

WESTLAND

LYSANDER MK.III 55cc

“ Graphics and specifications may change without notice “.

Code : SEA216



Specifications:

Wingspan-----118 in (299.7 cm).
Wing area-----1471 sq.in (94.9 sq.dm).
Weight-----22 lbs (10 kg).
Length-----70.4 in (178.8 cm).
Engine-----33-55cc gasoline - 2 stroke
-----40-60cc - 4 stroke
-----OS & Saito 5 Cylinder Radial
Radio-----6 channels with 8 servos.
Electric conversion: Optional.



INTRODUCTION.

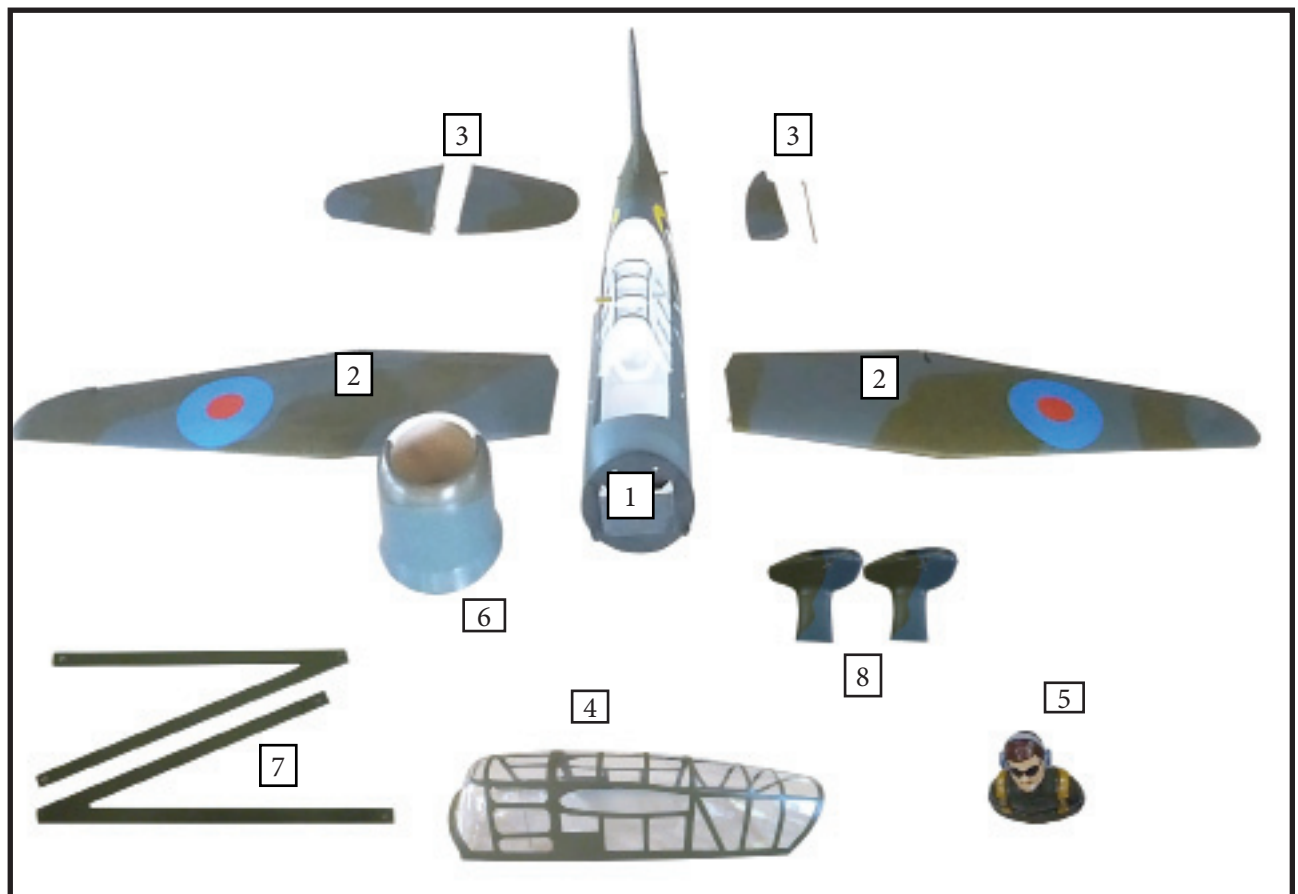
Thank you for choosing the **Westland Lysander** ARF by **SG MODELS** . The **Westland Lysander** was designed with the intermediate/advanced sport flyer in mind. It is a semi scale airplane which is easy to fly and quick to assemble. The airframe is conventionally built using balsa, plywood to make 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 **Westland Lysander** 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 **Westland Lysander** . 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

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SEA216 Westland Lysander *MK III* 55cc
SEA21601 Fuselage
SEA21602 Wing set
SEA21603 Tail set
SEA21604 Canopy
SEA21605 Pilot
SEA21606 Cowling
SEA21607 Wing struts
SEA21608 Wheel pants

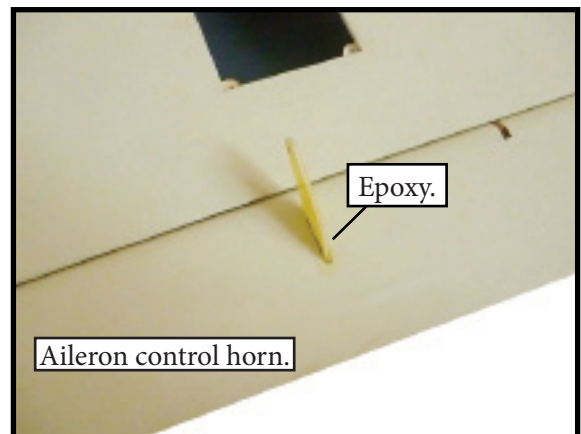
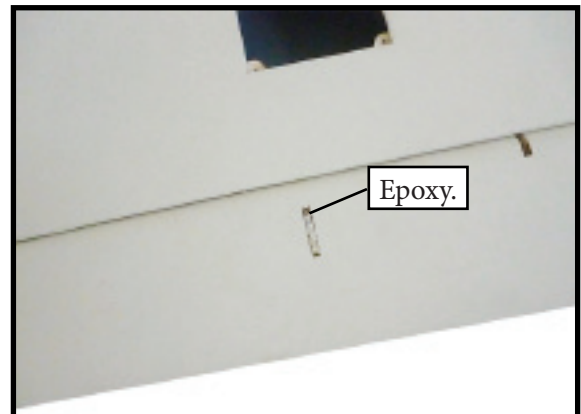
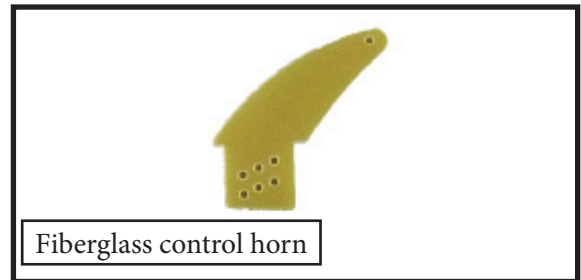
ADDITIONAL ITEMS REQUIRED.

- 33cc-55cc 2 stroke.
- 40cc-60cc 4 stroke
- OS & Saito 5 Cylinder Radial.
- Computer radio with 8 servos.
- Glow plug to suit engine.
- Propeller to suit engine.
- Protective foam rubber for radio system.

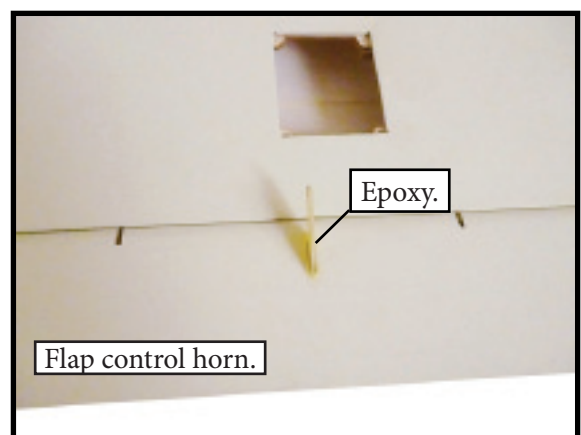
TOOLS & SUPPLIES NEEDED.

- Thick 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.

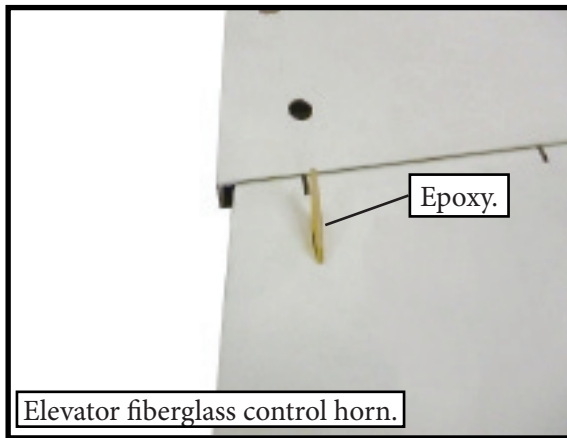
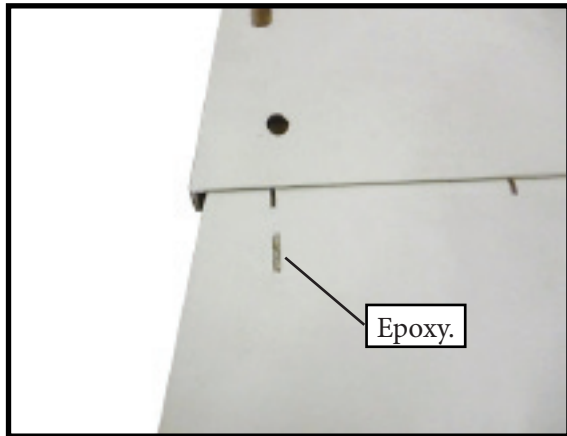
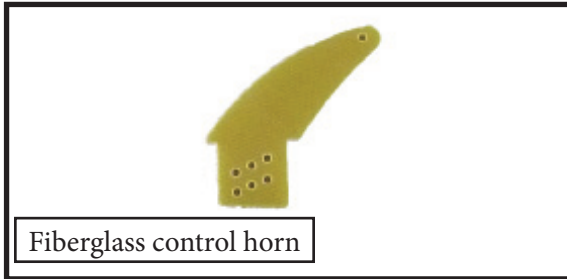
INSTALL THE AILERONS CONTROL HORN.



INSTALL FLAP CONTROL HORN.

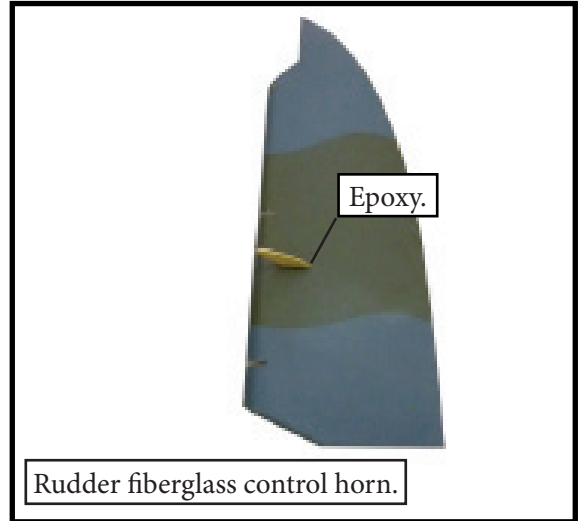
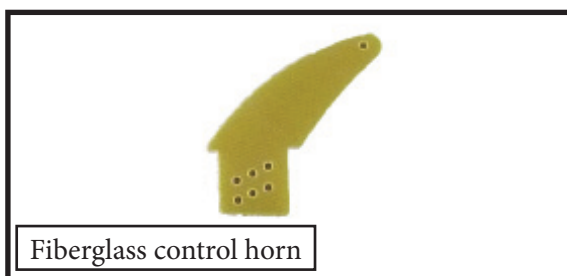


INSTALL ELEVATOR CONTROL HORN.



