



# EXTRA 330LX

Code: SEA274

“ Graphics and specifications may change without notice ” .



## Specifications:

Wingspan-----82.0 in (208.2 cm).

Wing area-----1349.4 sq.in ( 87.1 sq.dm).

Weight-----16.3 -16.8 lbs (7.4- 7.6kg).

Length-----77.7 in (197.3 cm).

Engine-----50cc-55cc gasoline.

Radio-----6 channels with 6 servos.



**INTRODUCTION.**

Thank you for choosing the **EXTRA 330LX** ARF by **SG MODELS** . The **EXTRA 330LX** 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 ARF, 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 **EXTRA 330LX** is simply a joy.

This instruction manual is designed to help you build a great flying aeroplane. Please read this manual thoroughly before starting assembly of your **EXTRA 330LX** . 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.

**ADDITIONAL ITEMS REQUIRED.**

- 50cc-55cc gasoline engine.
- Computer radio with 6 servos.
- Glow plug to suit engine.
- Propeller to suit engine.
- Protective foam rubber for radio system.

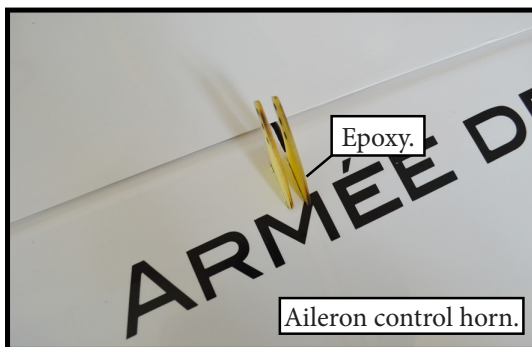
**TOOLS & SUPPLIES NEEDED.**

- 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.



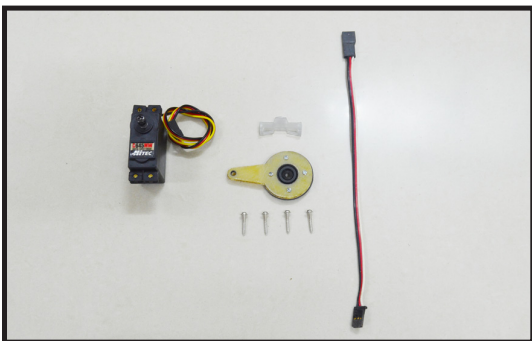


### INSTALL THE AILERONS CONTROL HORN.



### INSTALLING THE AILERON SERVOS.

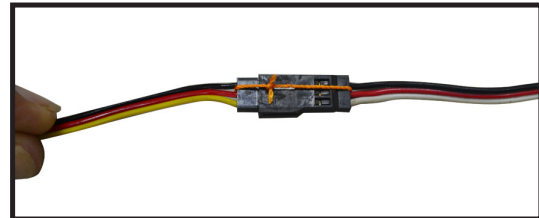
1) The ailerons have been pre-hinged and glued to the wing panels and are ready for flight. No other steps are necessary for hinging.



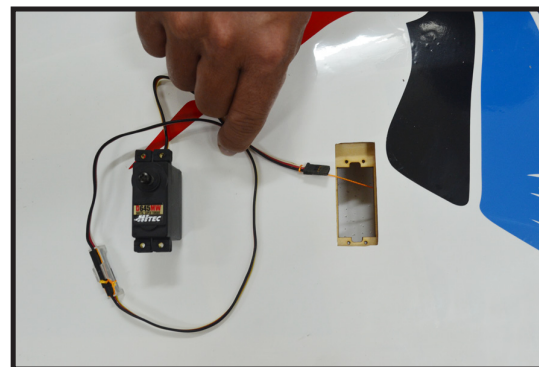
2) Layout the servo on the wing to test fit the installation and ensure servo lead is the correct length.



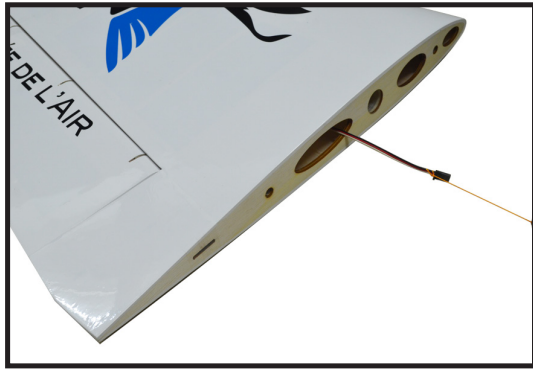
3) Attach the extension to the servo lead and secure with Safety Clip, safety wire, tape or other method. Ensure the plugs will not come apart from vibration or light tension.



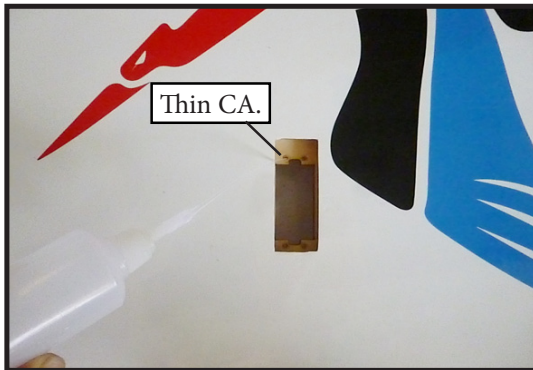
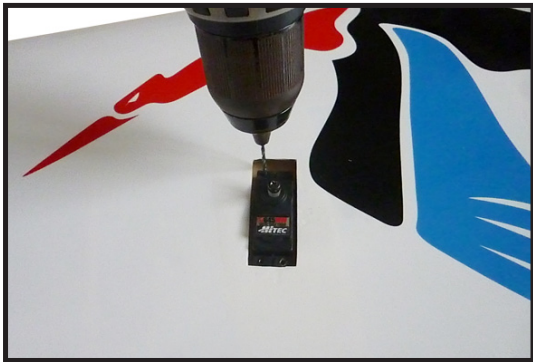
4) Fasten the pull string from the servo hole to the male plug of the servo extension.



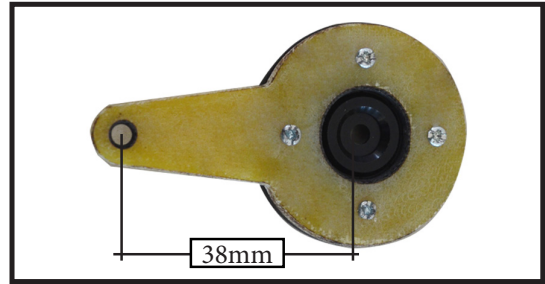




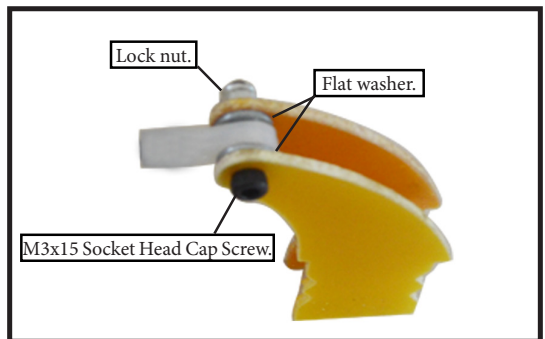
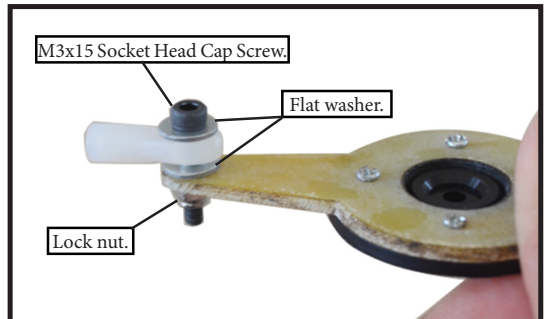
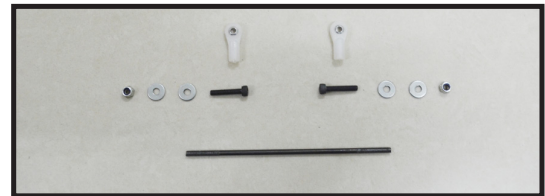
5) Install servo in servo well with the output arm toward the leading edge of the wing. Mark and drill location of servo mounting holes.

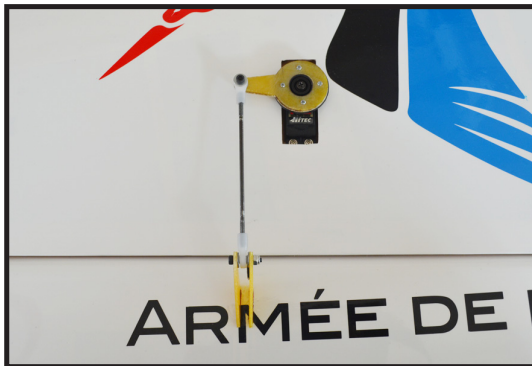
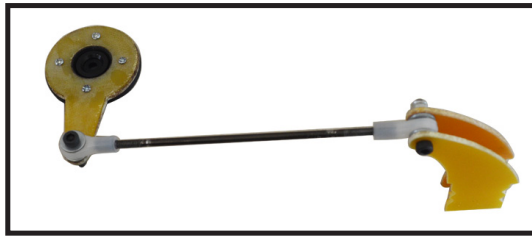
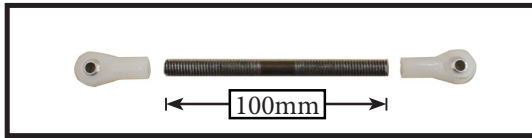


6) Install servo with servo mounting screws.



**INSTALLING THE AILERON PUSHROD.**

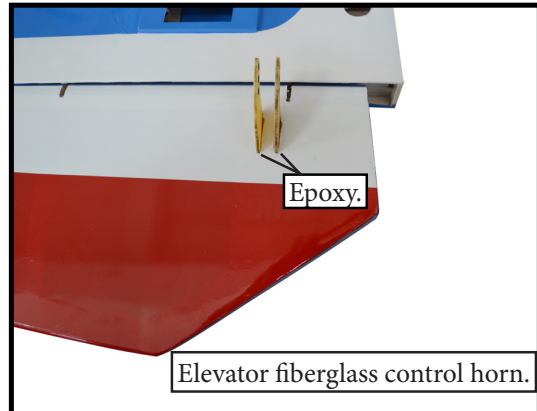
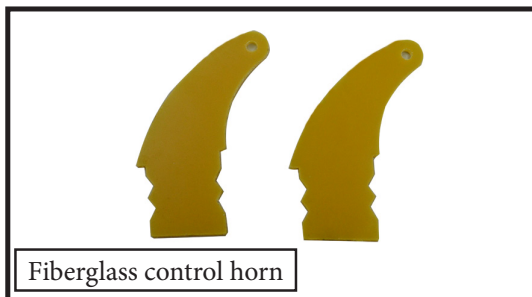




*Repeat all the above steps for the other wing.*



#### INSTALL ELEVATOR CONTROL HORN.

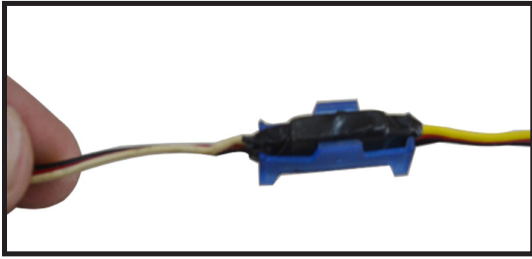


#### ELEVATOR SERVO INSTALLATION.

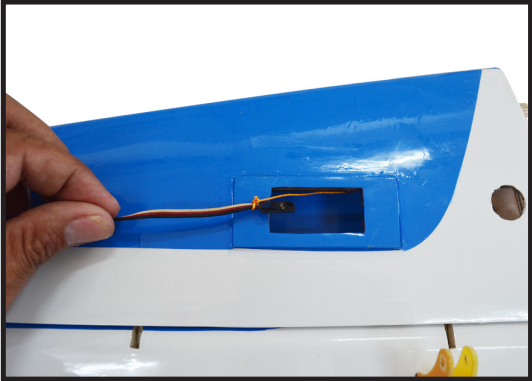
1) The elevators have been pre-hinged and glued to the stabs and are ready for flight. No other steps are necessary for hinging.



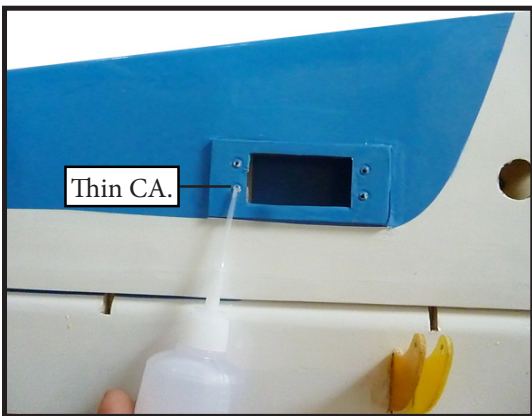
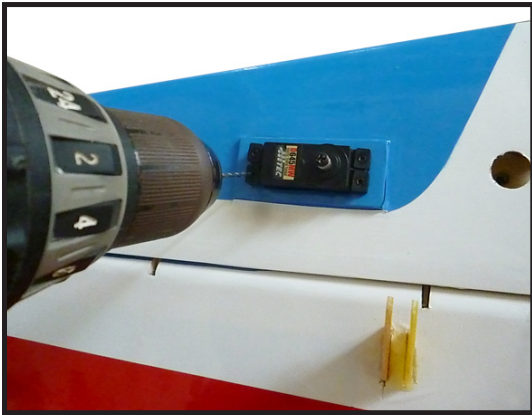
2) Attach the extension to the servo lead and secure with Safety Clip, safety wire, tape or other method. Ensure the plugs will not come apart from vibration or light tension.



