Giant Scale 1/3 Cap 232 ARF (97” Wingspan) 85cc

Code: SEA416

ASSEMBLY MANUAL

Specifications:

Wingspan---------- 246.4 cm---------- 97 in.
Length---------- 216.3 cm---------- 85.2 in.
Wing Area---------- 110.64 sq.dm---------- 1715 sq.in.
Flying Weight---------- 12 kg---------- 26.4 lbs.
Engine---------- 85cc.
Radio---------- 8 channels---------- 8 servos.

INTRODUCTION

Thank you for choosing the **Giant Scale 1/3 Cap 232 ARF (97" Wingspan) 85cc** ARTF by **SG MODELS**. The **Giant Scale 1/3 Cap 232 ARF (97" Wingspan) 85cc** 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 Scale 1/3 Cap 232 ARF (97" Wingspan) 85cc** is simply a joy.

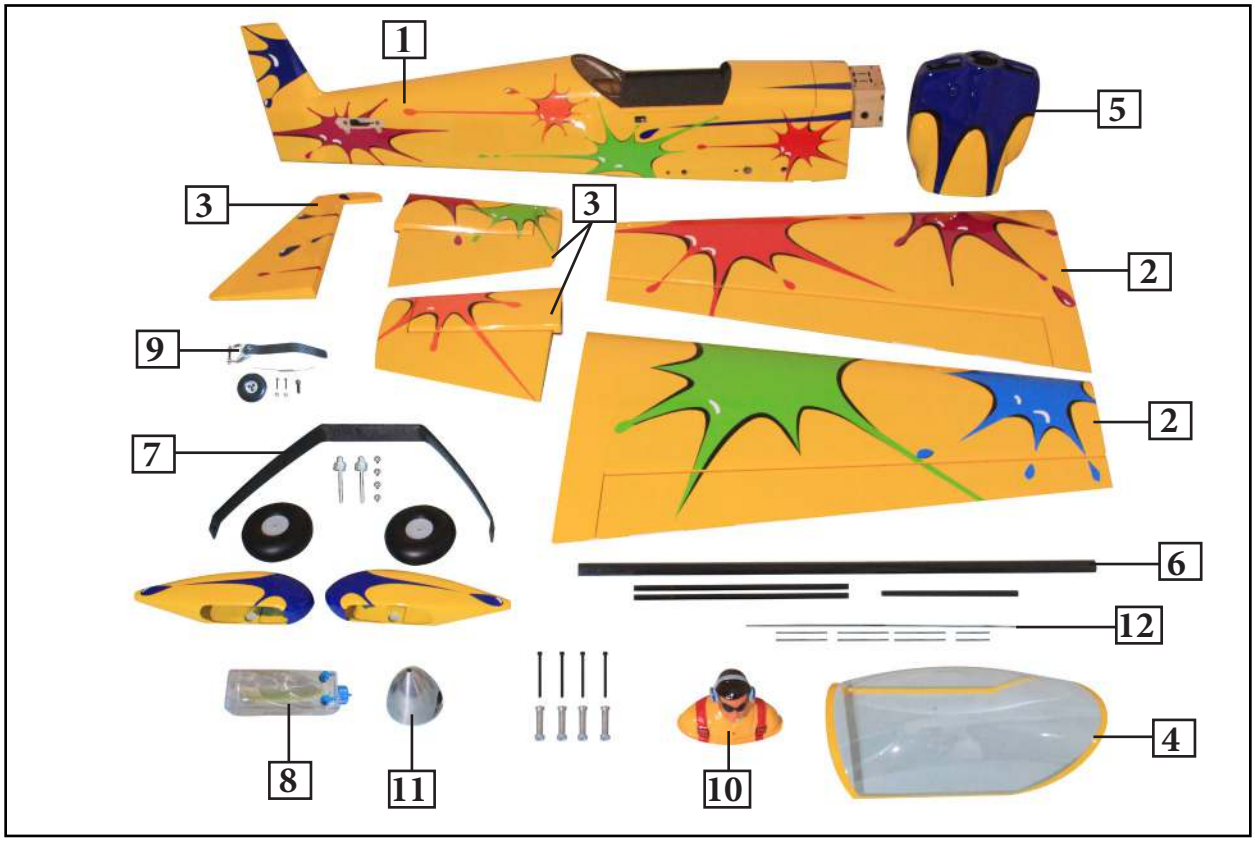
This instruction manual is designed to help you build a great flying aeroplane. Please read this manual throughly before starting assembly of your **Giant Scale 1/3 Cap 232 ARF (97" Wingspan) 85cc** Use the parts listing below to indentify all parts.

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

SEA416 Giant Scale 1/3 Cap 232 ARF (97" Wingspan) 85cc.

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. Pilot
11. Spinner
12. Pushrod set

ADDITIONAL ITEMS REQUIRED

- ☐ 85cc gasoline engine.
- ☐ Computer radio 8 channel with 8 servos.
- ☐ Glow plug to suit engine.
- ☐ Propeller to suit engine.
- ☐ Protective foam rubber for radio system.

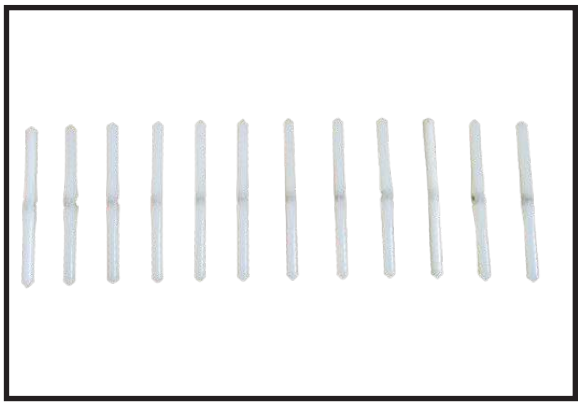
TOOLS & SUPPLIES NEEDED

- ☐ 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.

INSTALL THE AILERONS

Please see pictures below.

1.



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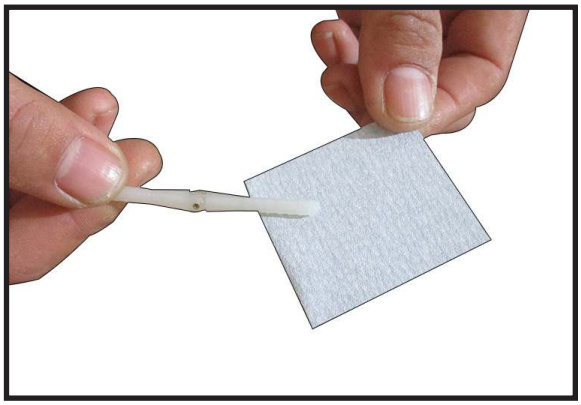
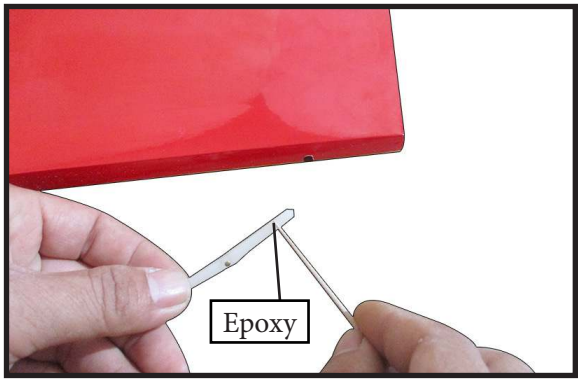


Remove the ailerons from the wing and remove the hinges.

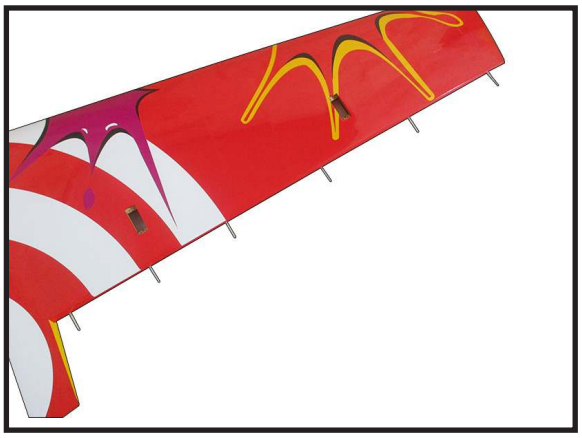
Use a small piece of rough sandpaper to scuff the hinges for better epoxy adhesion. Do this to all aileron hinges.

3.



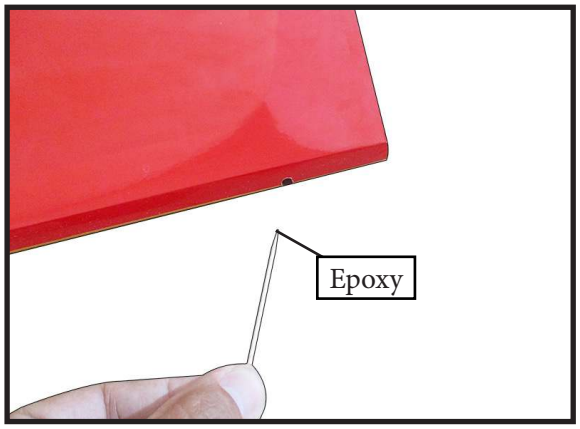
Apply epoxy to each hinge where it will be inserted into the ailerons. Tip: Apply some petroleum jelly to the metal pin hinge area to keep epoxy from interfering with smooth operation of hinge.

4.



Insert all four hinges in the ailerons at this time. Make sure hinges move up and down in right direction and not side to side !

5.

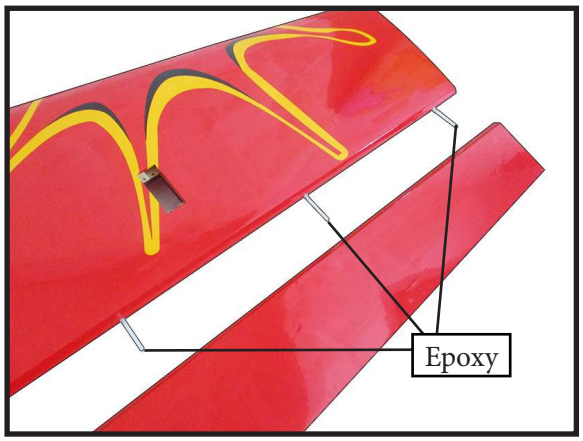


Apply epoxy into each of the holes in the ailerons using a spare piece of pushrod wire or toothpick.

Make sure to use enough epoxy so it securely adheres the hinge to the surfaces.

Do not use an excessive amount of epoxy when gluing the hinges so that it expels from the hinge area.

6.



Be sure to test the aileron hinges once you insert them. Ensure that the hinge pockets line up, and that the hinges move freely before the epoxy dries.

7.

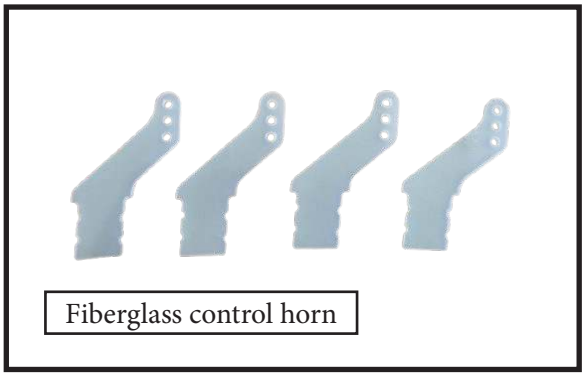
8.

Check the fit of the aileron to the wing. The top of the ailerons will align to the top of the wing. Make sure movement is smooth and bind free.

We prefer 30-minute epoxy to allow enough working time during the hinge installation.

INSTALL THE AILERONS CONTROL HORN

1.



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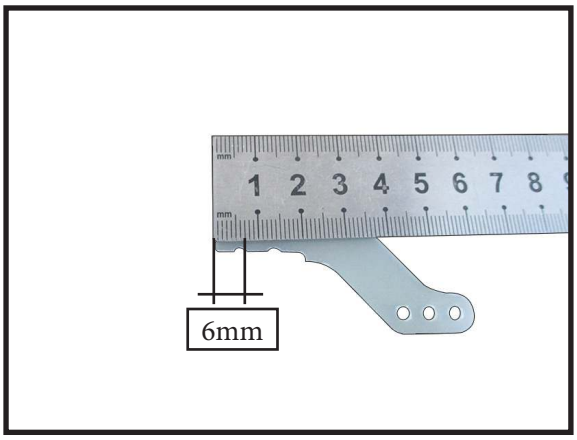

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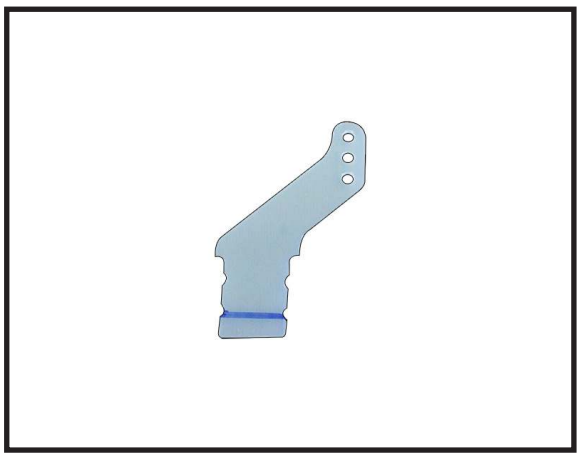

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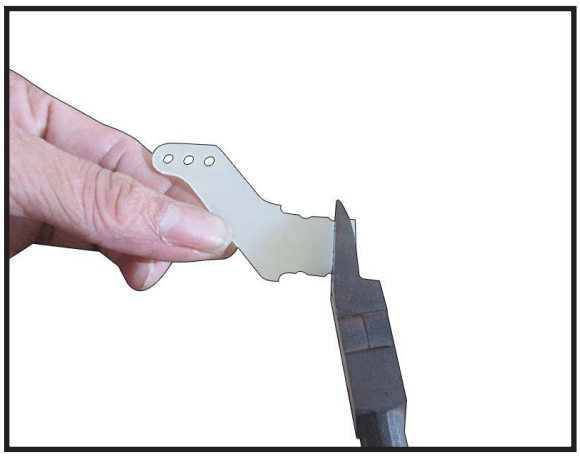

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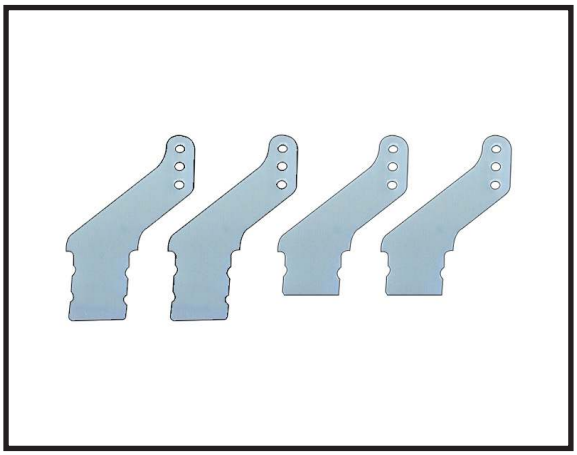
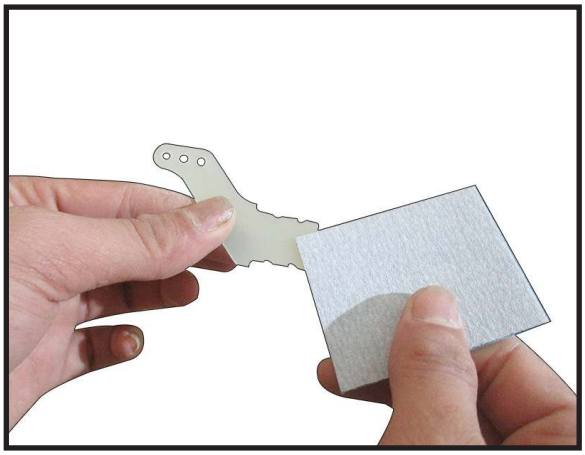


Prepare the aileron control horns by sanding the section that extends into the control surface with medium grit sand paper. Use isopropyl alcohol and a paper towel to remove any excess debris from the control horn.

6.



