



Shoestring Electric

Power 15 or 25.

“ Graphics and specifications may change without notice “ .

Code: SEAX139



(SEAX139W)



(SEAX139R)

Specifications:

Wingspan-----50.4 in (128 cm).

Wing area-----375 sq.in (24.2 sq.dm).

Weight-----2.8-3.1 lbs (1.25-1.4 kg).

Length-----33.8 in (85.8 cm).

Recommend engine size-----Motor 480

-----Power 15 or Power 25

Radio-----4 channels with 4 servos.

INTRODUCTION.

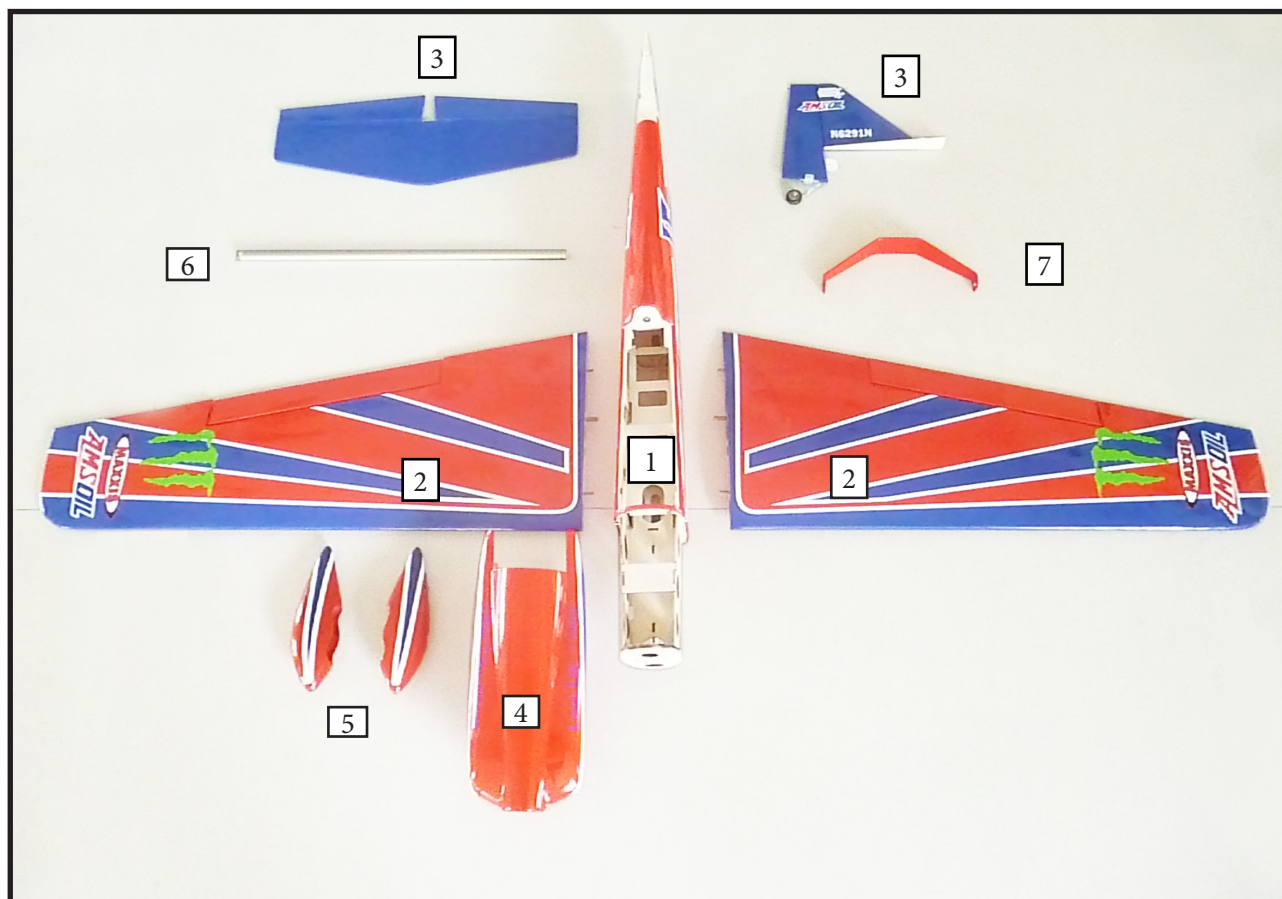
Thank you for choosing the **SHOESTRING 25e EP** ARTF by **SEAGULL MODELS COMPANY LTD.** The **SHOESTRING 25e EP** was designed with the intermediate/advanced sport flyer in mind. It is a semi scale airplane which is easy to fly and quick to assemble. The airframe is conventionally built using balsa, plywood to make it stronger than the average ARTF, yet the design allows the aeroplane to be kept light. You will find that most of the work has been done for you already. The motor mount has been fitted and the hinges are pre-installed. Flying the **SHOESTRING 25e EP** 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 **SHOESTRING 25e EP**. 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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SEAX139 SHOESTRING 25e EP

- SEAX13901 Fuselage
- SEAX13902 Wing set
- SEAX13903 Tail set
- SEAX13904 Cowling
- SEAX13905 Wheel pants
- SEAX13906 Aluminum tube
- SEAX13907 Landing gear

ADDITIONAL ITEMS REQUIRED.

- ☐ 480 Motor size
- ☐ Or Power 15 or Power 25
- ☐ Computer radio with 4 servos.
- ☐ Glow plug to suit engine.
- ☐ Propeller to suit engine.
- ☐ Protective foam rubber for radio system.

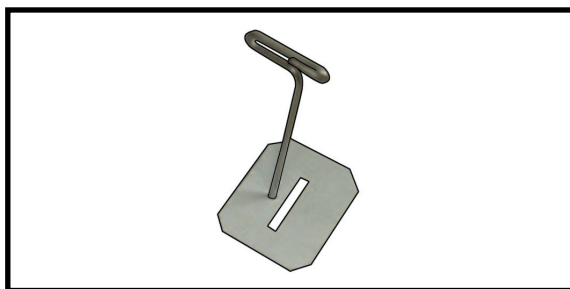
TOOLS & SUPPLIES NEEDED.

- ☐ 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.

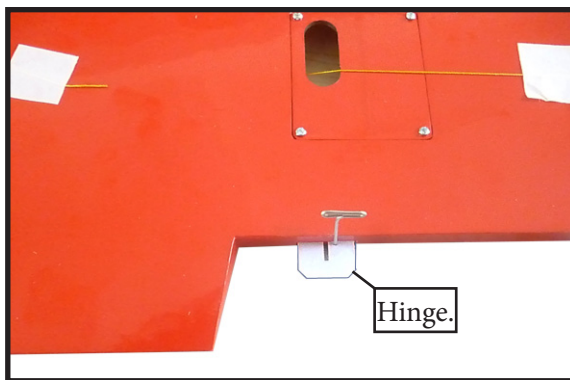
HINGING THE AILERON.

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

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



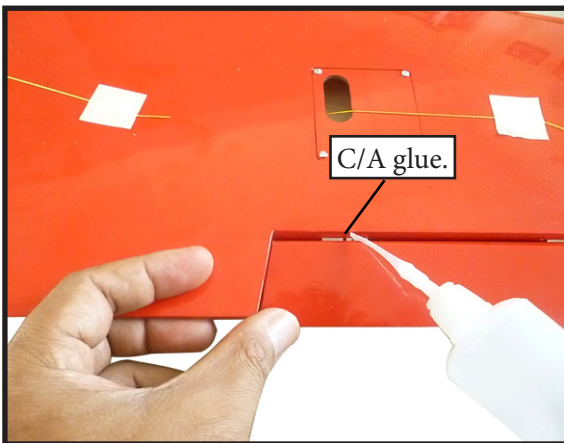
2) Remove each hinge from the wing panel and aileron and place a T-pin in the center of each hinge. Slide each hinge into the wing panel until the T-pin is snug against the wing panel. This will help ensure an equal amount of hinge is on either side of the hinge line when the aileron is mounted to the aileron.