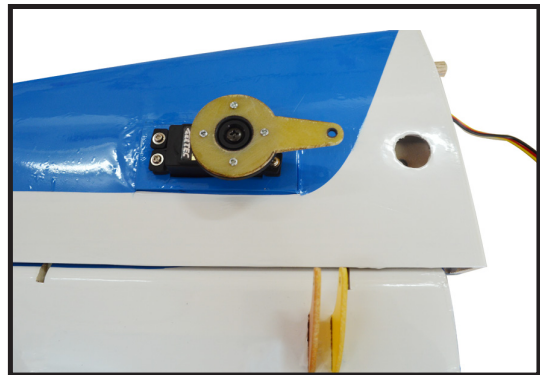
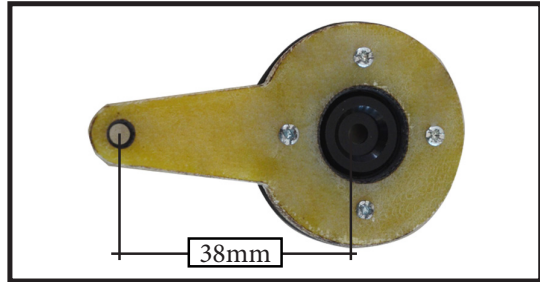
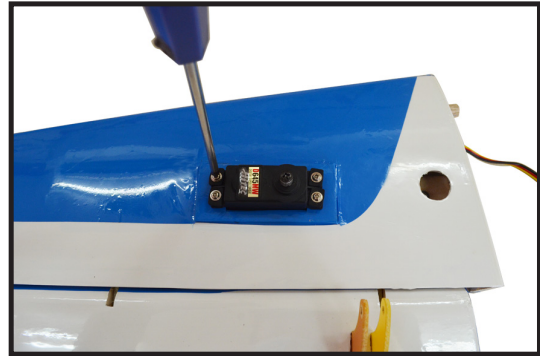
3) Feed servo extension through the elevator servo mounting hole.



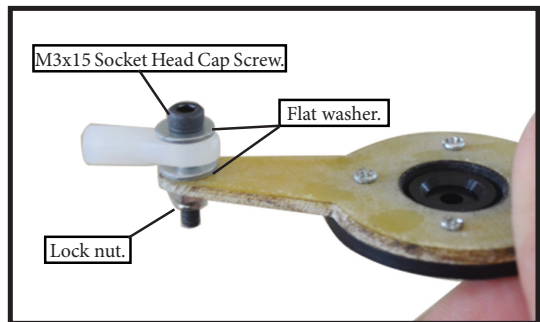
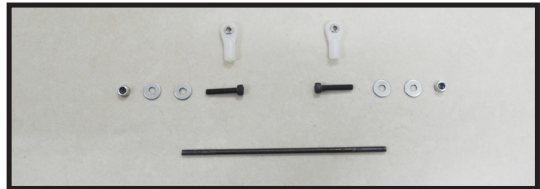
4) Mark and drill location of servo mounting holes.



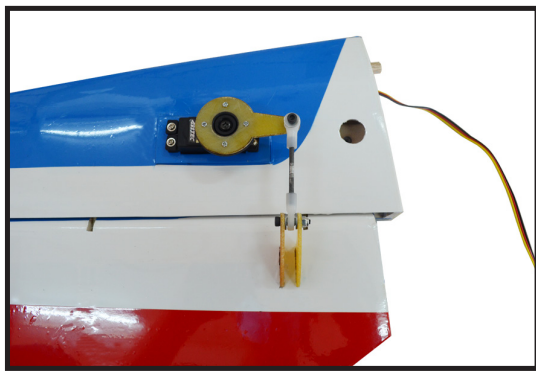
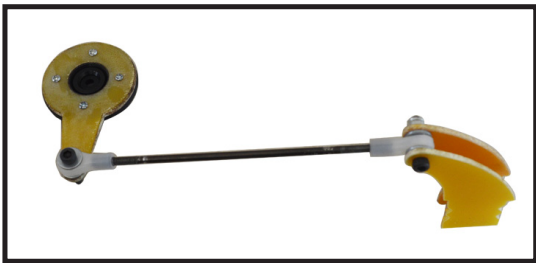
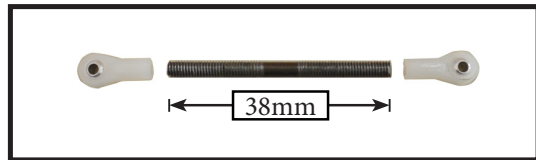
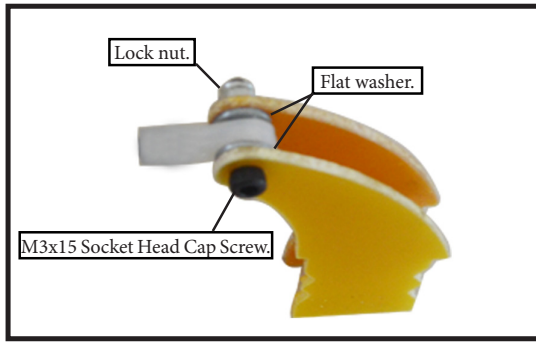
5) Install servo with servo mounting screws.



### ELEVATOR PUSHROD INSTALLATION.

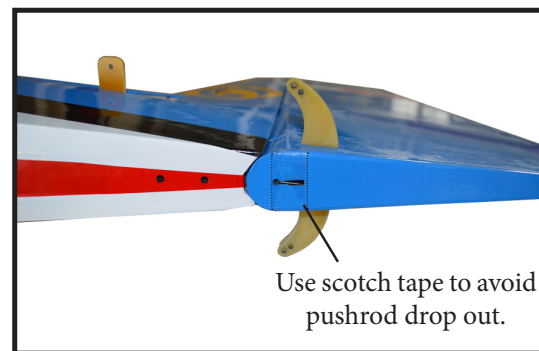
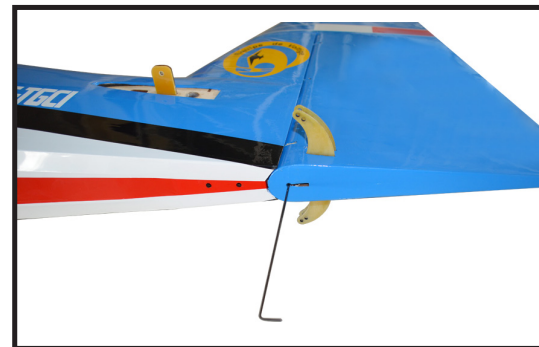
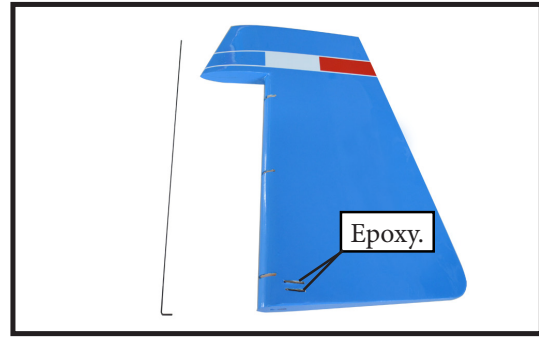
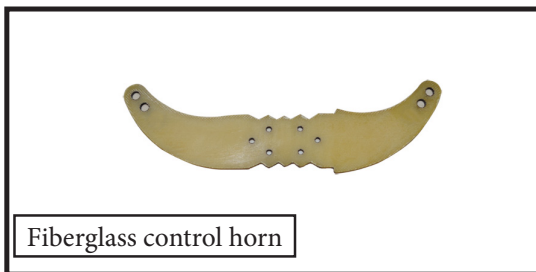






*Repeat all the above steps for the other elevator.*

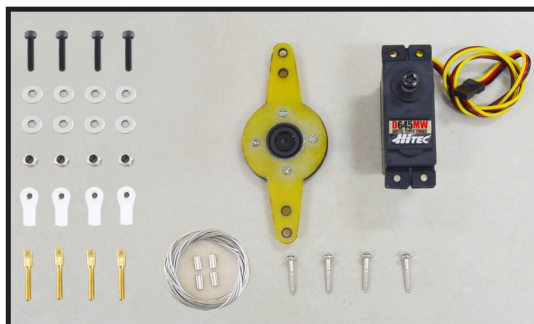
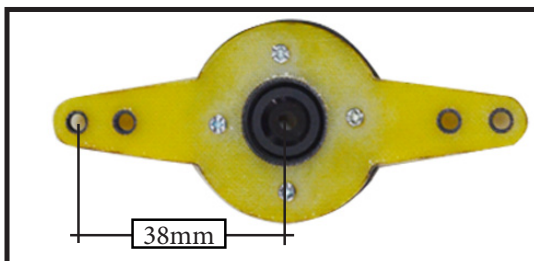
**INSTALL RUDDER CONTROL HORN.**





## INSTALL RUDDER CABLE AND SERVO.

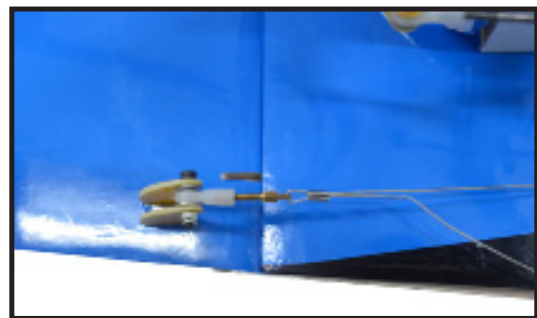
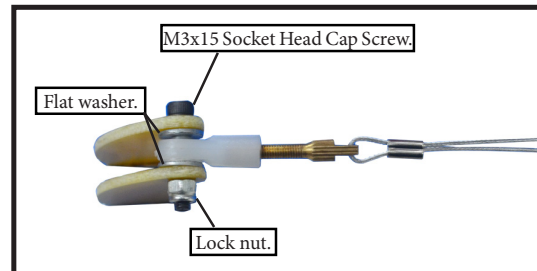
1) Gather one rudder aervo, mounting screws, servo arm and the rudder control linkage parts shown below.



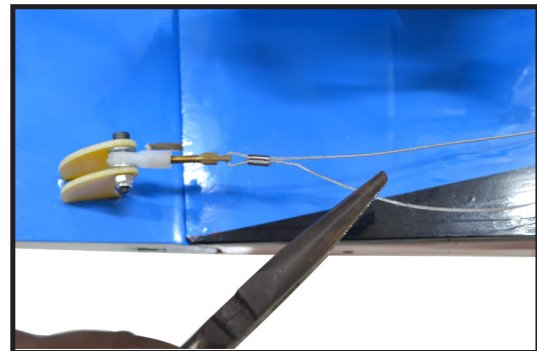
2) Tape the rudder balance tab to the top leading edge of the vertical fin in the neutral position as shown. This ensures the rudder is straight when the cables are attached.



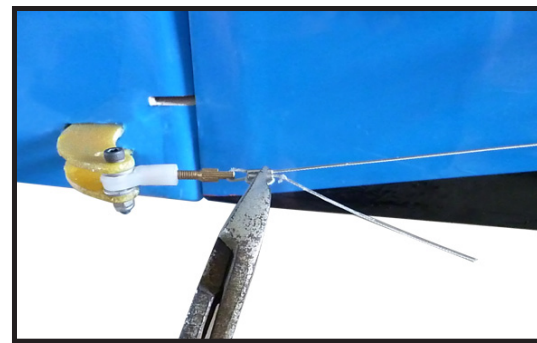
3) Thread the rudder cable through a brass swage tube, then the threaded coupler, and back through the brass swage tube on both sides. Pull light tension on the cable through the coupler on both sides as shown.



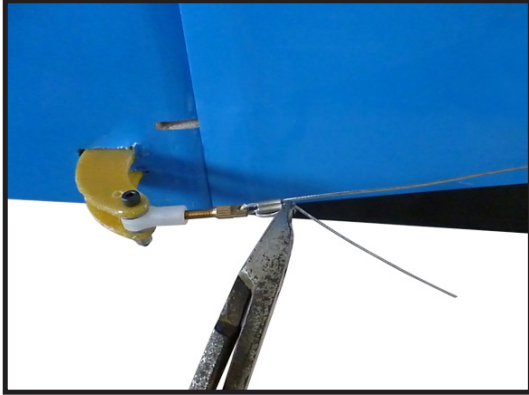
4) Loop the cable back through the brass swage tube and tighten the second loop through the brass swage tube as shown.