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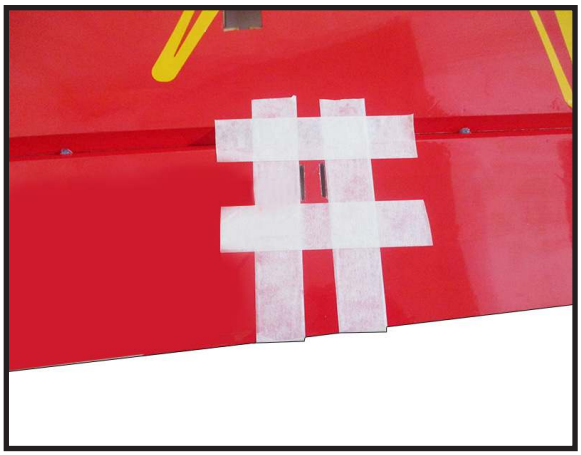

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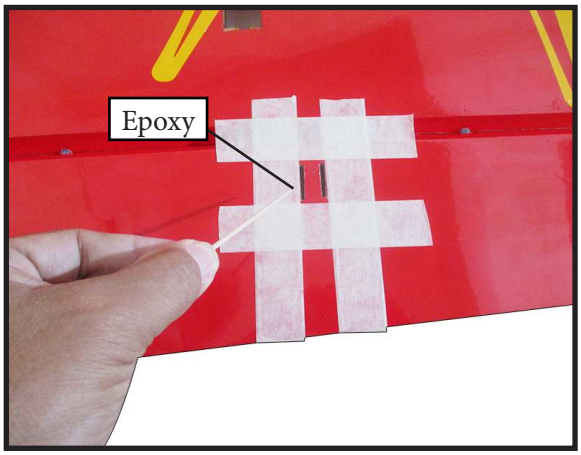

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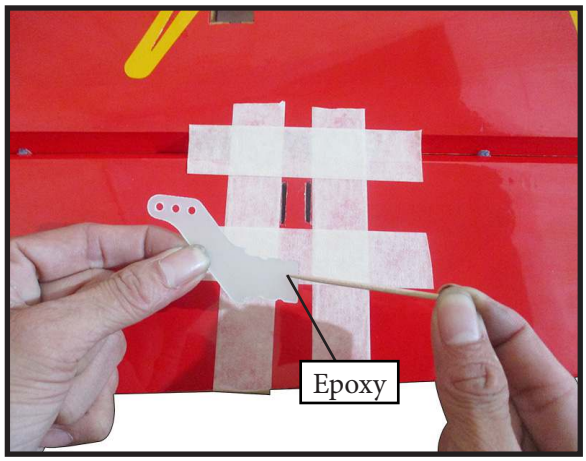

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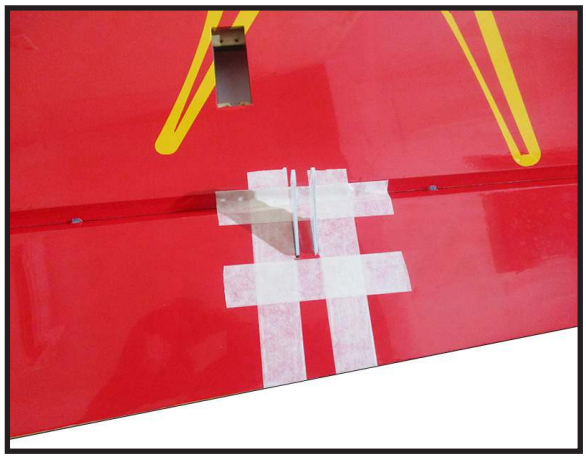

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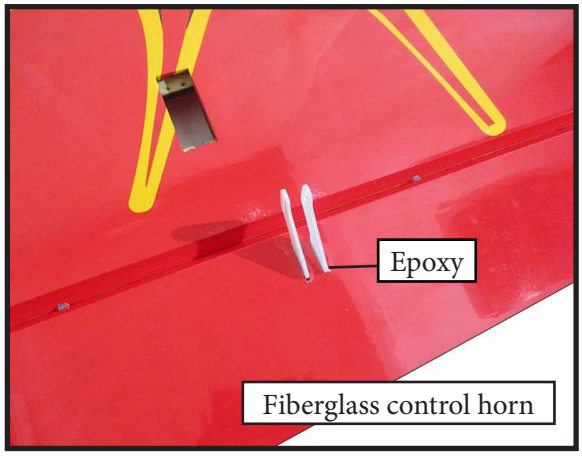
12.



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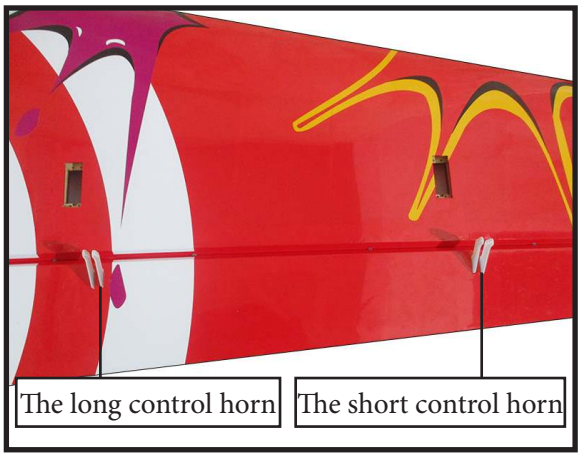
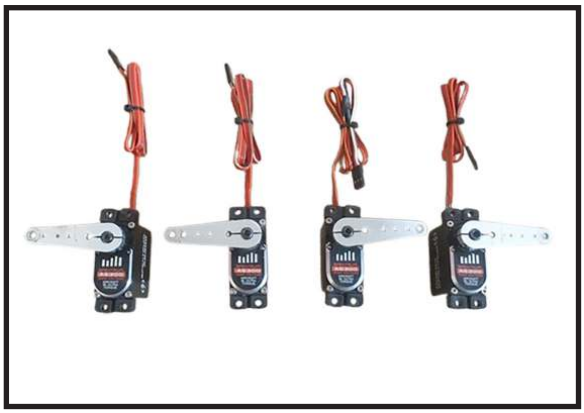


INSTALLING THE AILERON SERVOS

Please study images below.

1.



Minimum servo spec.

Torque : 27.3 kg-cm (378 oz-in) @6.0V
33.7 kg-cm (467 oz-in) @7.4V
38.2 kg-cm (530 oz-in) @8.4V

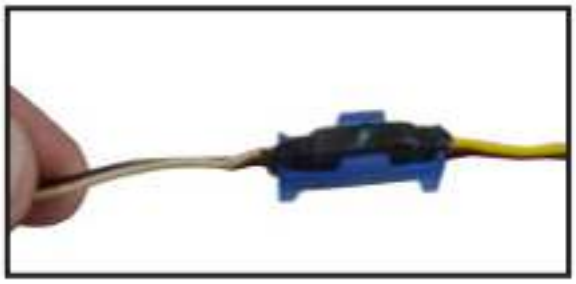
Transit Speed : 0.14 sec/60° @6.0V
0.11 sec/60° @7.4V
0.10 sec/60 @8.4V

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

Layout the servo on the wing to test fit the installation and ensure servo lead is he correct length.

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 or light tension.

2.

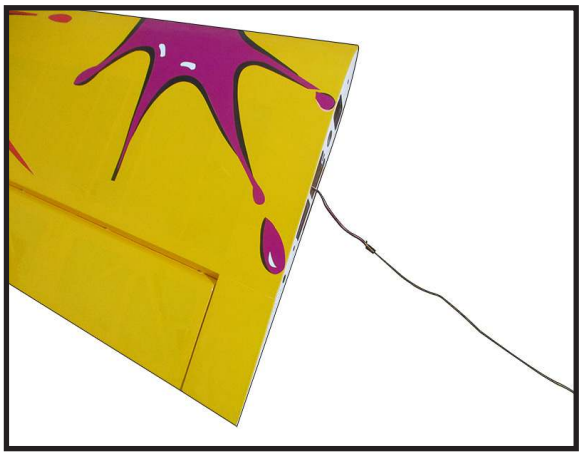


Fasten the pull string from the servo hole to the male plug of the servo extension.

3.

4.

5.



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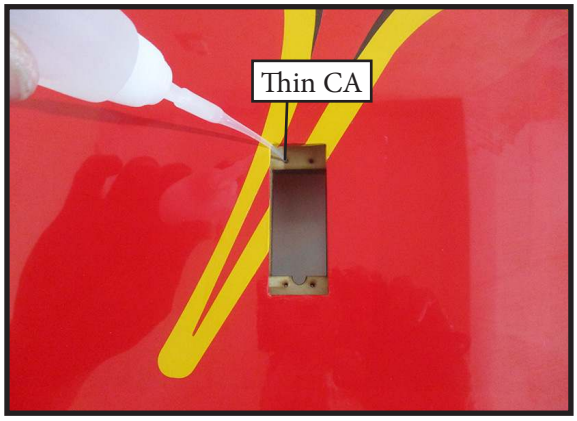
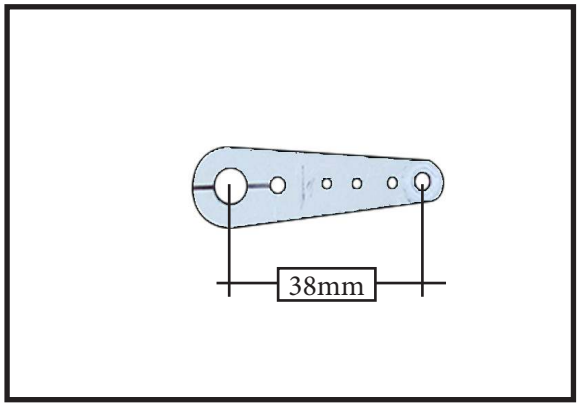


Install servo with servo mounting screws.

7.

8.



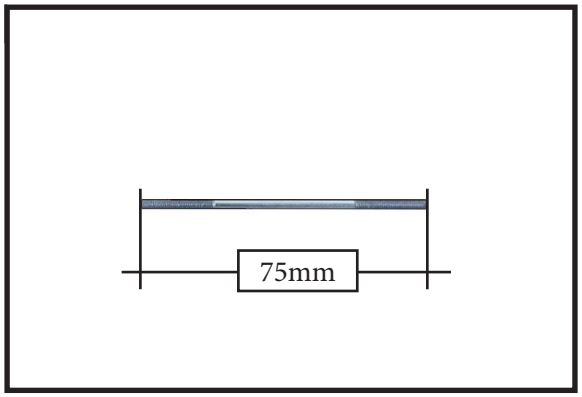
9.

INSTALLING THE AILERON PUSHROD

Please study images below.

1.

2.



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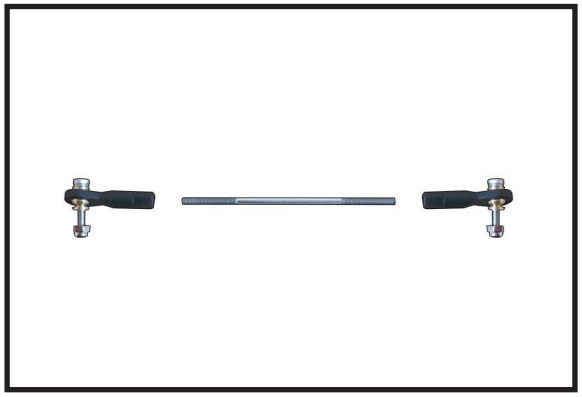

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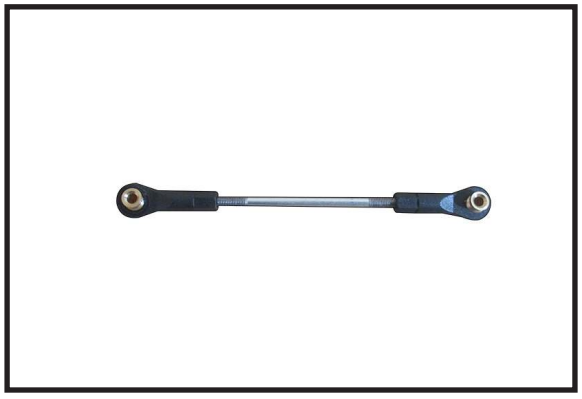


5.

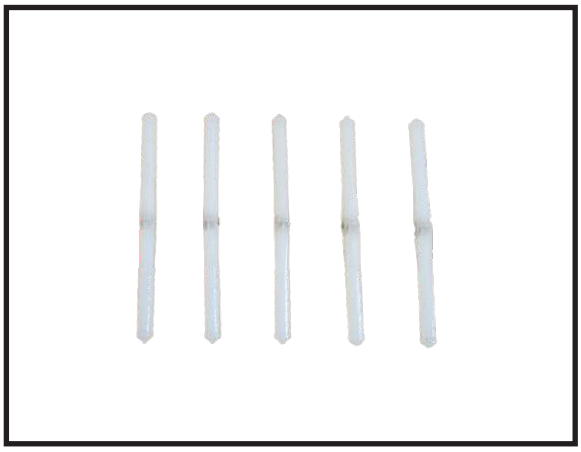
Repeat all the above steps for the other wing.

6.

INSTALL HINGE FOR STABILIZER AND ELEVATOR

Please study images below.

1.



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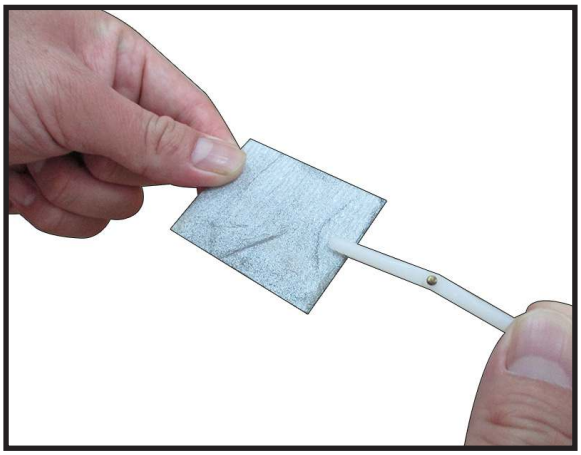

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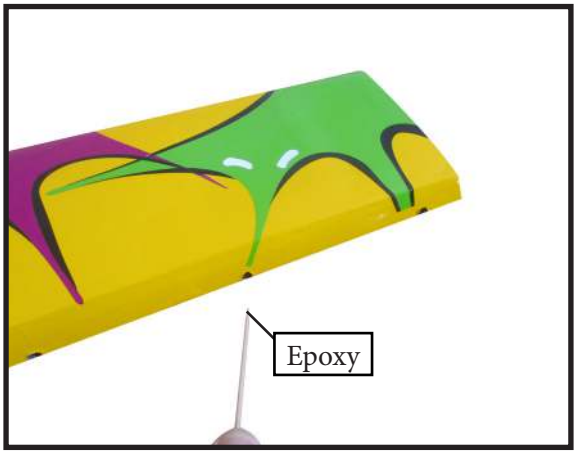

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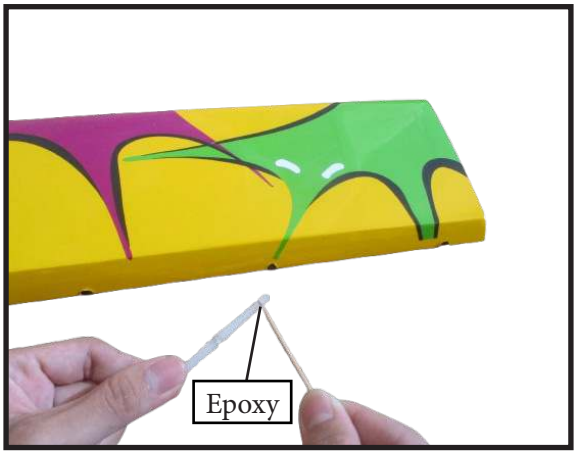

5.

6.

7.

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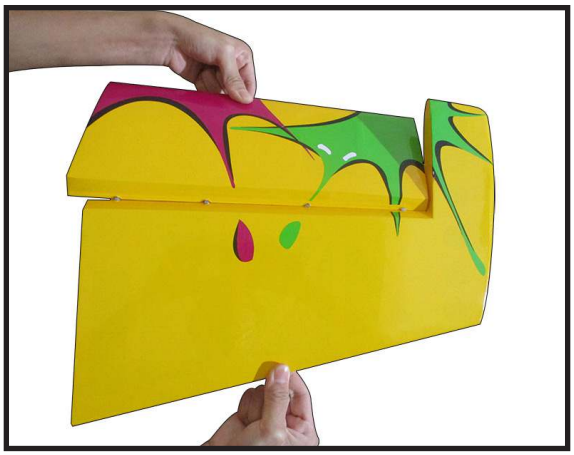
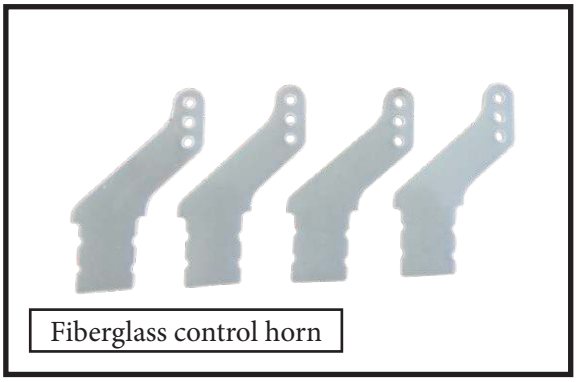


9.

INSTALL ELEVATOR CONTROL HORN

1.