3) Slide the wing panel on the aileron until there is only a slight gap. The hinge is now centered on the wing panel and aileron. Remove the T-pins and snug the aileron against the wing panel. A gap of 1/64" or less should be maintained between the wing panel and aileron.

4) Deflect the aileron and completely saturate each hinge with thin C/A glue. The ailerons front surface should lightly contact the wing during this procedure. Ideally, when the hinges are glued in place, a 1/64" gap or less will be maintained throughout the length of the aileron to the wing panel hinge line.

NOTE : The hinge is constructed of a special material that allows the C/A to wick or penetrate and distribute throughout the hinge, securely bonding it to the wood structure of the wing panel and aileron.

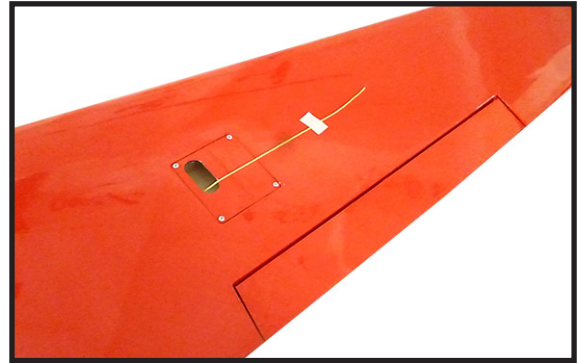


5) Turn the wing panel over and deflect the aileron in the opposite direction from the opposite side. Apply thin C/A glue to each hinge, making sure that the C/A penetrates into both the aileron and wing panel.

6) Using C/A remover/debonder and a paper towel, remove any excess C/A glue that may have accumulated on the wing or in the aileron hinge area.

7) Repeat this process with the other wing panel, securely hinging the aileron in place.

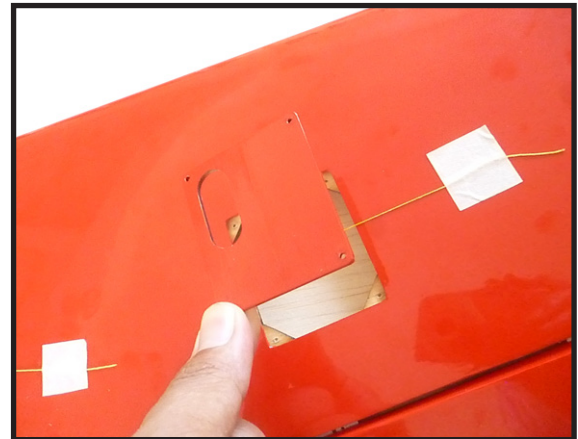
8) After both ailerons are securely hinged, firmly grasp the wing panel and aileron to make sure the hinges are securely glued and cannot be pulled out. Do this by carefully applying medium pressure, trying to separate the aileron from the wing panel. Use caution not to crush the wing structure.



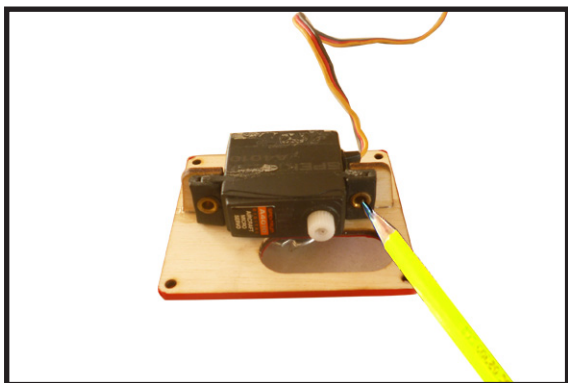
Note : Work the aileron up and down several times to “work in” the hinges and check for proper movement.

INSTALLING THE AILERON SERVOS.

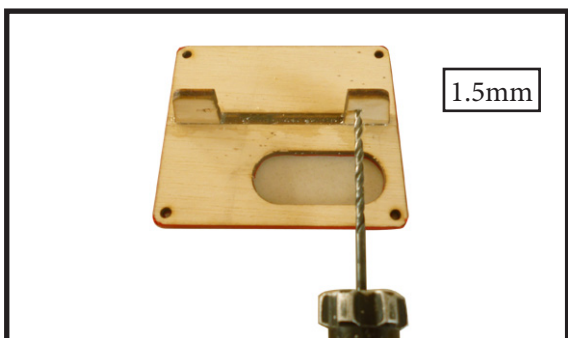
1) Remove the servo cover from the wing. Do not let the string fall into the wing as it is used to pull the servo lead through the wing.



2) Place the servo between the tabs on the servo cover with the output of the servo over the opening in the cover. With the servo spaced slightly off the cover, use a pencil to mark the location for the servo mounting screws.



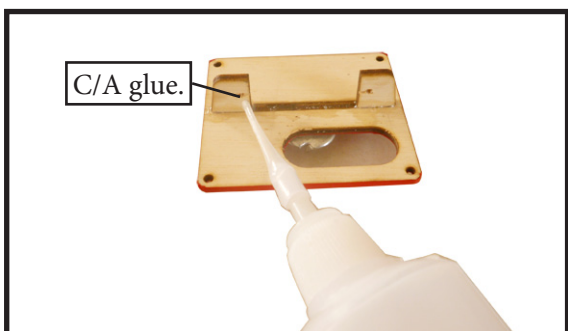
3) Use a drill bit to drill the holes for the servo mounting screws.



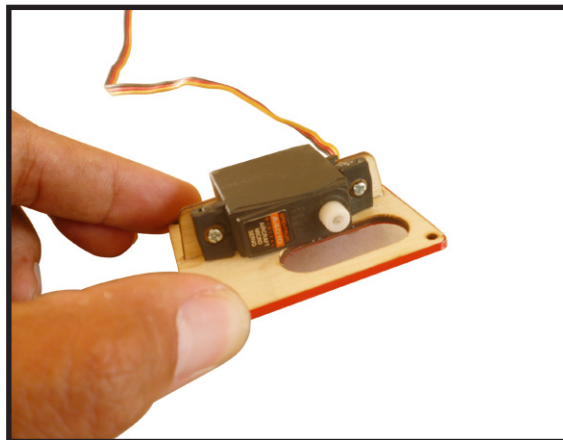
4) Use a screwdriver to thread a servo mounting screw into each of the holes to cut threads in the surrounding wood. Remove the screw before moving to the next step.



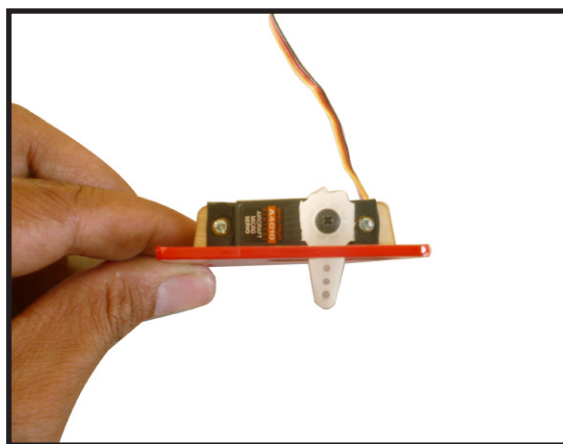
5) Apply 2-3 drops of thin CA in each of the holes to harden the surrounding wood. This will harden the threads so the screws do not easily strip the surrounding wood.



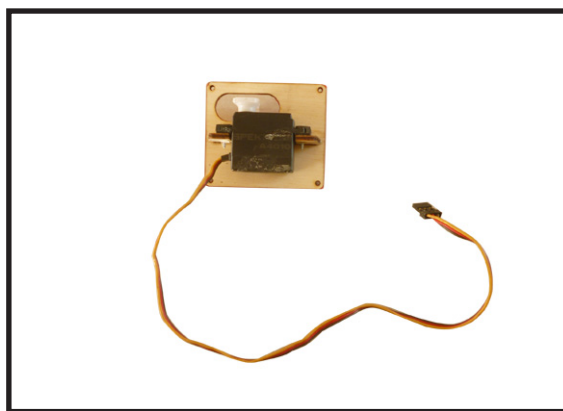
6) Secure the servo using the screws provided with the servo and a screwdriver. The output shaft of the servo will align with the opening in the cover.