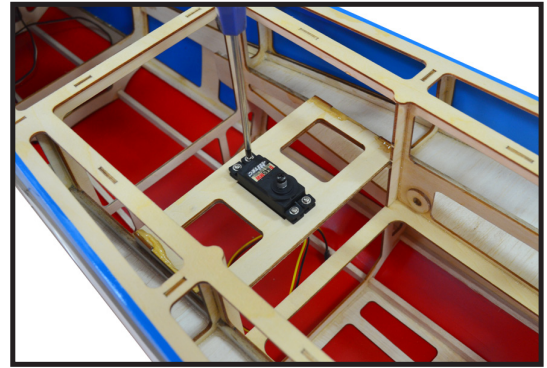
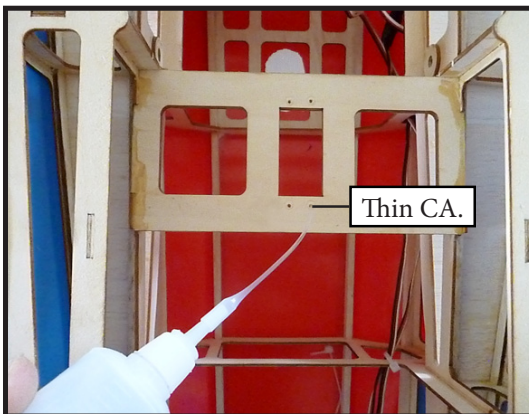
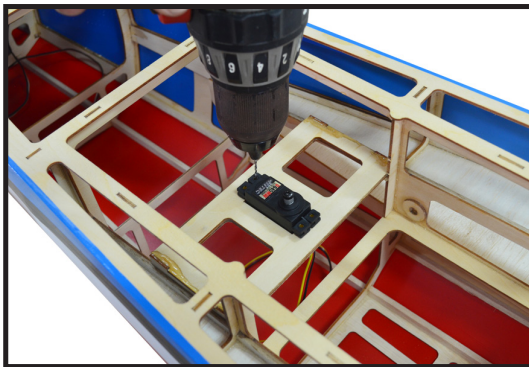
5) Crimp the brass tube with a crimping tool or pliers.



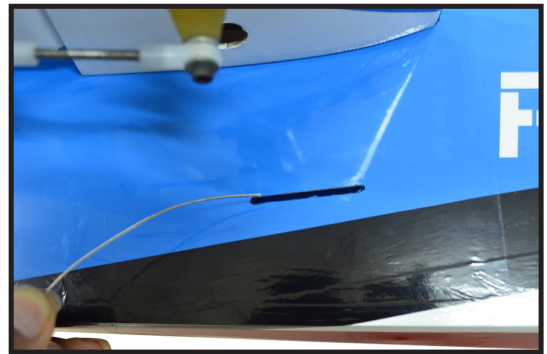
6) Cut off excess cable as shown.



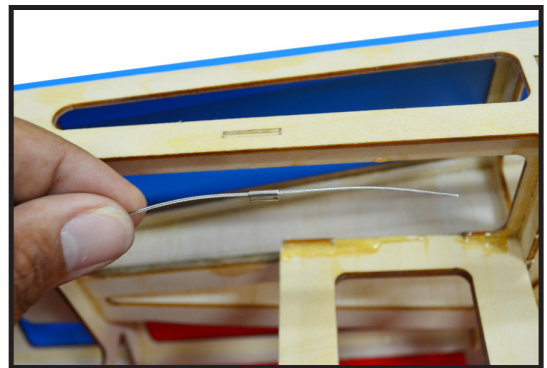
7) Mark and use a 1/16 bit to drill the rudder servo.



8) Feed one rudder cable through the pre installed cable exit tube in the rear of the fuse toward the front of the fuse. Repeat for other side.



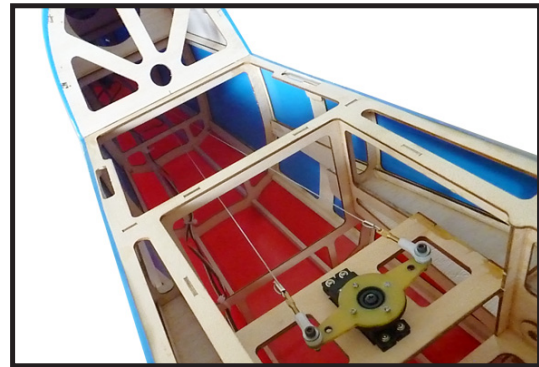
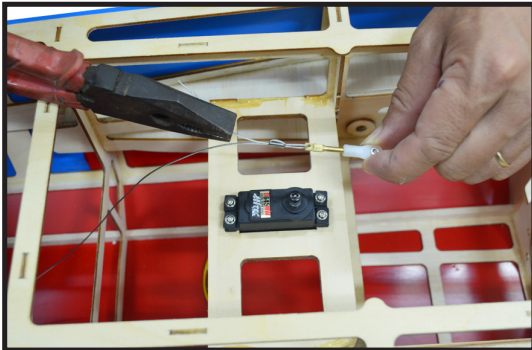
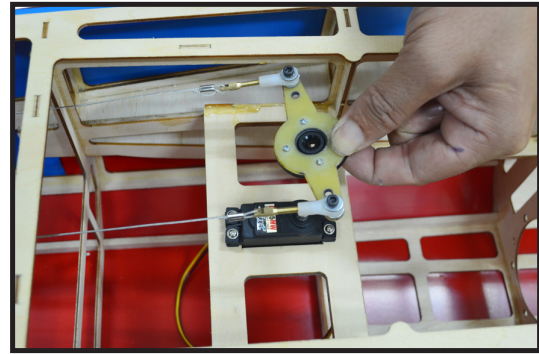
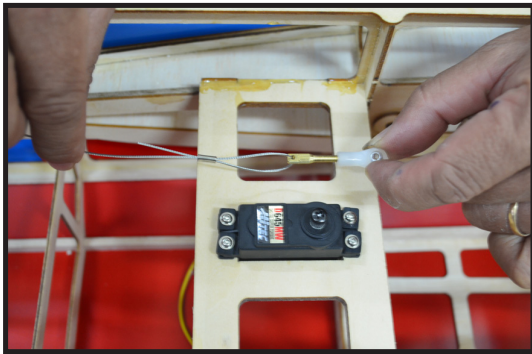
9) Thread cable through brass swage tube.



10) Thread cable through the threaded coupler hole, and back through the brass swage tube as shown.

11) Loop the cable back through the brass swage tube and pull tight.





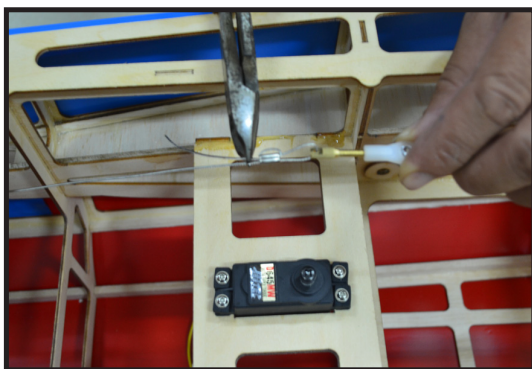
12) Crimp the brass swage tube with a crimping tool or pliers.

**NOTE :** *Cable is installed crossed "X", not parallel.*

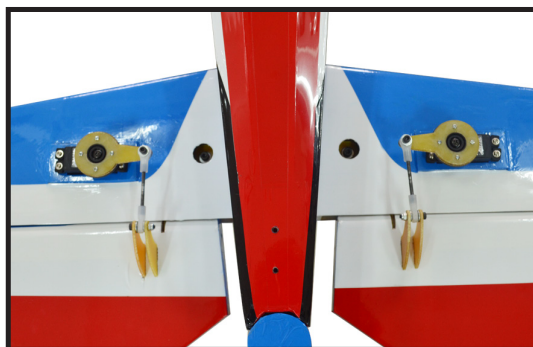
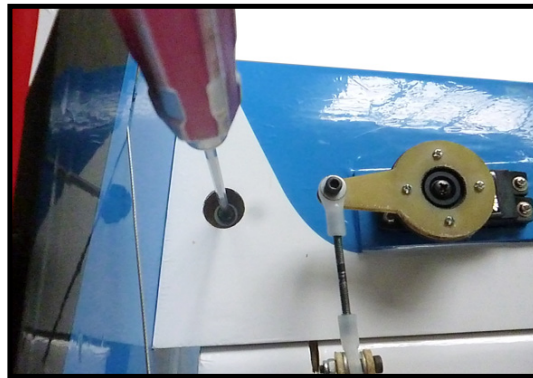
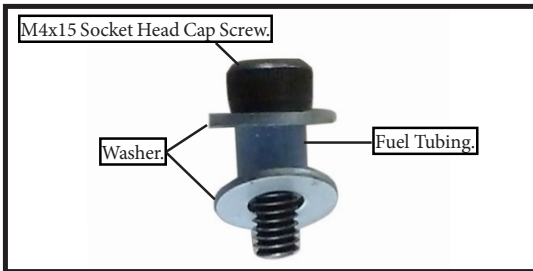
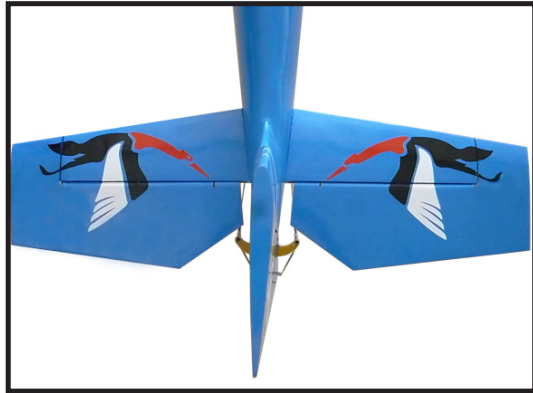
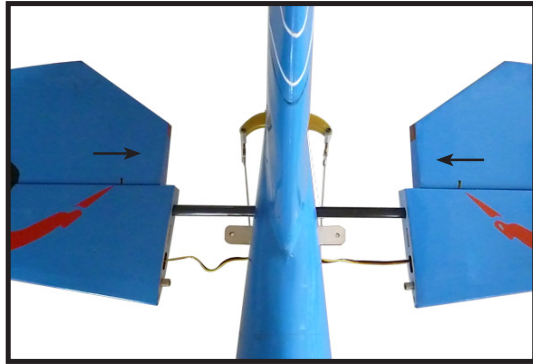


15) Attach the aluminum tube to combine two elevator as below pictures.

13) Cut off excess cable as shown.

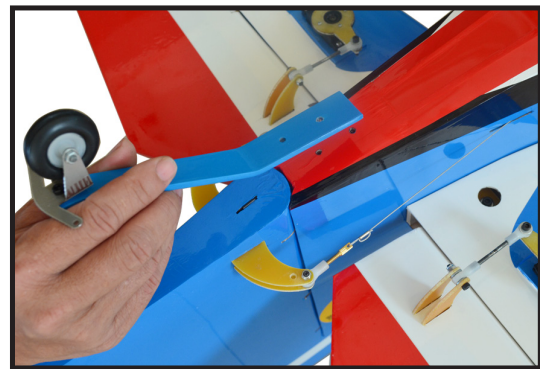
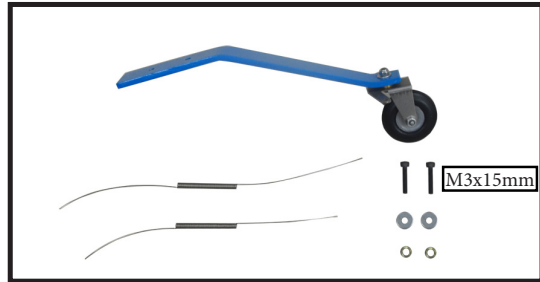


14) Attach ball links to the rudder servo arm and then attach the servo arm to the rudder servo as shown.

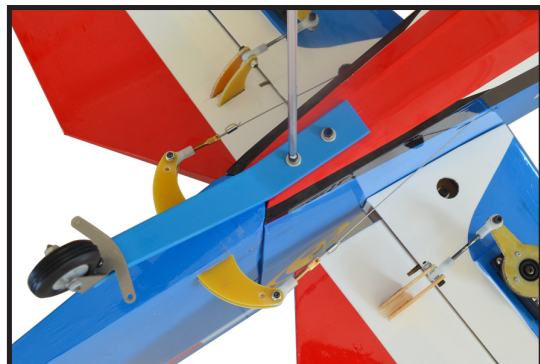
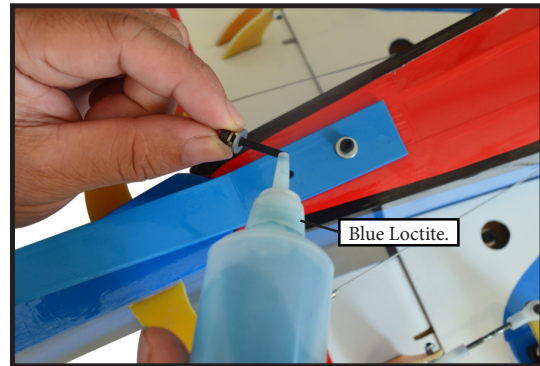


**TAILWHEEL INSTALLATION.**

Locate items necessary to install tail-wheel.

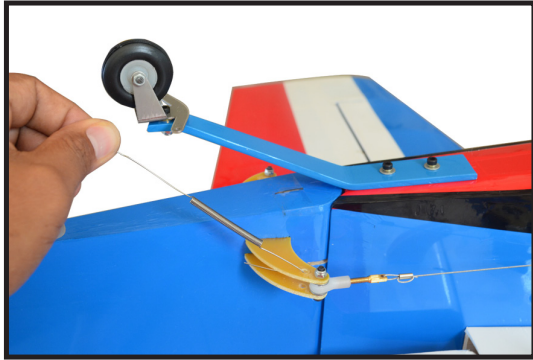


Place a drop of Blue Loctite on tail wheel strut mounting screws.