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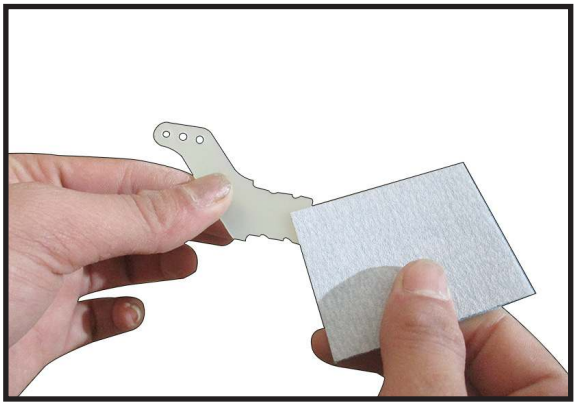

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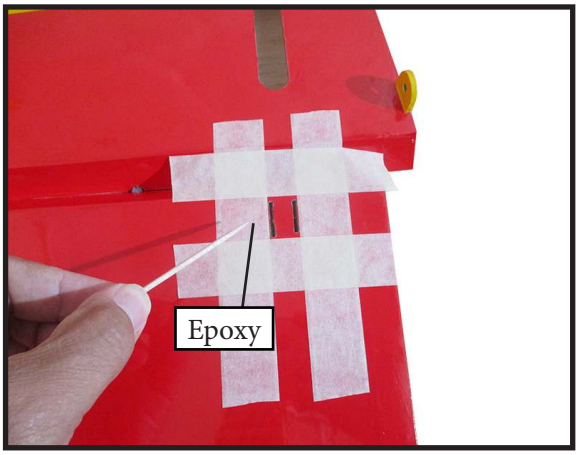

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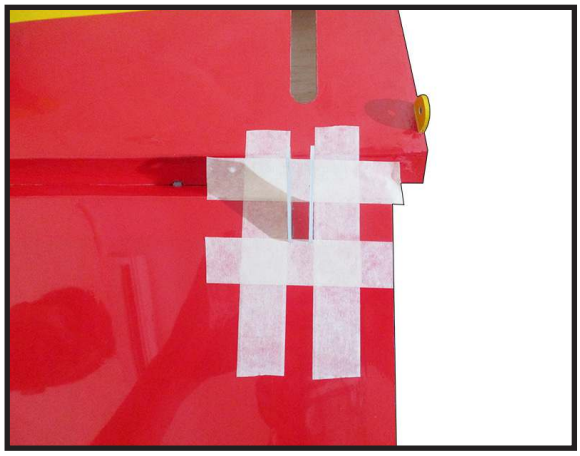
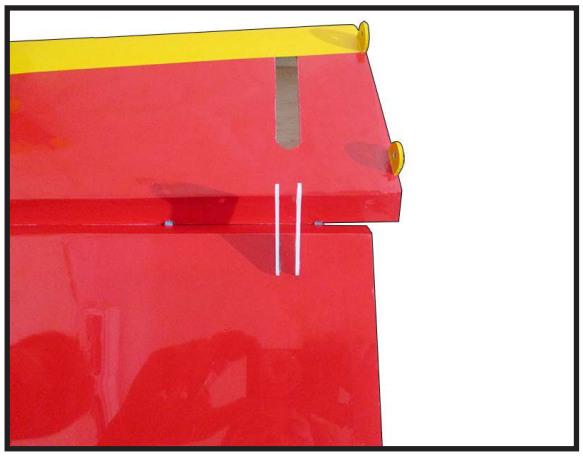


6.

7.

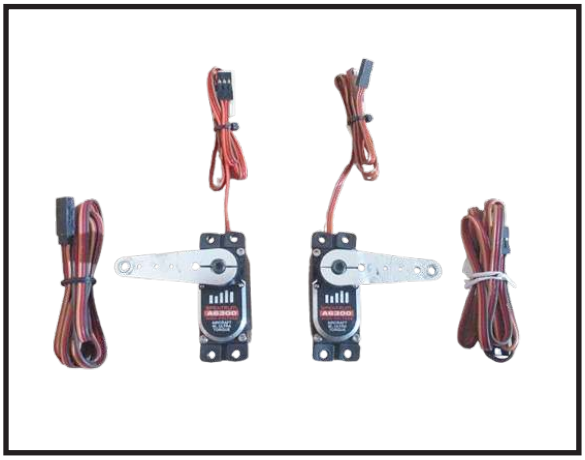


ELEVATOR SERVO INSTALLATION

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.

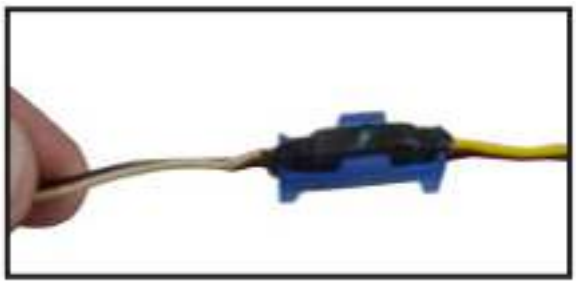
1.



Minimum servo spec.
Torque : 27.3 kg-cm (378 oz-in) @6.0V
33.7 kg-cm (467 oz-in) @7.4V
38.2 kg-cm (530 oz-in) @8.4V
Transit Speed : 0.14 sec/60° @6.0V
0.11 sec/60° @7.4V
0.10 sec/60 @8.4V

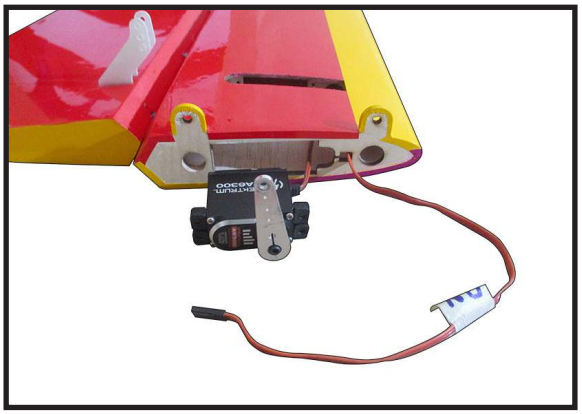
Attach the extension to the servo lead and secure with Safety Clip, safety wire, tape or other method. Ensure the plugs will not come apart from vibration or-light tension.

2.



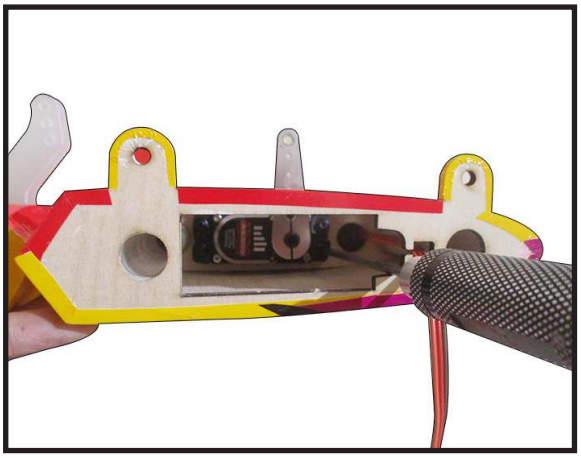
Feed servo extension through the elevator servo mounting hole.

3.



Install servo with servo mounting screws.

4.



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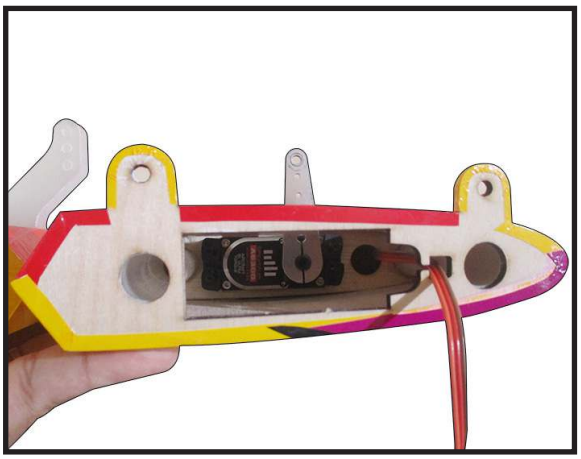

ELEVATOR PUSHROD INSTALLATION

Please study images below.

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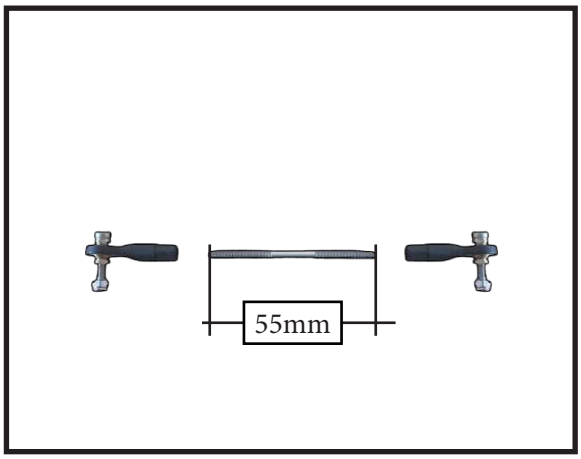

2.

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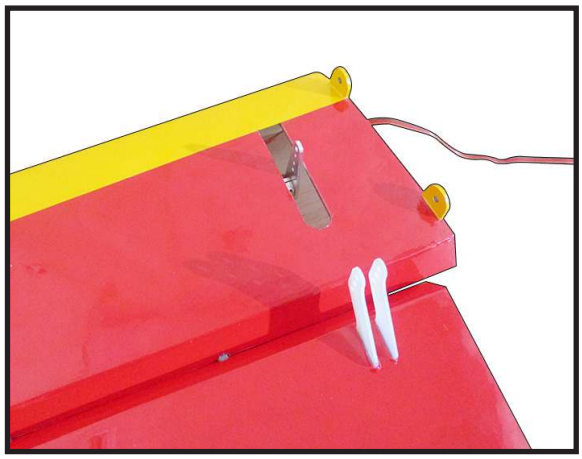

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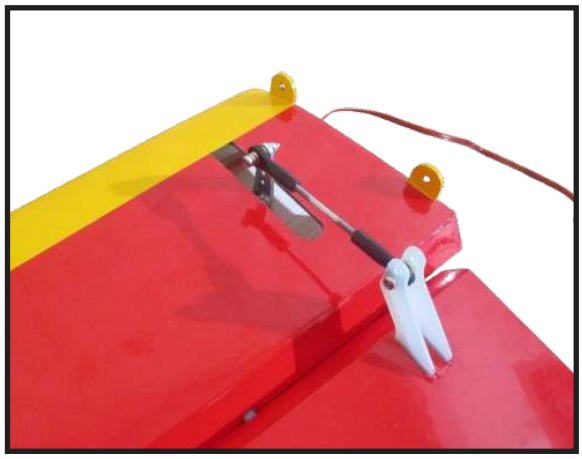
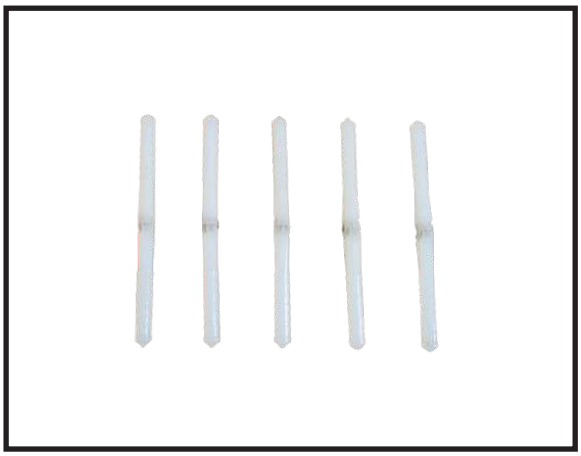


Repeat all the above steps for the other elevator.

INSTALL HINGE FOR RUDDER AND FIN

Please study images below.

1.



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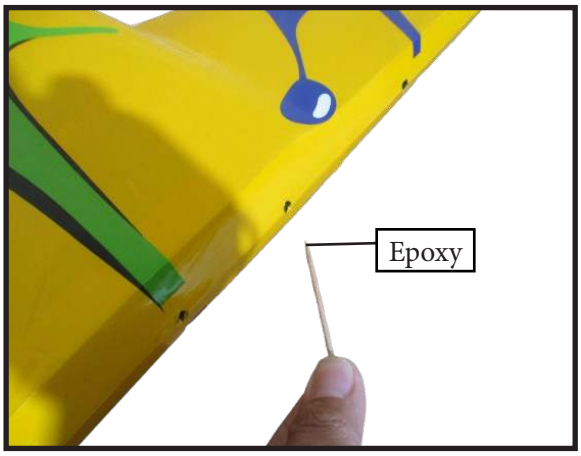
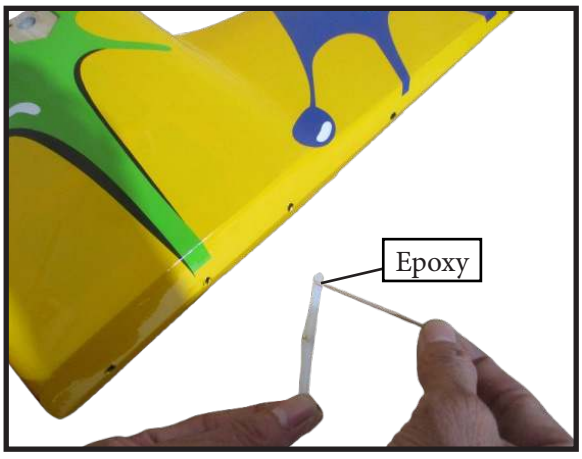


3.



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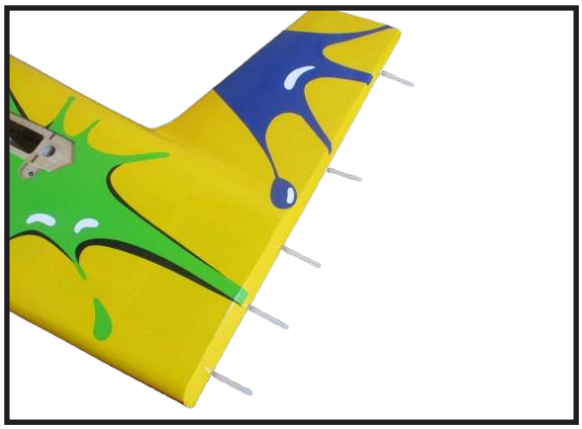

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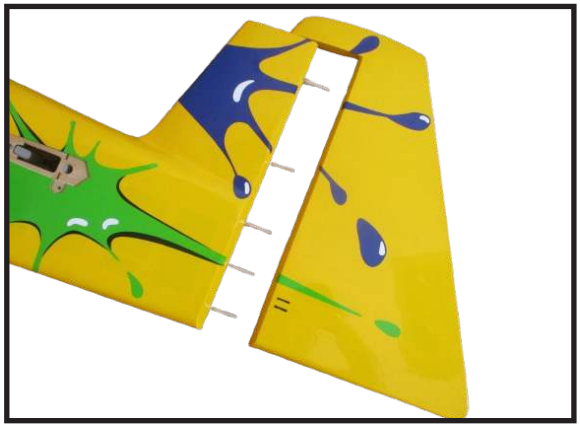

6.

INSTALL RUDDER CONTROL HORN

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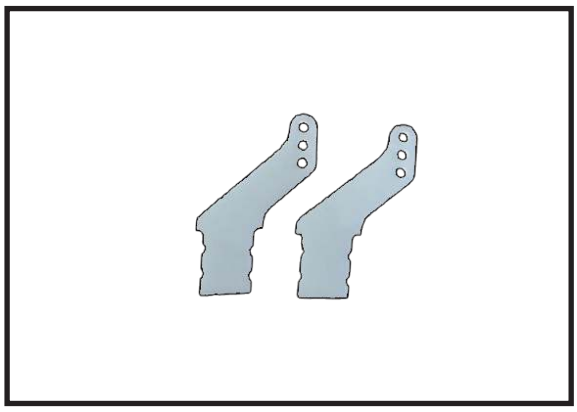

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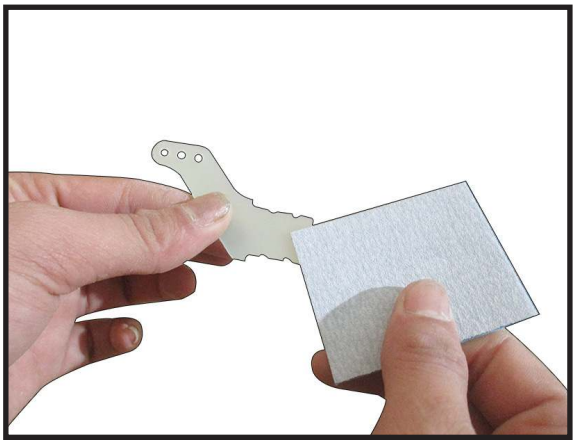

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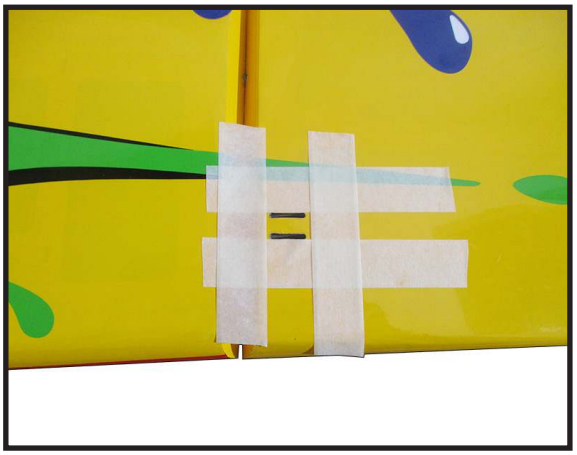

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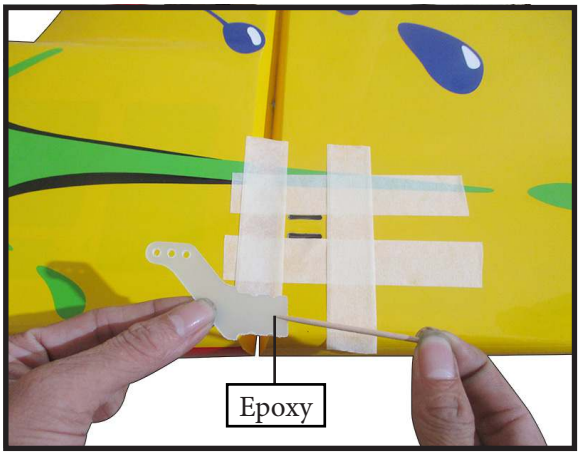

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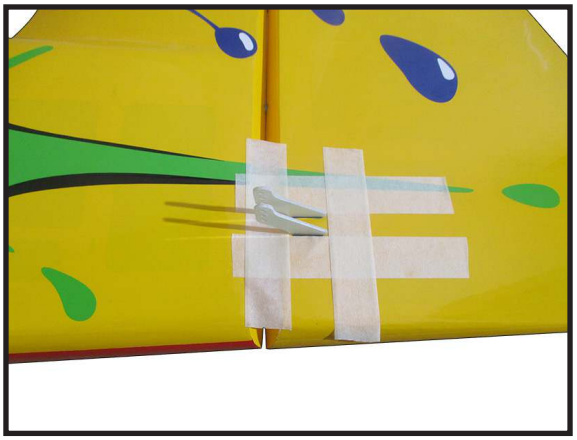

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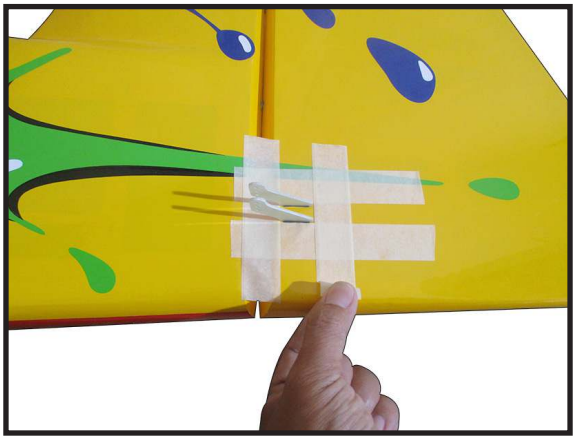
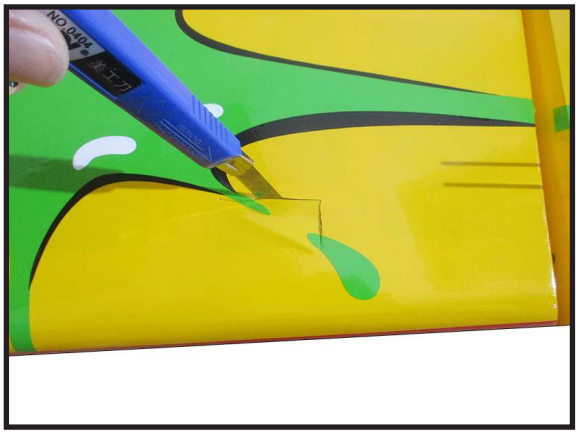


8.

