way.

☐ 5) If your radio transmitter is equipped with dual rate switches double check that they are on the low rate setting for your first few flights.

☐ 6) Check to ensure the control surfaces are moving the proper amount for both low and high rate settings.

☐ 7) Check the receiver antenna. It should be fully extended and not coiled up inside the fuselage.

☐ 8) Properly balance the propeller. An out of balance propeller will cause excessive vibration which could lead to engine and/or airframe failure.

We wish you many safe and enjoyable flights
***with your* Giant 1/4 Scale Super Chipmunk Aerobatic 99" wingspan ARF 60–76cc.**

If you have any queries, or are interested in our products, please feel free to contact us

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