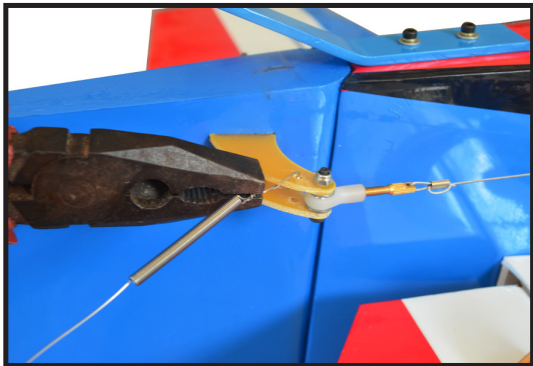




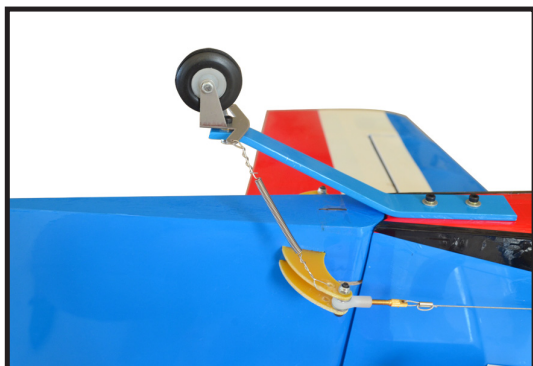
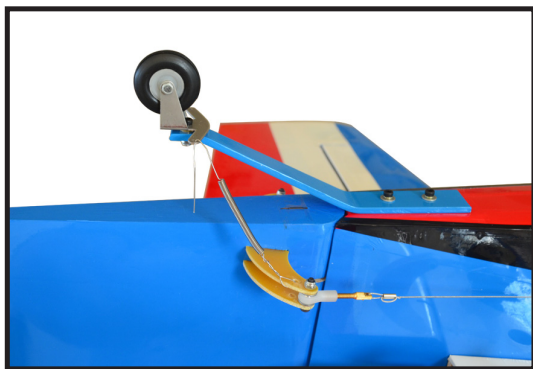
Attach the steering spring to the rudder control horn.



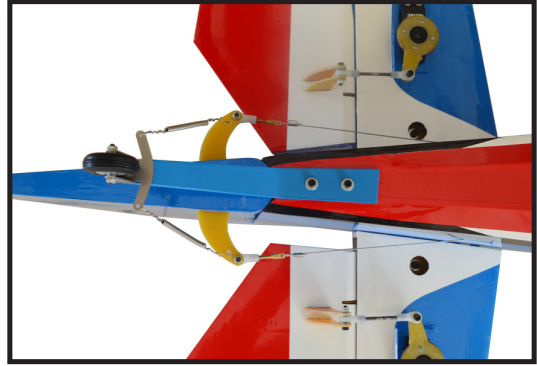
Use pliers to twist spring end closed around rudder control horn.



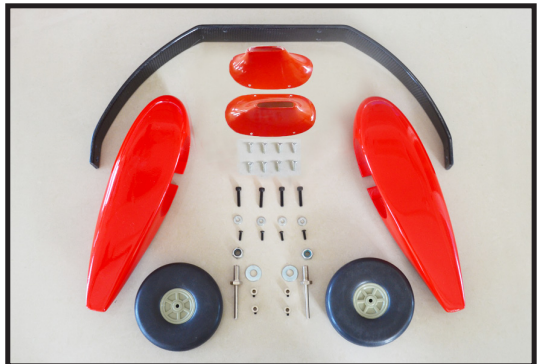
Do same for attachment the steering spring to the rudder tiller.



Repeat spring installation for other side.



### INSTALLING THE MAIN LANDING GEAR TO FUSELAGE.

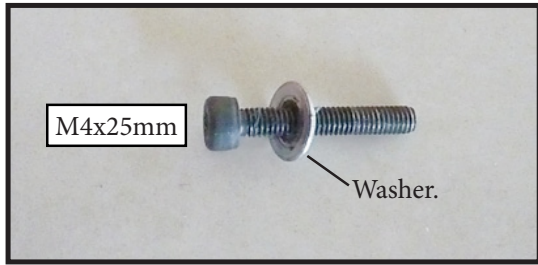


1) The blind nuts for securing the landing gear are already mounted inside the fuselage.

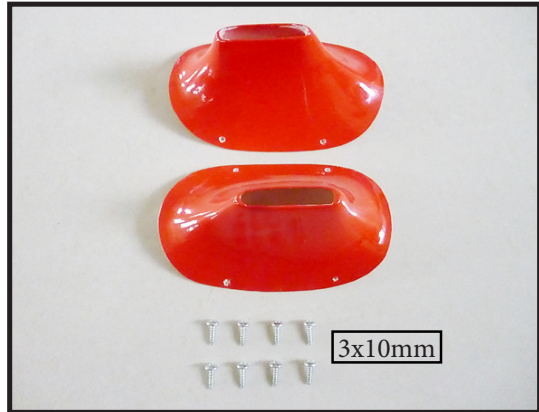
2) Using the hardware provided, mount the main landing gear to the fuselage.

3) Place the fuselage inverted on the workbench in a suitable stand. Set the landing gear in place and use a screwdriver to secure the landing gear to the fuselage using bolts M4x25mm and washers. Make sure to use the threadlock on the bolts so they don't vibrate loose.



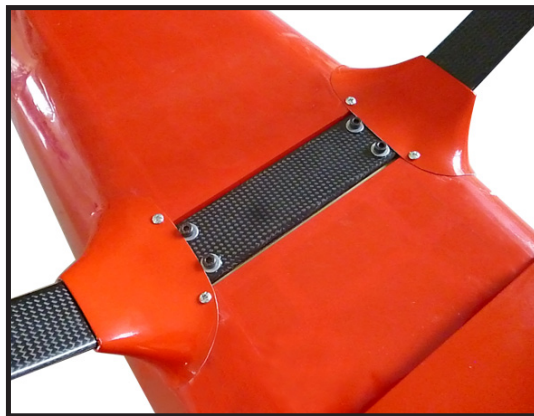
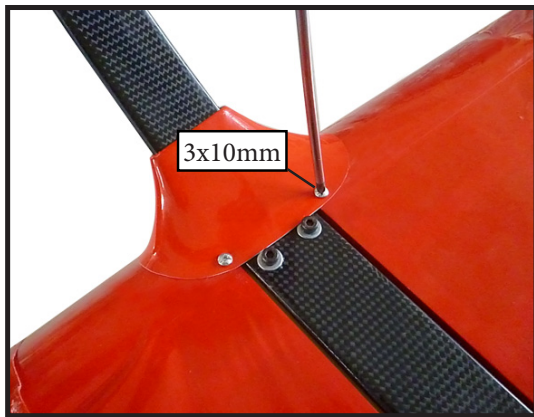
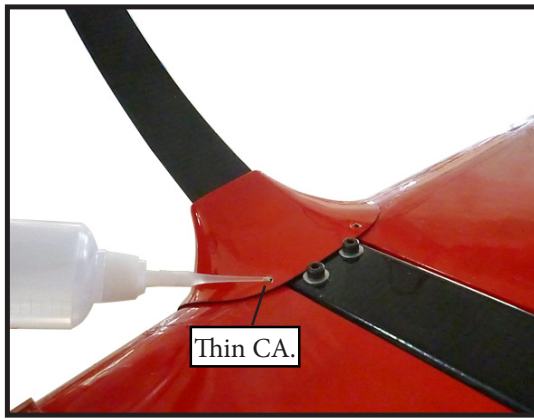


Install gear cover into landing gear.

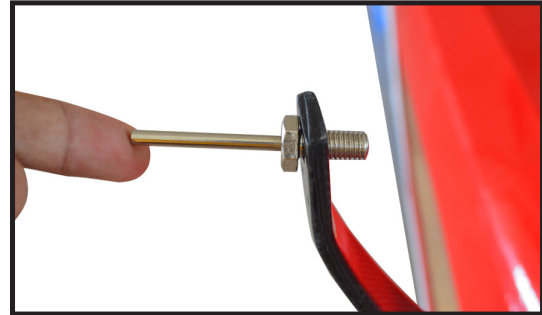


Use lock nut to secure landing gear tighten into fuselage.

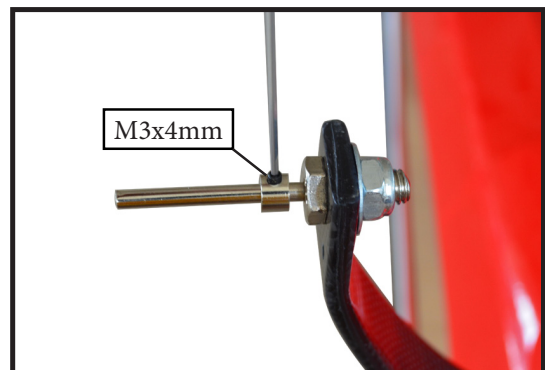




Using locknut install axle to gear.

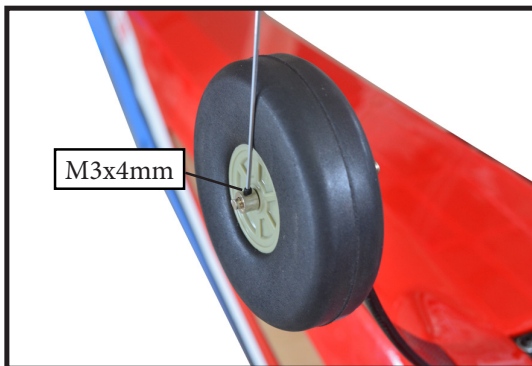


Align the wheel pant slot over the axle bolt as shown. Slide the wheel pant slot over the flat sides of the axle bolt and align blind nuts in wheel pants with mounting holes in landing gear. When all bolt holes are aligned tighten axle in place.

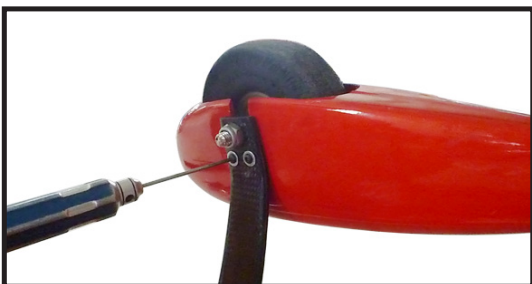
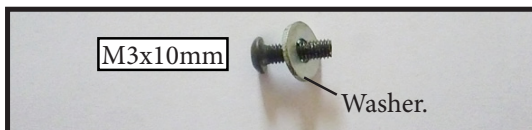




Install the wheel and outer wheel collar.  
Use blue Loctite on the wheel collar set screw before final tightening

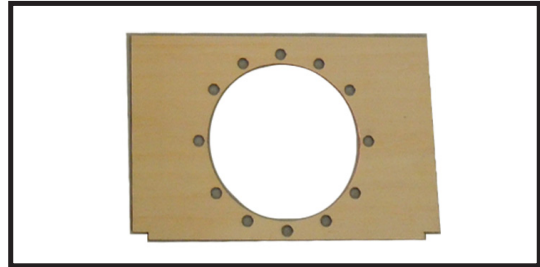


Use blue Loctite on the bolts before final tightening.



## MOUNTING THE ENGINE.

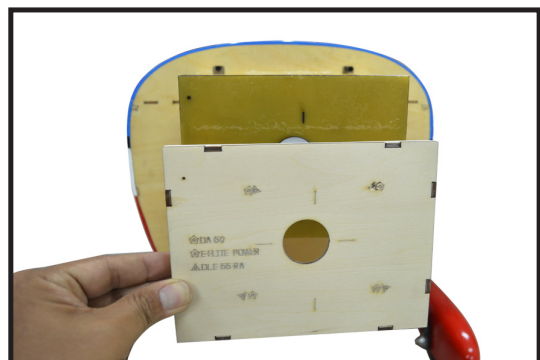
**NOTE :** It's the canister mount which is used to assemble the canister exhaust system. It's only for extra reference purpose for your model.



Locate the laser cut engine mounting template.

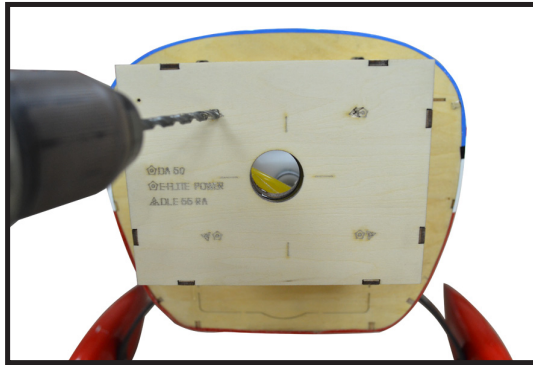


Align mounting template to front of firewall.