INSTALL RUDDER CONTROL HORN.

Repeat steps to install the rudder control horn as same as steps done for ailerons.

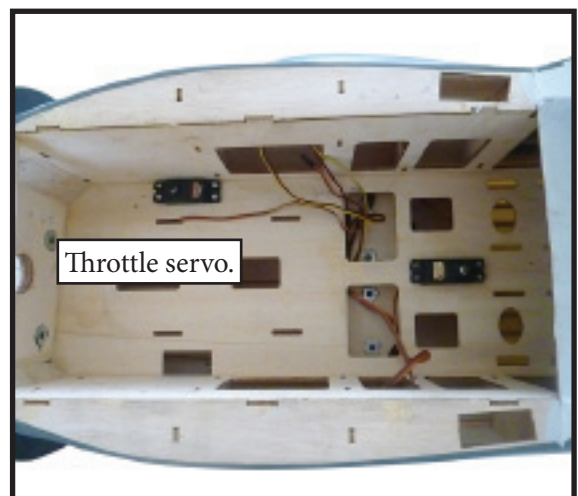


INSTALLING THE FUSELAGE SERVOS.

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

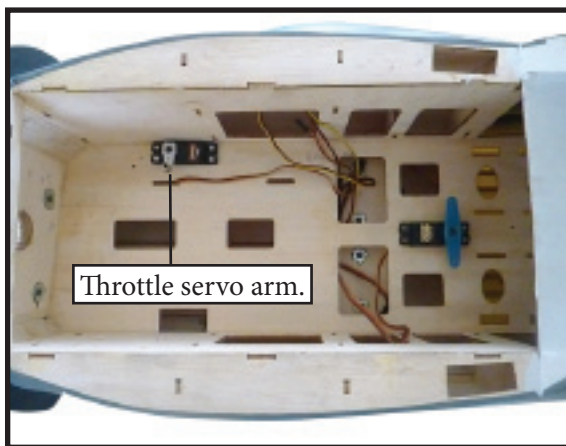
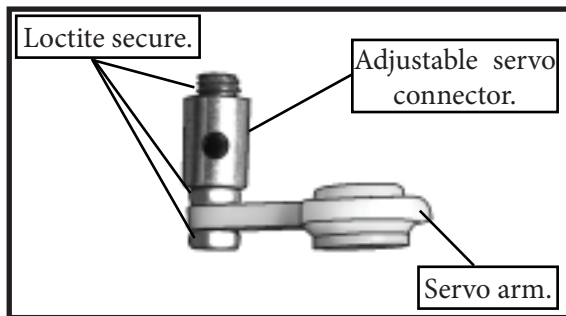
1) Install the rubber grommets and brass collets onto the throttle servo. Test fit the servo into the aileron servo mount.

2) Secure the servos with the screws provided with your radio system.



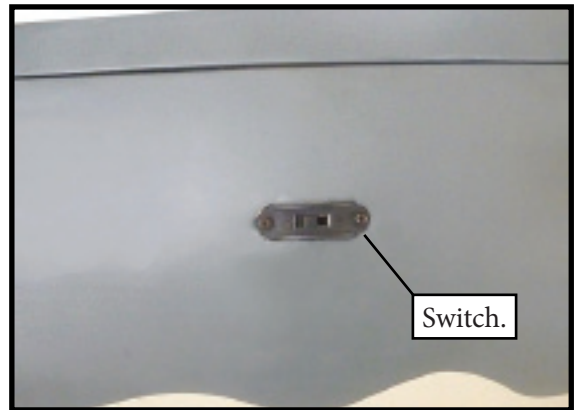
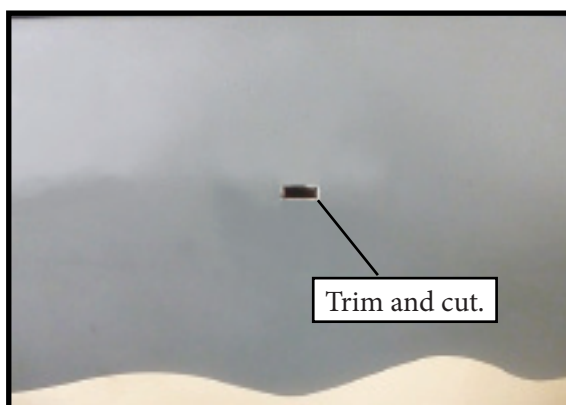
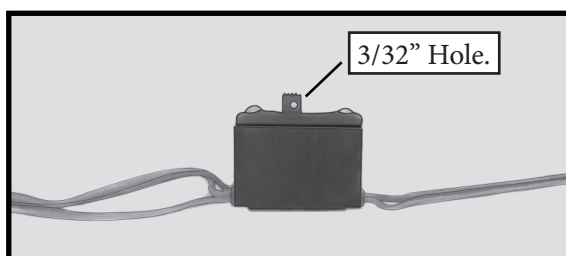
THROTTLE SERVO ARM INSTALLATION.

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

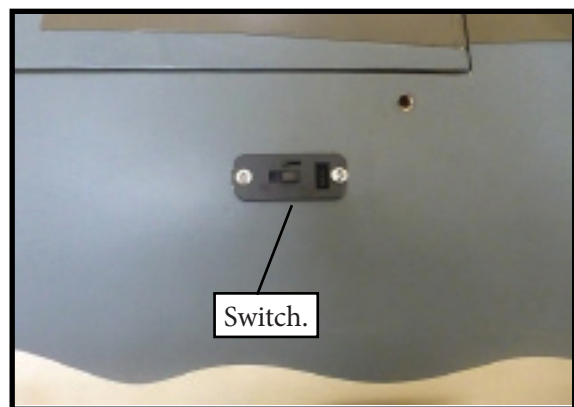


INSTALLING THE RECEIVER SWITCH.

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



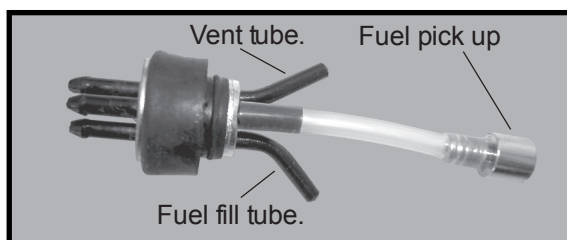
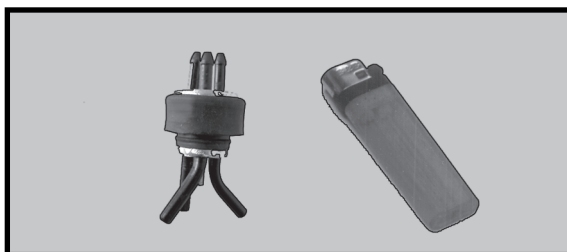
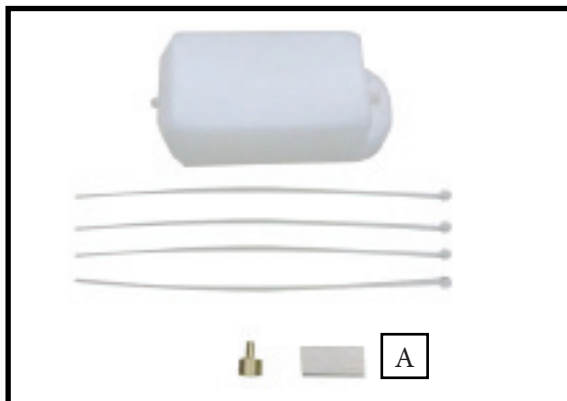
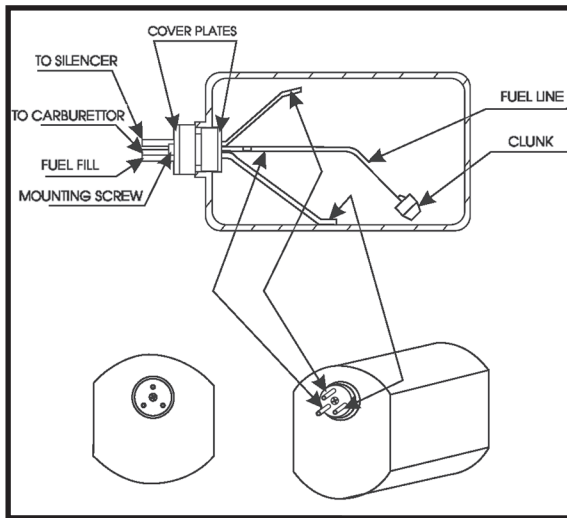
INSTALLING THE ENGINE SWITCH.



INSTALLING THE STOPPER ASSEMBLY.

1) 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.

2) 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.



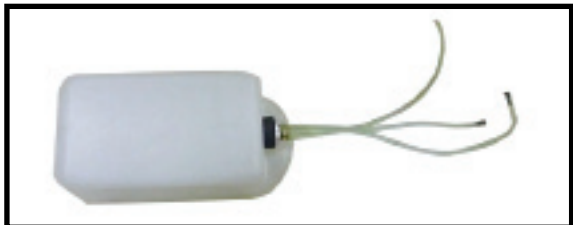
3) Carefully bend the second nylon tube up at a 45° angle. This tube is the vent tube.

4) 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.

5) 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.

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

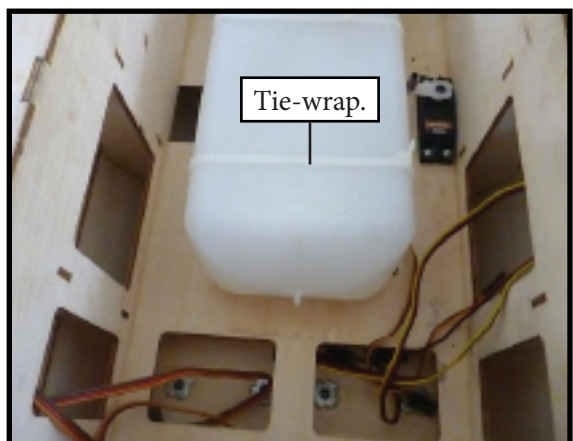
FUEL TANK INSTALLATION.

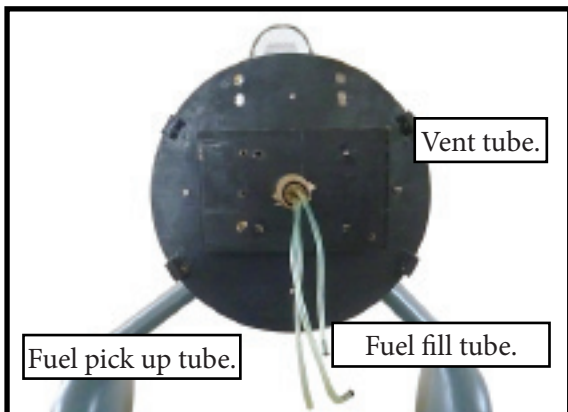
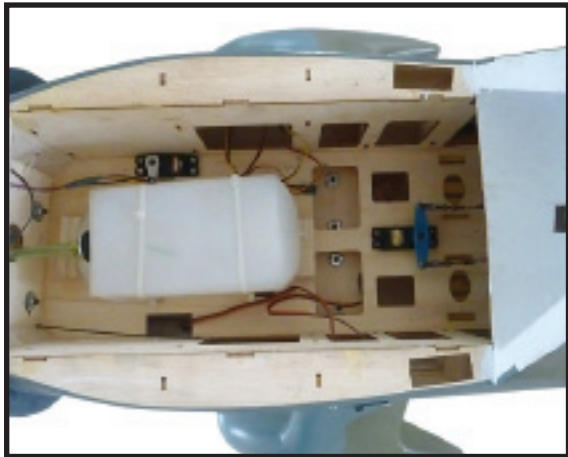
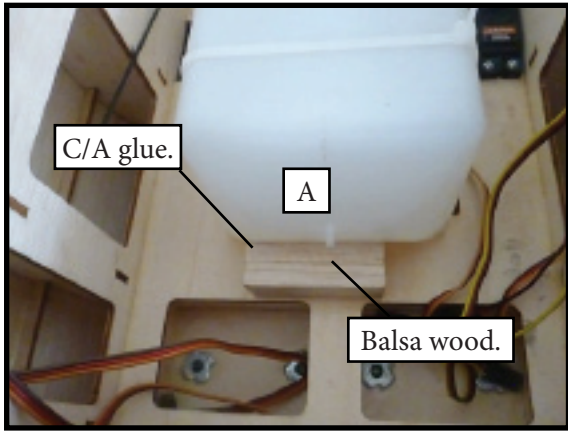


! *You should mark which tube is the vent and which is the fuel pickup when you attach fuel tubing to the tubes in the stopper. Once the tank is installed inside the fuselage, it may be difficult to determine which is which.*

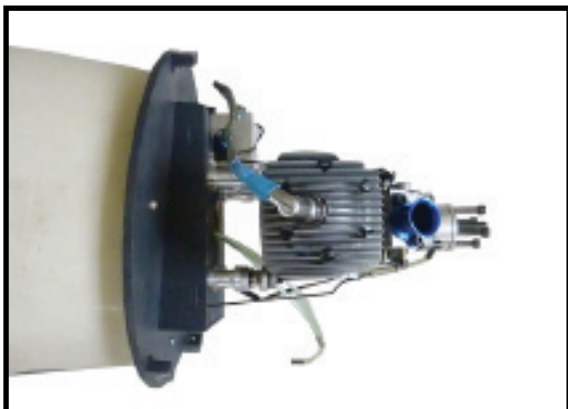
7) Slide the fuel tank into the fuselage. Guide the lines from the tank through the hole in the firewall.


