



Instruction Manual book

SPEED AIR



SPECIFICATION

☐ Wingspan :	1,500 mm	59 in.
☐ Length :	1,160 mm	46 in.
☐ Weight :	2.4 kg	5.28 Lbs.
☐ Radio :	04 channels.	
☐ Servo :	04 servos.	
☐ Engine :	40 - 46	2 stroke
	52	4 stroke

Made in Vietnam.

This instruction manual is designed to help you build a great flying aeroplane. Please read this manual thoroughly before starting assembly of your **SPEED AIR-40**. Use the parts listing below to identify 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 & RESPONSIBILITY.

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.

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.

Some more parts.

HARDWARE PACK

COWLING.

Landing gear.....

SUGGESTION.

To avoid scratching your new airplane, do not unwrap the pieces until they are needed for assembly. Cover your workbench with an old towel or brown paper, both to protect the aircraft and to protect the table. Keep a couple of jars or bowls handy to hold the small parts after you open the bag.

PARTS LISTING.

FUSELAGE ASSEMBLY

- ☐ (1) Fuselage.

WING ASSEMBLY

- ☐ (1) Right wing half with pre-installed aileron.
- ☐ (1) Left wing half with pre-installed aileron.
- ☒ Some more parts

Tail section assembly

- ☐ (1) Vertical stabilizer with pre-installed rudder.
- ☐ (1) Horizontal stabilizer with pre-installed elevator halves.

NOTE.

Please trial fit all the parts. Make sure you have the correct parts and that they fit and are aligned properly before gluing! This will assure proper assembly. **SPEED AIR-40** ARF is hand made from natural materials, every plane is unique and minor adjustments may have to be made. However, you should find the fit superior and assembly simple.

The painted and plastic parts used in this kit are fuel proof. However, they are not tolerant of many harsh chemicals including the following: paint thinner, C/A glue accelerator, C/A glue debonder and acetone. Do not let these chemicals come in contact with the colors on the covering and the plastic parts.

SAFETY PRECAUTION.

- + This is not a toy
 - + Be sure that no other flyers are using your radio frequency.
 - + Wear safety glasses.
 - + Keep loose clothing and wires away from the propeller.
 - + Do not start the engine if people are near.
- Do not stand in line with the side of the propeller.
- + Make engine adjustments from behind the propeller only. Do not reach around the spinning propeller.

**SERVO INSTALLATION.**

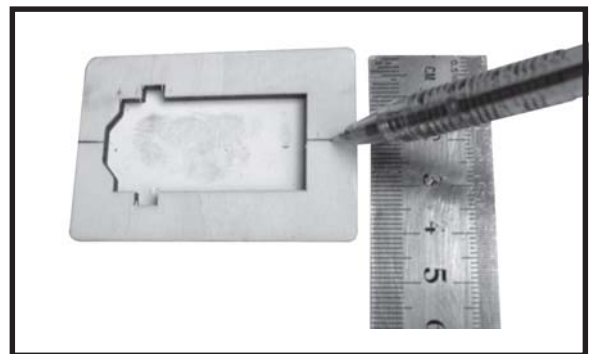
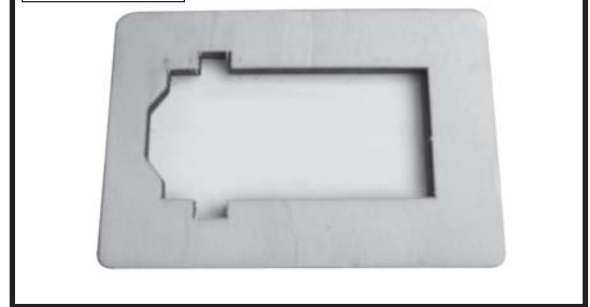
1) Install the rubber grommets and brass eyelets onto the aileron servo.



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



Servo mount.