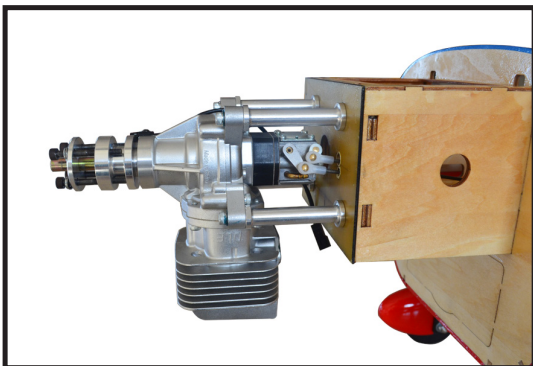
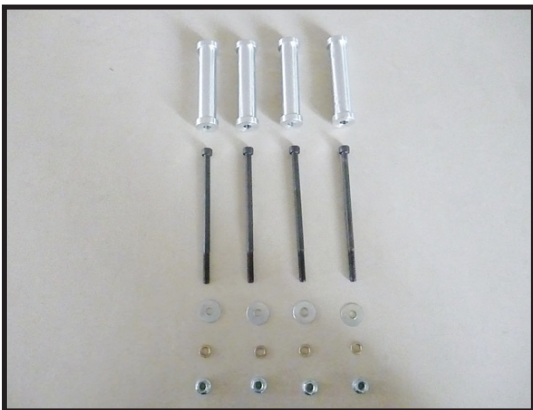
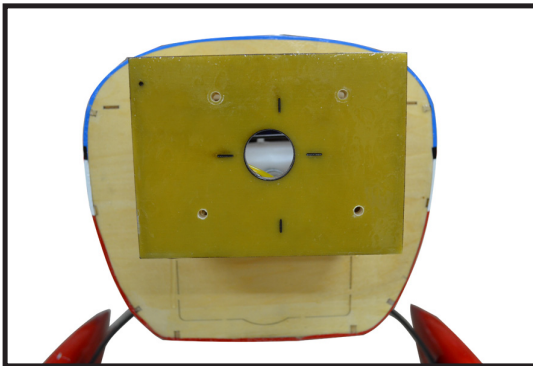




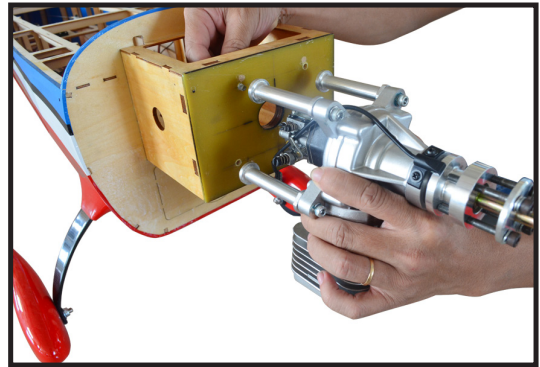
Use a 1/4 bit to drill the engine mounting holes



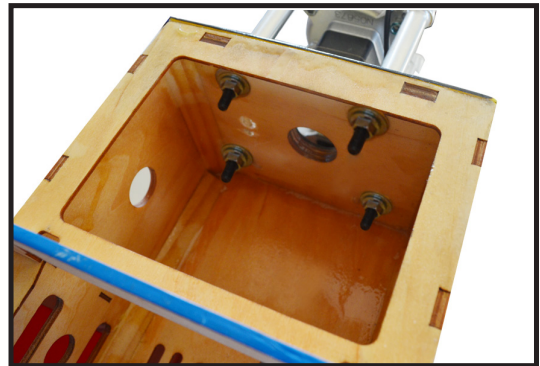
Remove mounting template from firewall. Firewall shown with mounting holes drilled ready for engine mounting.



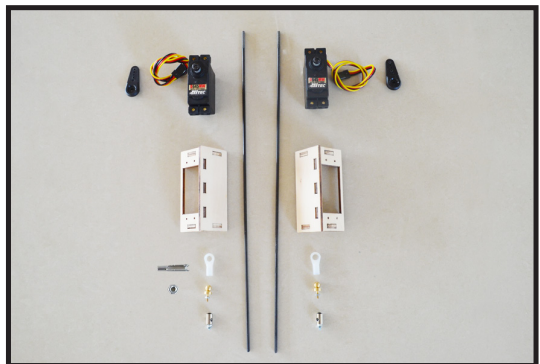
Using mounting bolts and washers mount engine to firewall.



Tighten mounting bolts and secure engine to firewall.

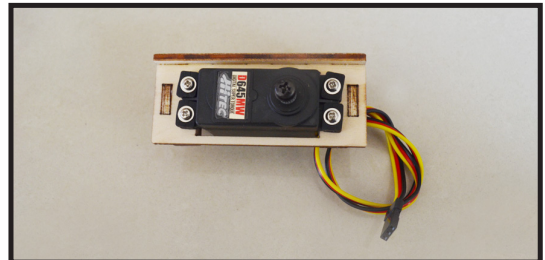
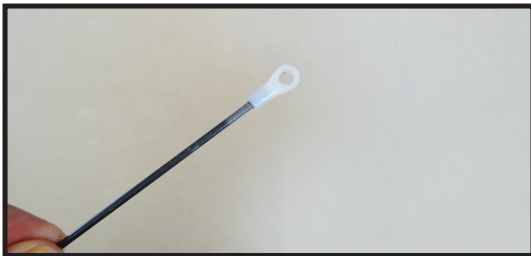
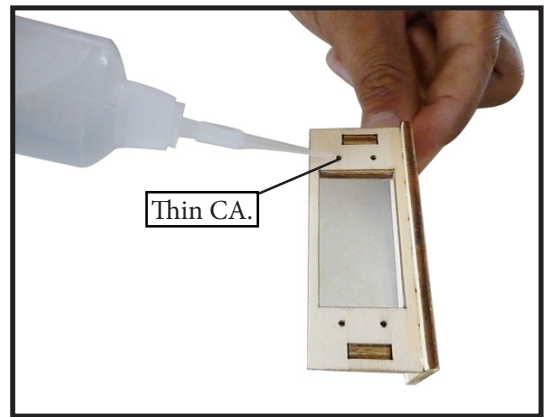
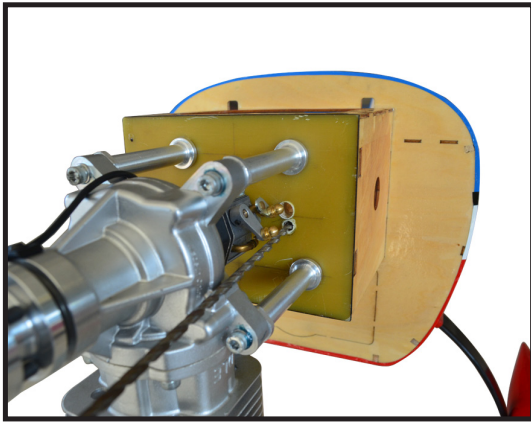


## THROTTLE SERVO INSTALLATION.

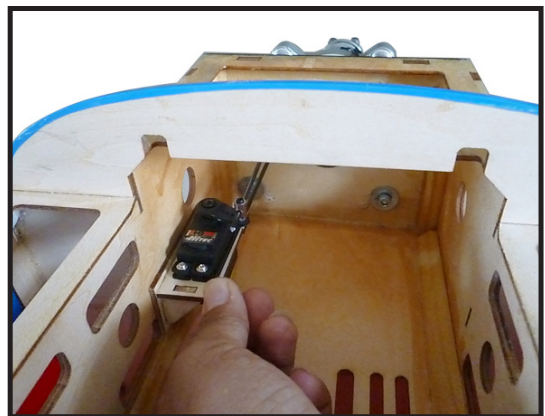
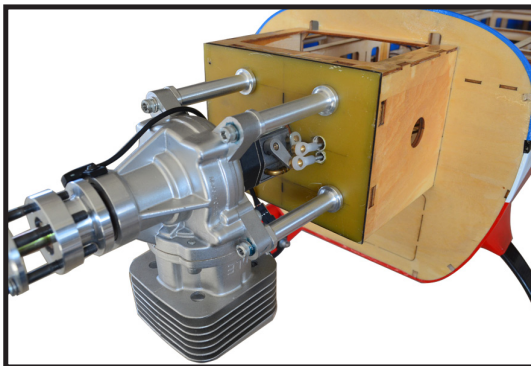


1) Use a 1/4" bit to drill a pushrod exit hole in the firewall in line with the engine carburetor throttle arm.

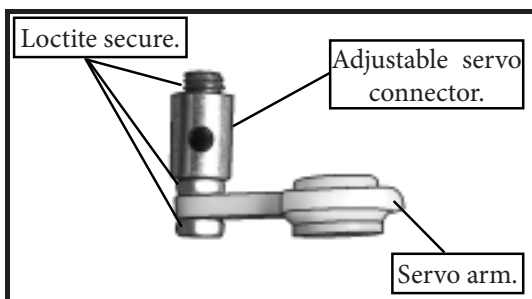
2) Assemble ball link to threaded end of pushrod.



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



4) Install adjustable servo connector in the servo arm as same as picture below:



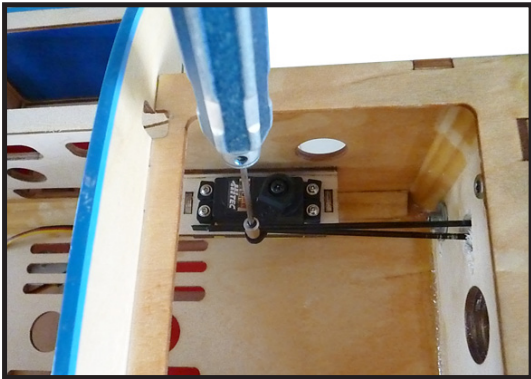
5) Install throttle servo into servo mounting tray.

6) Reinstall the servo horn by sliding the connector over the pushrod wire. Center the throttle stick and trim and install the servo horn perpendicular to the servo center line.



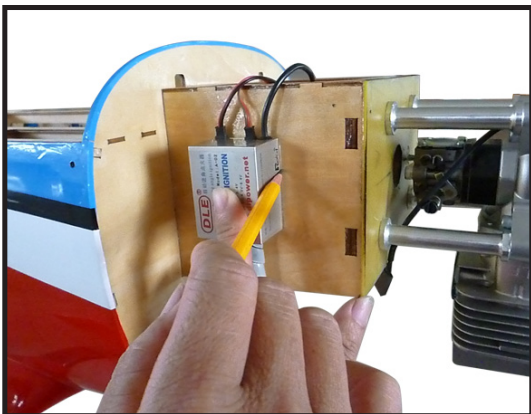


7) Move the throttle stick to the closed position and move the carburetor to closed. Use a 2.5mm hex wrench to tighten the screw that secures the throttle pushrod wire. Make sure to use threadlock on the screw so it does not vibrate loose.

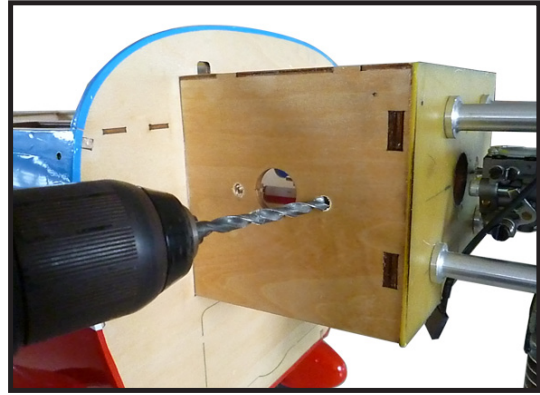


## IGNITION INSTALLATION.

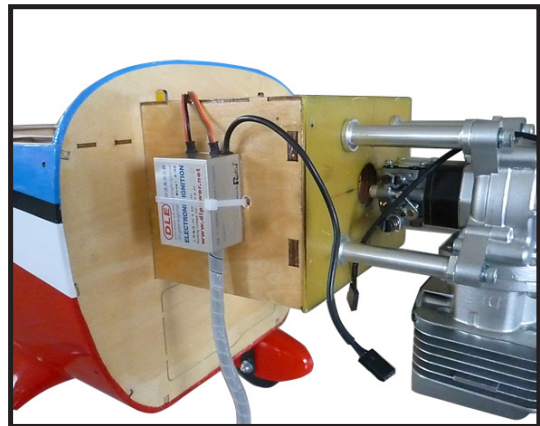
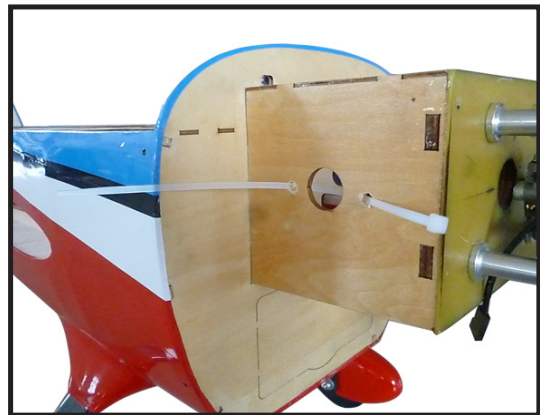
1) Position the ignition module on the side of the engine mounting box and mark the location of the nylon tie holes as shown.



2) Use a 1/8" bit to drill the ignition module mounting holes.