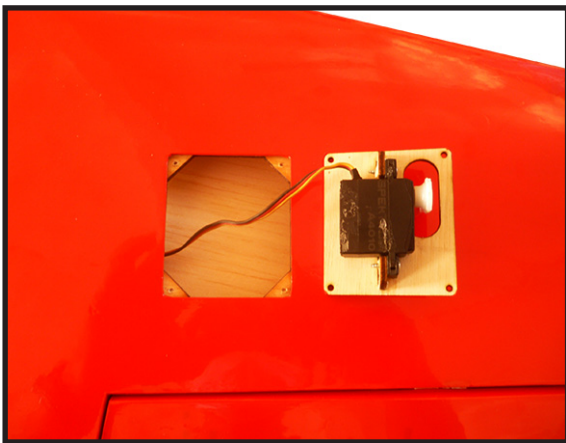
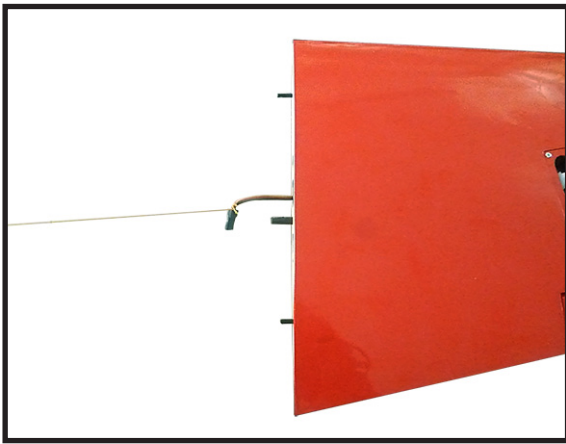
7) Fit the servo horn to the servo so it is perpendicular to the servo.



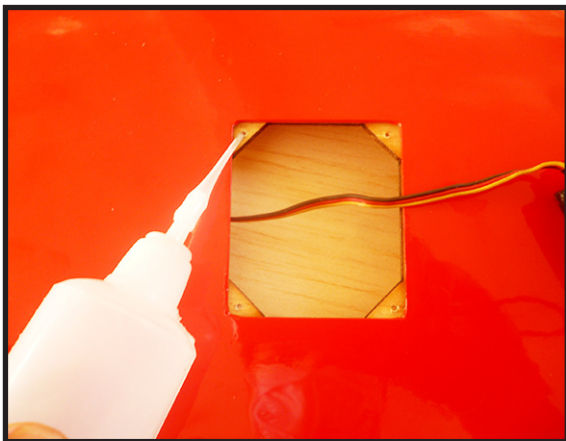
8) Use string or dental floss to secure a servo extension to the aileron servo lead.



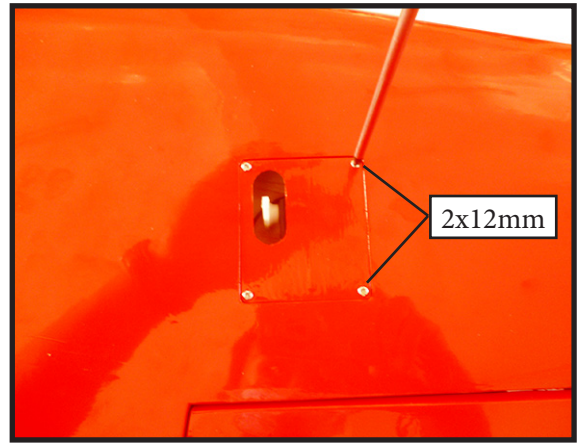
9) Use the string to pull the extension through the wing root.



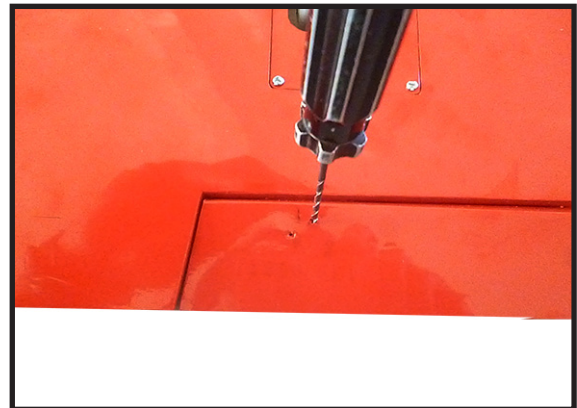
10) Apply 1-2 drops of thin CA in each of the holes to harden the surrounding wood for the aileron cover screws.



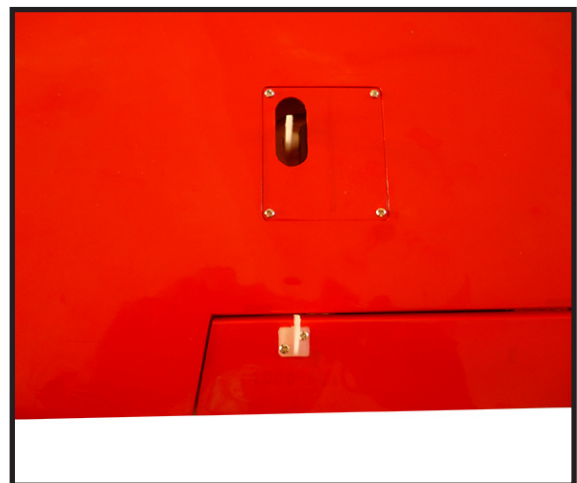
11) Set the aileron hatch in place and use screwdriver to install it with four metal screws.

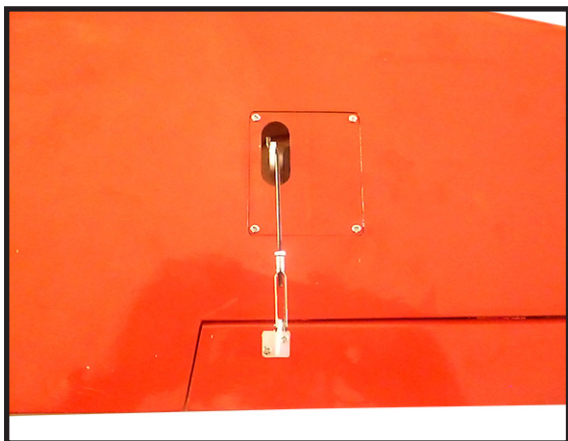
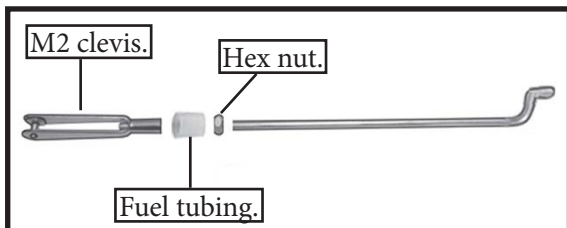


12) Use a drill bit to drill the two holes completely through the aileron for the aileron control horn mounting screws. The holes have already been started and are easily found on the bottom of the aileron.



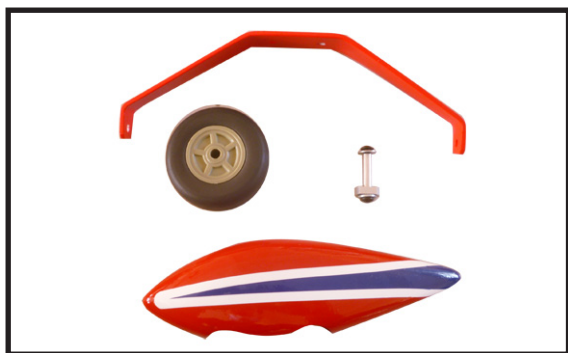
13) Attach the control horn to the aileron using two 2x12m metal screws and a control horn backplate. Use a screwdriver to tighten the screws.





Repeat steps to install the remaining aileron control horn and pushrod.