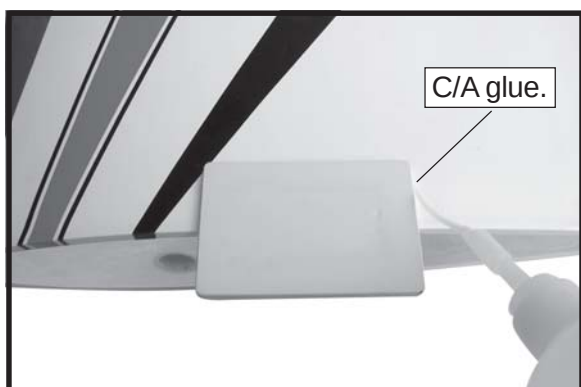
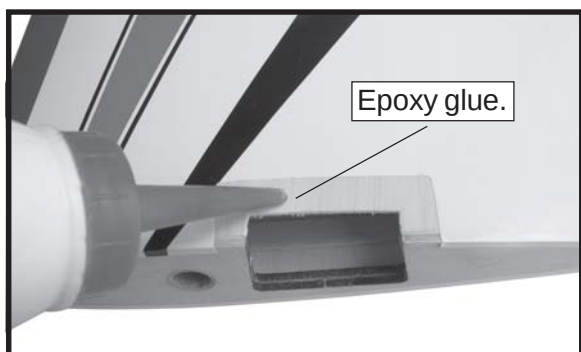
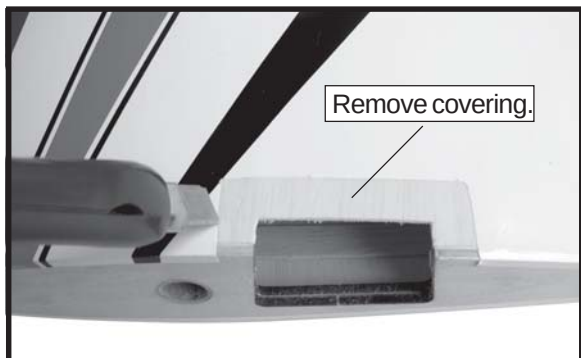
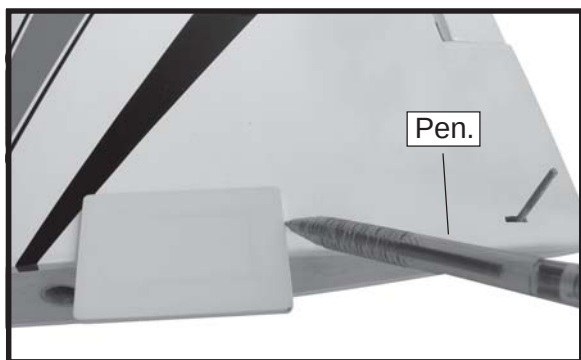


□ 2) Place the mount onto the wing haft, aligning the cutout in the mount with the cutout in the wing. The two notches in the mount should face the leading edge of the wing.

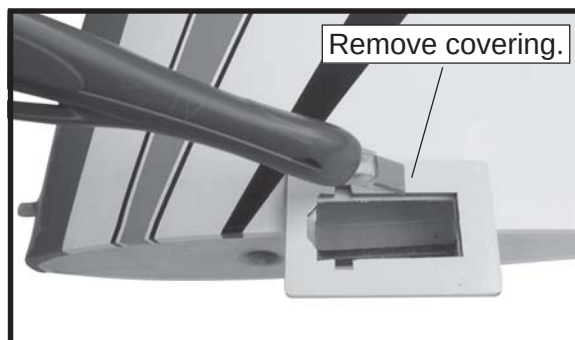
□ 3) While holding the servo mount firmly in place, trace around it using a pen.

□ 4) Remove the mount, and using a modeling knife, carefully remove the covering from inside the outline you drew.

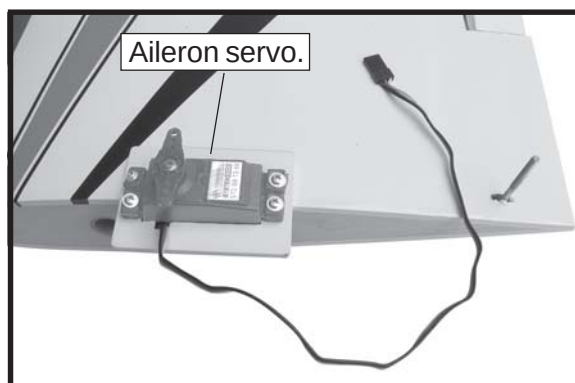
□ 5) Using Kwik Bond 5 Minute Epoxy, glue the servo mount into place. Remove any excess epoxy using a paper towel and rubbing alcohol. Use pieces of masking tape to hold the tray in place until the epoxy fully cures.



□ 6) Using a modeling knife, carefully remove the covering from servo mount.



□ 7) Install the aileron servo into the servo mount, with the output shaft towards the leading edge of the wing, using the wood screws provided with your radio system. Drill 1/16" pilot holes through the mount before installing the screws. This will prevent the wood from splitting.