8) Use plywood template to hold in place the fuel tank with C/A glue to secure the fuel tank inside the fuselage.





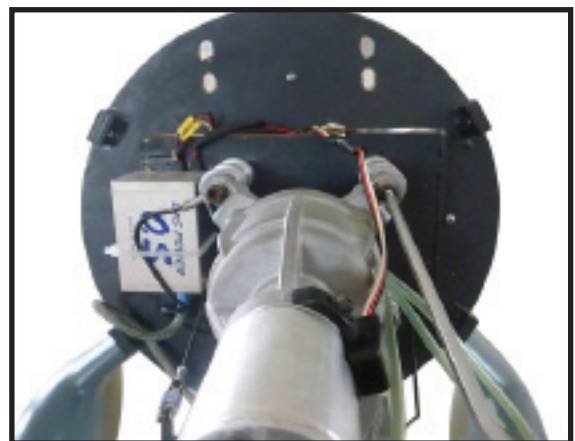
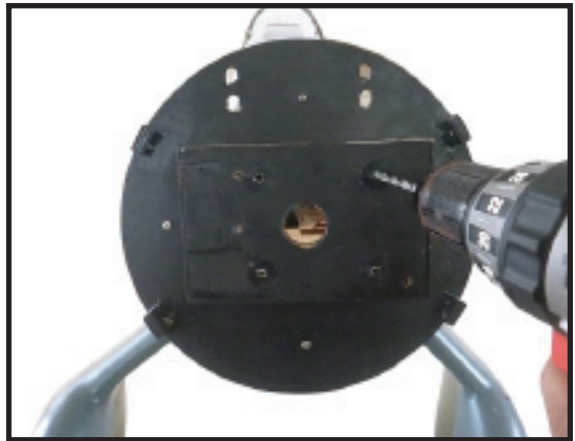
9) Connect the lines from the tank to the engine and muffler. The vent line will connect to the muffler and the line from the clunk to the carburetor.

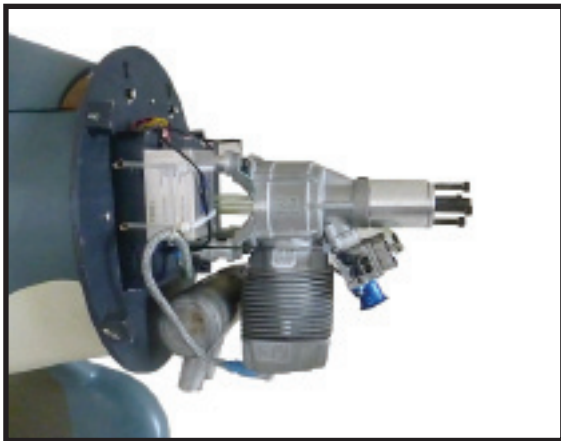
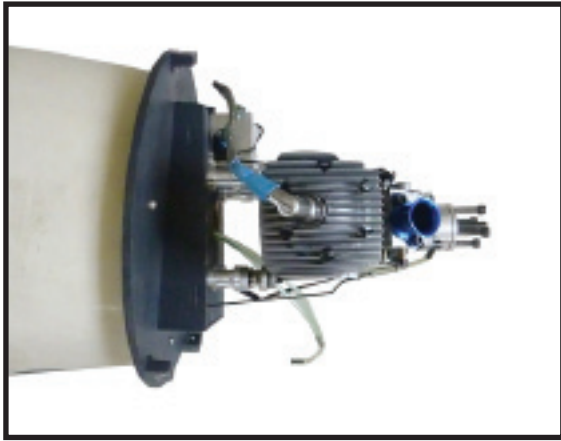


 Blow through one of the lines to ensure the fuel lines have not become kinked inside the fuel tank compartment. Air should flow through easily.

MOUNTING THE ENGINE .

Please see below pictures.

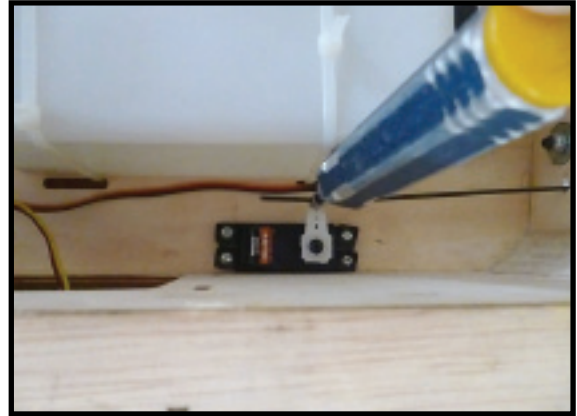




Reinstall the servo horn by sliding the connector over the pushrod wire. Center the throttle stick and trim and install the servo horn perpendicular to the servo center line.



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.



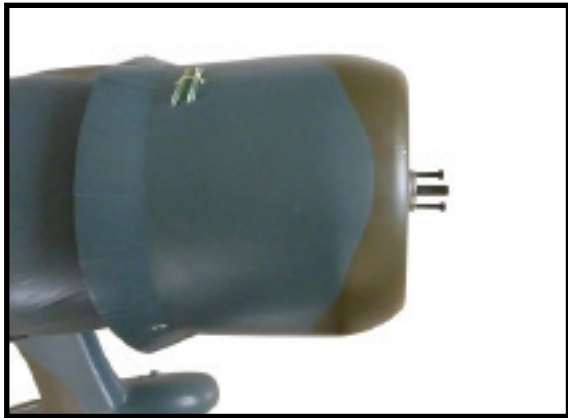
COWLING.

Please see these below pictures.



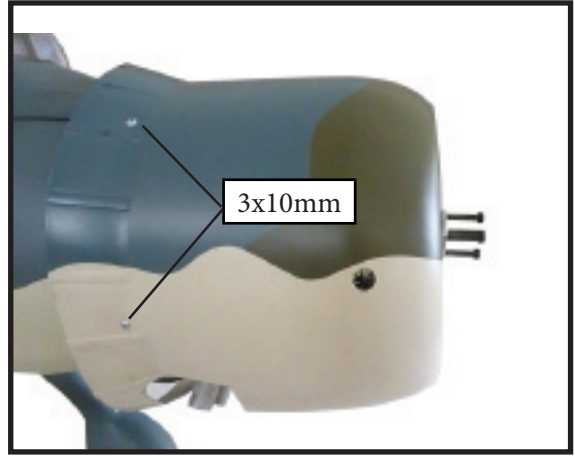


1) Slide the fiberglass cowl over the engine and line up the back edge of the cowl with the marks you made on the fuselage then trim and cut as shown.

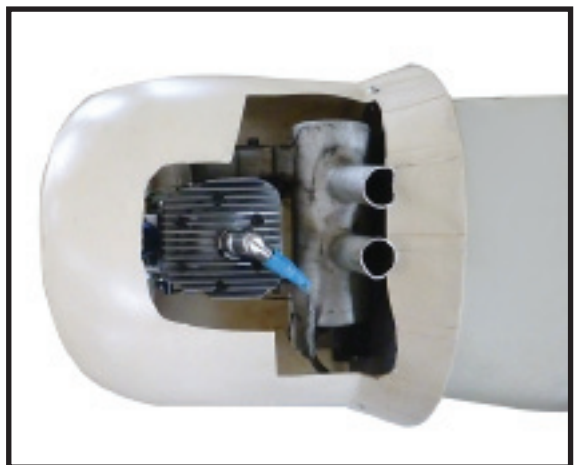
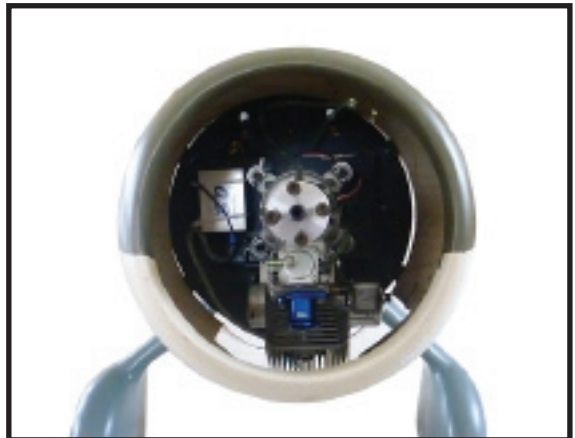


Because of the size of the cowl, it may be necessary to use a needle valve extension for the high speed needle valve. Make this out of sufficient length 1.5mm wire and install it into the end of the needle valve. Secure the wire in place by tightening the set screw in the side of the needle valve.

2) While keeping the back edge of the cowl flush with the marks, align the front of the cowl with the crankshaft of the engine. The front of the cowl should be positioned so the crankshaft is in **nearly** the middle of the cowl opening. Hold the cowl firmly in place using pieces of masking tape.



3) 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 filler valve. Secure the cowl to fuselage using the M3x10mm screws.



ELECTRIC POWER CONVERSION.

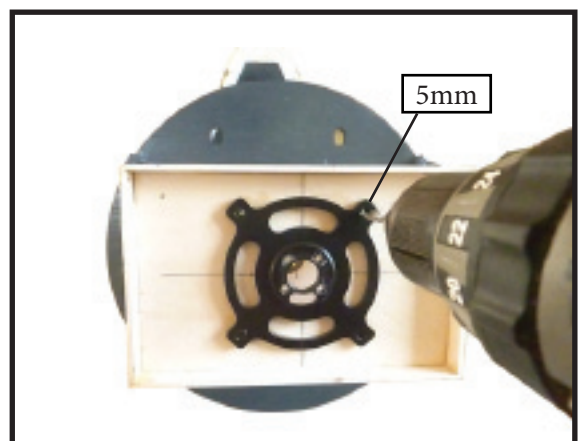
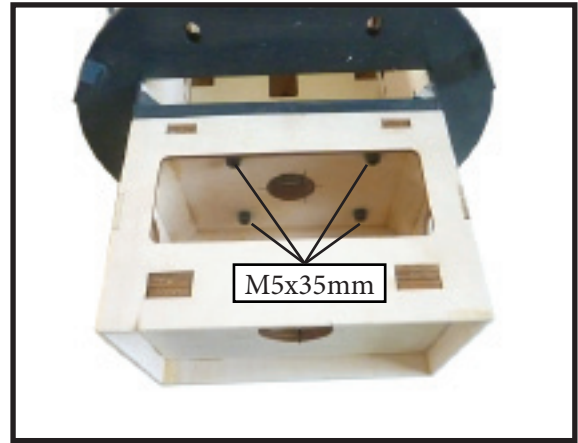
1) Locate the items necessary to install the electric power conversion included with your model.