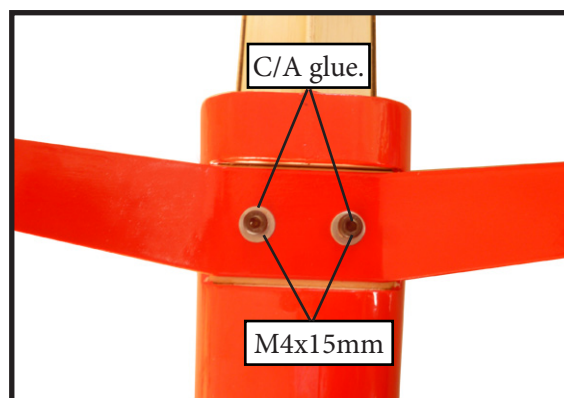
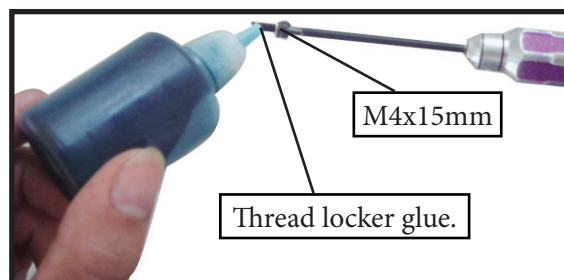
INSTALLING THE MAIN LANDING GEAR TO FUSELAGE.



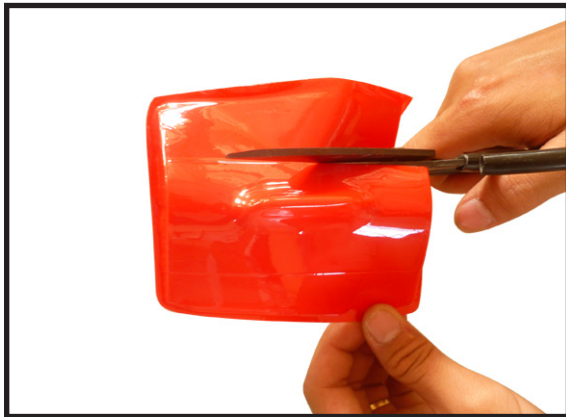
1) The blind nuts for securing the landing gear are already mounted inside the fuselage.

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 M4x15mm and washers. Make sure to use the threadlock on the bolts so they don't vibrate loose.



4) Use hobby scissors and a hobby knife to trim the landing gear fairings. Leave the size of the fairings slightly over-sized.



6) Fit the landing gear fairings over the gear. Slowly trim the fairing to fit to the fuselage. When installed, they will cover the area where the landing gear attaches to the fuselage.



WHEELS AND WHEEL PANTS.

1) Remove the hardware from the axle. Place a drop of light machine oil on the axle to help the wheel roll freely.



2) Slide the axle into the wheel.



3) Slide the wheel into the wheel pant.



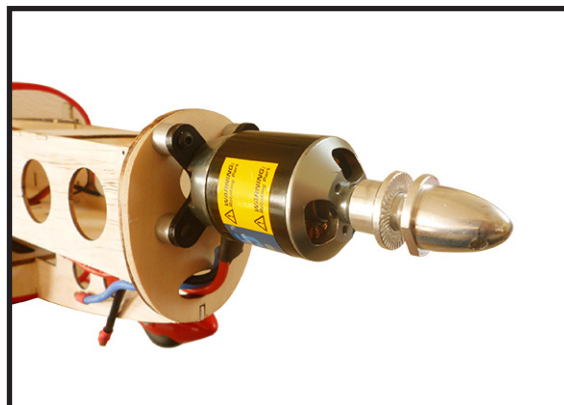


4) Repeat above steps to install the remaining wheel and wheel pant on the landing gear.

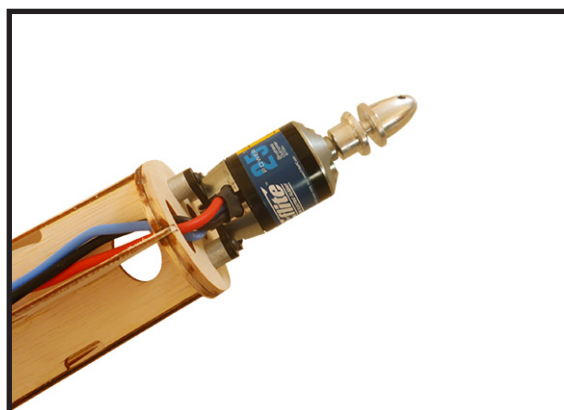


ELECTRIC POWER CONVERSION.

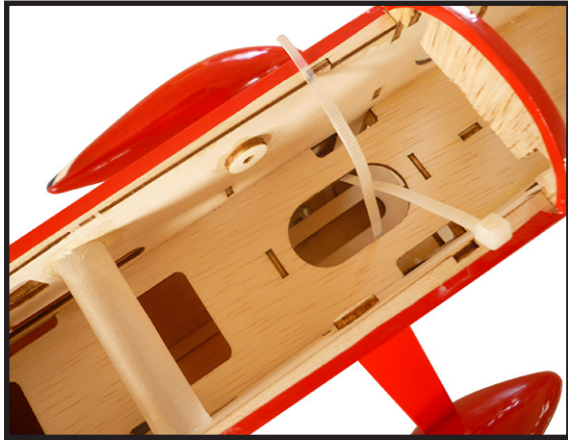
Please see below pictures.



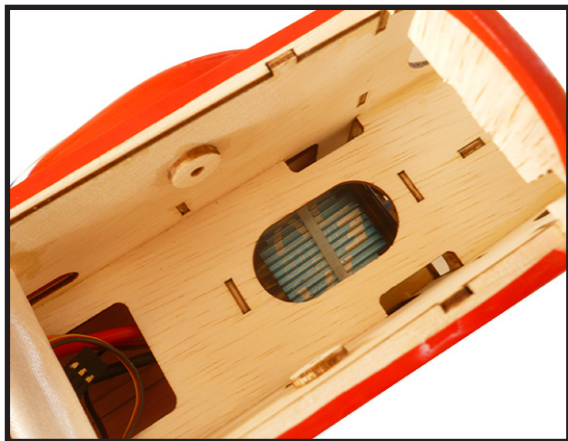
1) Route the leads for the motor through the hole in the firewall.



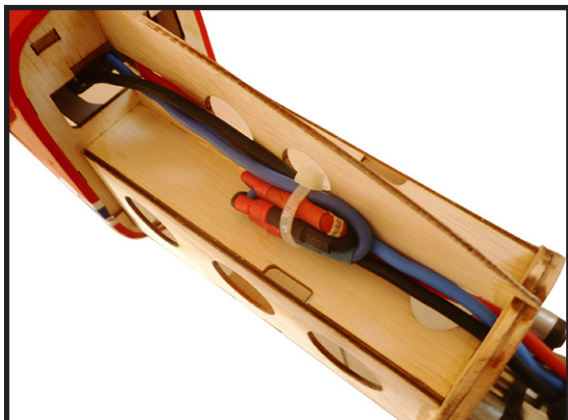
2) Loop a tie-wrap (not included) through the plate in the fuselage right above the landing gear plate. Make sure the tie-wrap is not looped through the battery mounting plate.



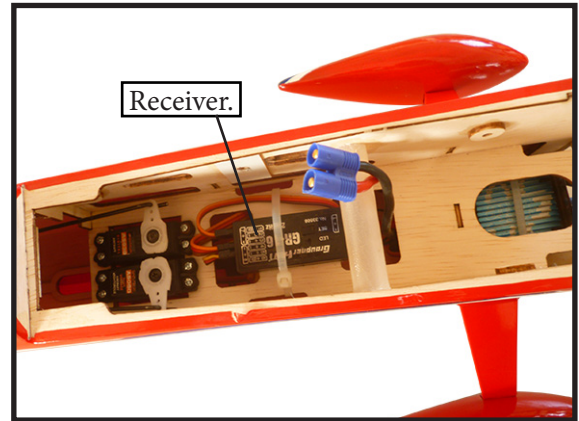
3) Slide the speed control into the fuselage with the battery wires, receiver lead and switch going in and through the tie-wrap. Position the speed control, then tighten the tie-wrap to secure the speed control in the fuselage. The heat sink will face the top of the fuselage.