You cut the vertical tail hole.

9.



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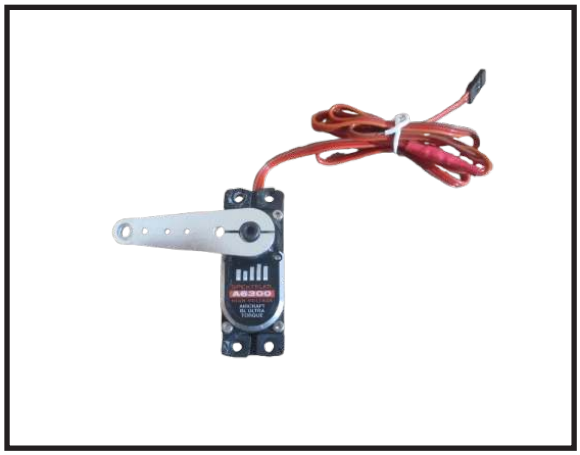
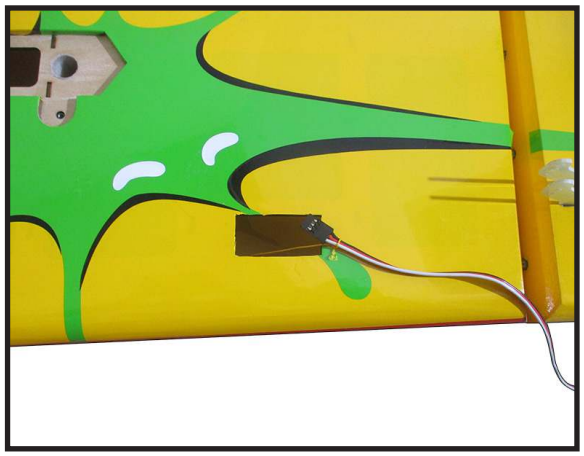


Minimum servo spec.

Torque : 27.3 kg-cm (378 oz-in) @6.0V
33.7 kg-cm (467 oz-in) @7.4V
38.2 kg-cm (530 oz-in) @8.4V

Transit Speed : 0.14 sec/60₀ @6.0V
0.11 sec/60₀ @7.4V
0.10 sec/60 @8.4V

13.



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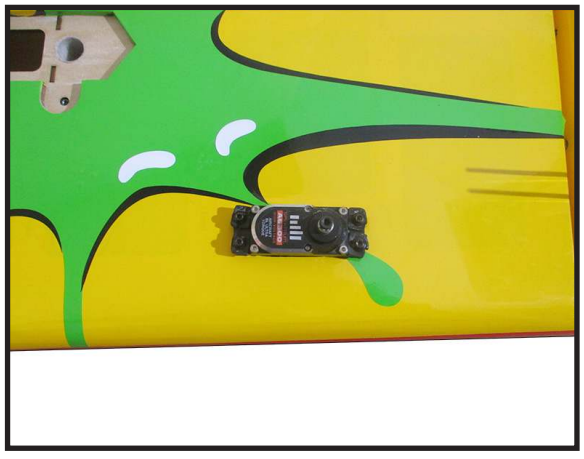

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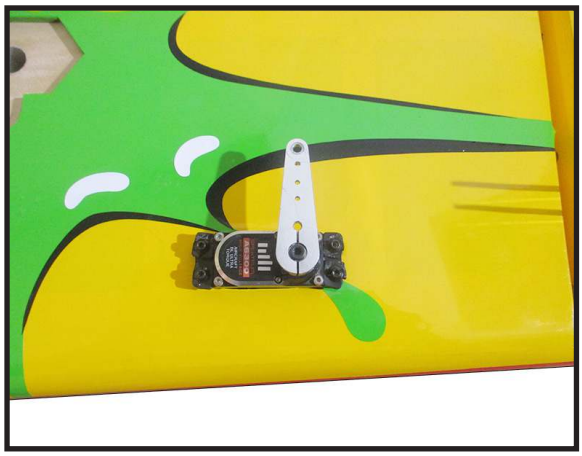

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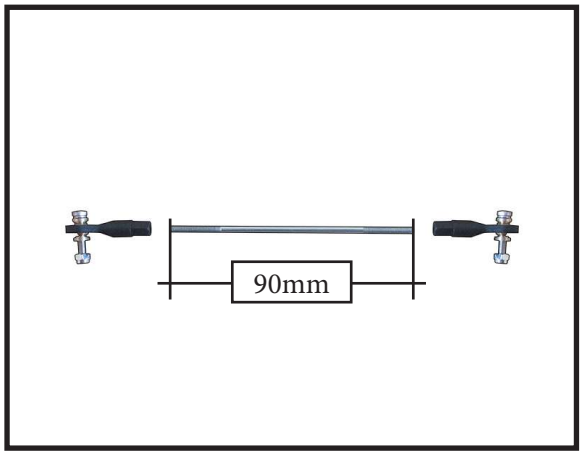

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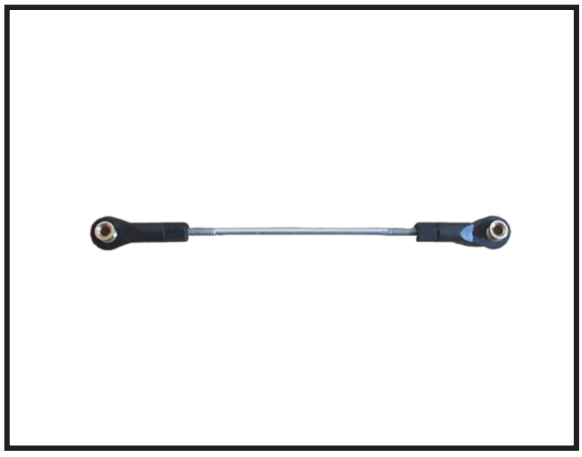
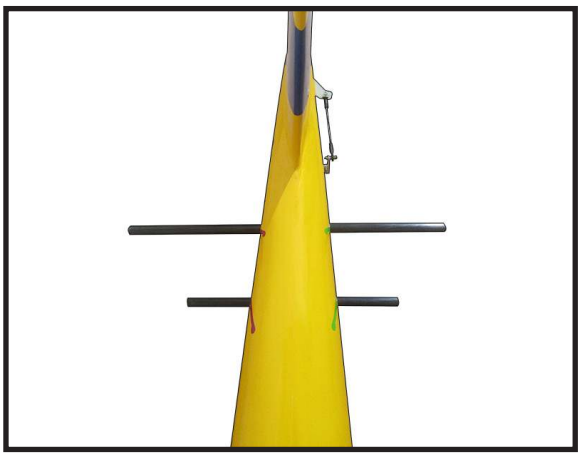


20.

HORIZONTAL TAIL INSTALLATION

Please study images below.

1.



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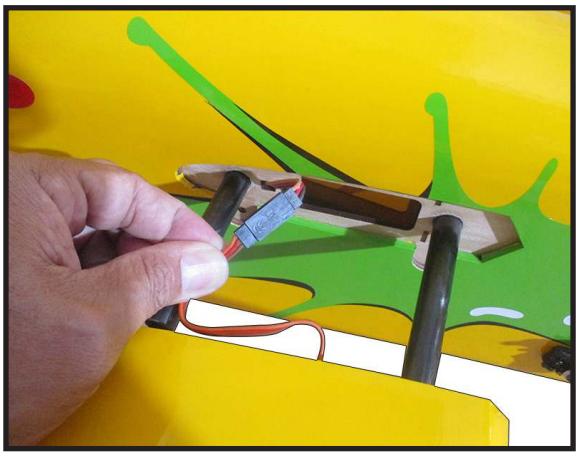
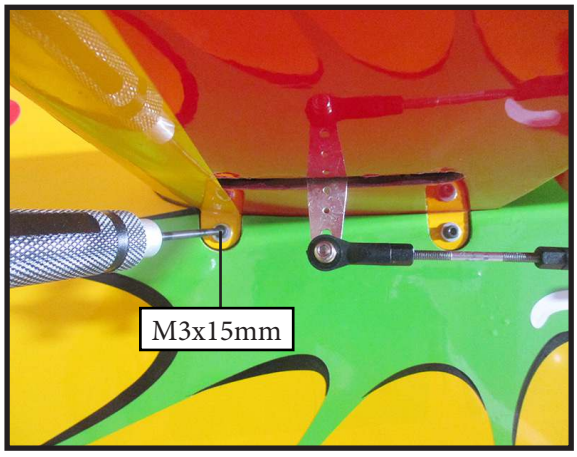


3.

4.

5.

6.

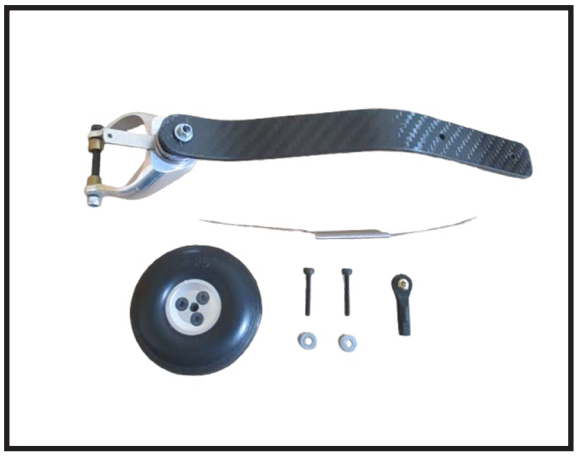


7.

TAILWHEEL INSTALLATION

Locate items necessary to install tailwheel.

1.



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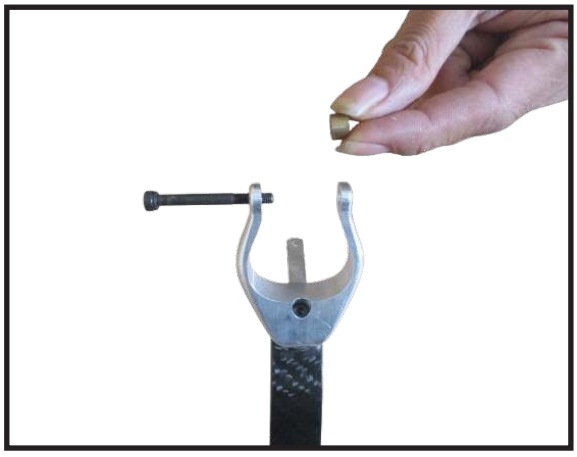

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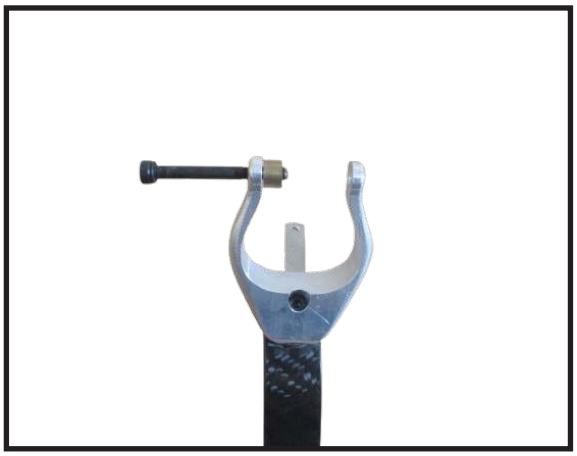

5.

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7.

8.

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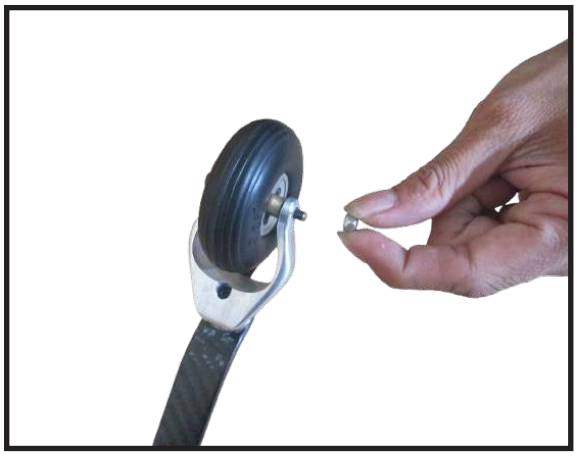

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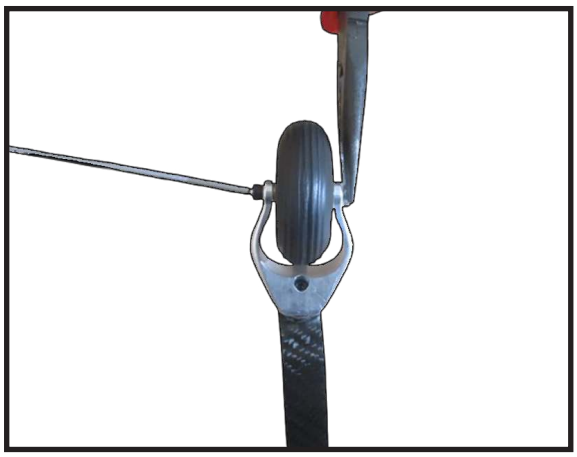

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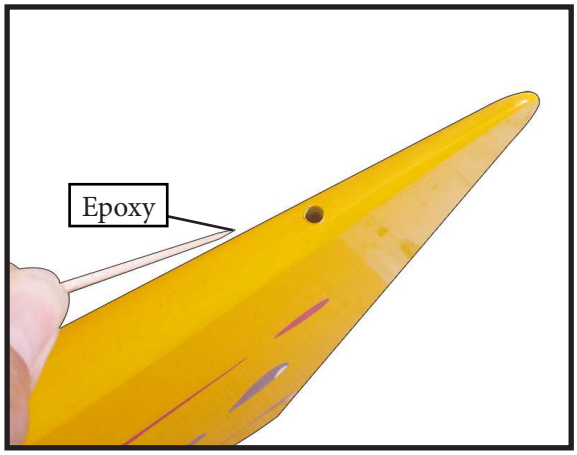

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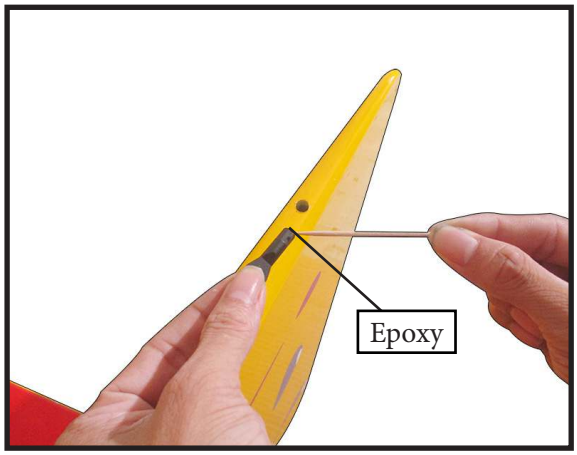

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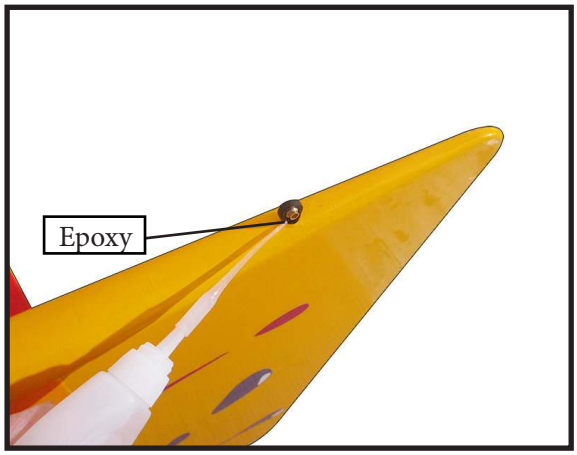