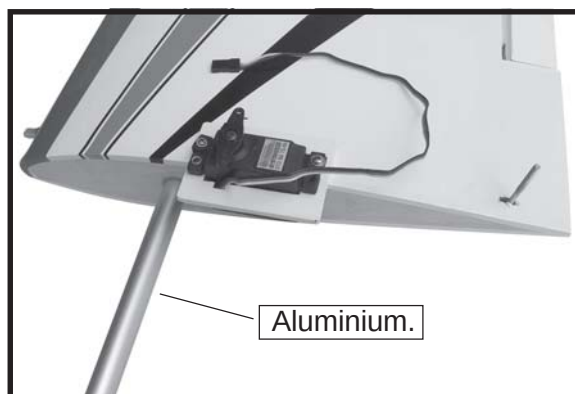


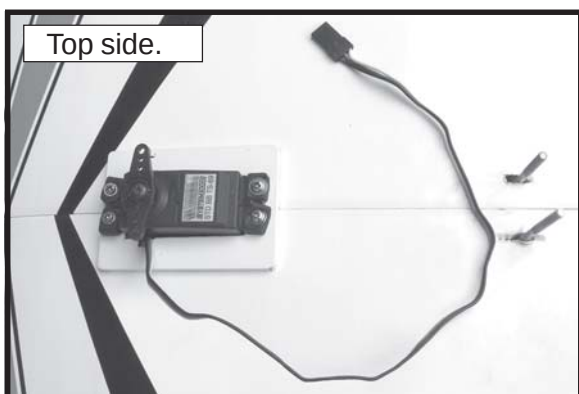
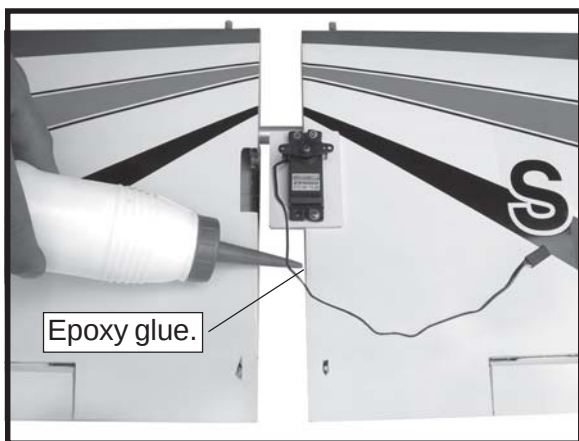
WING ASSEMBLY.

□ 1) Location the aluminium wing dihedral brace.

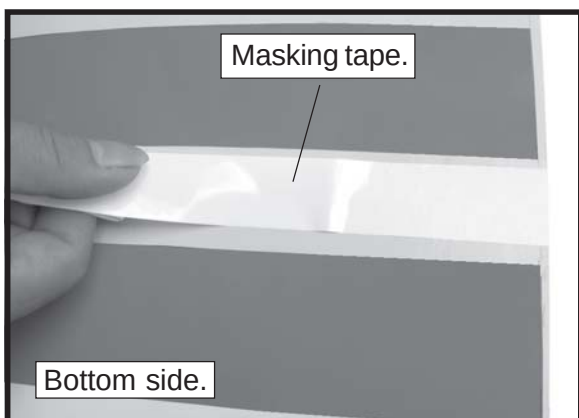


2) Test fit the aluminium dihedral brace into each wing half. The brace should slide in easily.

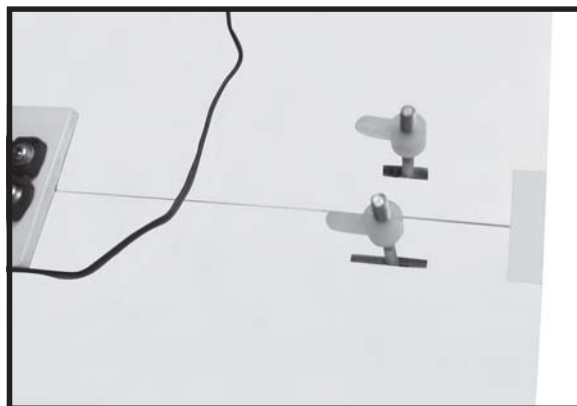
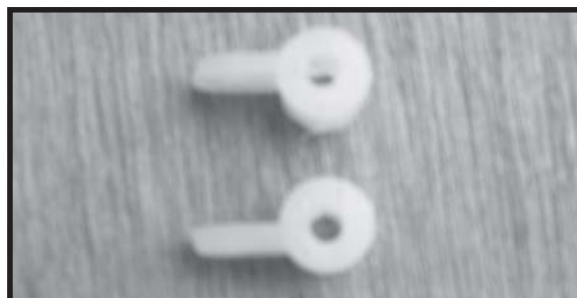




3) Apply masking tape at the wing join to hold the wing halves together securely.



INSTALLING THE AILERON LINKAGE.