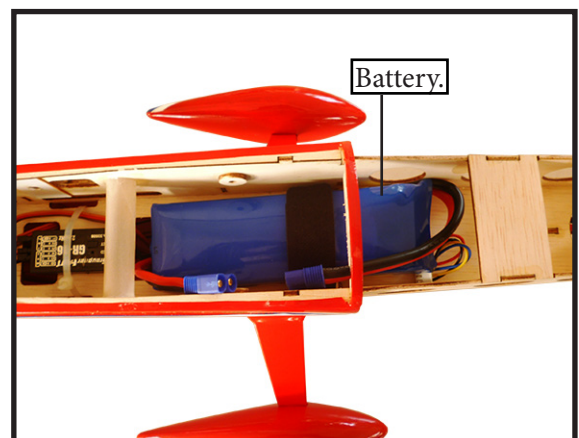
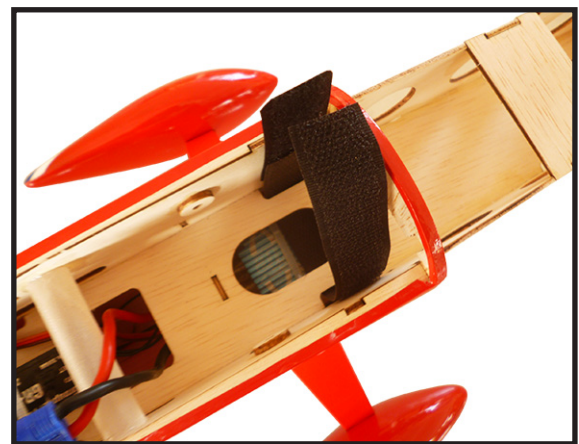
4) Connect the wires from the motor to the wires of the speed control. Use a tie-wrap (not included) to secure the leads so they don't interfere with the operation of the motor or installation of the cowl.



5) Route the battery lead through the opening in the fuselage. The lead for the receiver is routed under the battery tray and receiver, then plugged into the throttle channel of the receiver. Mount the switch from the speed control in the fuselage where it can be accessed when the canopy is removed.



6) Secure the battery in the fuselage using a hook and loop strap. Also, place hook and loop tape on the battery and fuselage where they contact each other to prevent the battery from moving.



COWLING.

Please see below pictures.



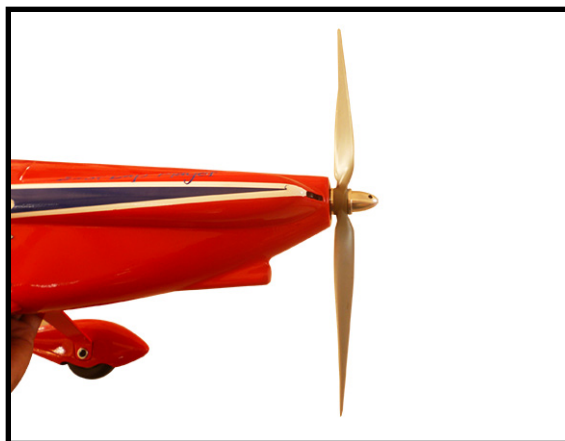
The cowl can now be secured to the fuselage using the four 2x6mm metal screws.



INSTALLING THE PROPELLER.

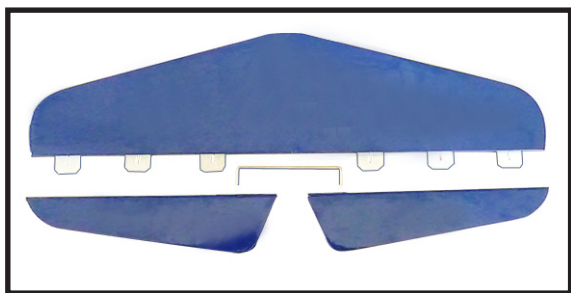


⚠ The propeller should not touch any part of the spinner cone. If it does, use a sharp modeling knife and carefully trim away the spinner cone where the propeller comes in contact with it.



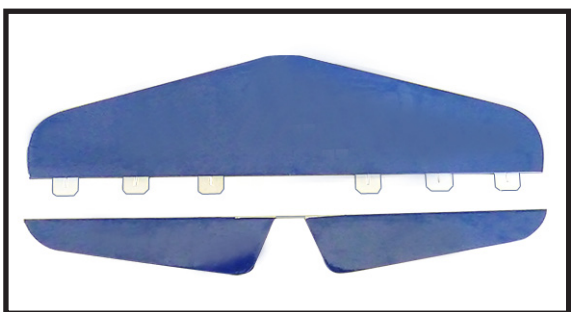
HINGING THE ELEVATOR.

1) Locate the items for this section of the manual.

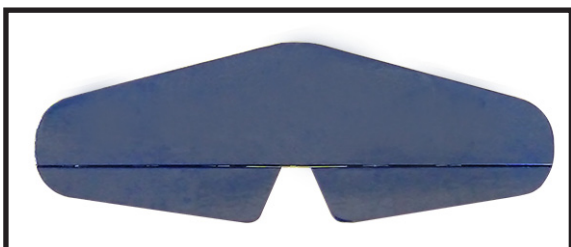


2) Carefully remove the elevator from one of the horizontal stabilizer panels. Note the position of the hinges.

3) Remove each hinge from the horizontal stabilizer panel and elevator and place a T-pin in the center of each hinge. Slide each hinge into the elevator until the T-pin is snug against the elevator. This will help ensure an equal amount of hinge is on either side of the hinge line when the elevator is mounted to the horizontal stabilizer panel.



Glue the elevator hinges in place using the same techniques used to hing the ailerons.



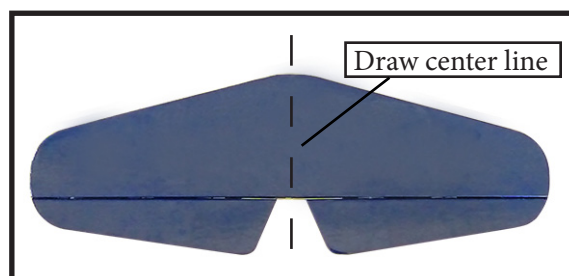
HINGING THE ELEVATOR.

Glue the ruder hinges in place using the same techniques used to hing the ailerons.



STABILIZER INSTALLATION.

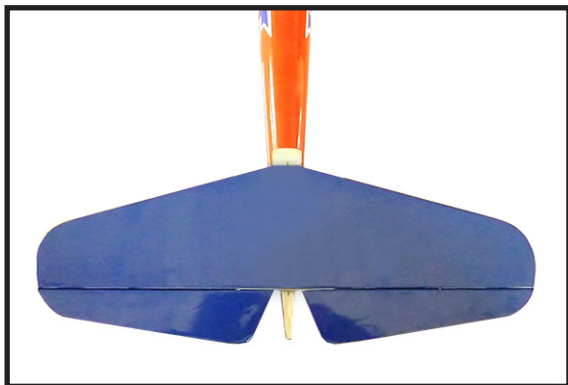
1) Using a ruler and a pen, locate the centerline of the horizontal stabilizer, at the trailing edge, and place a mark. Use a triangle and extend this mark, from back to front, across the top of the stabilizer. Also extend this mark down the back of the trailing edge of the stabilizer.



2) Using a modeling knife, carefully remove the covering at mounting slot of horizontal stabilizer (both side of fuselage).



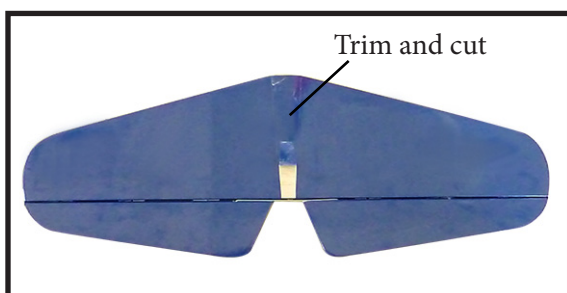
3) Slide the stabilizer into place in the precut slot in the rear of the fuselage. The stabilizer should be pushed firmly against the front of the slot.



4) With the stabilizer held firmly in place, use a pen and draw lines onto the stabilizer where it and the fuselage sides meet. Do this on both the right and left sides and top and bottom of the stabilizer.