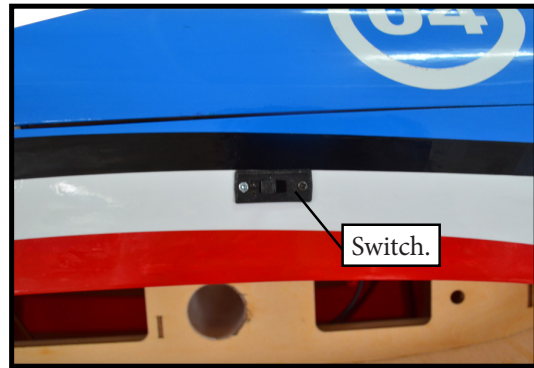
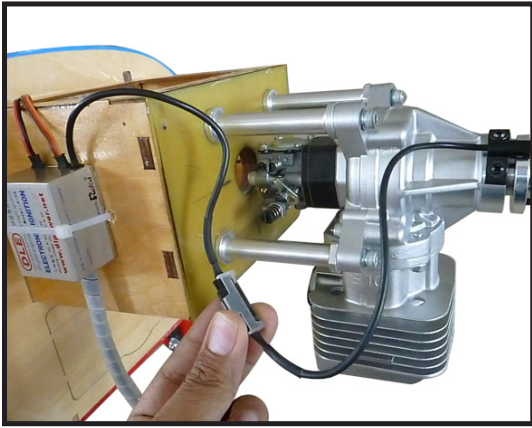
3) Thread nylon tie through mounting holes.



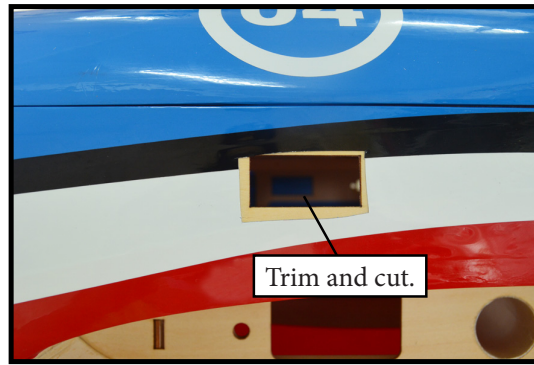
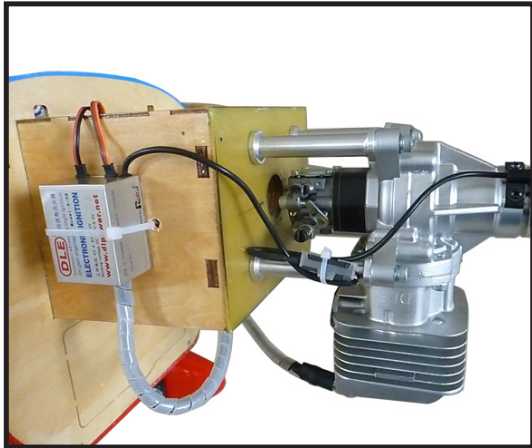
4) Connect ignition module to pickup line of engine. Secure with Safety Clip, safety wire, tape or other method. Ensure the plugs will not come apart from vibration or light tension.

5) Secure ignition wire with nylon ties as necessary.



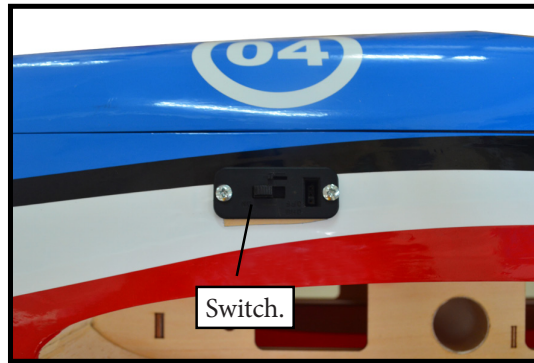


**INSTALLING THE ENGINE SWITCH.**

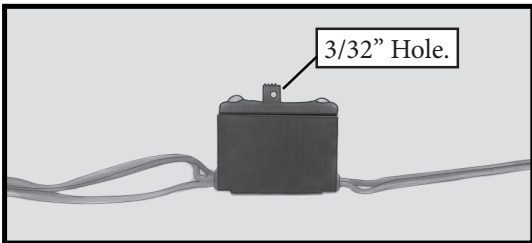


**INSTALLING THE RECEIVER SWITCH.**

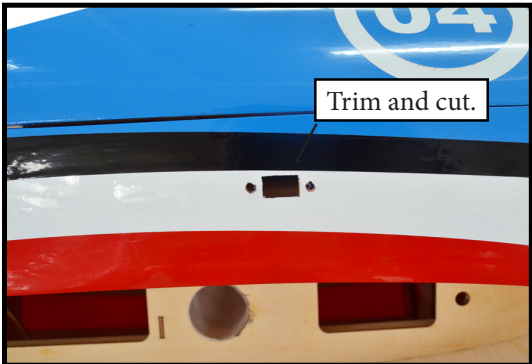
Install the switch into the precut hole in the side, in the fuselage.

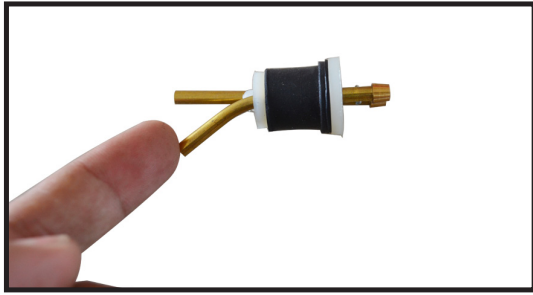


**FUEL TANK ASSEMBLY.**

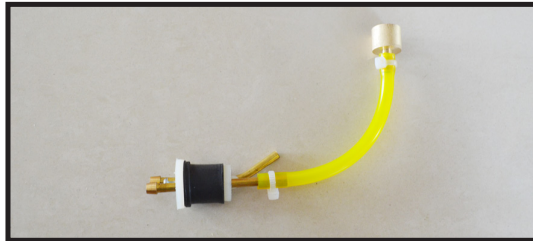


Please see below pictures.





1) Install the fuel tubing and clunk. Secure the fuel tubing with nylon ties to the pick-up tube and clunk.



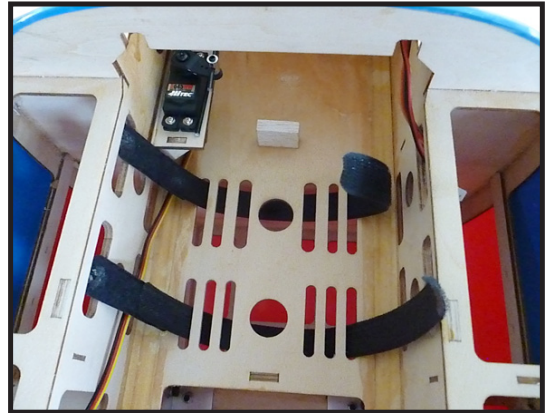
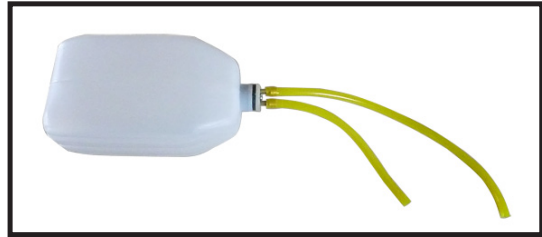
2) Insert the rubber stopper assembly into the tank with the vent tube at the top of the tank.



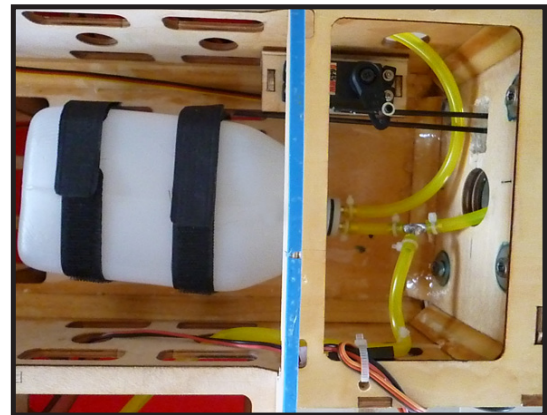
3) Secure the rubber stopper with set screw. Take care not to strip threads by over tightening set screw.



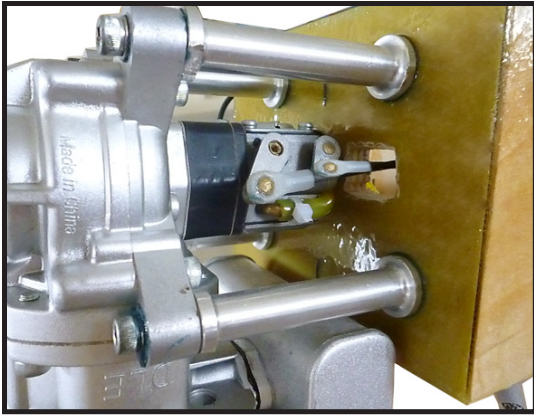
## FUEL TANK INSTALLATION.



Slide the fuel tank into the fuselage. Use the T-fitting from the fuel dot to connect lines from the clunk to the carburetor. Secure all connections using tie wraps.

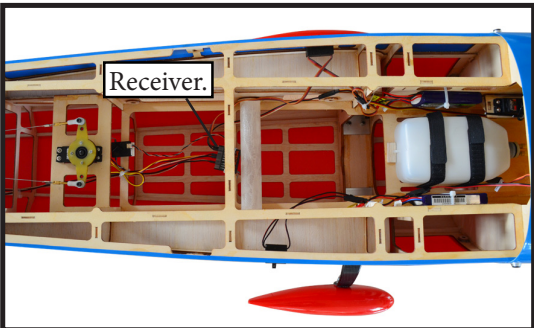
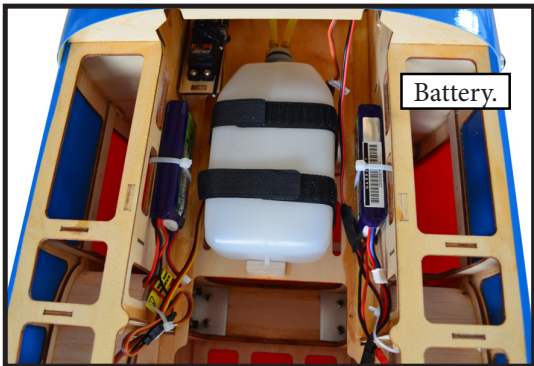




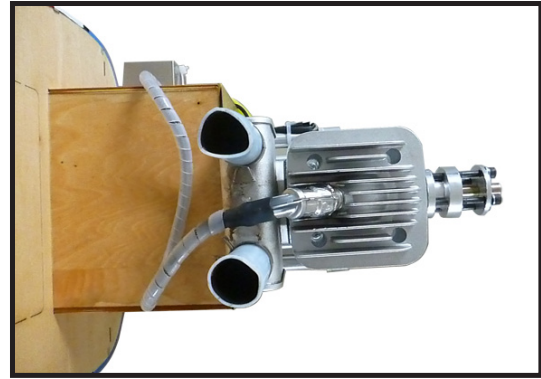
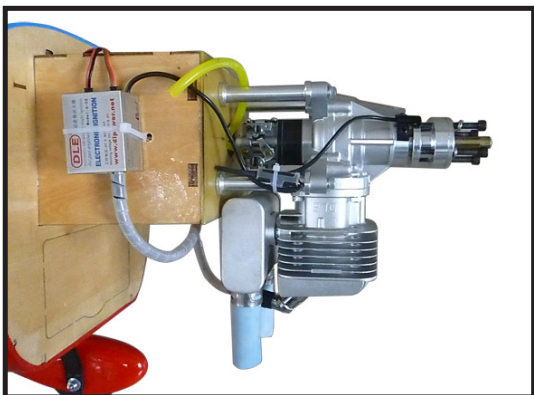


### BATTERY & RECEIVER.

Install battery using nylon ties and receiver as shown.

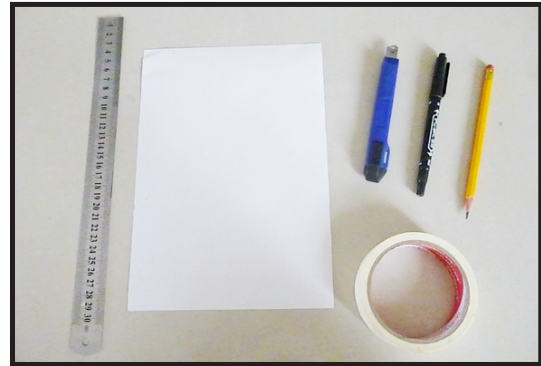


### MUFFLER INSTALLATION.

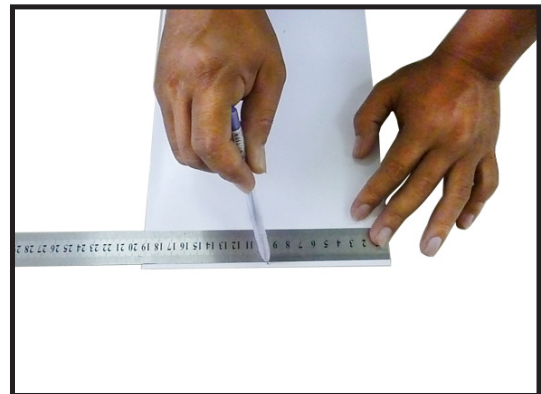


### COWLING.

1) Gather the materials as shown below.



2) Measure and mark the center of the template material as shown.



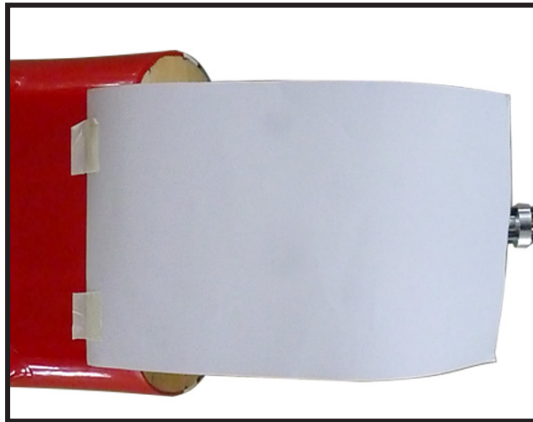
3) Measure and mark the center of the bottom of the fuselage as shown. Mount cowling to fuse and transfer center line on fuse to bottom of cowl.