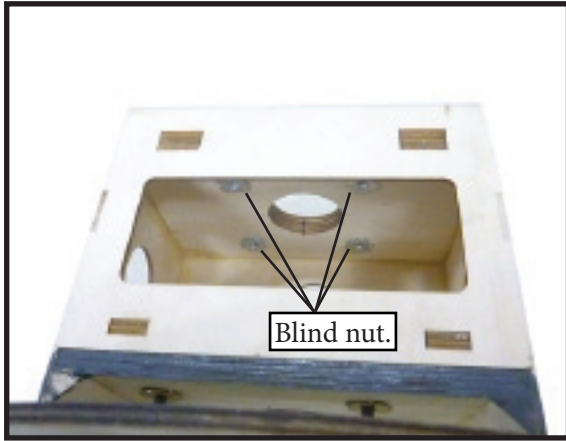


2) Recommend the items necessary to install the electric power conversion parts included with your model.

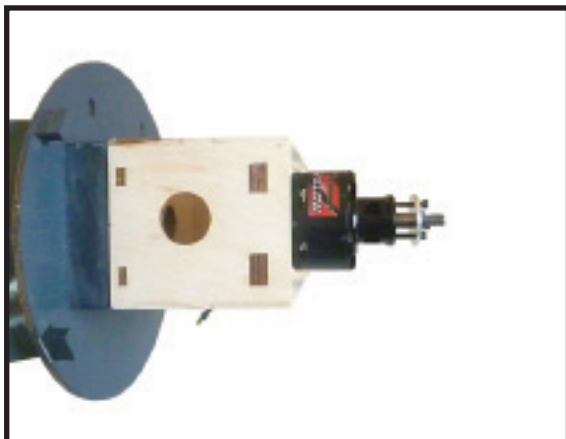
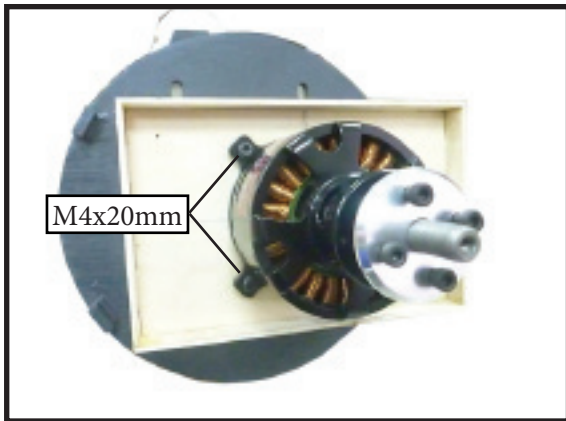
- **Motor:** 360
- **Propeller:** 24x10 ~ 25x12
- **ESC:** 160A- 200A
- **Lipo:** 12-15 cell

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

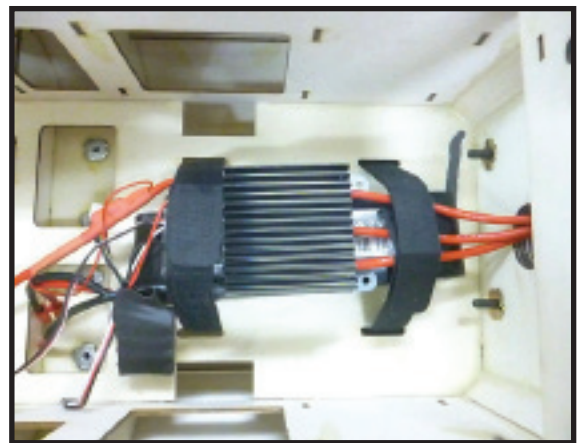
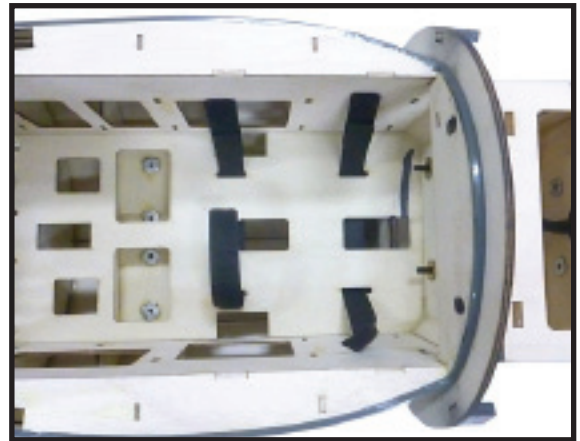




4) Attach the motor to the front of the electric motor box using four 4mm blind nut, four M4x20mm hex head bolts to secure the motor. Please see picture shown.



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.



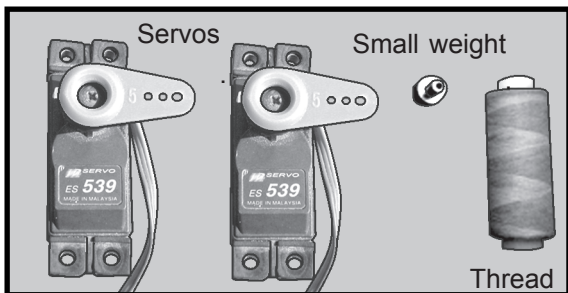
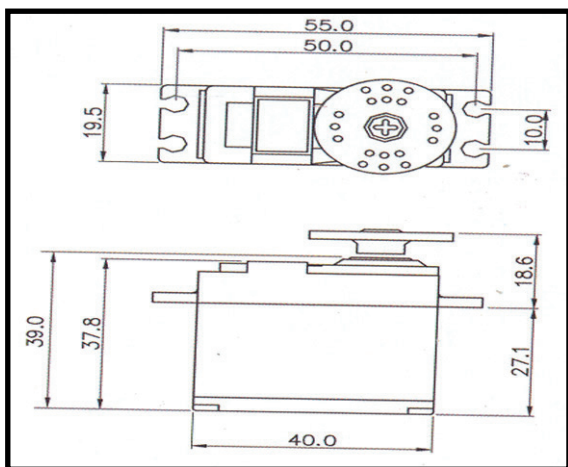
INSTALLING THE SPINNER.



⚠ 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.



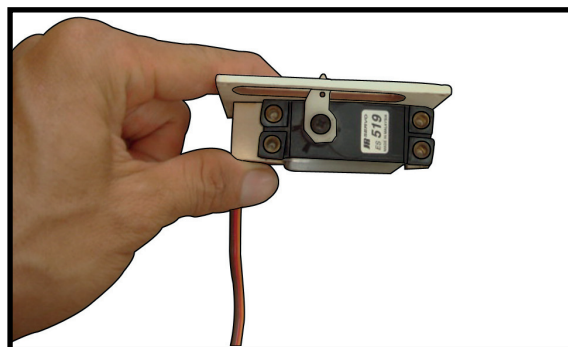
INSTALLING THE AILERON SERVOS.



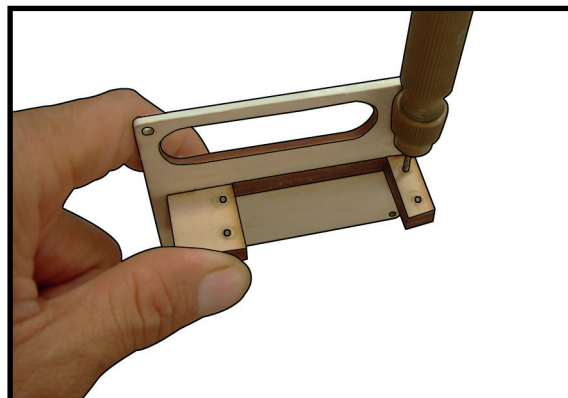
! Because the size of servos differ, you may need to adjust the size of the precut opening in the mount. The notch in the sides of the mount allow the servo lead to pass through.

1) Using a small weight (Weighted fuel pick-up works well) and string, feed the string through the wing as indicated.

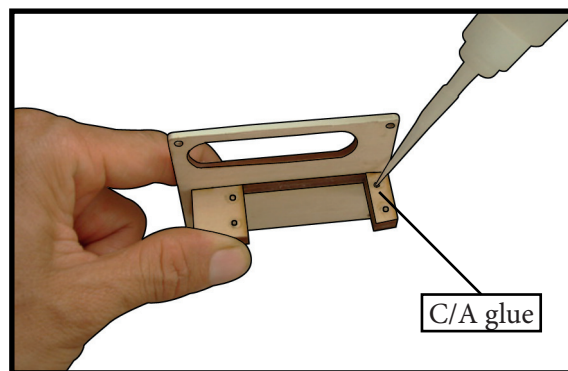
2) Place the servo between the mounting blocks and space it from the hatch. Use a pencil to mark the mounting hole locations on the blocks.



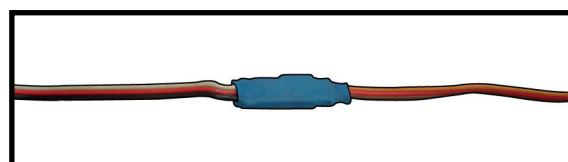
3) Use drill bit in a pin vise to drill the mounting holes in the blocks.



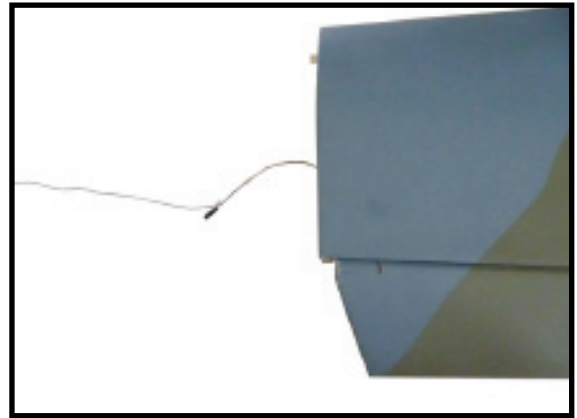
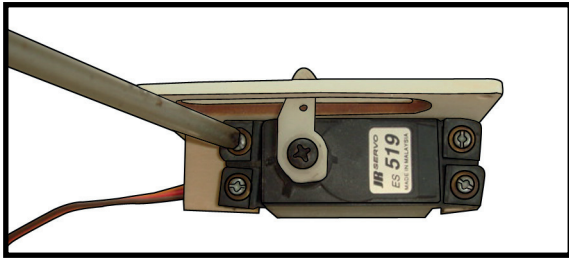
4) Apply 2-3 drops of thin C/A to each of the mounting holes. Allow the C/A to cure without using accelerator.



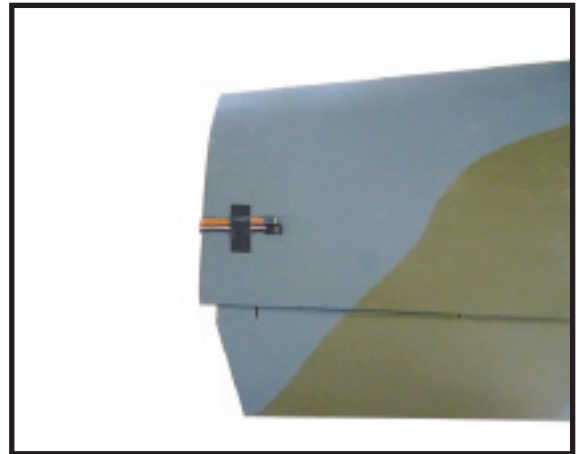
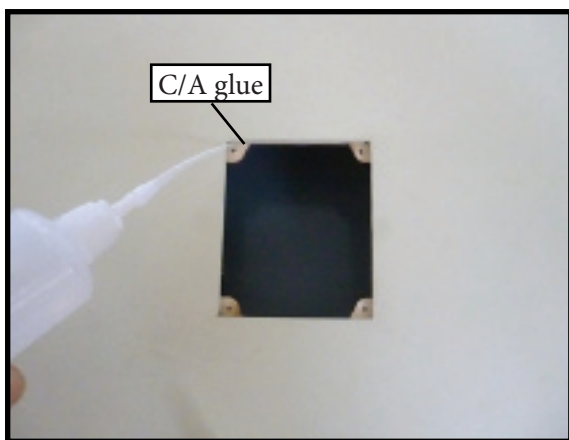
5) Use dental floss to secure the connection so they cannot become unplugged.