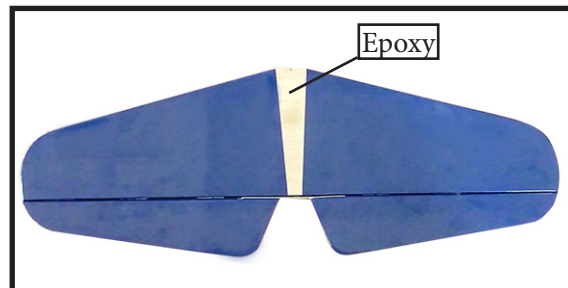


5) Remove the stabilizer. Using the lines you just drew as a guide, carefully remove the covering from between them using a modeling knife.

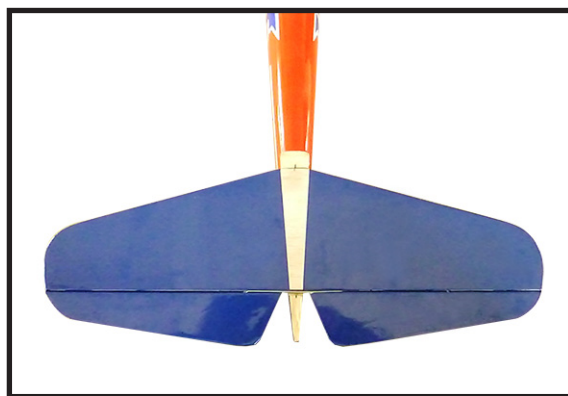


! When cutting through the covering to remove it, cut with only enough pressure to only cut through the covering itself. Cutting into the balsa structure may weaken it.

6) Using a modeling knife, carefully remove the covering that overlaps the stabilizer mounting platform sides in the fuselage. Remove the covering from both the top and the bottom of the platform sides.

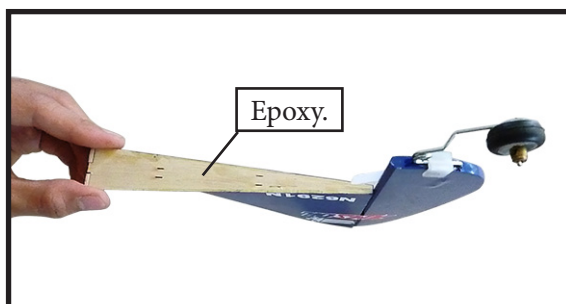
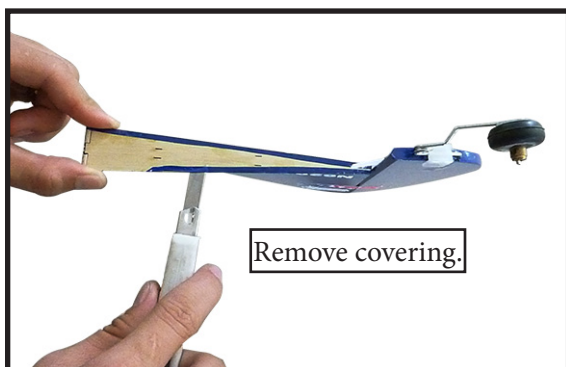


7) When you are sure that everything is aligned correctly, mix up a generous amount of 30 Minute Epoxy. Apply a thin layer to the top and bottom of the stabilizer mounting area and to the stabilizer mounting platform sides in the fuselage. Slide the stabilizer in place and realign. Double check all of your measurements once more before the epoxy cures. Hold the stabilizer in place with T-pins or masking tape and remove any excess epoxy using a paper towel and rubbing alcohol.



INSTALLING VERTICAL STABILIZER.

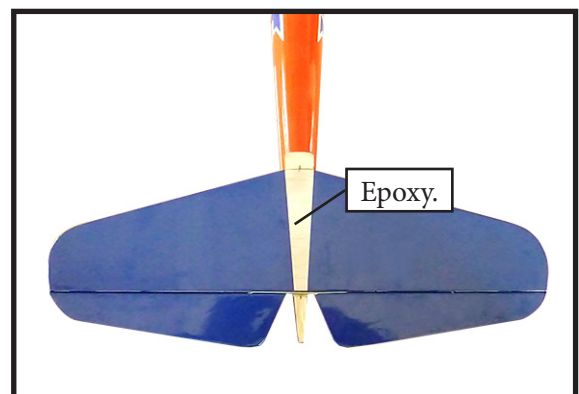
1) Using a modeling knife, remove the covering from over the precut hinge slot cut into the lower rear portion of the fuselage. This slot accepts the lower rudder hinge.



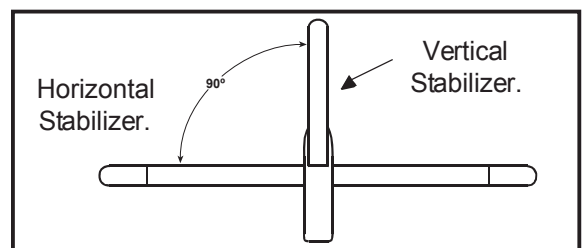
2) Slide the vertical stabilizer into the slot in the top of the fuselage. The rear edge of the stabilizer should be flush with the rear edge of the fuselage and the lower rudder hinge should engage the precut hinge slot in the lower fuselage. The bottom edge of the stabilizer should also be firmly pushed against the top of the horizontal stabilizer.



3) While holding the vertical stabilizer firmly in place, use a pen and draw a line on each side of the vertical stabilizer where it meets the top of the fuselage.

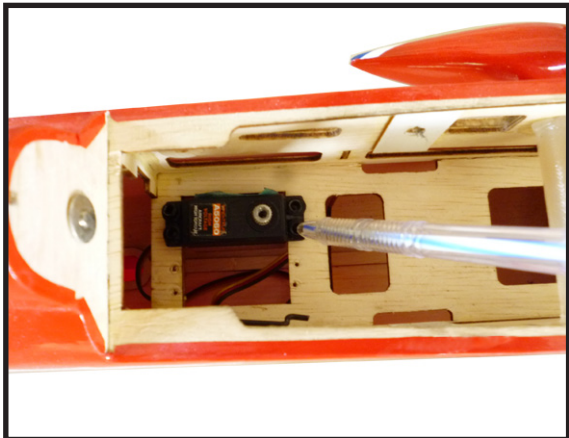


4) Slide the vertical stabilizer back in-place. Using a triangle, check to ensure that the vertical stabilizer is aligned 90° to the horizontal stabilizer.

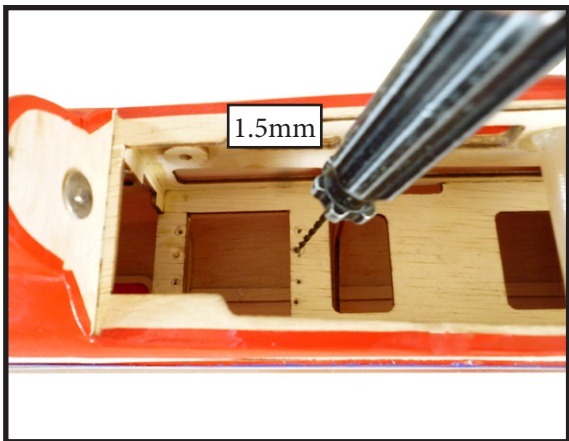


SERVO AND PUSHROD INSTALLATION.

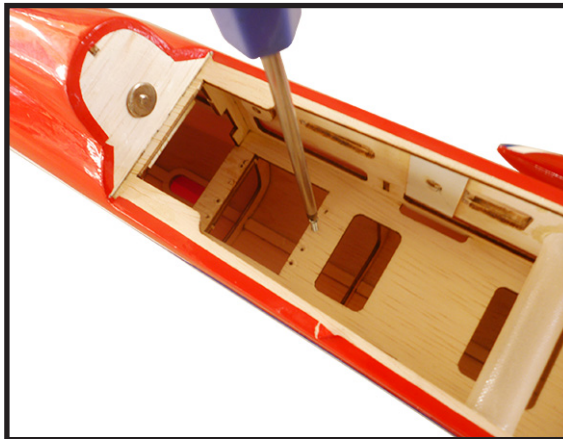
1) Place the rudder servo in the fuselage with the output shaft to the front of the fuselage. Position the servo so the edge toward the center is centered in the opening. Use a pencil to transfer the positions for the mounting screws on the servo tray.