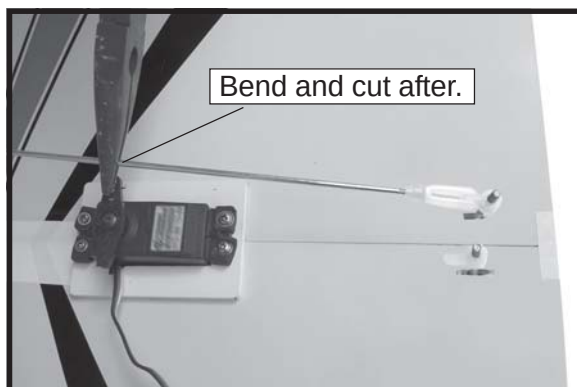


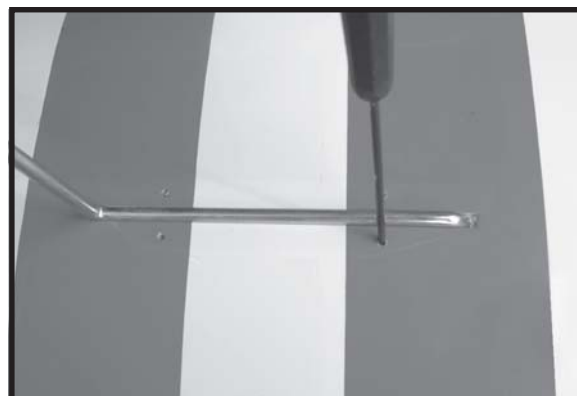
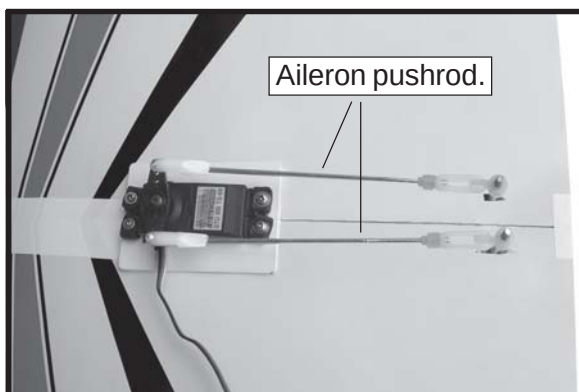
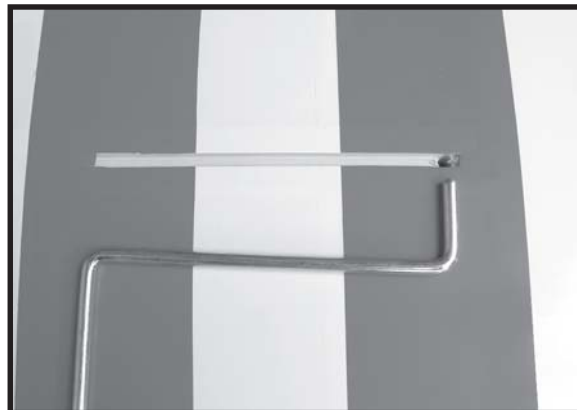
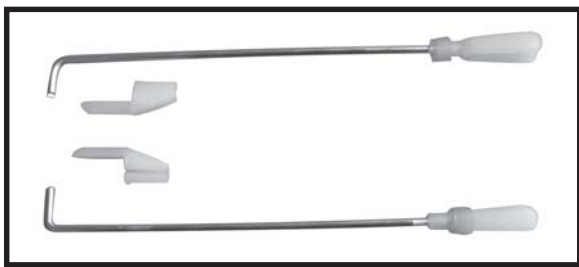
□ 1) Thread one nylon adjustable control horn onto each aileron torque rod. Thread the horns on until they are flush with the ends of the torque rods.

□ 2) Thread one nylon clevis at least 5/16" onto each of the two 2mm x 100mm threaded wires.



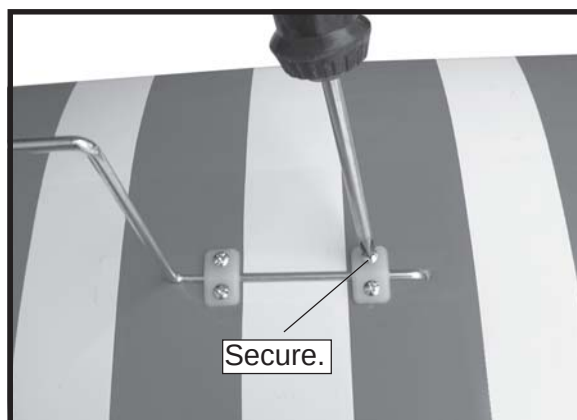
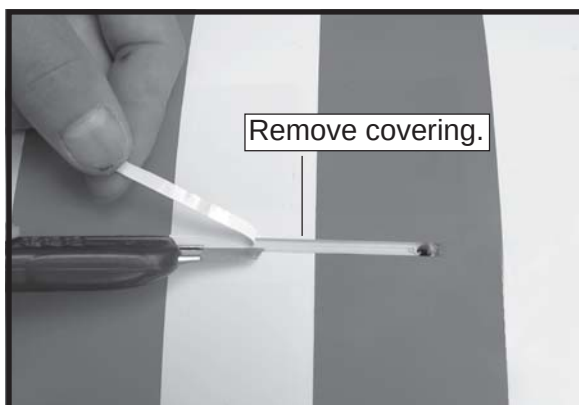
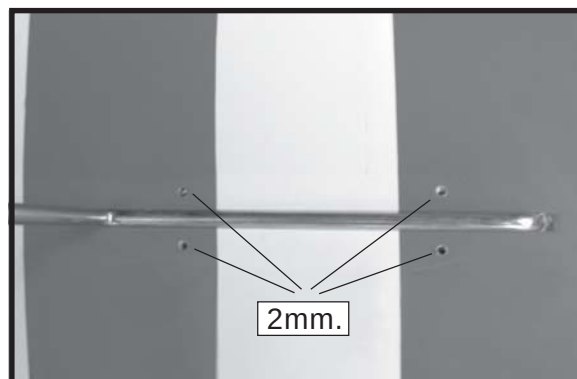
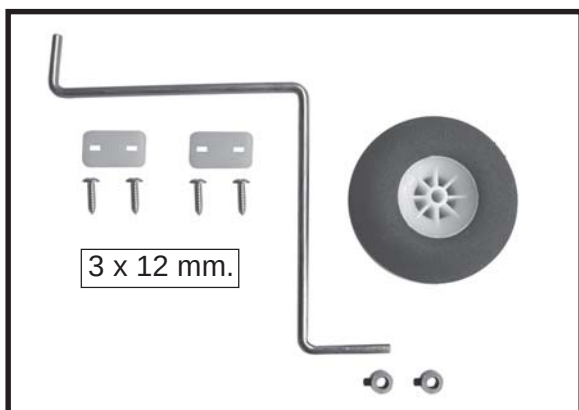
□ 3) With the aileron servo centered, install the servo arm onto the servo. The arm should be installed so it is parallel with the trailing edge of the wing.