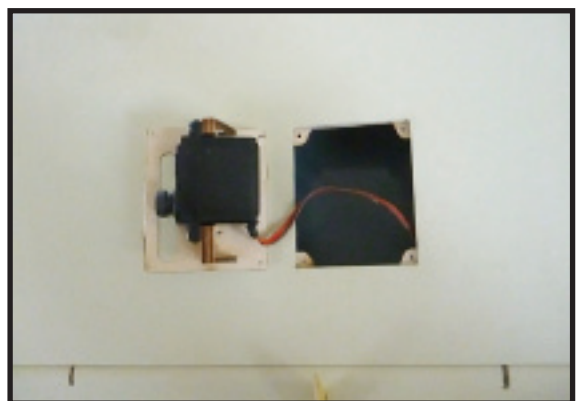
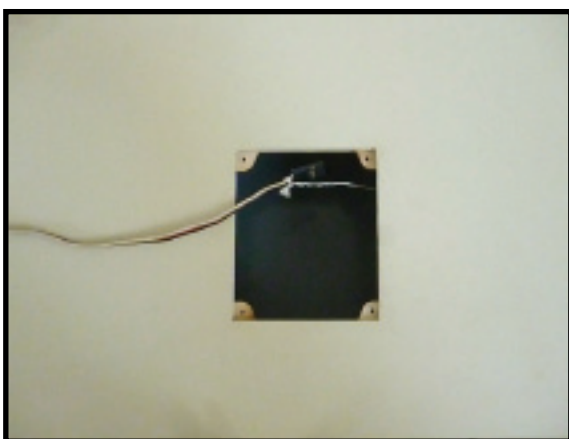
6) Secure the servo to the aileron hatch using Phillips screwdriver and the screws provided with the servo.



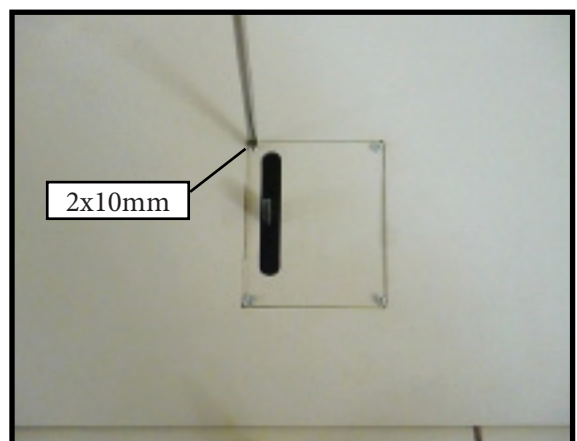
7) Apply 1-2 drops of thin C/A to each of the mounting tabs. Allow the C/A to cure without using accelerator.



8) A string has been provided in the wing to pull the aileron lead through to the wing root. Remove the string from the wing at the servo location and use the tape to attach it to the servo extension lead. Pull the lead through the wing and remove the string.



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

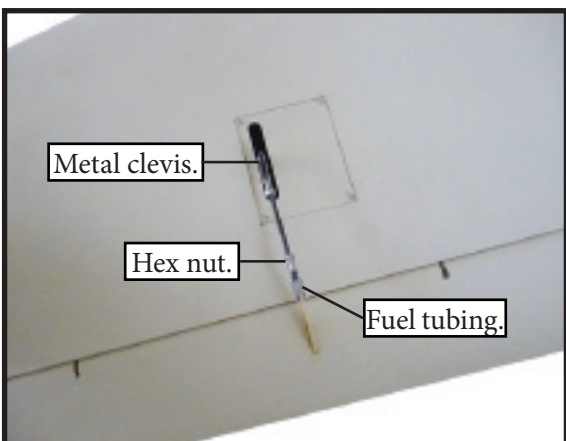
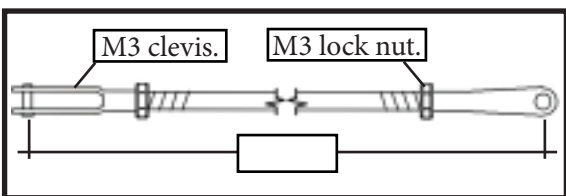
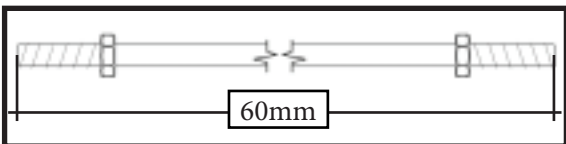




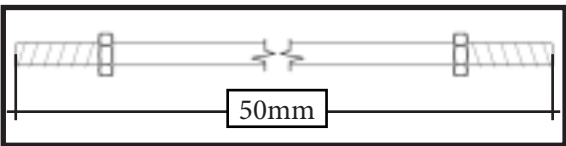
INSTALLING THE FLAP SERVOS.



AILERON PUSHROD INSTALLATION.

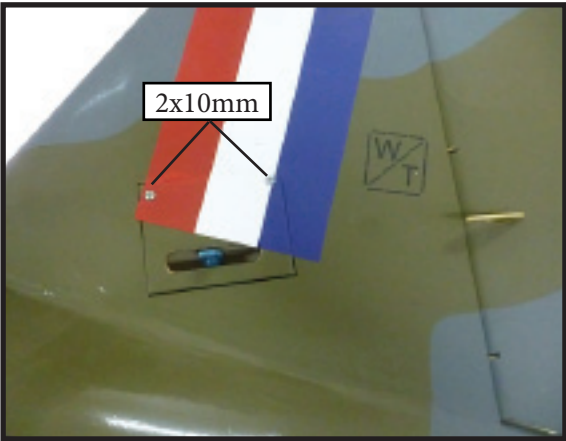
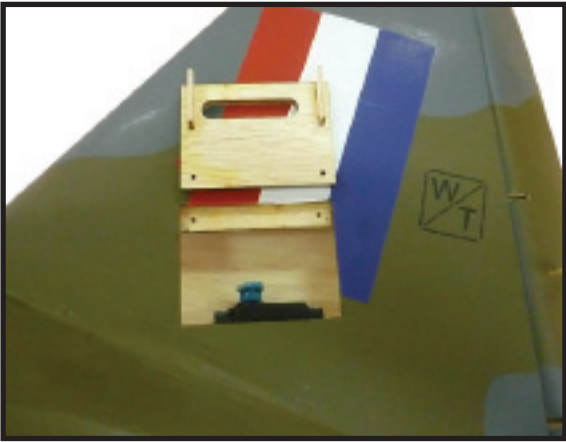


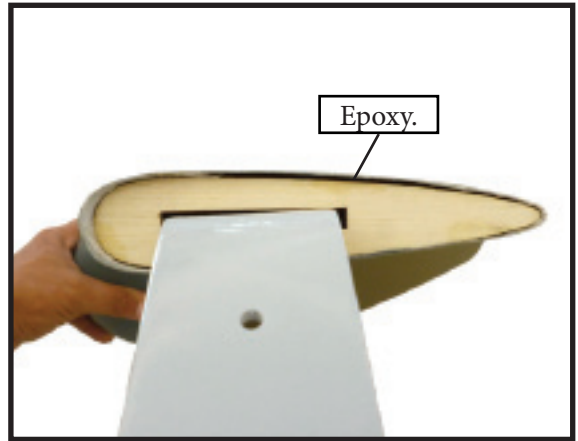
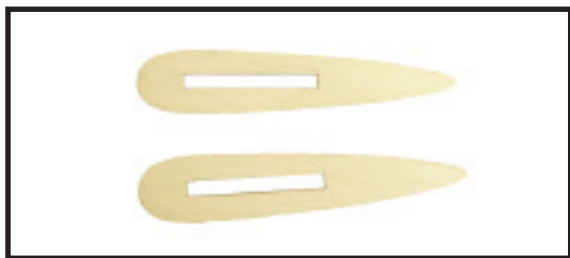
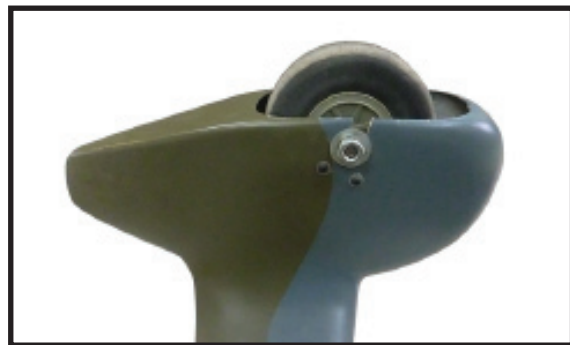
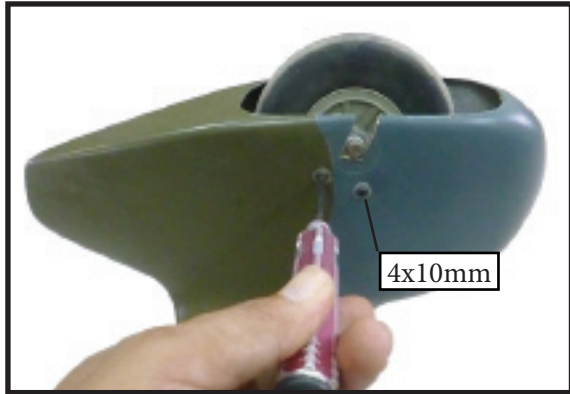
FLAP PUSHROD INSTALLATION.



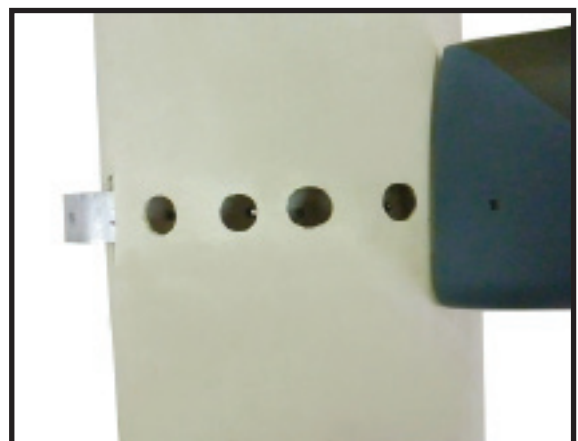
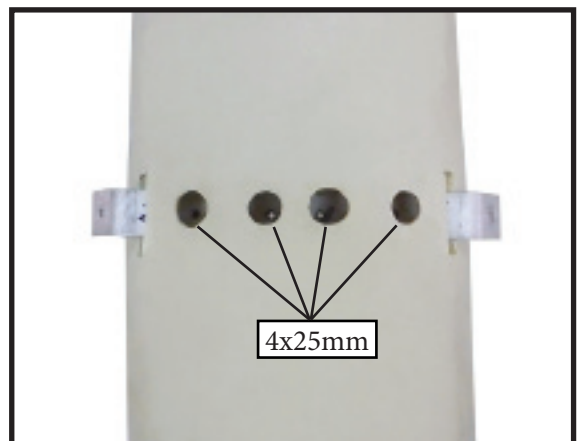
INSTALLING THE RUDDER SERVO.

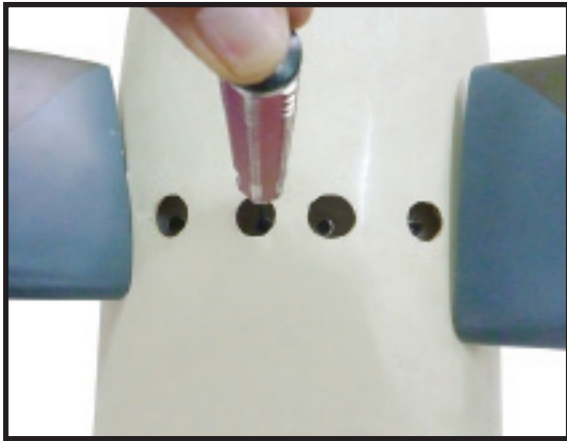
The process as aileron servo to install servos for rudder.