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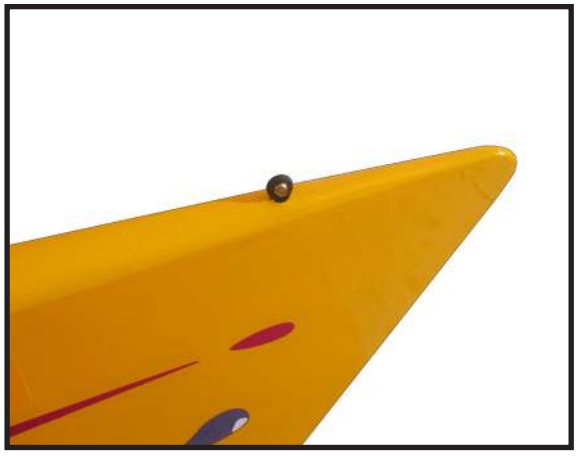

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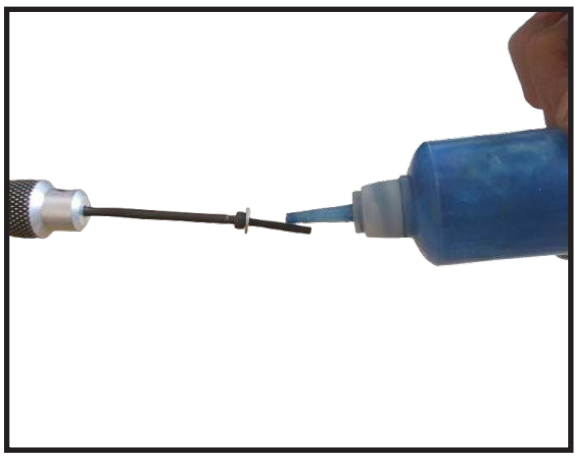

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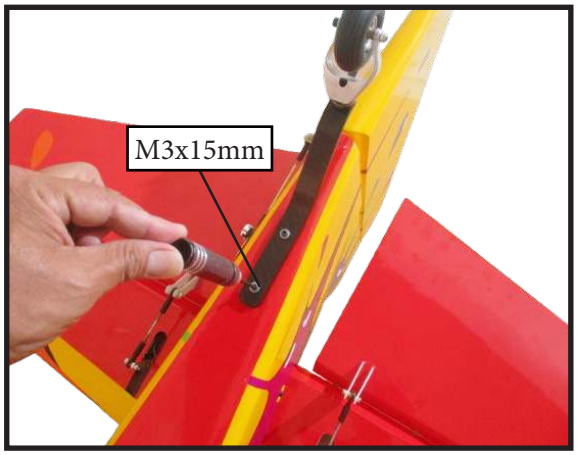

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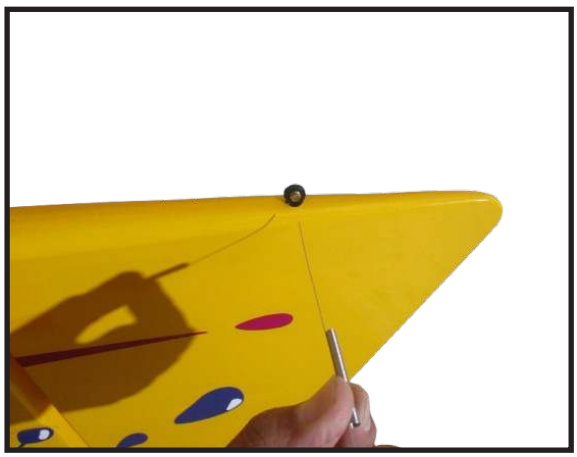

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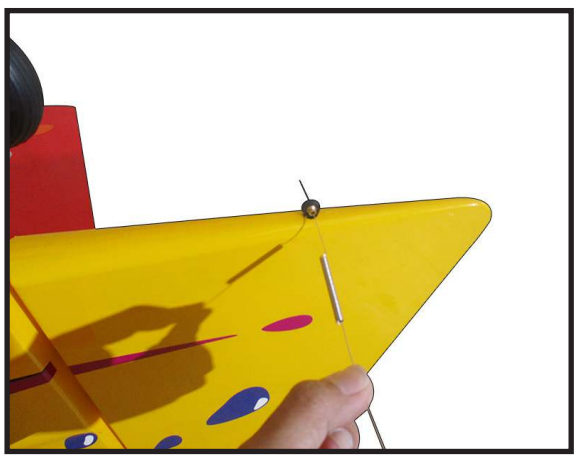

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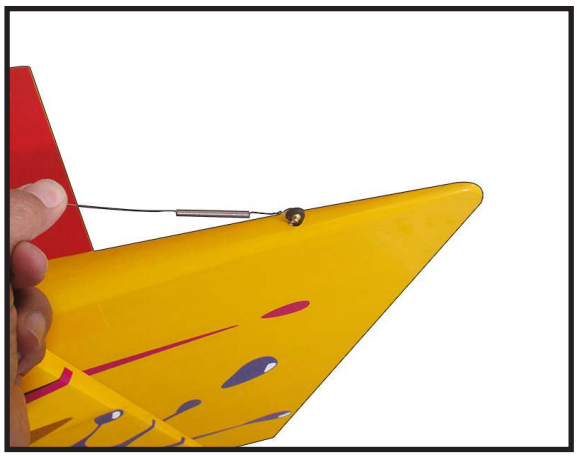

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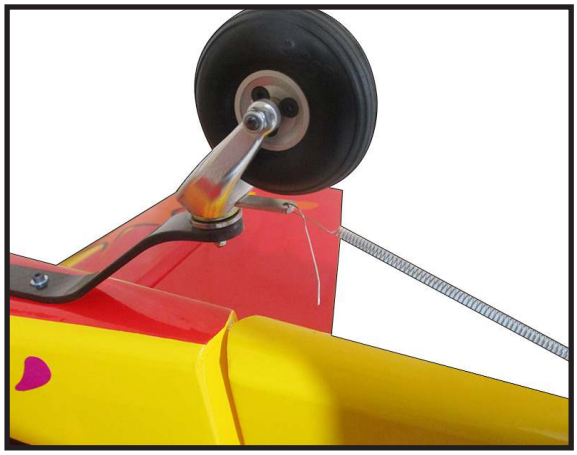

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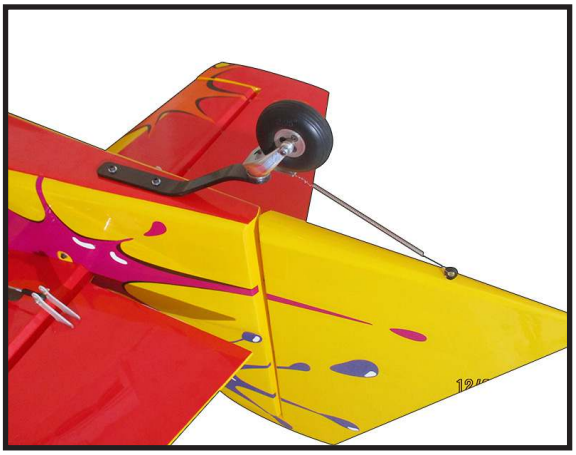
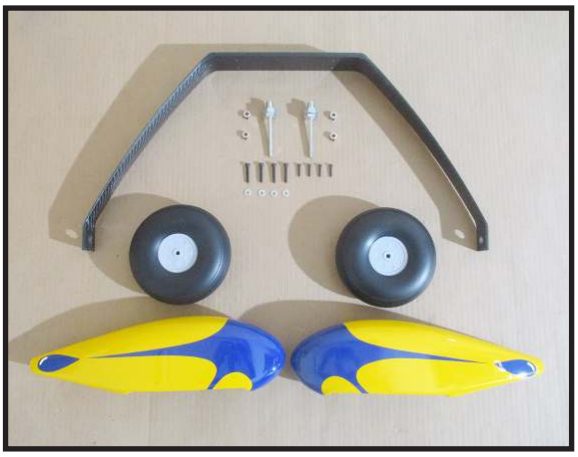


INSTALLING LANDING GEAR

Locate items necessary to install Sprin Landing Gear.

1.



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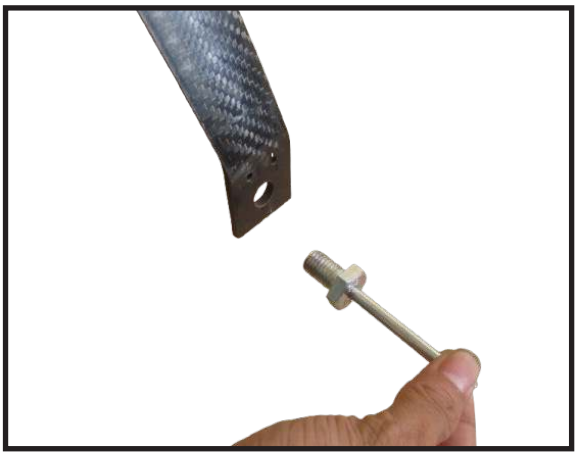

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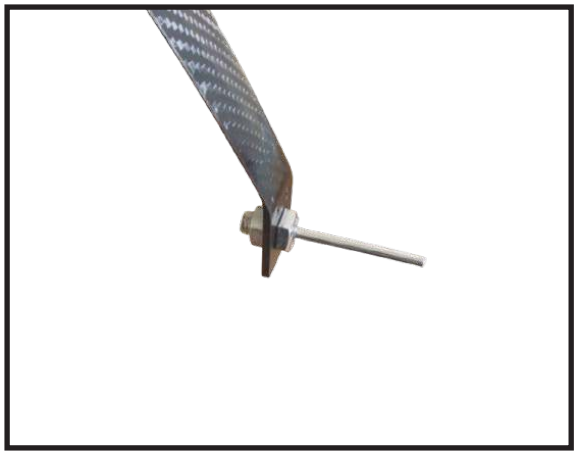

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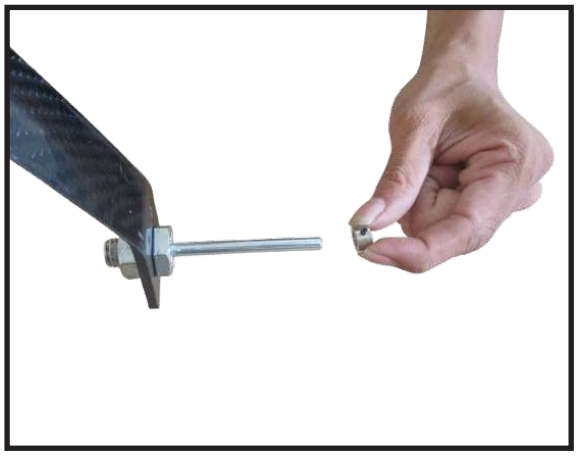

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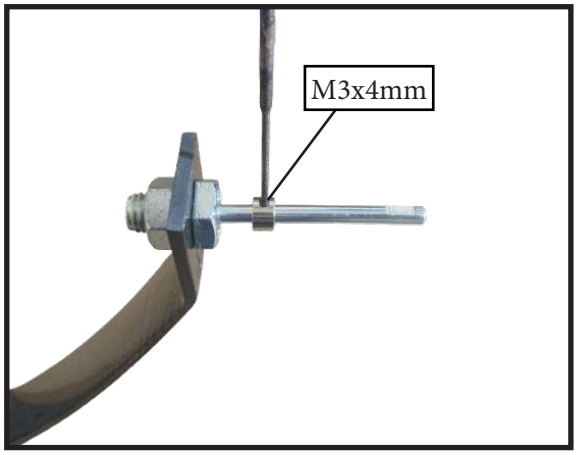

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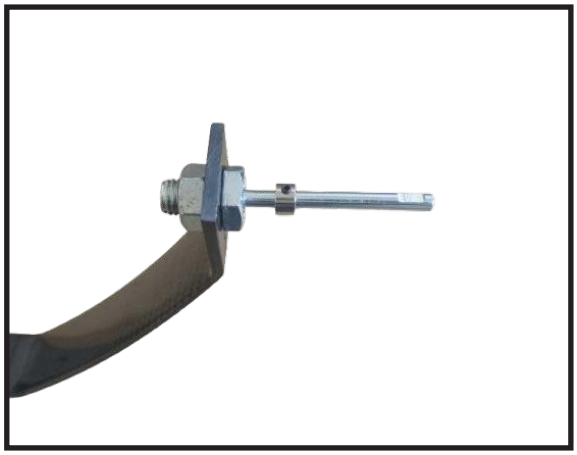

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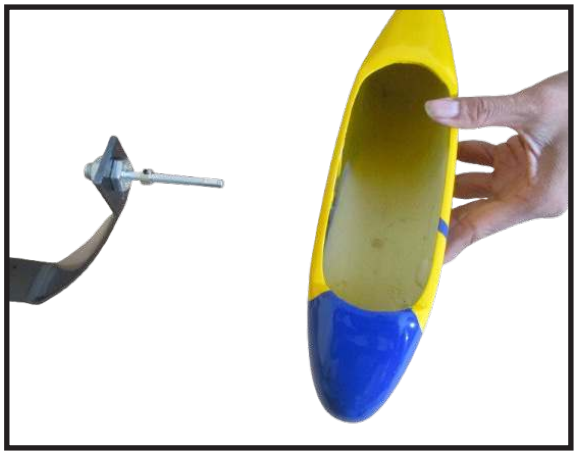

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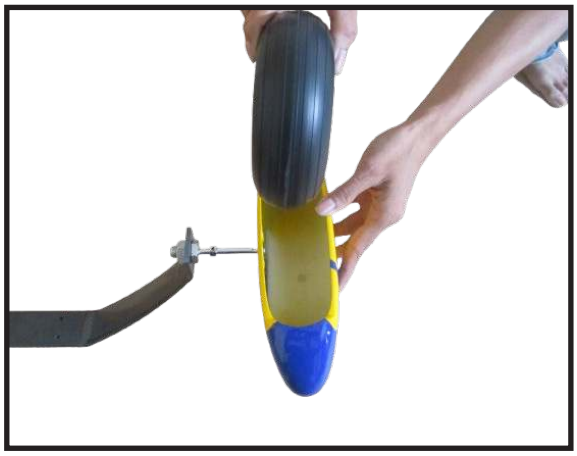

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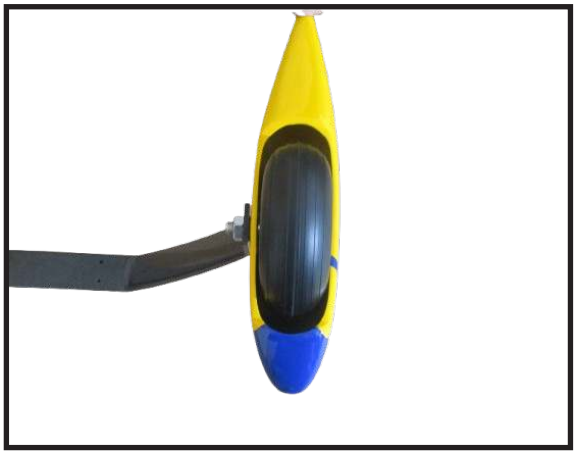
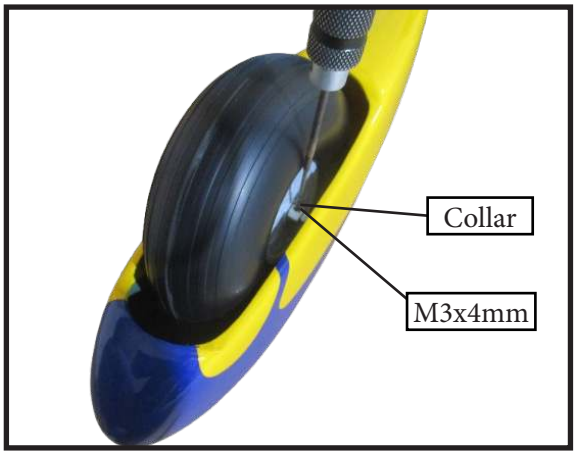


12.

13.



14.