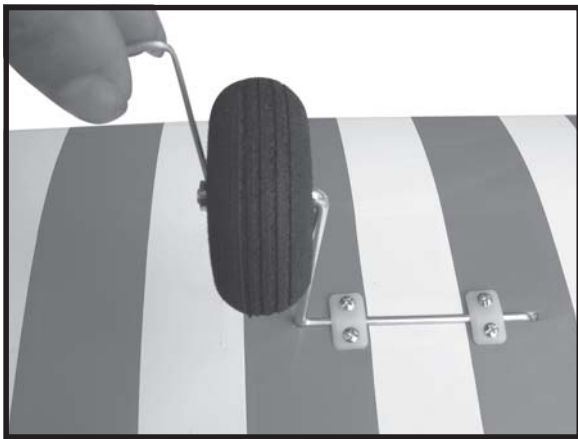




- 4) Slide the pushrod wires following picture above.

INSTALLING THE MAIN GEAR WHEELS.





Repeat the procedure for the other main gear wheel.



INSTALLING THE ENGINE MOUNT.



FUEL TANK.

INSTALLING THE STOPPER ASSEMBLY

1) The stopper has been pre-assembled at the factory.

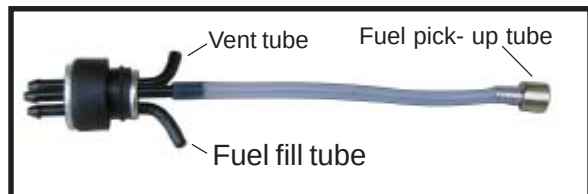
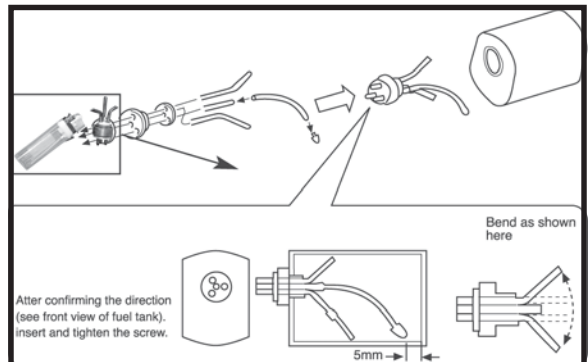
2) Using a modeling knife, cut one length of silicon fuel line (the length of silicon fuel line is calculated by how the weighted clunk should rest about 8mm away from the rear of the tank and move freely inside the tank). Connect one end of the line to the weighted clunk and the other end to the nylon pick up tube in the stopper.

3) Carefully bend the second nylon tube up at a 45 degree angle (using a cigarette lighter). This tube will be the vent tube to the muffler.

4) Carefully bend the third nylon tube down at a 45 degree angle (using a cigarette lighter). This tube will be vent tube to the fueling valve.



When the stopper assembly is installed in the tank, the top of the vent tube should rest just below the top surface of the tank. It should not touch the top of the tank.



5) 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 of it falls into the tank.

6) When satisfied with the alignment of the stopper assembly tighten the 3mm 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.

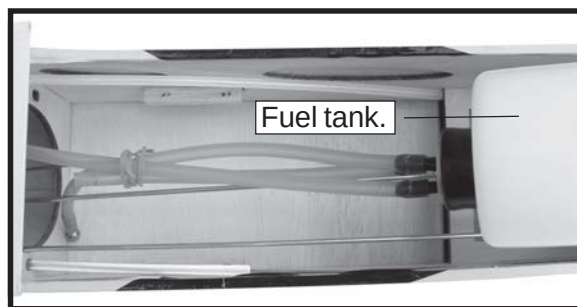
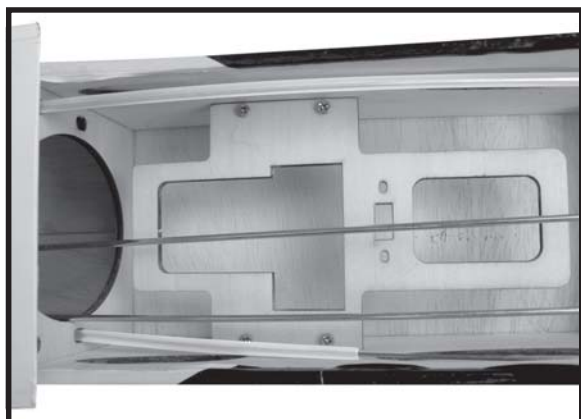
7) Using a modeling knife, cut 3 lengths of fuel line 150mm long. Connect 2 lines to the 2 vent tubes and 1 line to the fuel pickup tube in the stopper.