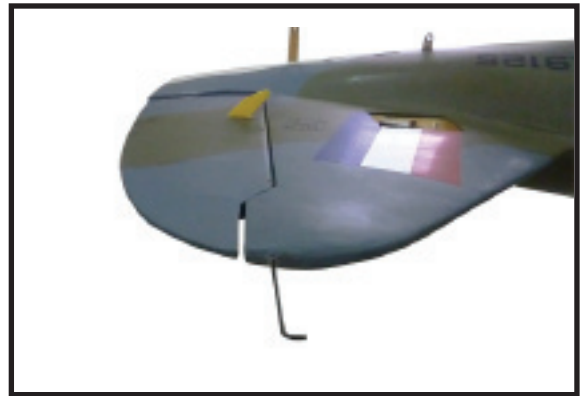
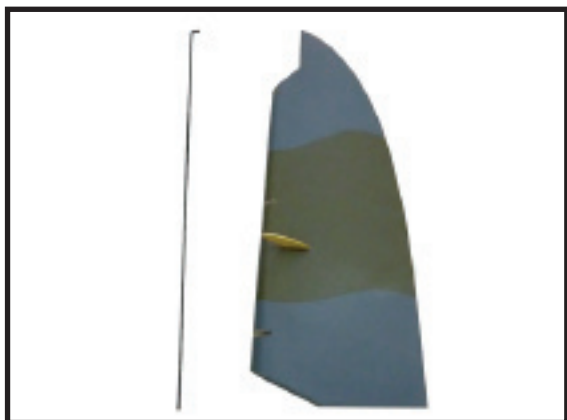
INSTALLING THE MAIN LANDING GEAR.



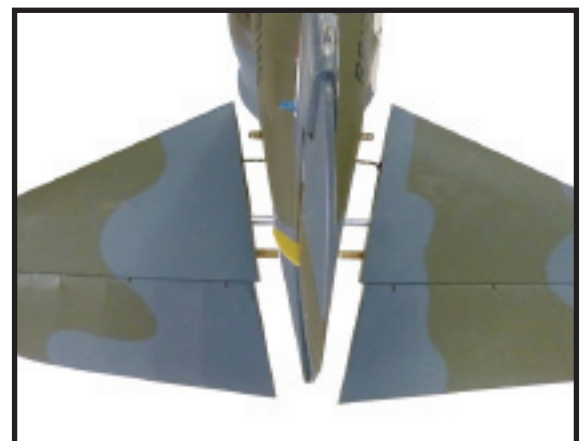
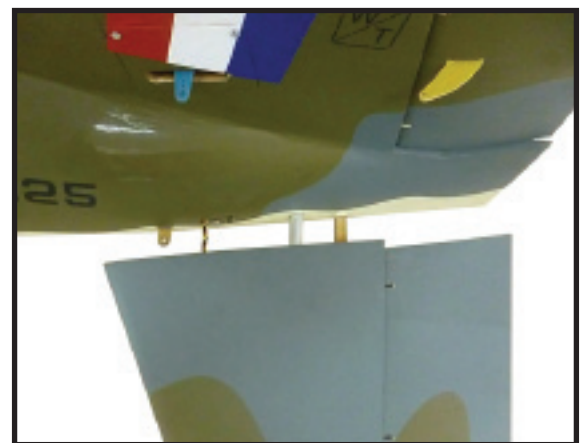
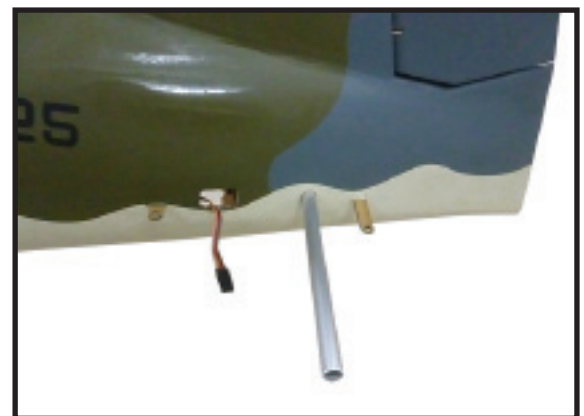


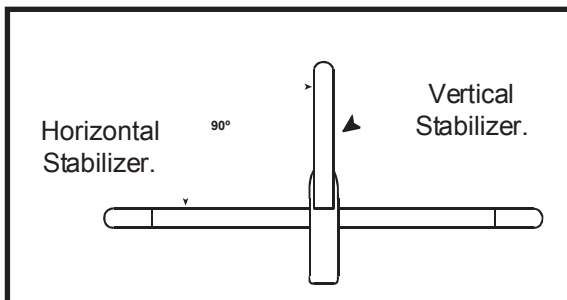
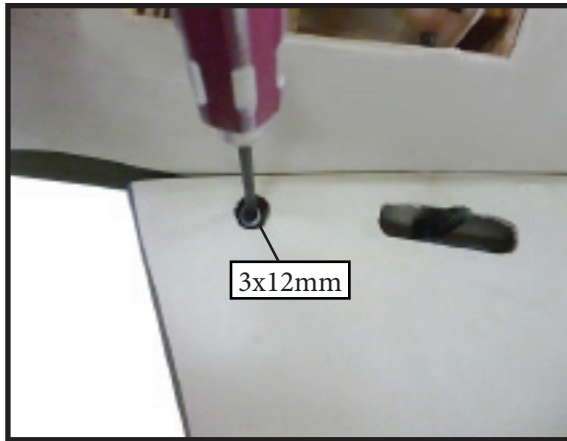
INSTALLING RUDDER HINGE.

The rudder hinge assembly as below pictures.



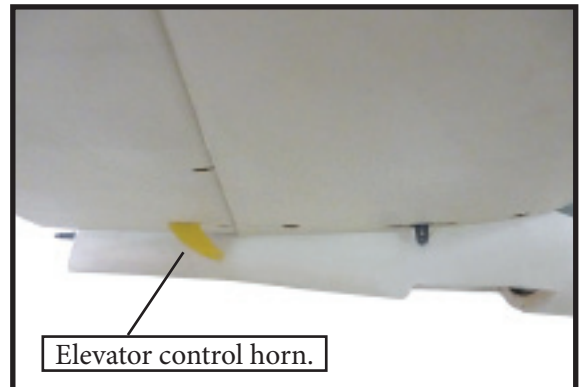
INSTALLING HORIZONTAL STABILIZER.





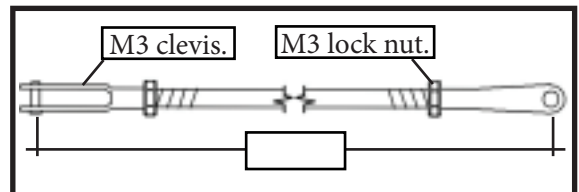
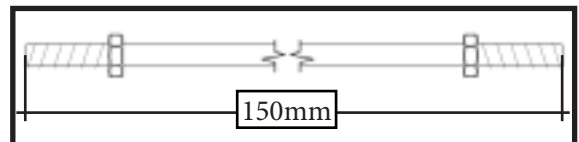
ELEVATOR PUSHROD INSTALLATION.

- 1) Locate items necessary to install elevator pushrod.
- 2) Install the elevator control horn using the same method as with the aileron control horns.
- 3) Position the elevator control horn on the both side of elevator.



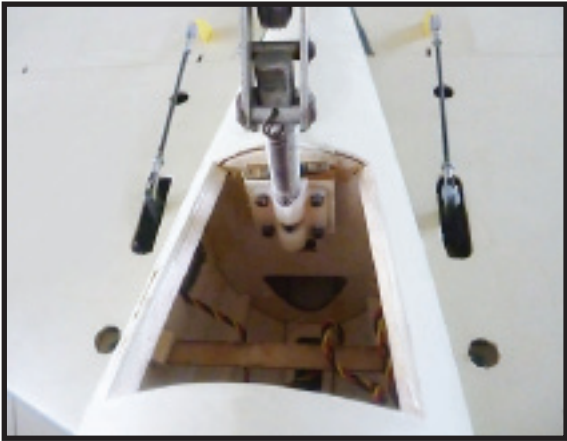
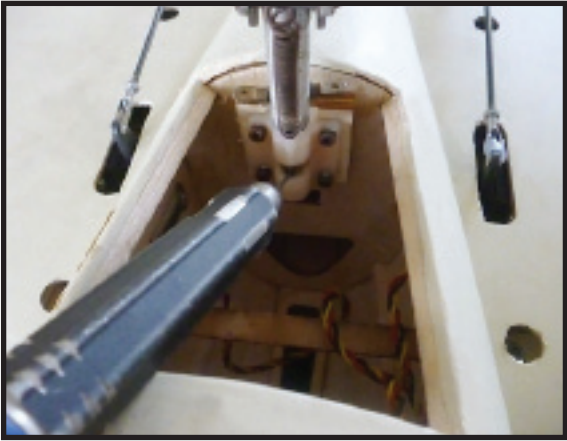
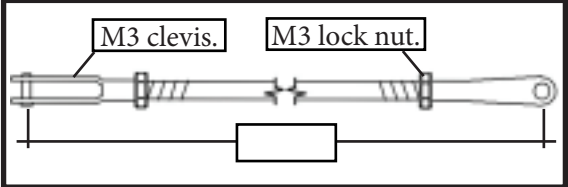
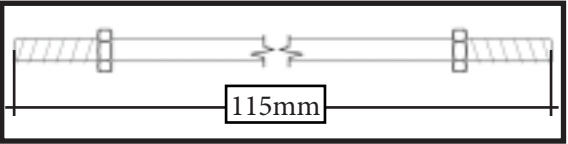
3) Thread one clevis and M3 lock nut on to each elevator control rod. Thread the horns on until they are flush with the ends of the control rods.

4) Elevator ushrods assembly as pictures below.

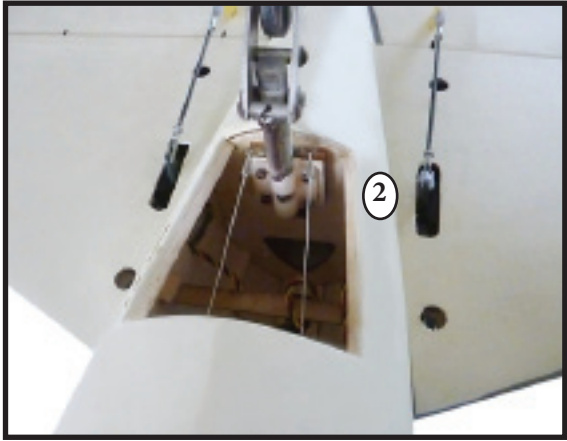
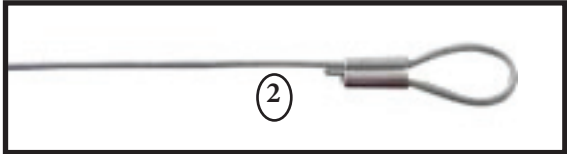
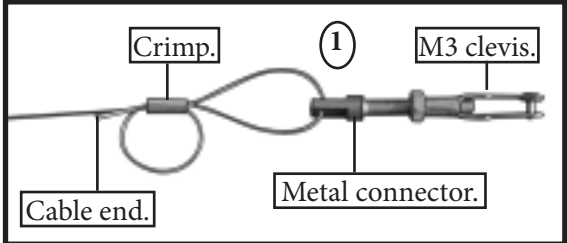
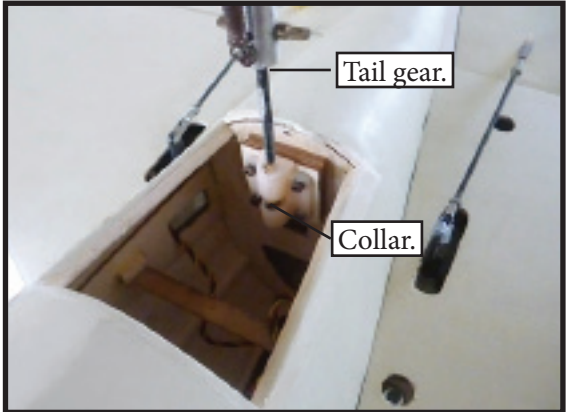