**Note:** You will use this center mark during a later step when aligning template with cowl.



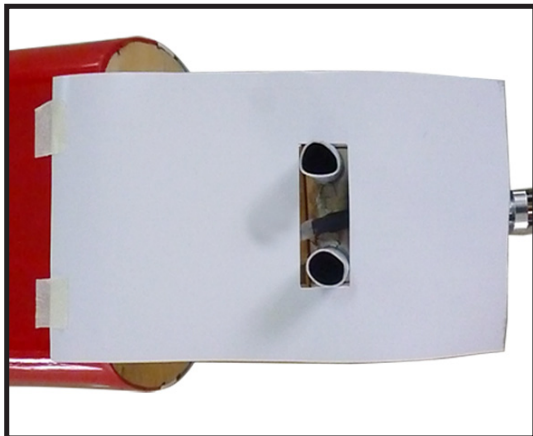


4) Aligning center lines of template and fuse. Tape the template to the bottom of the fuse with the back edge of the template flush against the aft edge of the recessed cowl mounting ring.

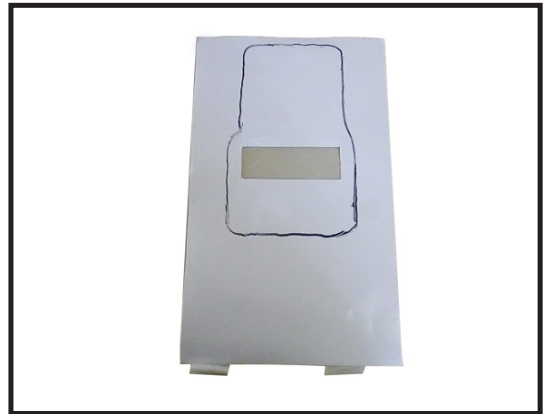
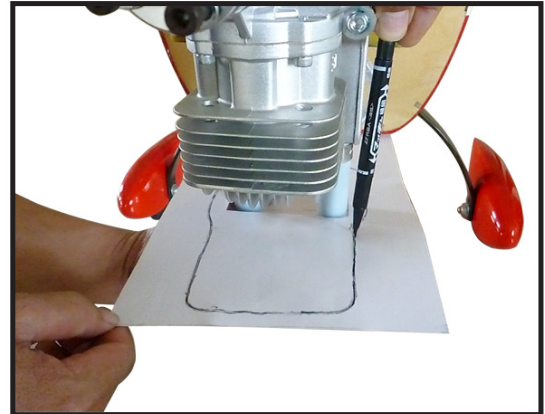


5) Using a hobby knife roughly cut a hole for the muffler exhaust stacks to pass through.

**Note:** This will allow you to pull the template up next the engine cylinder head.



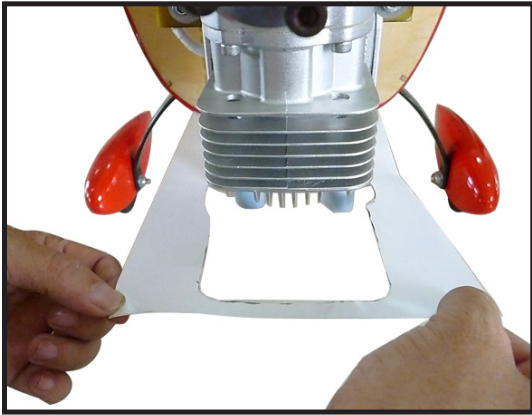
6) Trace around the head of the engine being careful to keep the template in the same location.



7) Use a hobby knife to cut out the hot air exit opening as shown.



8) Check the fit of the template at this time. It may be necessary to make small adjustments to the cutout to get it to fit properly.



9) Fit template flush with rear of cowl and align center marks of template and cowl. Tape template to the bottom of cowl. Use a felt tip marker to transfer the template cutout pattern to the cowl and mark cut location.



10) The cowl should be marked as shown. Be sure to mark all of the lines clearly and carefully to aid in cutting.



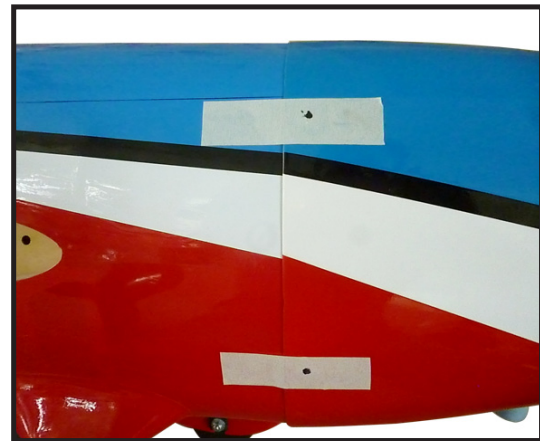
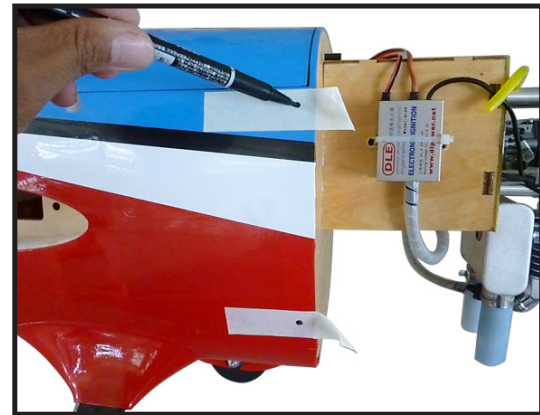
11) Remove the template and use a rotary cutting tool and sanding drum to cut out the openings in the cowl.

**Note:** Take care not to cut or scratch the cowl.

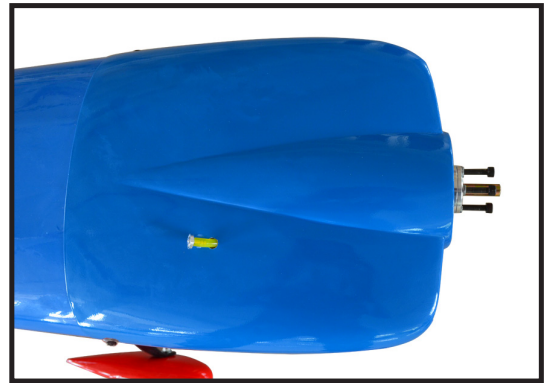
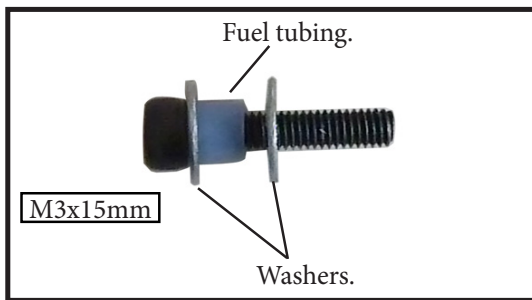
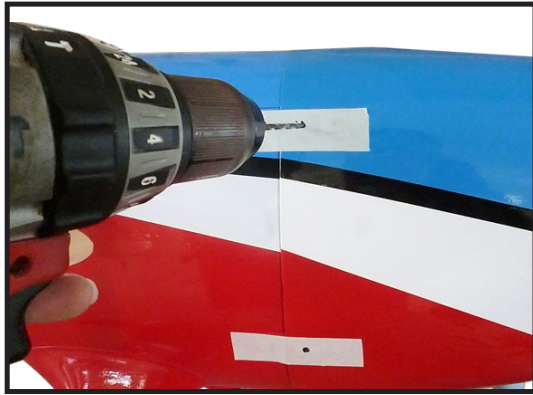


12) Install the cowl and check that everything fits correctly and does not come in contact with the cowl. If needed enlarge the cutouts and test fit again until everything fits correctly.

13) Mark and tape the cowl to the fuselage using low-tack tape.

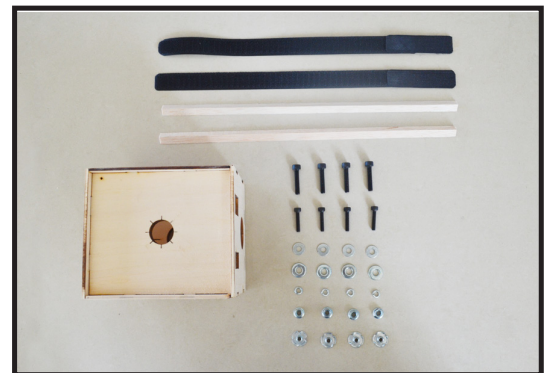


14) Mark by using a drill to drill the holes for the cowl mounting screws. Then, take cowling out of and drill on it. Make sure the cowl position is correct before drilling each hole.



### ELECTRIC POWER CONVERSION.

1) Locate the items necessary to install the electric power conversion included with your model.

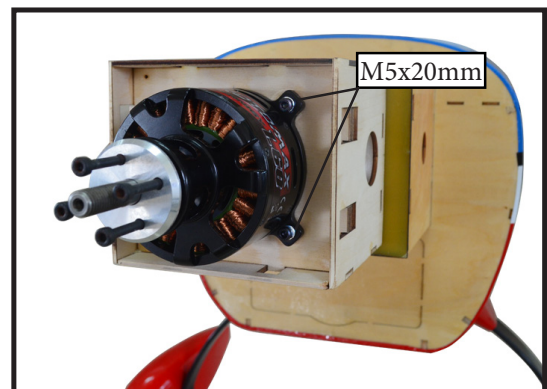
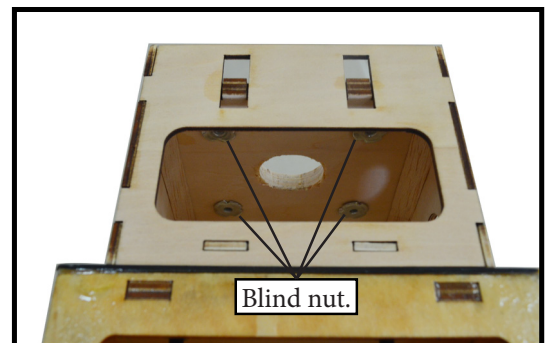
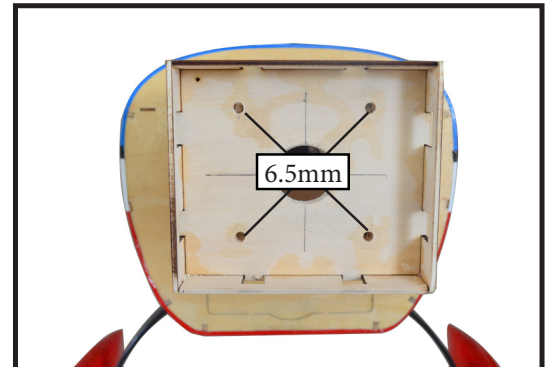
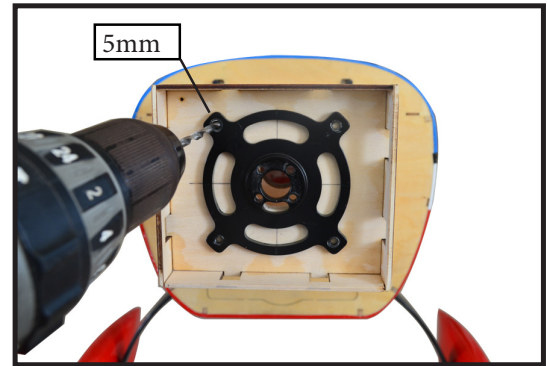
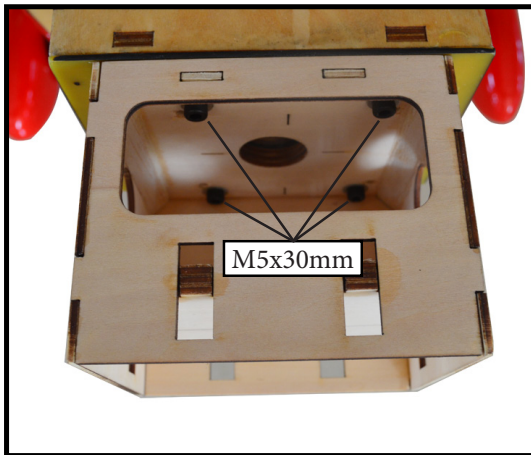
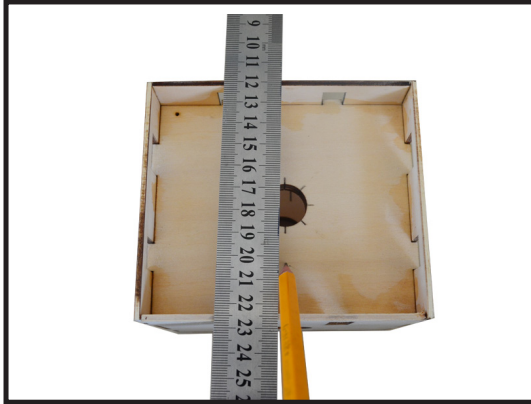


2) Recommend the items necessary to install the electric power conversion parts included with your model.