8) Feed three lines through the fuel tank compartment and through the pre-drilled hole in the firewall. Pull the lines out from behind the engine, while guiding the fuel tank into place. Push the fuel tank as far forward as possible, the front of the tank should just about touch the back of the firewall.

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.

9) To secure the fuel tank in place, apply a bead of silicon sealer to the forward area of the tank, where it exits the fuselage behind the engine mounting box and to the rear of the tank at the forward bulkhead.

Do not secure the tank into place permanently until after balancing the airplane. You may need to remove the tank to mount the battery in the fuel tank compartment.



NOSE GEAR INSTALLATION.



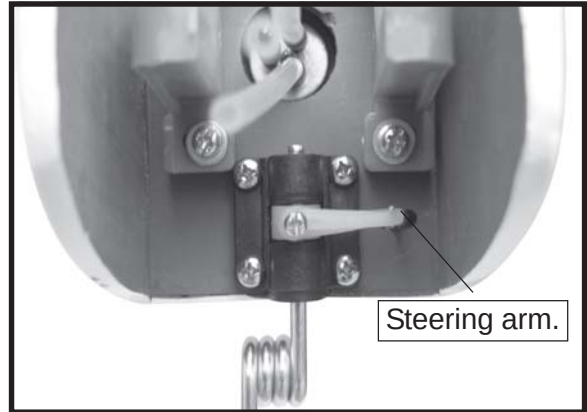


Installing steering arm as follow



Steering arm.

Adjust the nose gear steering arm until the arm is parallel with the fire wall.



Steering arm.



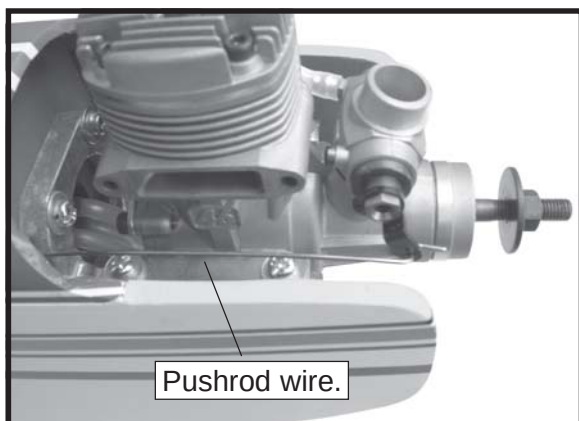
INSTALLING THE ENGINE.



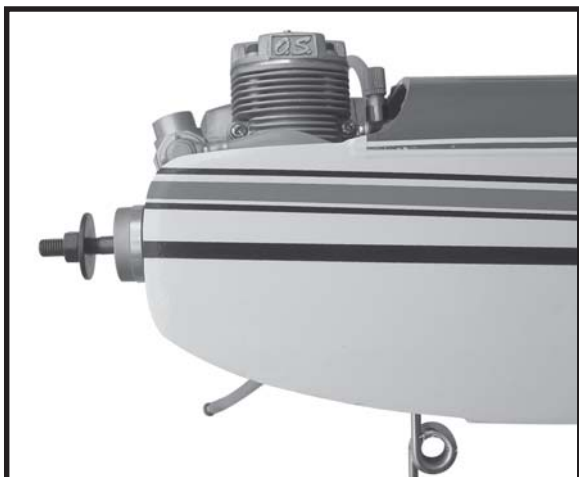
3x20 mm.

Locate the long piece of wire used for the throttle pushrod. One end of the wire has been pre-bend in to a "Z" bend at the factory. This "Z" bend should be inserted into the throttle arm of the engine when the engine is fitted onto the engine mount. Fit the engine to the engine mount using the screws provided.



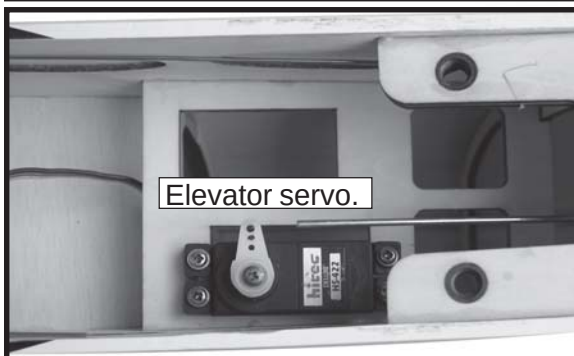
**INSTALLING THE SPINNER.**

Install the spinner backplate, propeller and spinner cone. The spinner cone is held in place using two 3mm x 12mm wood screws.