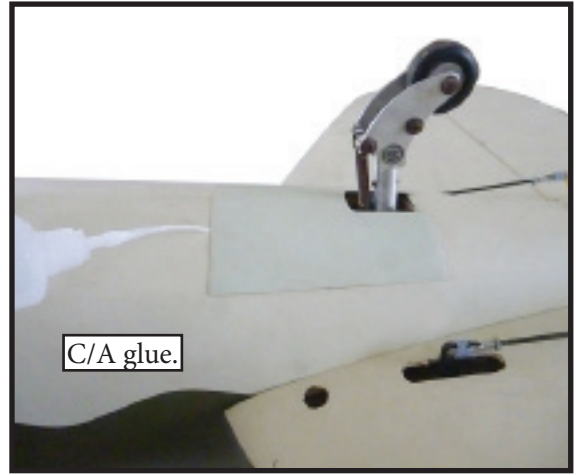
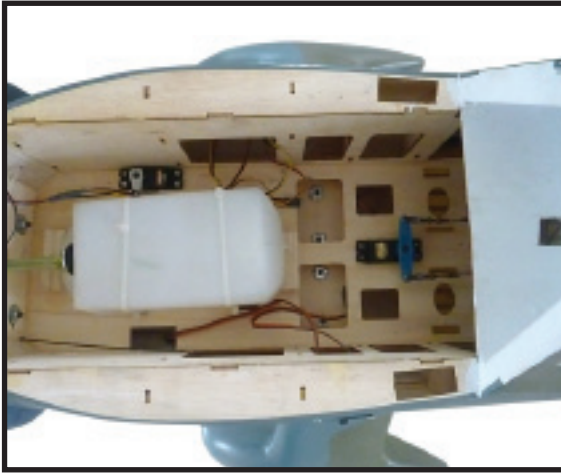
RUDDER PUSHROD INSTALLATION.

Locate items necessary to install rudder pushrod.



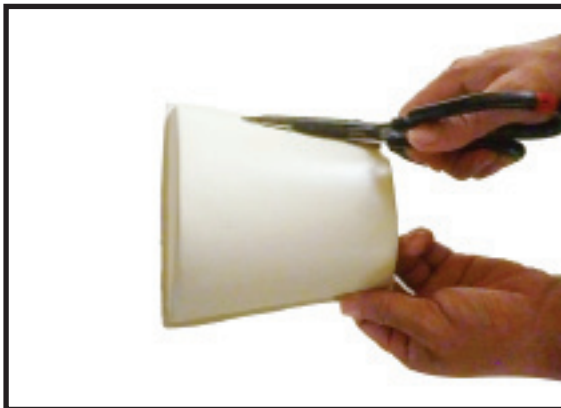
MOUNTING THE TAIL WHEEL.





INSTALLATION PILOT AND CANOPY.

1) Locate items necessary to install pilot, seats.

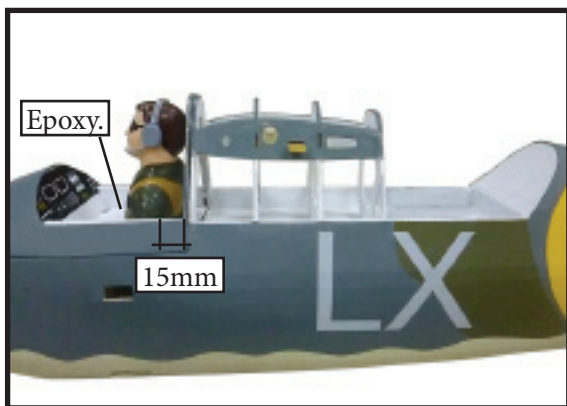
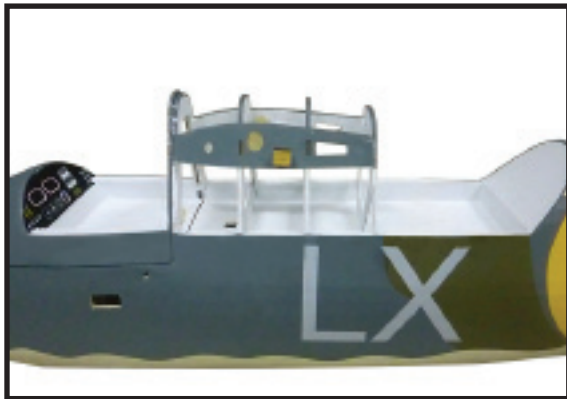


2) A scale pilot is included with this ARE. The Pilot included fitting well to the cockpit. (or you can order others scale pilot figures made by SG Models. They are available at SG Models distributors.)

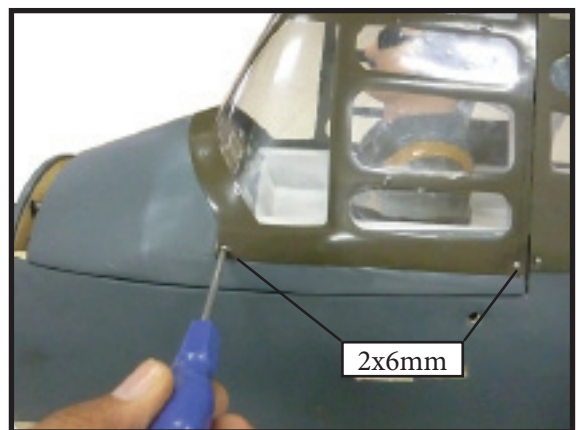
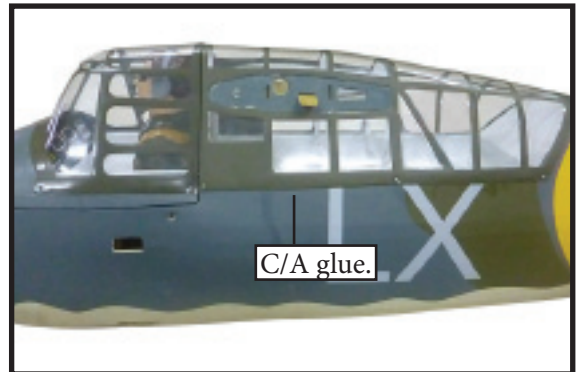
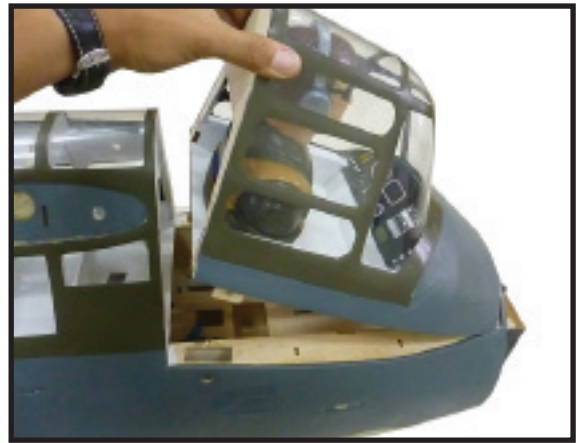
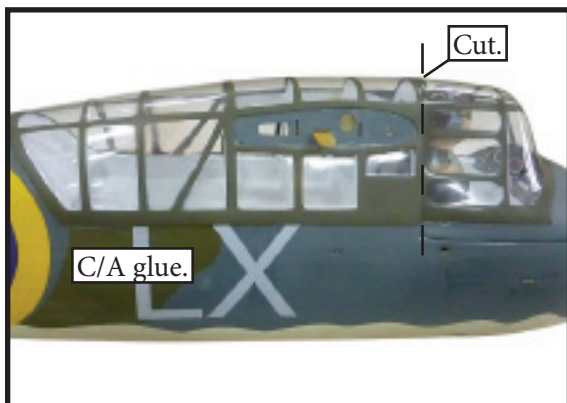


If you are going to install a pilot figure, please use a sanding bar to sand the base of the figure so that it is flat.

3) 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.



4) Position the canopy onto the fuselage. Trace around the canopy and onto the fuselage using a felt-tipped pen.



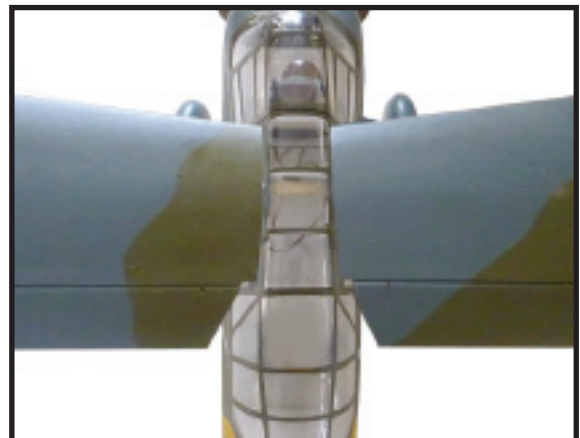
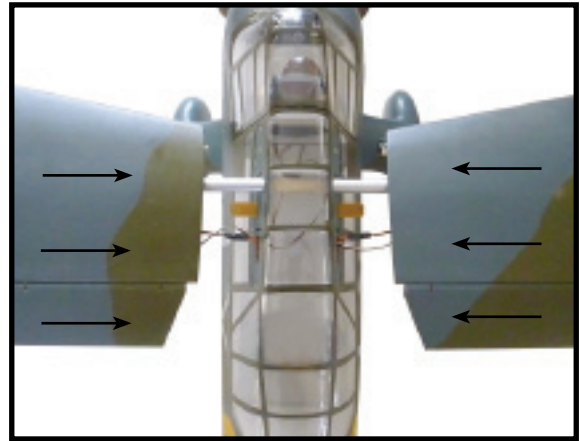
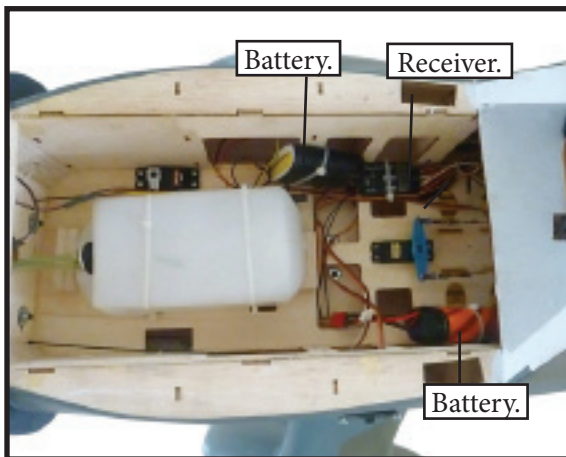
APPLY THE DECALS.

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.

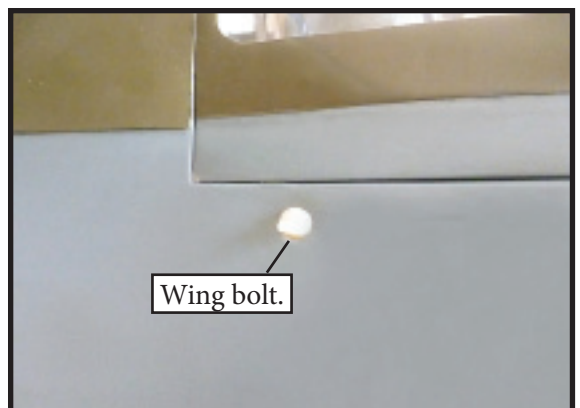
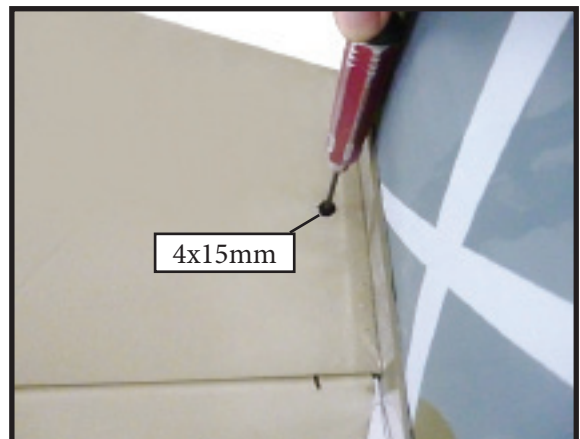
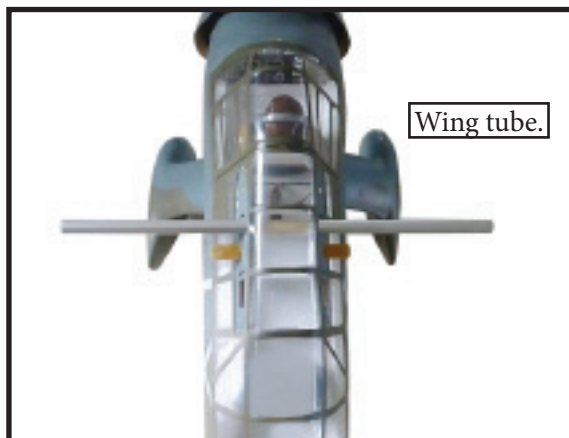
INSTALLING BATTERY - RECEIVER.