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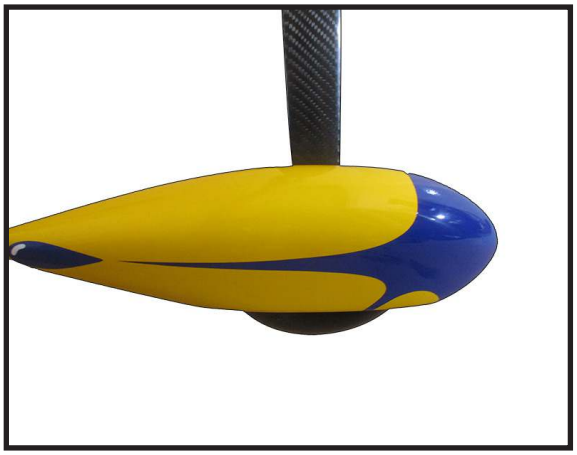

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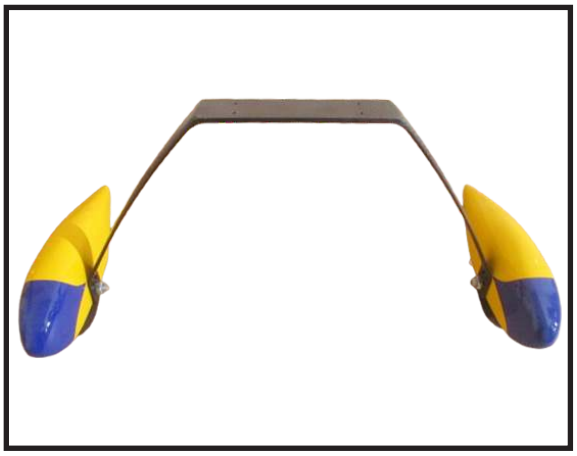

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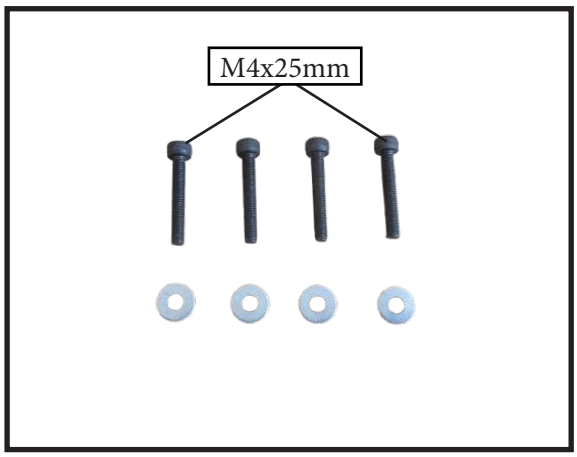

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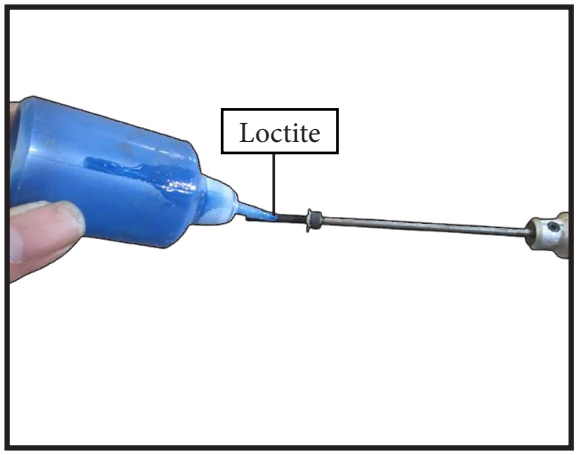

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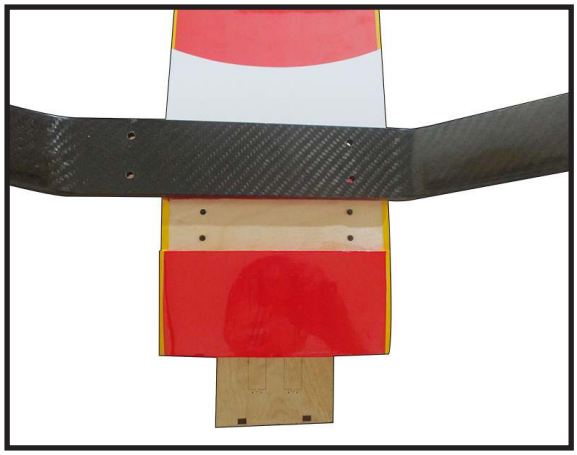

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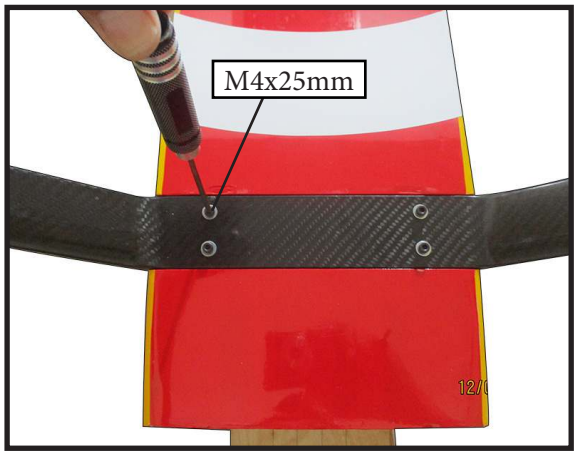


23.

24.

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.

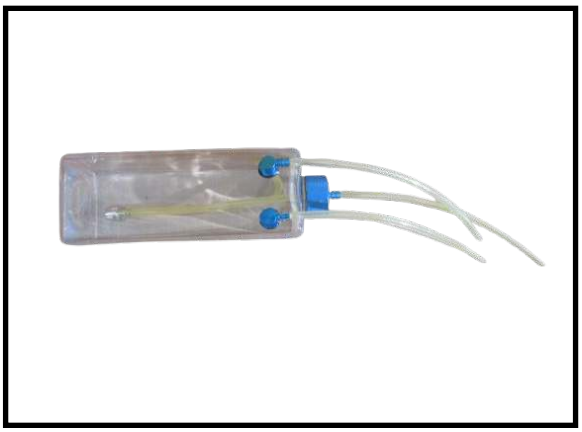
Test fit the stopper assembly into the tank. It may be necessary to remove some of the flashing around the tank opening using a modeling knife. If flashing is present, make sure none falls into the tank.

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 3x20mm machine screw until the rubber stopper expands and seals the tank opening. Do not overtighten the assembly as this could cause the tank to split.

FUEL TANK INSTALLATION

1.

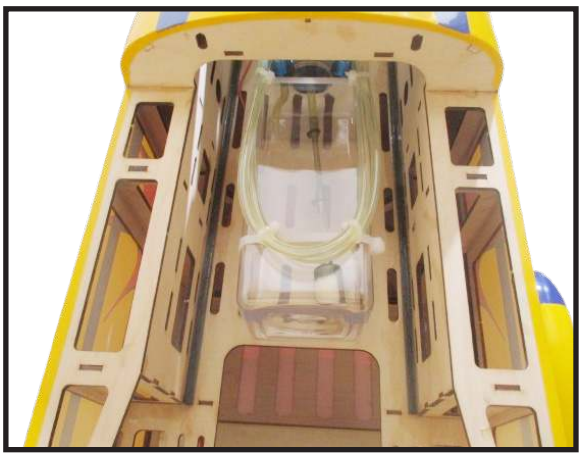


- ⚠ *You should mark which tube is the vent and which is the fuel pickup when you attach fuel tubing to the tubes in the stopper. Once the tank is installed inside the fuselage, it may be difficult to determine which is which.*

Slide the fuel tank into the fuselage. Guide the lines from the tank through the hole in the fiewall.

2.

3.



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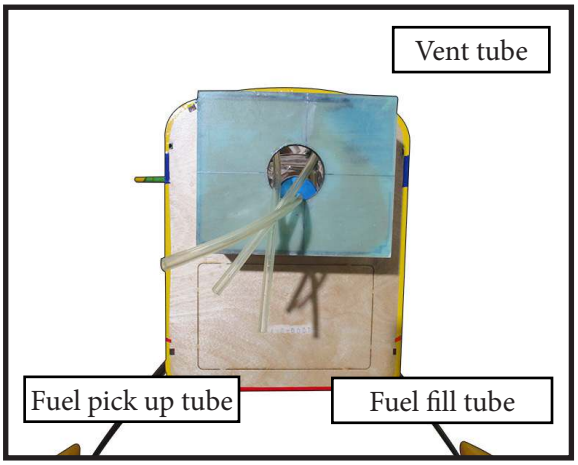


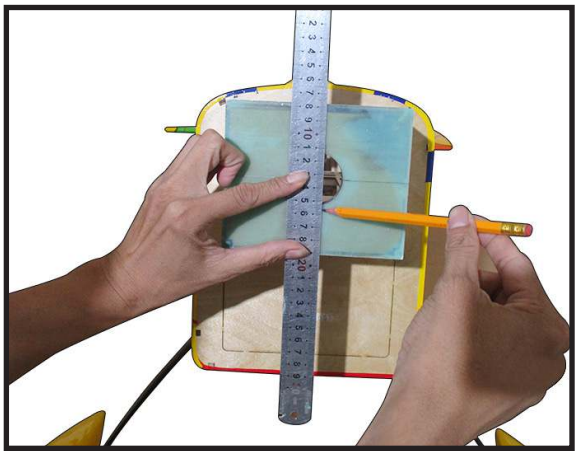
Connect the lines from the tank to the engine and muffler. The vent line will connect to the muffler and the line from the clunk tothe carburetor.

- *Blow through one of the lines to ensure the fuel lines have not become kinked inside the fuel tank compartment. Air should flow through easily.*

MOUNTING THE ENGINE

Please see below pictures.

1.



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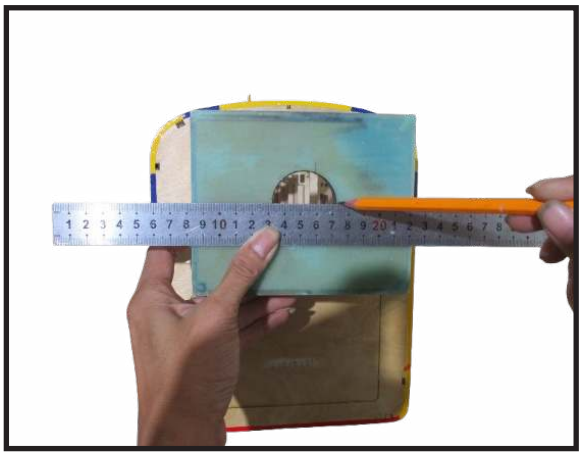
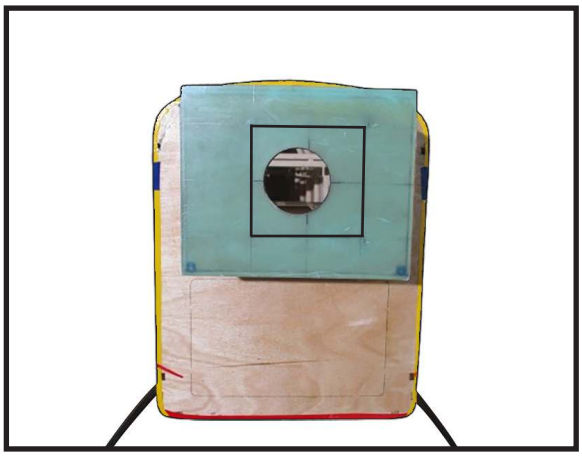


3.



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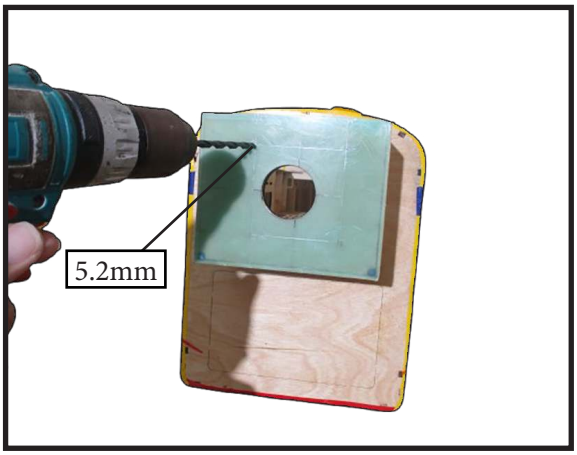

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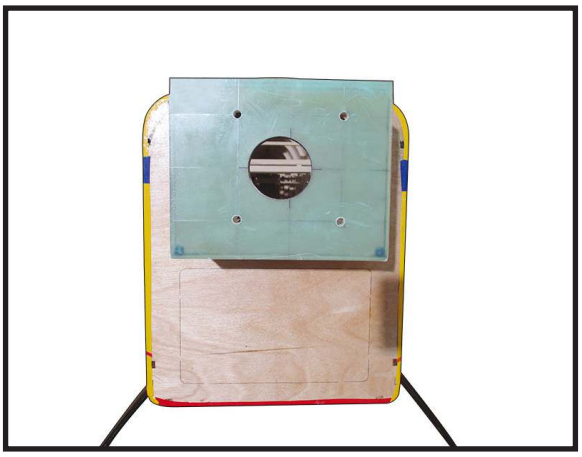

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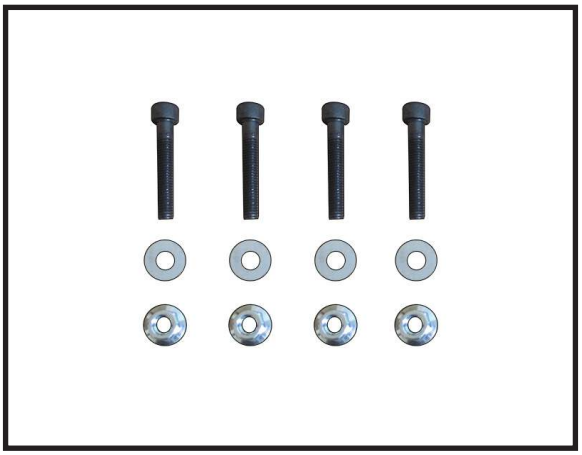

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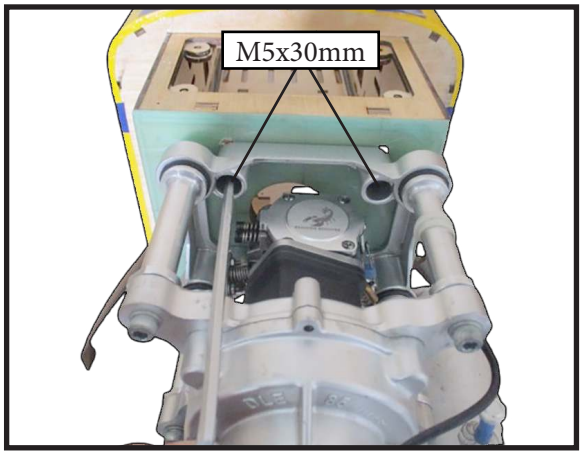

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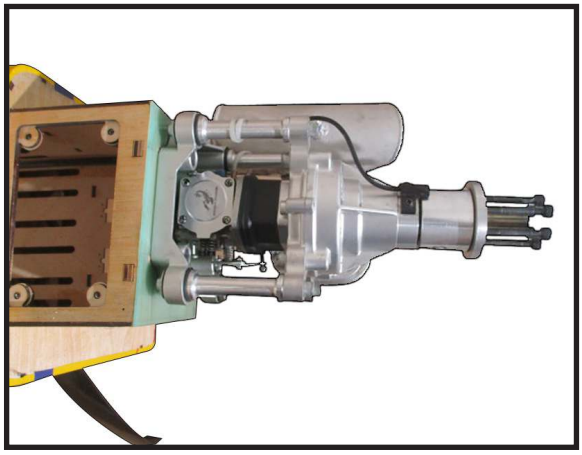

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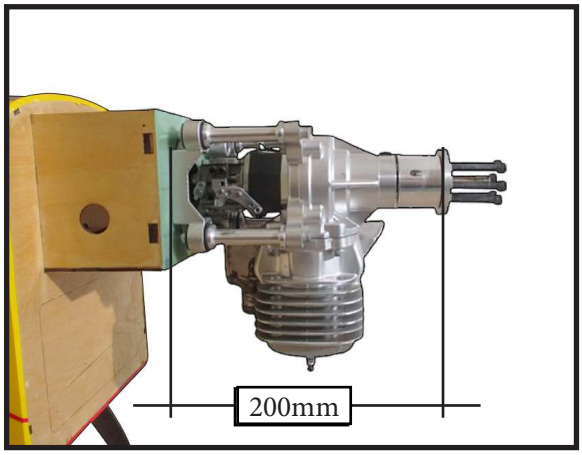

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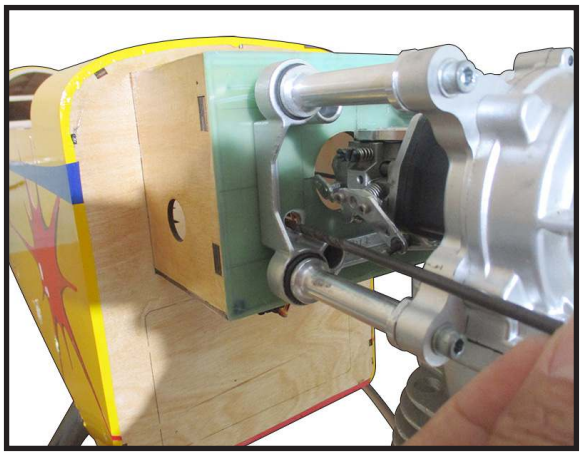

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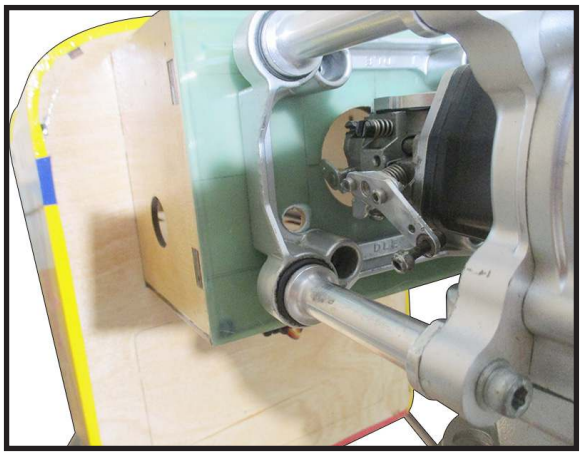

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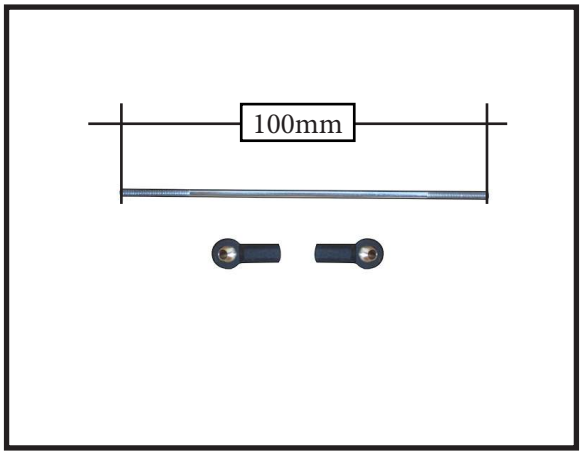