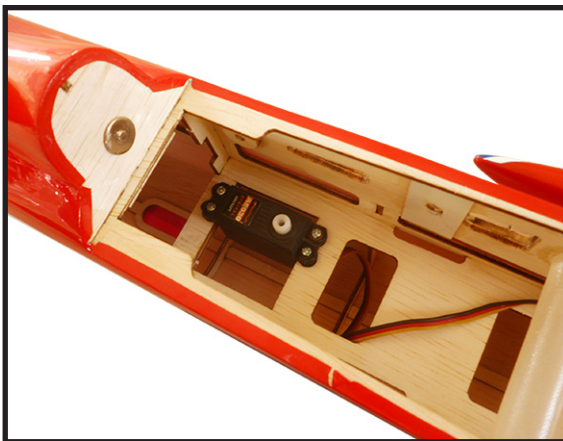
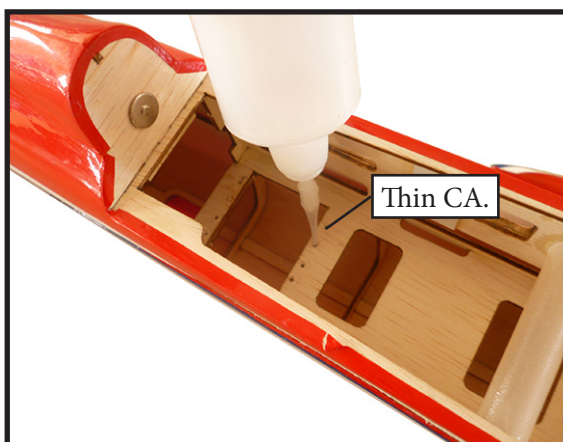
2) Remove the servo from the fuselage. Use a pin vise and drill bit to drill the four holes for the servo mounting screws.



3) Use a screwdriver to thread a servo mounting screw into each of the holes to cut threads in the surrounding wood. Remove the screw before moving to the next step. Prepare all four mounting holes at this time.

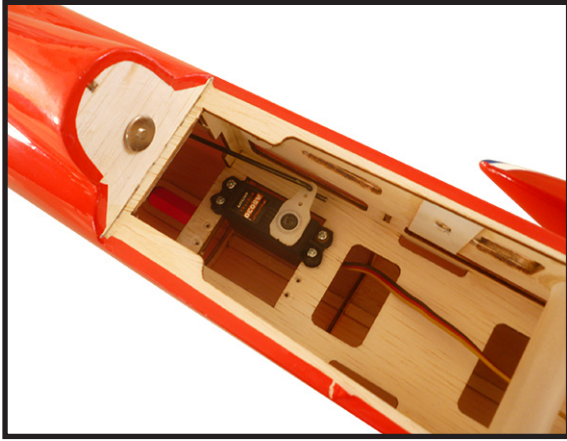


4) Place 2-3 drops of thin CA in each hole to harden the surrounding wood.

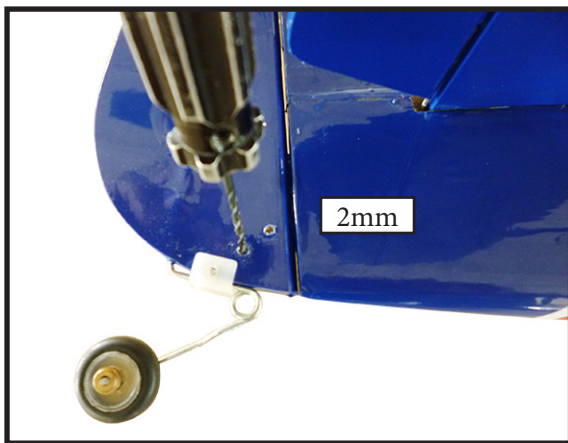


5) Insert the Z-bend from the pushrod wire through the hole in the servo horn.

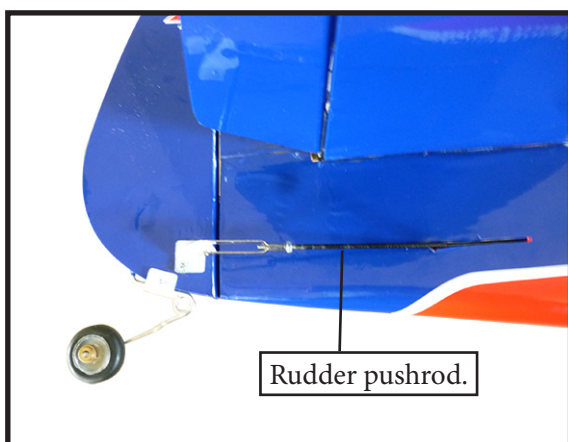




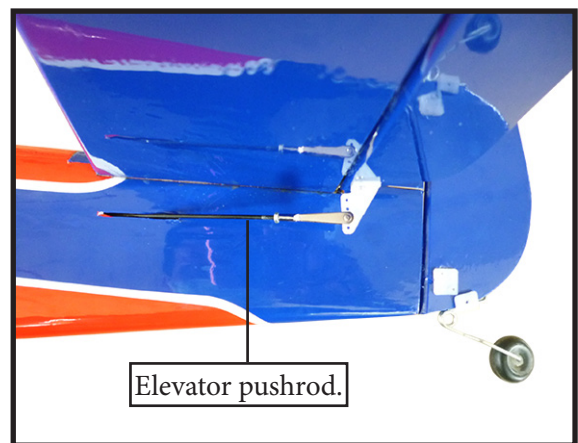
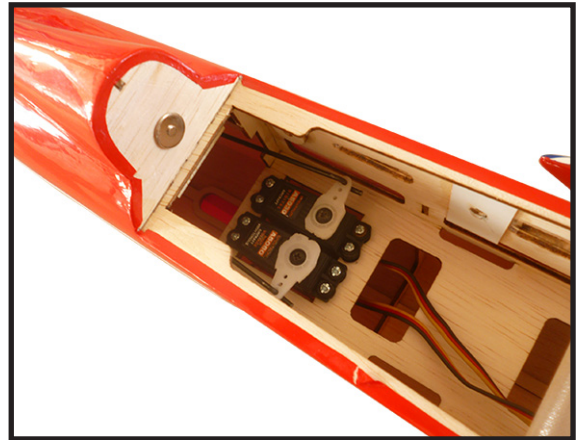
6) Use a pin vise and drill bit to drill the two locations for the control horn mounting screws. The locations have been pre-drilled at the factory.



7) Secure the control horn to the rudder using two 2x12mm metal screws and a control horn backplate.



8) Repeat above steps to connect the elevator pushrod wire. The positions and measurements for the elevator connections are the same as the rudder.



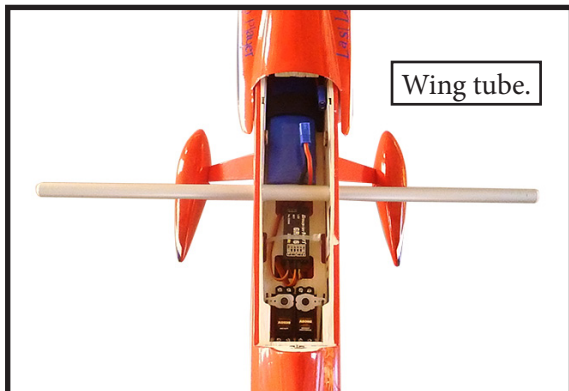
APPLY THE DECALS.

1) If all the decals are pre-cut 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.