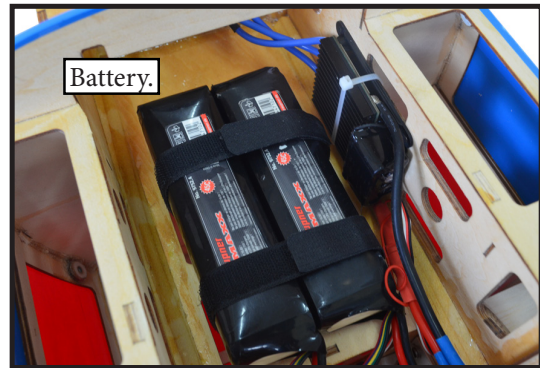
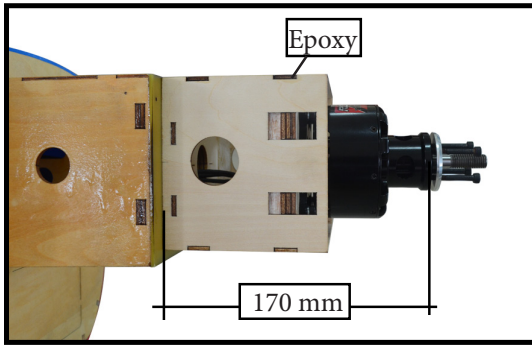
- Motor 360 - 6000 Watt
- Propeller: 24x10 ~ 25x12
- ESC: 160A- 200A
- 12S Lipo



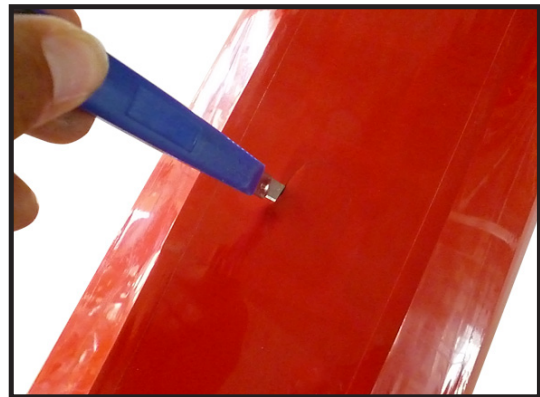
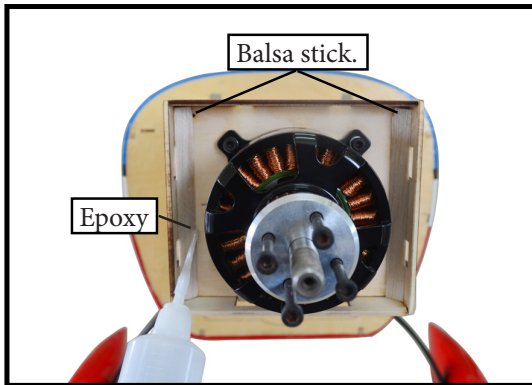
3) Attach the electric motor box to the firewall suitable with the cross lines drawn on the electric motor box and firewall. Using epoxy and balsa stick to secure the motor box to the firewall. Please see pictures below.



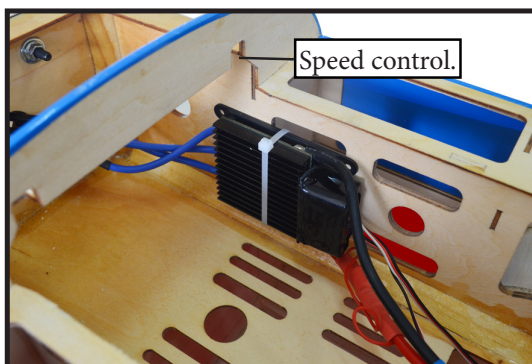
4) Attach the motor to the front of the electric motor box using four 4mm blind nut, four M5x20mm hex head bolts to secure the motor. Please see picture shown.



*Open the air exit hole as shown.*

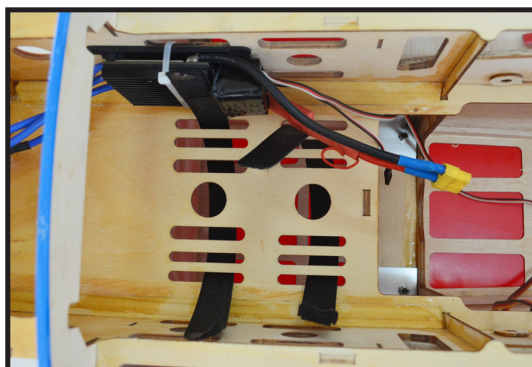


5) Attach the speed control to the side of the motor box using two-sided tape and tie wraps. Connect the appropriate leads from the speed control to the motor. Make sure the leads will not interfere with the operation of the motor.




**INSTALLING THE SPINNER.**

Install the spinner backplate, propeller and spinner cone.



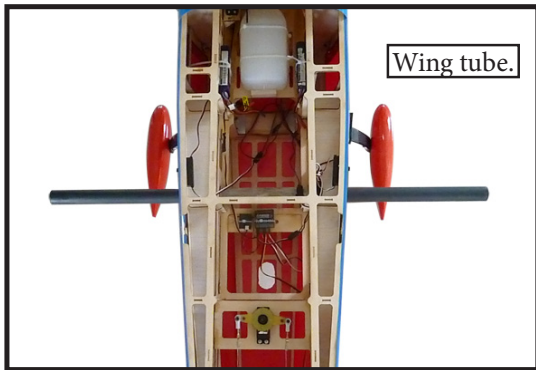


 The propeller should not touch any part of the spinner cone. If it does, use a sharp modeling knife and carefully trim away the spinner cone where the propeller comes in contact with it.

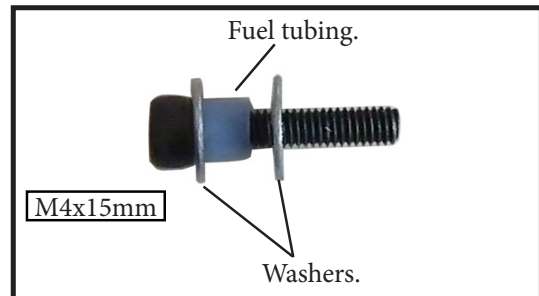
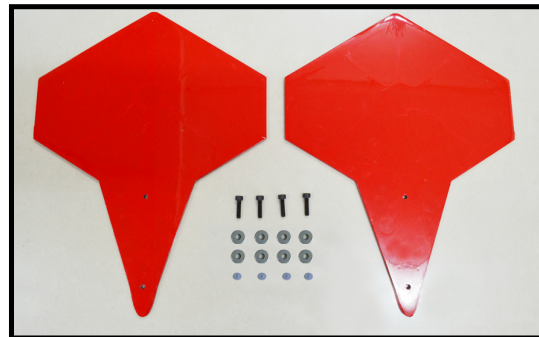
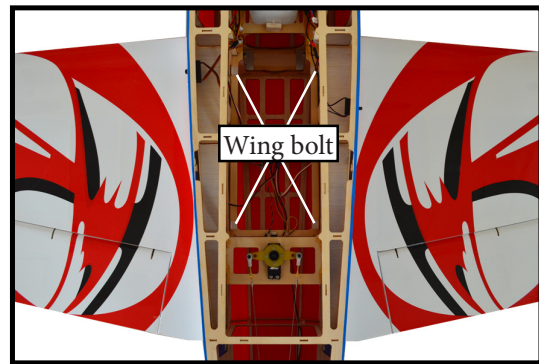
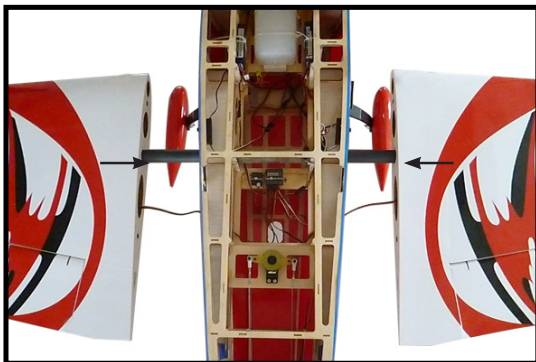


**ATTACHMENT WING- FUSELAGE.**

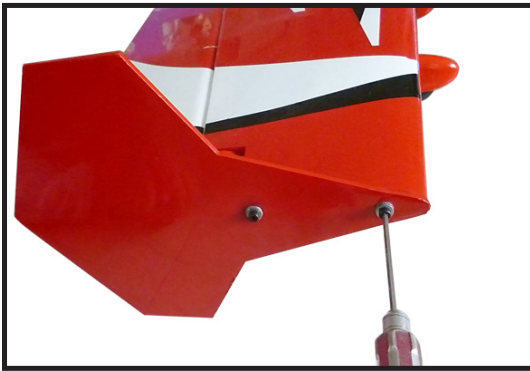
Attach the aluminum tube into fuselage.



Insert two wing panels as pictures below.

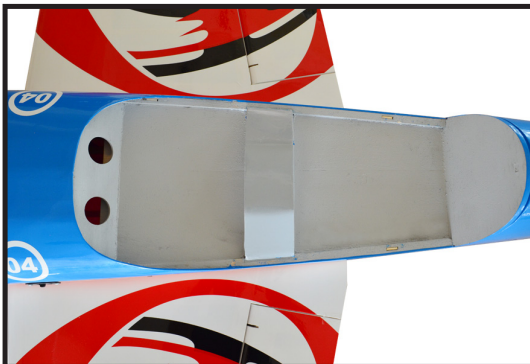






**INSTALLATION PILOT , PANEL AND WINDSHIELD.**

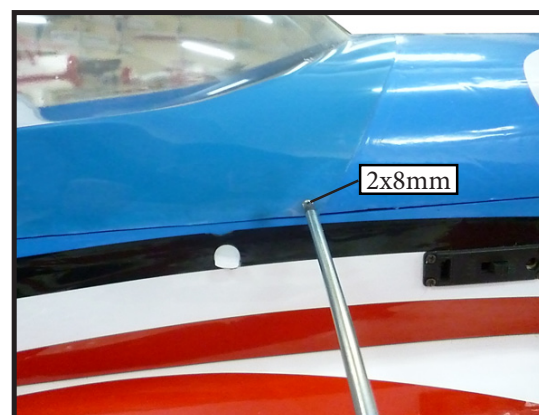
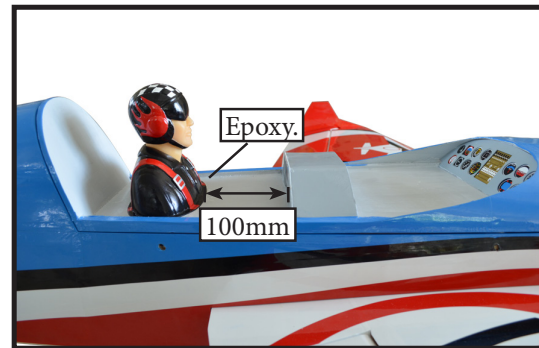
1) Locate items necessary to install pilot , the panel and windshield.



2) A scale pilot is included with this ARF. The Pilot included fits well in 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.

3) Position the pilot figure on the cockpit floor as shown. Use epoxy to glue the base of the pilot figure, please see pictures as shown.





### APPLY THE DECALS.

1) 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.

2) 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.

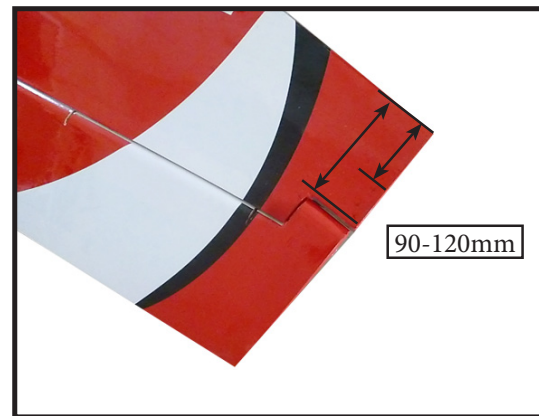
### BALANCING.

An important part of preparing the aircraft for flight is properly balancing the model.

1. Attach the wing panels to the fuselage. Make sure to connect the leads from the aileron to the appropriate leads from the receiver. Make sure the leads are not exposed outside the fuselage before tightening the wing bolts. Your model should be flight-ready before balancing.

2. The recommended Center of Gravity (CG) location for your model is **90-120mm** back from the leading edge at the wing as shown. Mark the location of the CG on the top of the wing at the wing tip.

3. When balancing your model, make sure it is assembled and ready for flight. Using an assistant, lift the model at the locations marked in the previous step. This is the correct balance point for your model.



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**CONTROL THROWS.**

**Aileron (high rate):**

**55% exponential**

Up: 42.0 Degrees

Down: 41.0 Degrees

**Aileron (normal rate):**

**40% exponential**

Up: 25.5 Degrees

Down: 25.0 Degrees

**Elevator (high rate):**

**70% exponential**

Up: 51.0 Degrees

Down: 51.0 Degrees

**Elevator (normal rate):**

**40% exponential**

Up: 12.5 Degrees

Down 12.5 Degrees

**Rudder (high rate):**

**45% exponential**

Right: 47.0 Degrees

Left: 47.0 Degrees

**Rudder (normal rate):**

**40% exponential**

Right: 24.0 Degrees

Left: 24.0 Degrees



**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 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 EXTRA 330LX 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 EXTRA 330LX.*