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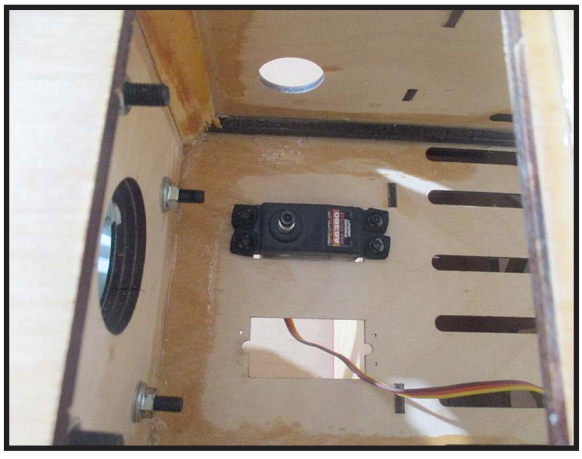

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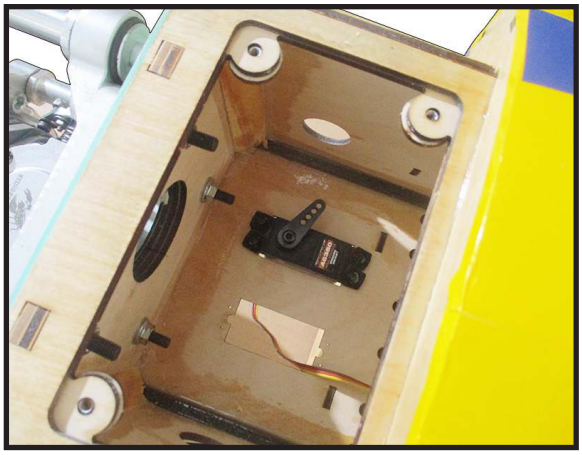

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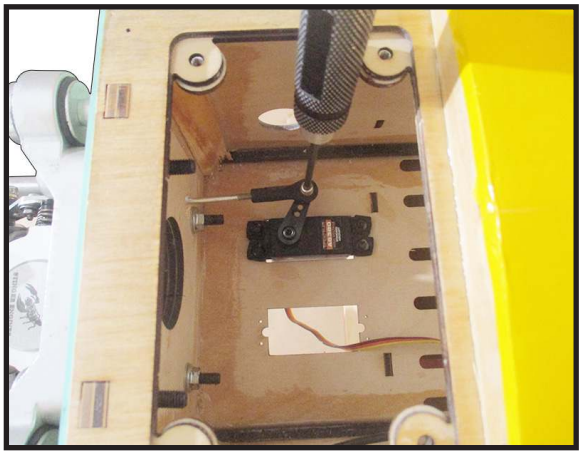

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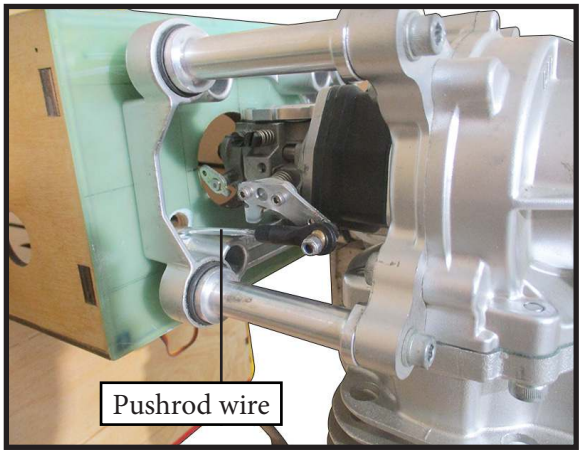

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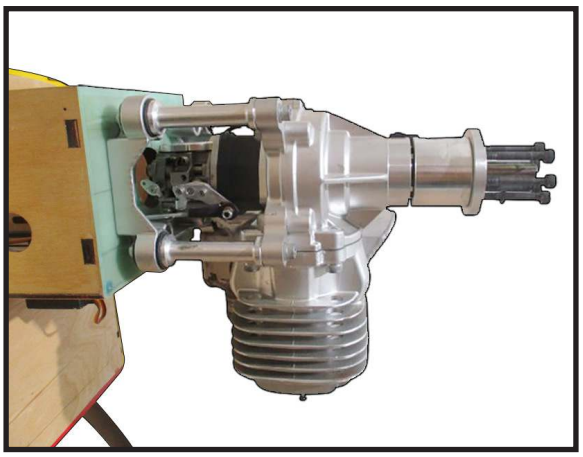

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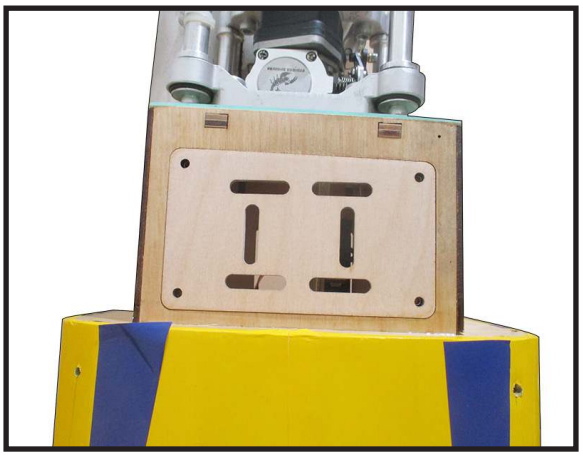

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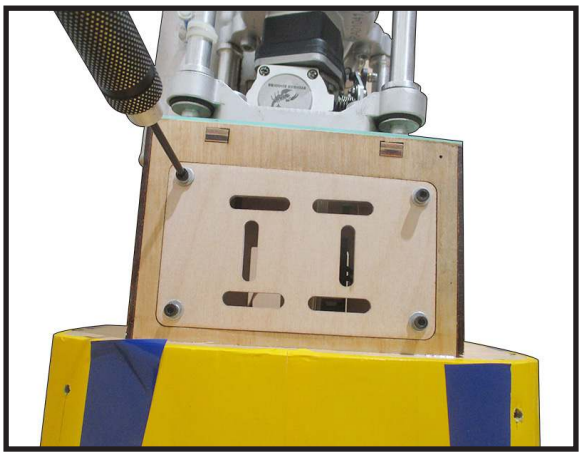

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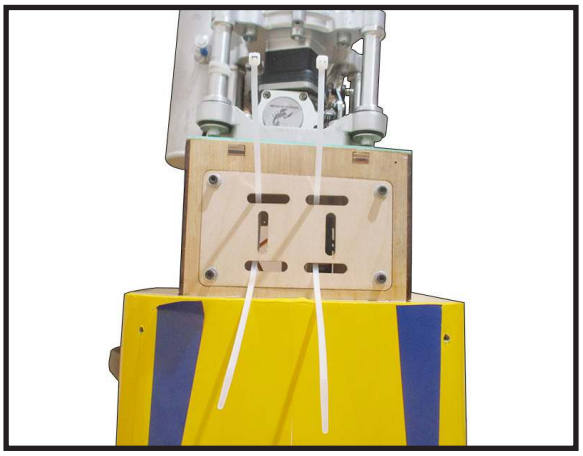

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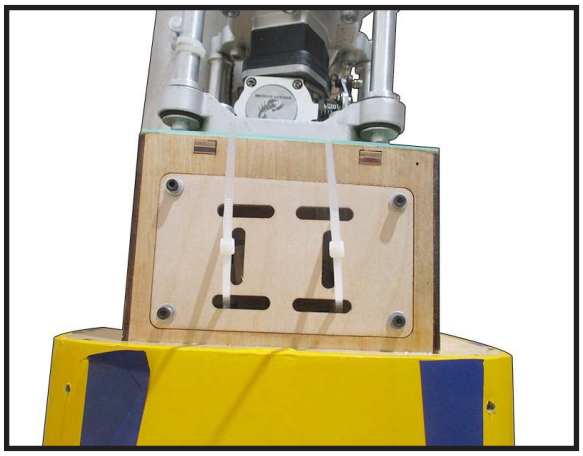

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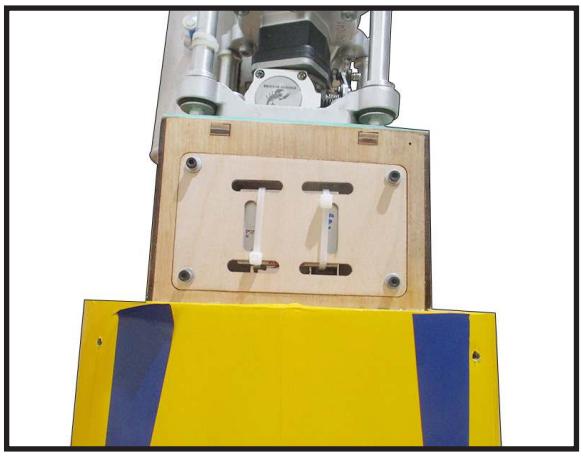

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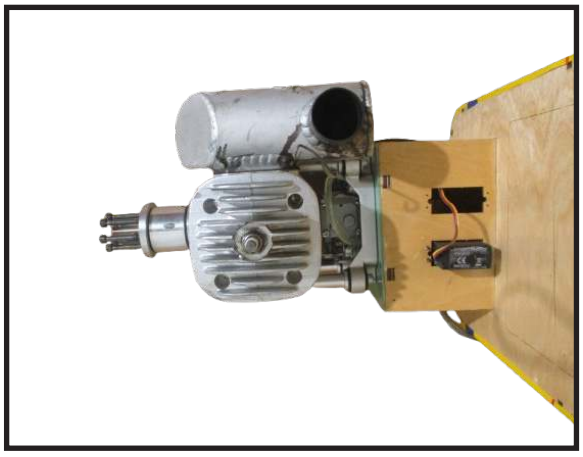

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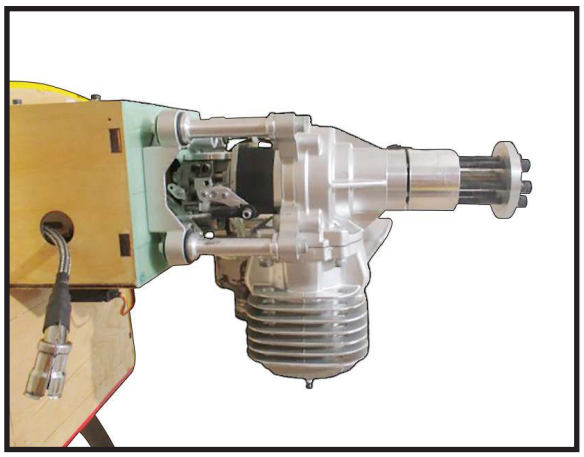

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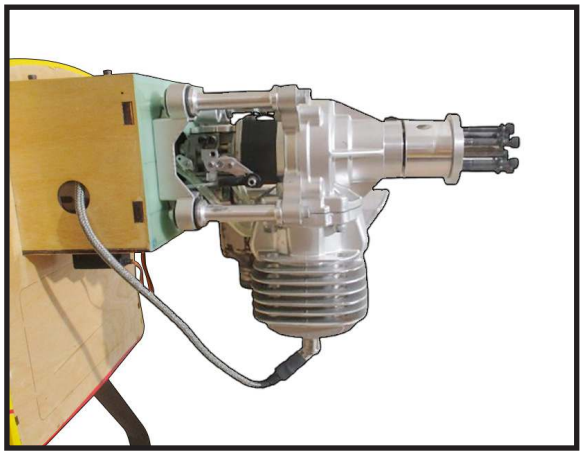

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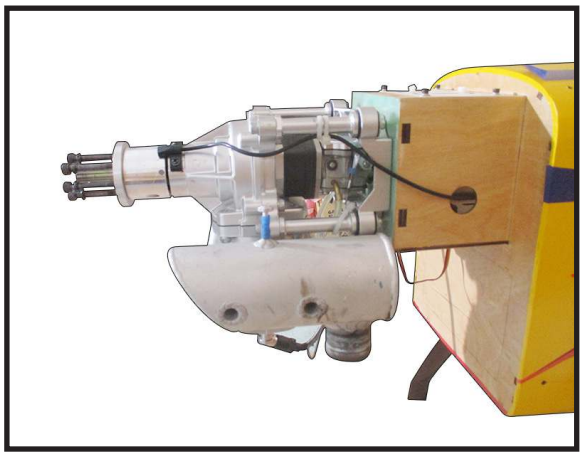

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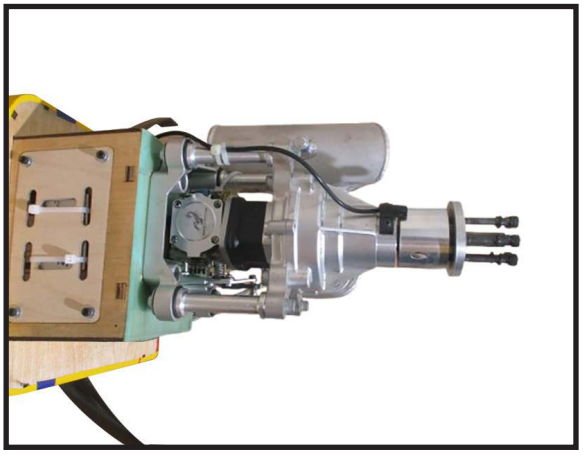

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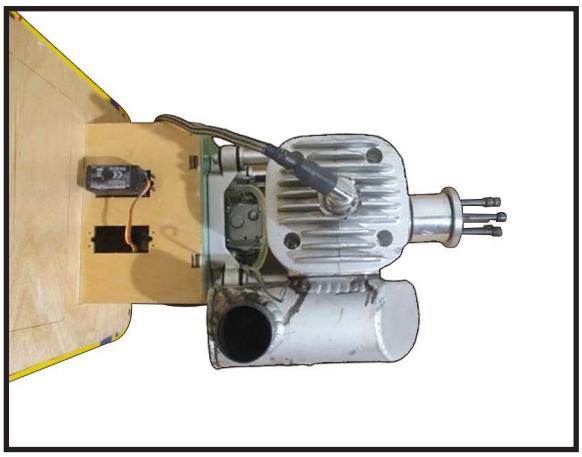
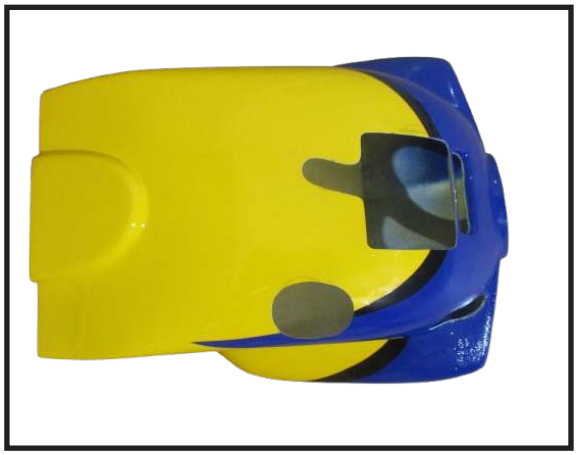


COWLING

Please study images below.

1.

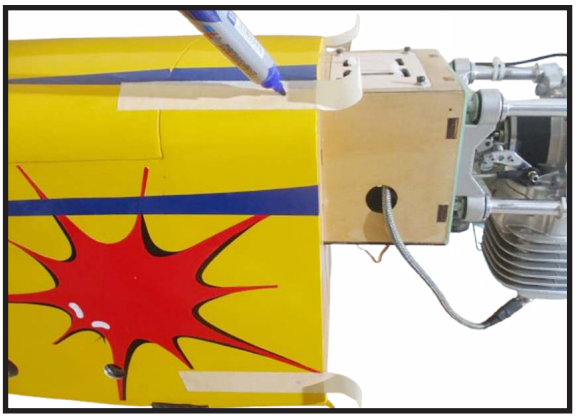
2.



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

3.

4.



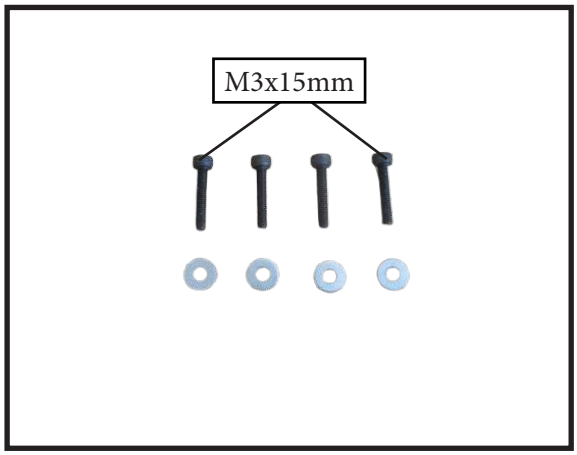
5.

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.

6.

Install the muffler and muffler extension 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 silicon fuel tube under the head of the screw helps with vibration.

7.



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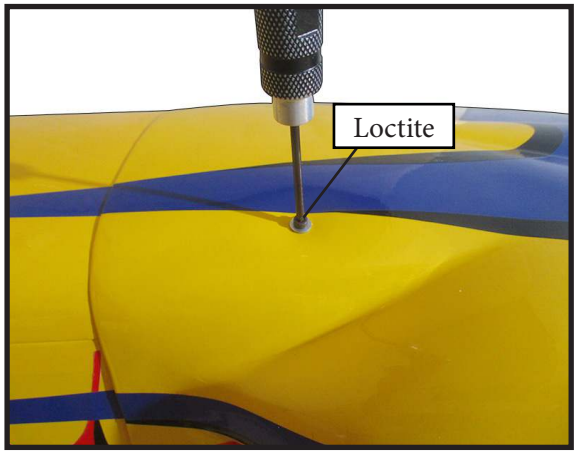
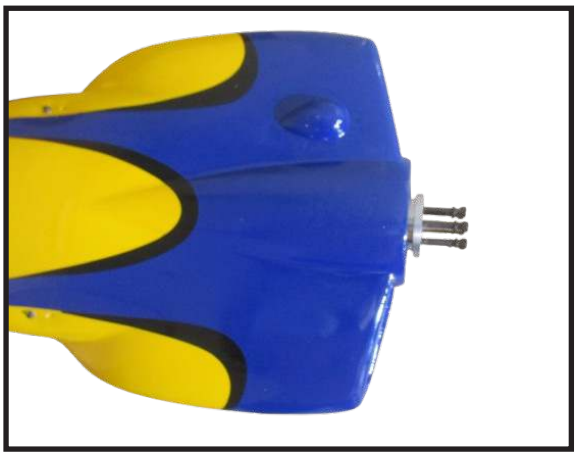


9.