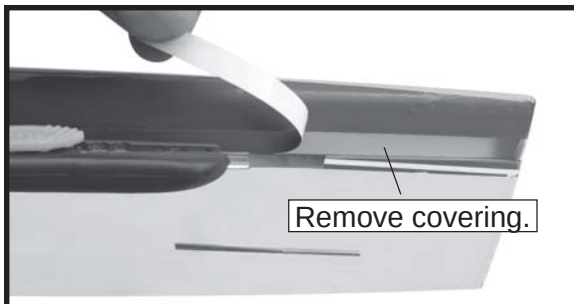


ELEVATOR INSTALLATION.**SERVO INSTALLATION.**

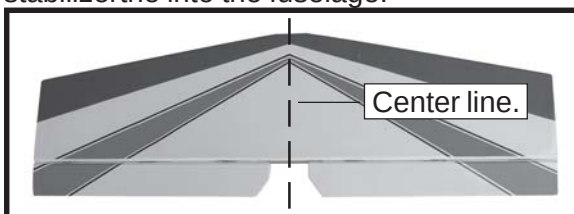
- 1. Install the rubber grommets and brass collets into the elevator servo. Test fit the servo into the servo tray.
- 2. Mount the servo to the tray using the mounting screws provided with your radio system.

**HORIZONTAL STABILIZER.**

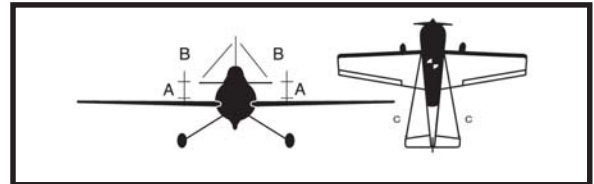
- ☞ 1. Using a modeling knife, cut away the covering from the fuselage for the stabilizer and remove it.



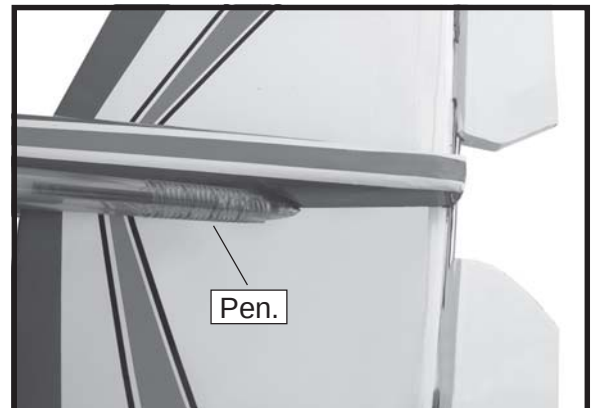
- 2) Using a ruler and a pen, locate the centerline of the horizontal stabilizer, at the trailing edge, and place a mark. Use a triangle and extend this mark, from back to front, across the top of the stabilizer. Also extend this mark down the back of the trailing edge of the stabilizer. Then slide the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



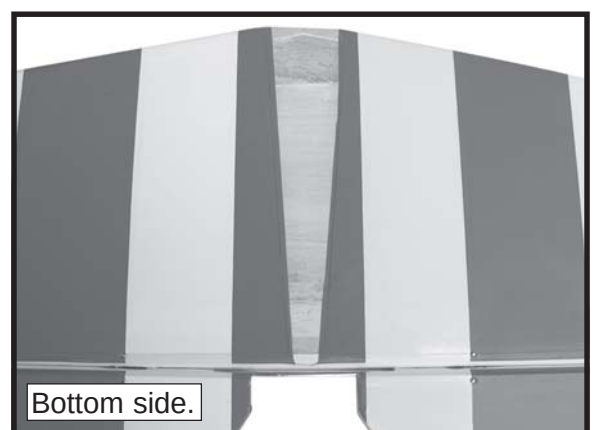
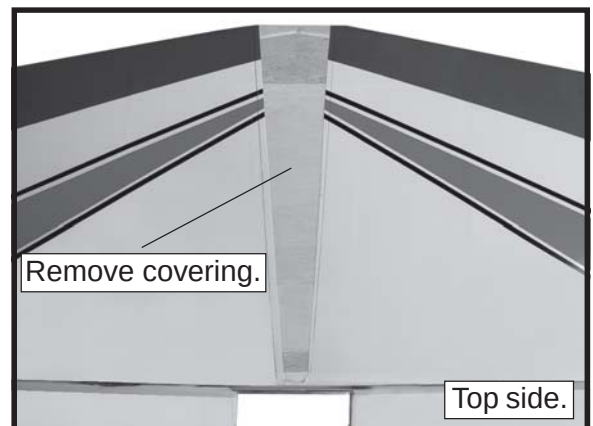
The top of the stabilizer does not have the hinge pins exposed.



- ☞ 3. 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.