- 1) Plug the servos leads and the switch lead into the receiver. Plug the battery pack lead into the switch also.
- 2) Wrap the receiver and battery pack in the protective foam rubber to protect them from vibration.



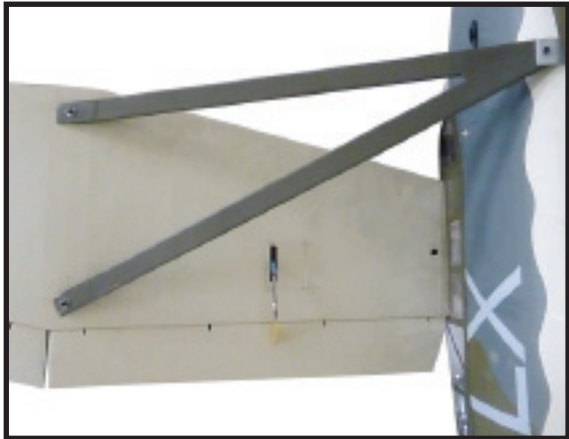
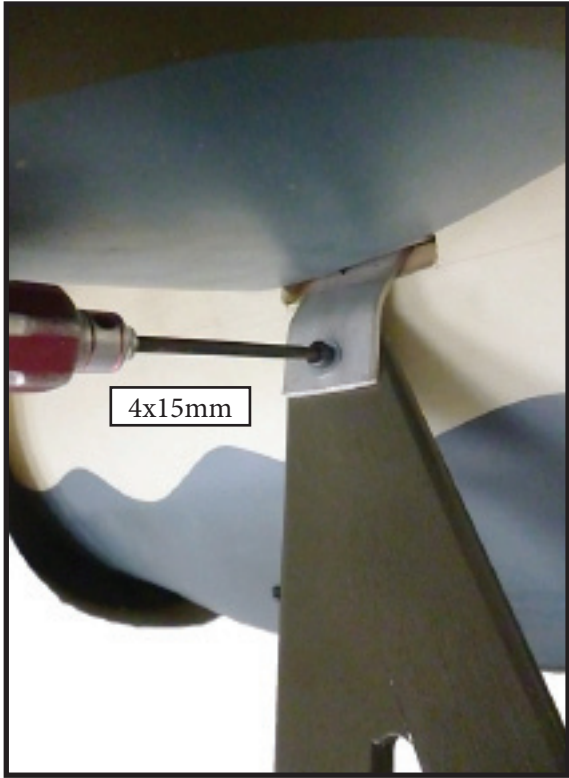
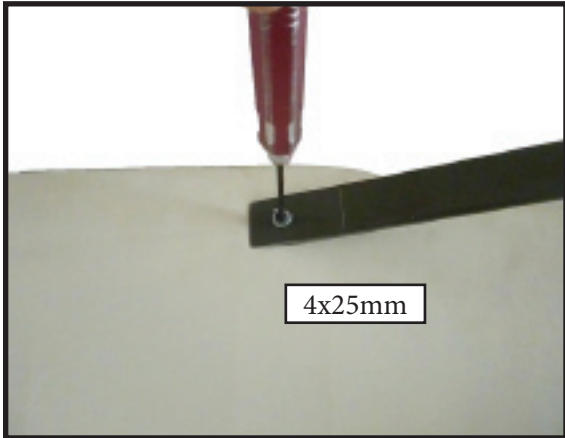
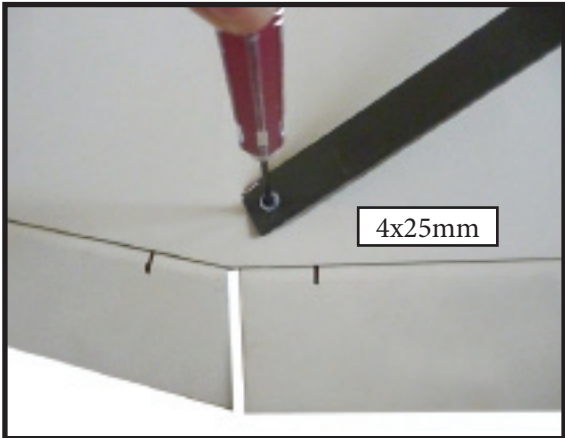
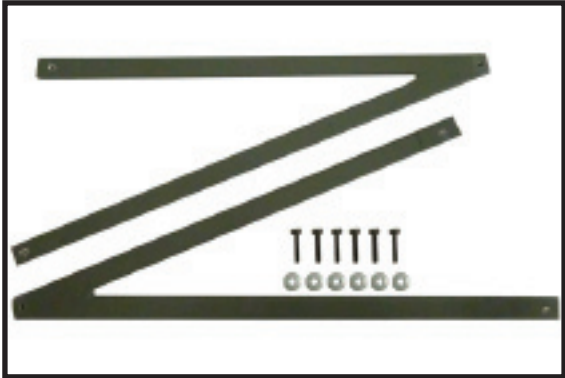
ATTACHMENT WING- FUSELAGE.

Attach the aluminum tube into fuselage.



Insert two wing panels as pictures below.

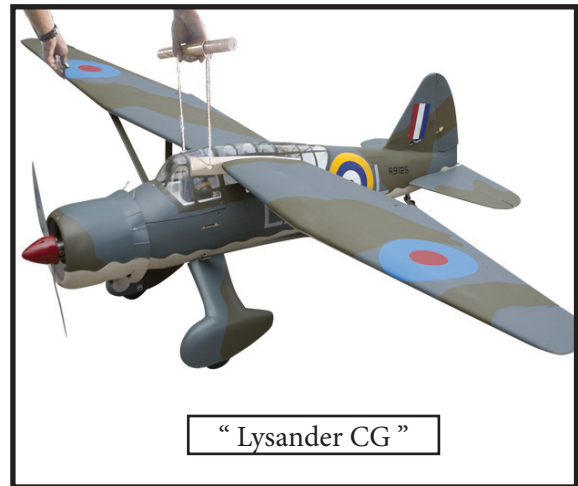
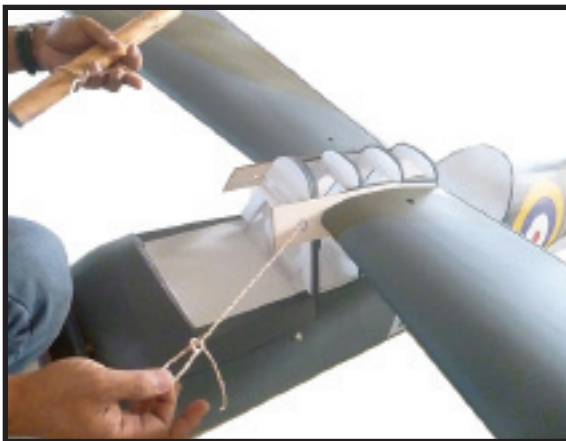
**INSTALLING STRUTS
WING-FUSELAGE.**



BALANCING.

1) 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 27MM FORWARD OF THE LEADING EDGE.

2) If the nose of the plane falls, the plane is nose heavy. To correct this first move the battery pack further back in the fuselage. If this is not possible or does not correct it, stick small amounts of lead weight on the fuselage sides under the horizontal stabilizer. If the tail of the plane falls, the plane is tail heavy. To correct this, move the battery and receiver forward or if this is not possible, stick weight onto the fire-wall or use a brass heavy hub spinner hub, similar to those offered by Harry Higley. When balanced correctly, the airplane should sit level or slightly nose down when you lift it up with your fingers.

**CONTROL THROWS.****Ailerons:**

12mm - 15mm up.

12mm - 15mm down.

Elevator:

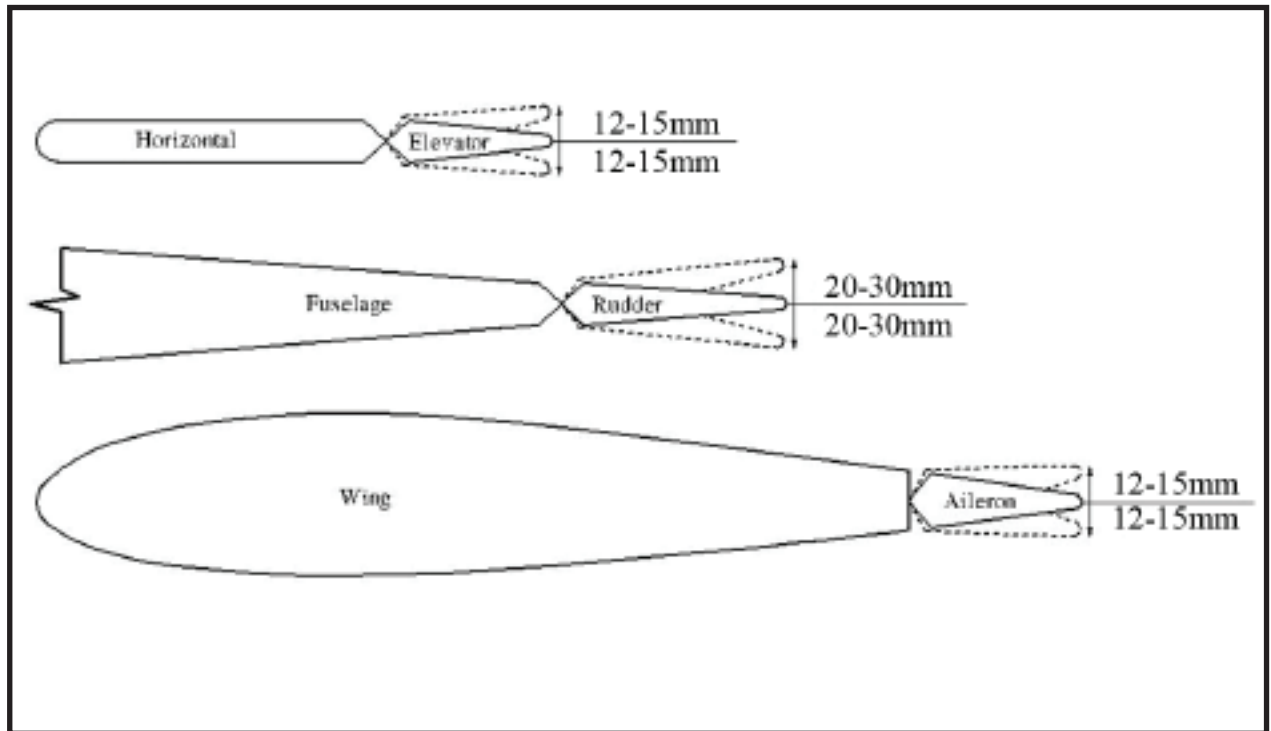
12mm - 15mm up.

12mm - 15mm down.

Rudder:

20mm - 30mm left.

20mm - 30mm right.



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 **Westland Lysander** 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 **Westland Lysander MK III 55cc.**

*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.