10.

11.



12.

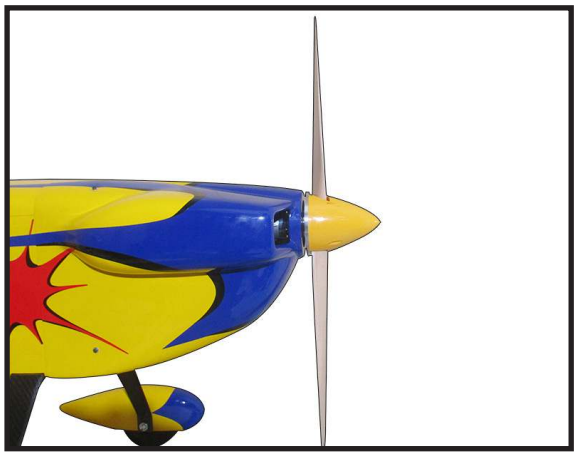
INSTALLING THE SPINNER

Install the spinner backplate, propeller and spinner cone.

1.

⚠ The propeller should not touch any part of the spinner cone. If it does, use a sharp modeling knife and carefully trim away the spinner cone where the propeller comes in contact with it.

2.



INSTALLATION PILOT AND CANOPY

Locate items necessary to install pilot and canopy.

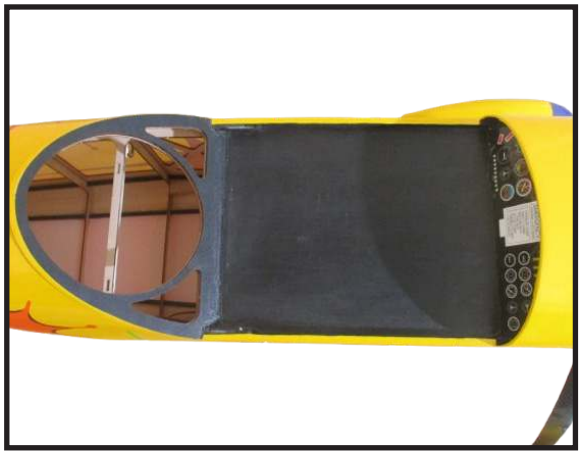
1.

A scale pilot is included with this ARF. The Pilot included fitting well to the cockpit. (or you can order others scale pilot figures made by SG Models. They are available at SG Models distributors.)

If you are going to install a pilot figure, please use a sanding bar to sand the base of the figure so that it is flat.

Position the pilot figure on the canopy floor as show. Locate the oval shaped on the canopy floor and remove the covering. Use epoxy to glue this into the base of the pilot figure and glue the cockpit panel in place with C/A glue, please see pictures as shown.

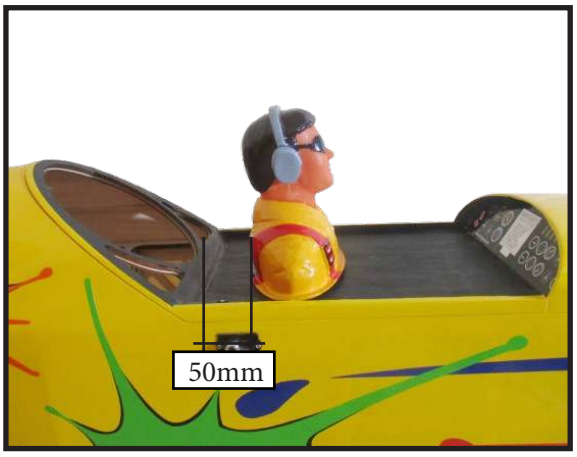
2.



3.

4.

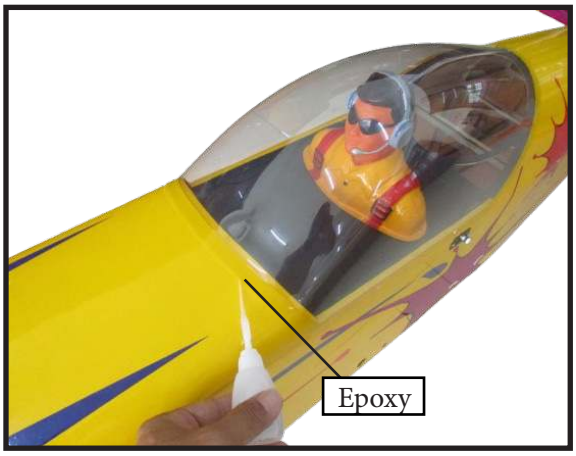
5.



Epoxy canopy onto the fuselage. Trace around the canopy and onto the fuselage using a epoxy.

6.

7.

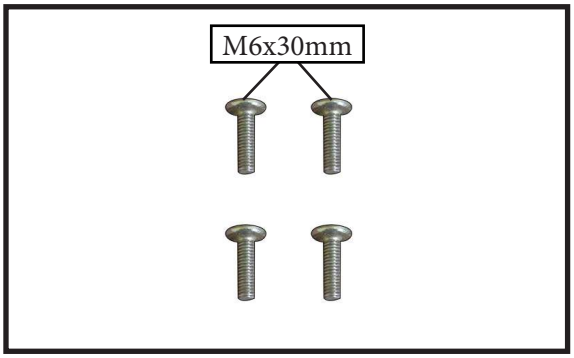


8.

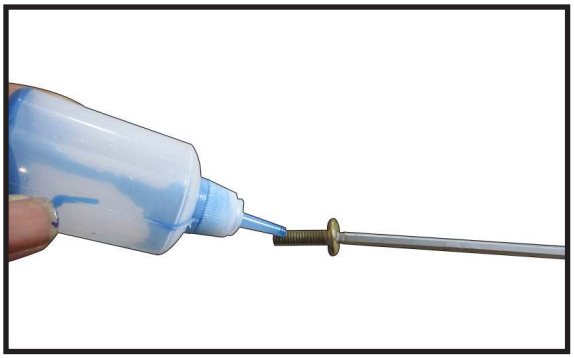
ATTACHMENT WING - FUSELAGE

Please study images below.

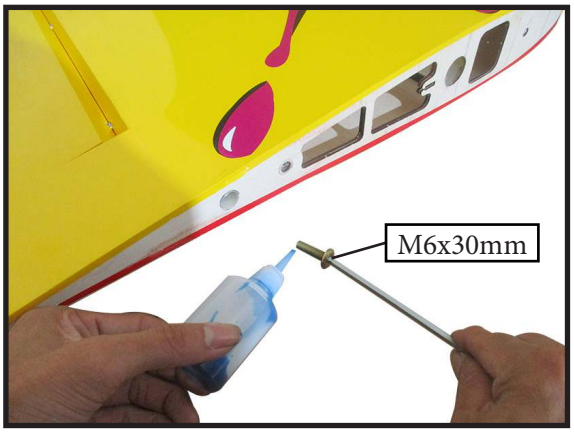
1.



2.



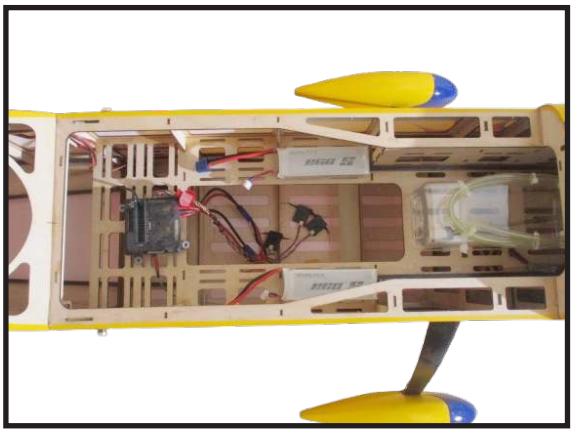
3.



4.

Attach the aluminium tube into fuselage.

5.



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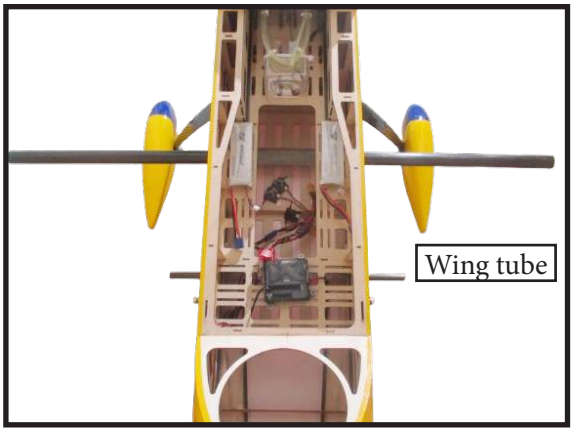

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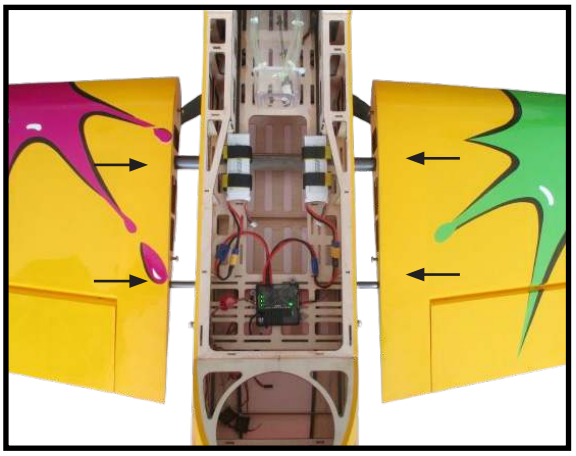

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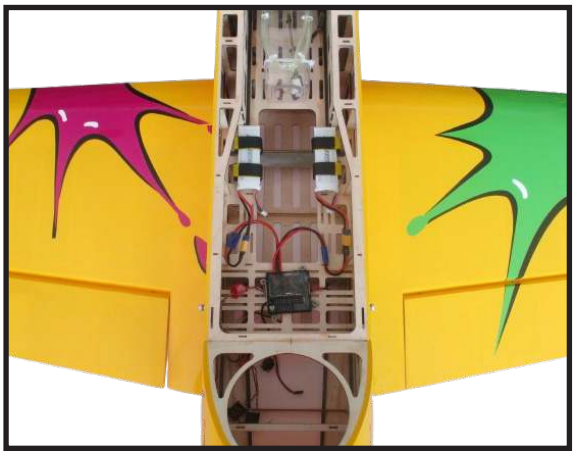

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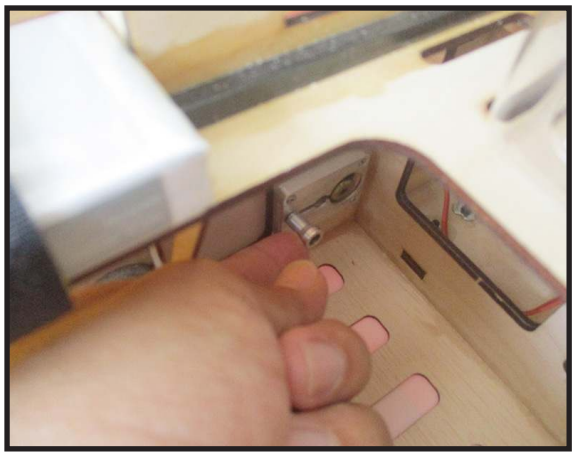

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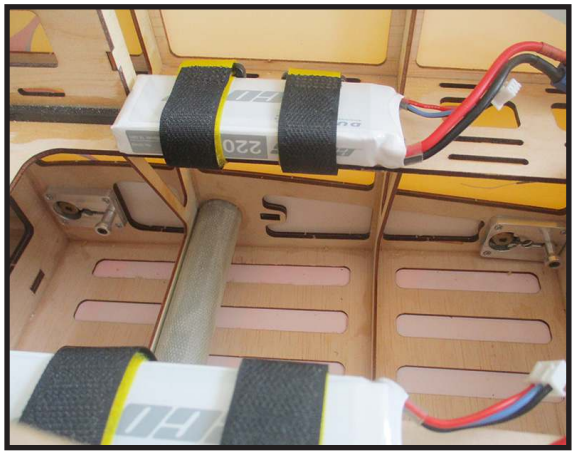


11.

12.

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

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 **170MM** 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 170mm back from the leading edge at the wing root.

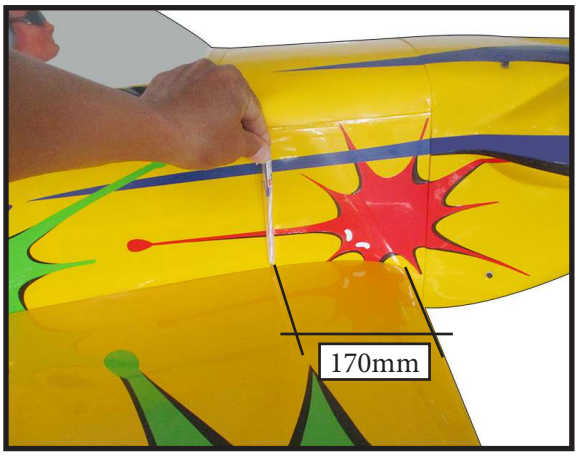
With the model inverted, place your fingers on the masking tape and carefully lift the plane. This is the point at which your model should balance for your first flights. Later, you may wish to experiment by shifting the balance up to 10mm forward or back to change the flying characteristics. Moving 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.

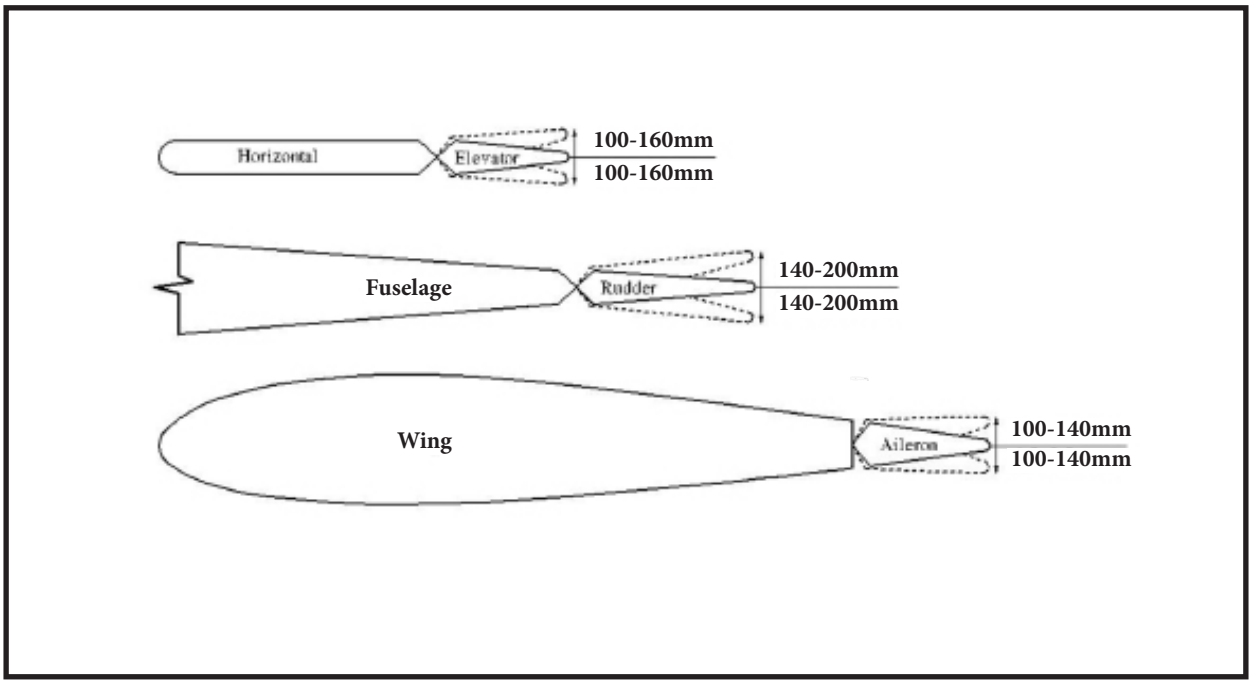
Lift the model. If the tail drops when you lift, the model is "tail heavy" and you must add weight* to the nose. If the nose drops, it is "nose heavy" and you must add weight* to the tail to balance.

1.



CONTROL THROWS

Ailerons:	**Rudder:**
High Rate :	High Rate :
Up : 140 mm	Right : 200 mm
Down : 140 mm	Left : 200 mm
Low Rate :	Low Rate :
Up : 100 mm	Right : 140 mm
Down : 100 mm	Left : 140 mm
Elevator:	
High Rate :	
Up : 160 mm	
Down : 160 mm	
Low Rate :	
Up : 100 mm	
Down : 100 mm	


Horizontal
Elevator
100-160mm
100-160mm
Fuselage
Rudder
140-200mm
140-200mm
Wing
Aileron
100-140mm
100-140mm

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 Scale 1/3 Cap 232 ARF (97" Wingspan) 85cc** 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 Scale 1/3 Cap 232 ARF (97" Wingspan) 85cc.**

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

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Facebook : www.facebook.com/SeaGullModels.