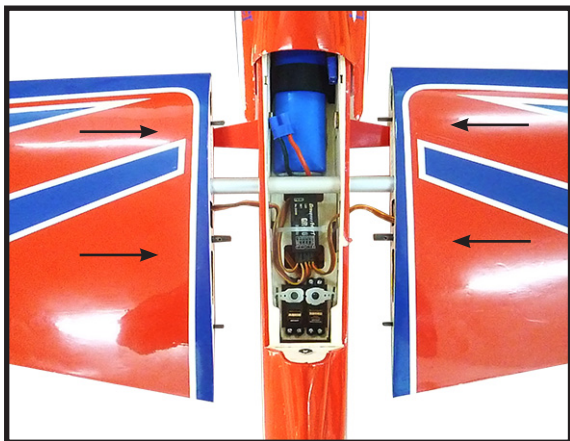
2) If all the decals are not pre-cut, please use scissors or a sharp hobby knife to cut the decals from the sheet. Please be certain the model is clean and free from oily fingerprints and dust. Position decal on the model where desired, using the photos on the box and aid in their location.

ATTACHMENT WING- FUSELAGE.

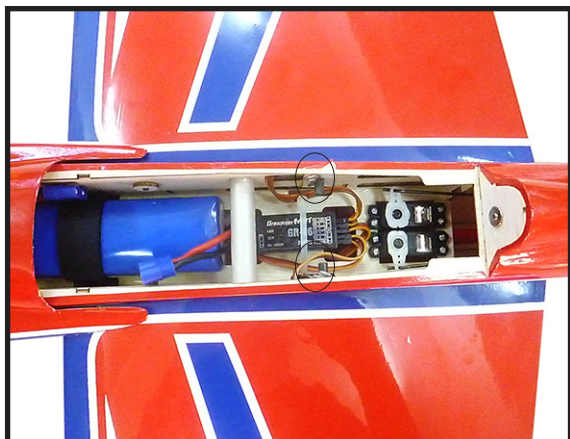
Slide the aluminum tube into fuselage.



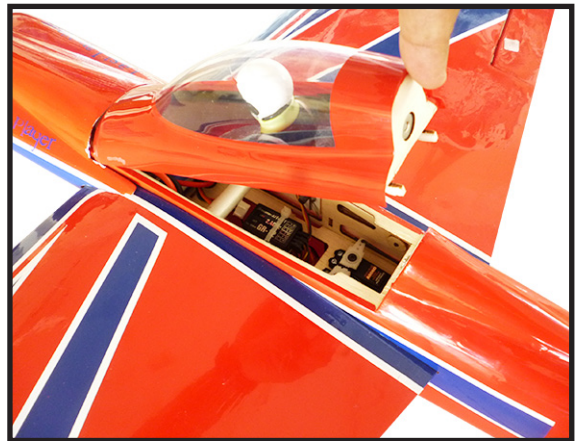
Insert two wing panels as pictures below.



Use a clip to secure the wing to the fuselage.



Insert canopy hatch into fuselage as below pictures.



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 **60 to 66mm** BACK FROM THE LEADING EDGE OF THE WING AT THE WING ROOT.

2) Mount the wing to the fuselage. Using a couple of pieces of masking tape, place them on the bottom side of the wing **60 to 66mm** back from the leading edge of the wing at the wing root.

3) With the model upright, place your fingers on the masking tape and carefully lift the plane.

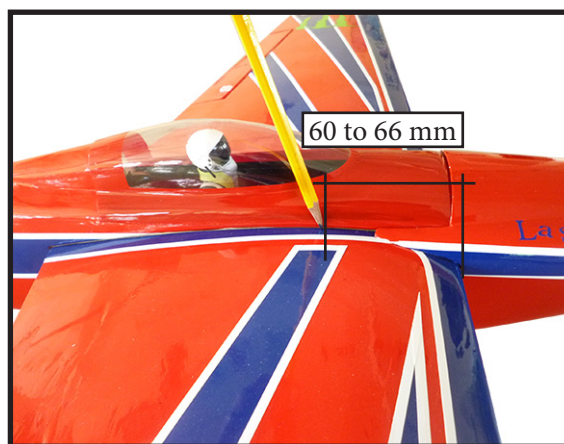
4) Do not turn plane upside down. Only low wing models should be turned upsidown for balancing. Remove this paragraph, it is not intended for use in the instructions. it is a note for you. High Wing models must be balanced upright.

Accurately mark the balance point on the bottom of the wing on both sides of the fuselage. The balance point is located **60 to 66mm** back from the leading edge of the wing at the wing root. This is the balance point at which your model should balance for your first flights. Later, you may wish to experiment by shifting the balance up to 10mm forward or back to change the flying characteristics. Moving the balance forward may improve the smoothness and arrow- like tracking, but it may then require more speed for take off and make it more difficult to slow down for landing. Moving the balance aft makes the model more agile with a lighter and snappier "feel". In any case, please start at the location we recommend .

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

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

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



CONTROL THROWS.

Ailerons:

High Rate

Up: 10mm

Down: 6mm

Low Rate

Up: 8mm

Down: 5mm

Elevator:

High Rate

Up: 7mm

Down: 6mm

Low Rate

Up: 5mm

Down: 4mm

Rudder:

High Rate

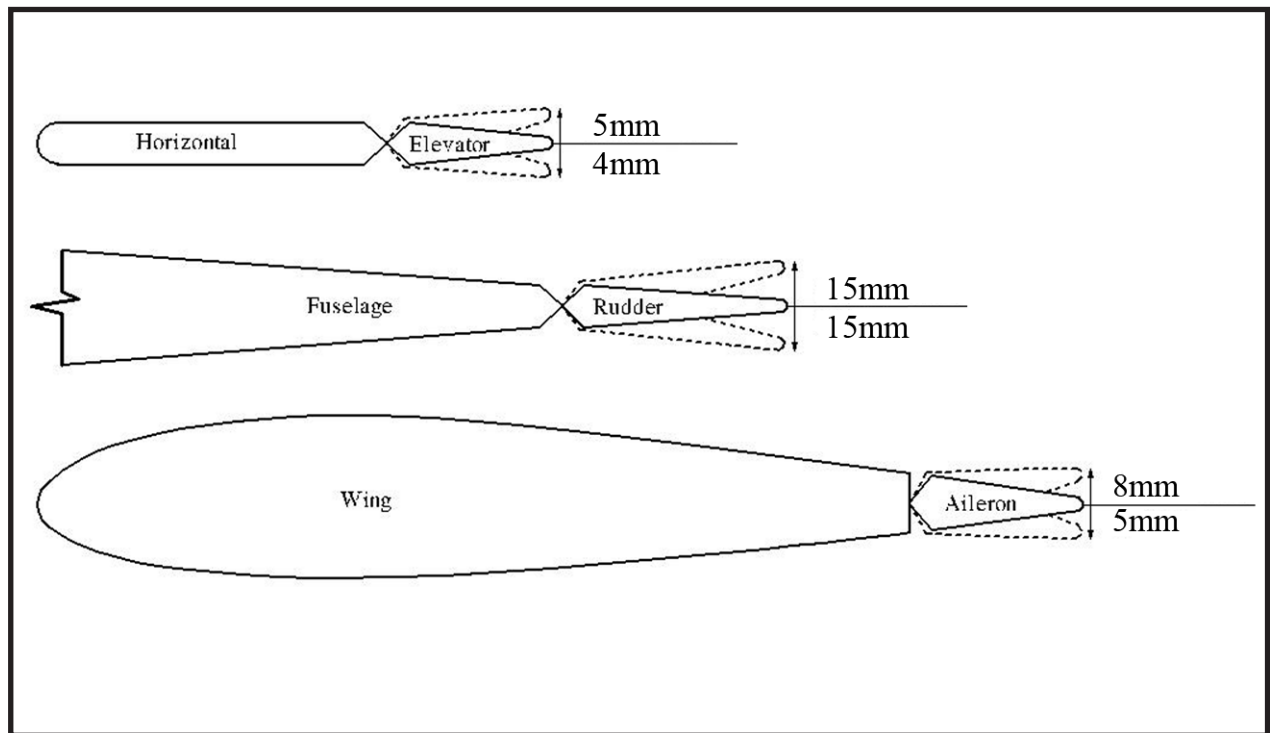
Right: 17mm

Left: 17mm

Low Rate

Right: 15mm

Left: 15mm



FLIGHT PREPARATION.

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

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

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

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

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

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

PREFLIGHT CHECK.

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

□ 2) Check every bolt and every glue joint in the **SHOESTRING 25E EP** 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 **SHOESTRING 25E EP**.*