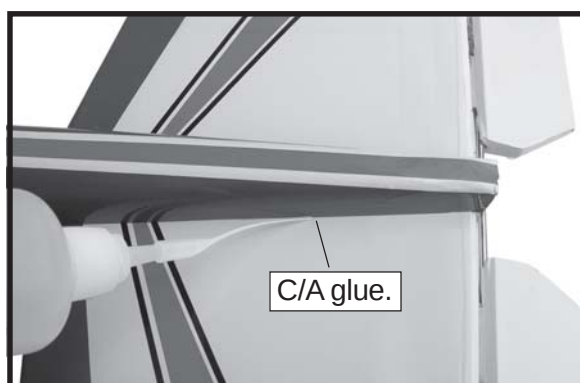
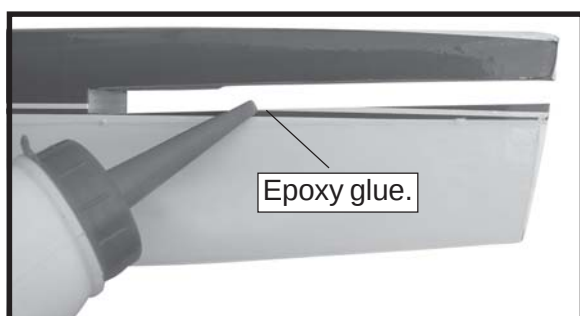
- 4) Remove the stabilizer. Using the lines you just drew as a guide, carefully remove the covering from between them using a modeling knife.



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.

5. 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.

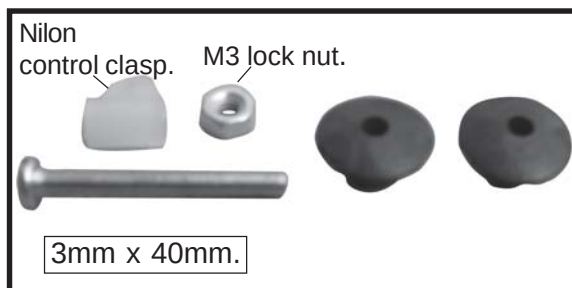
6) When you are sure that everything is aligned correctly, mix up a generous amount of 30 Minute Epoxy. Apply a thin layer to the top and bottom of the stabilizer mounting platform sides in the fuselage. Slide the stabilizer in place and realign. Double check all of your measurements once more before 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.



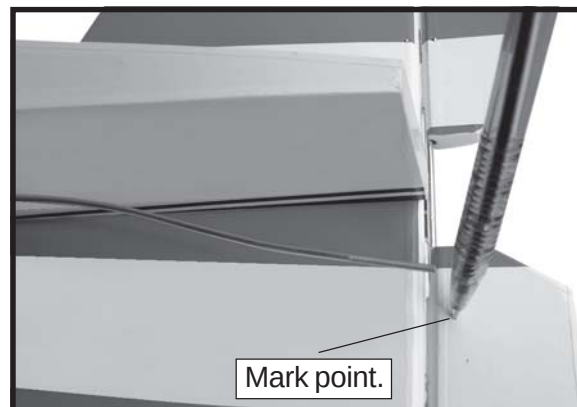
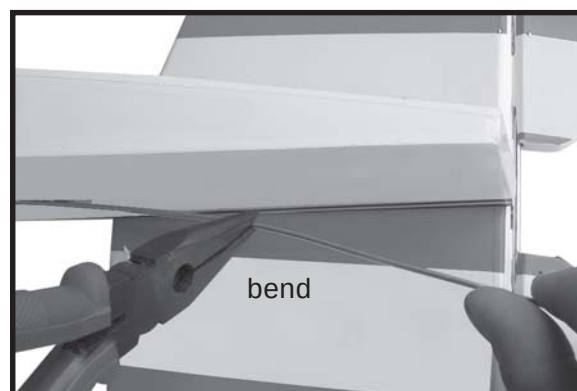
7) After the epoxy has fully cured, remove the masking tape or T-pins used to hold the stabilizer in place. Carefully inspect the glue joints. Use more epoxy to fill in any gaps that may exist that were not filled previously and clean up the excess using a paper towel and rubbing alcohol.

ELEVATOR CONTROL HORN INSTALLATION.

Elevator control horn install as same as the way of aileron control horn. Please see pictures below.

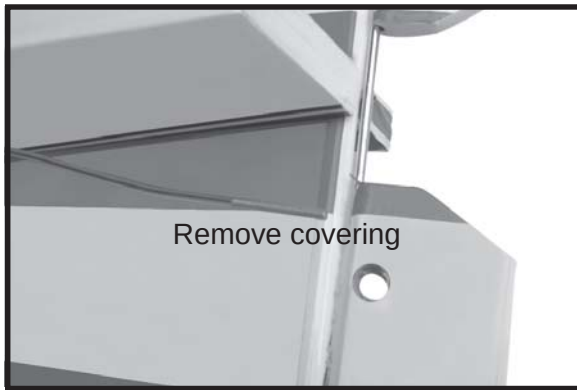


Control horn of elevator.

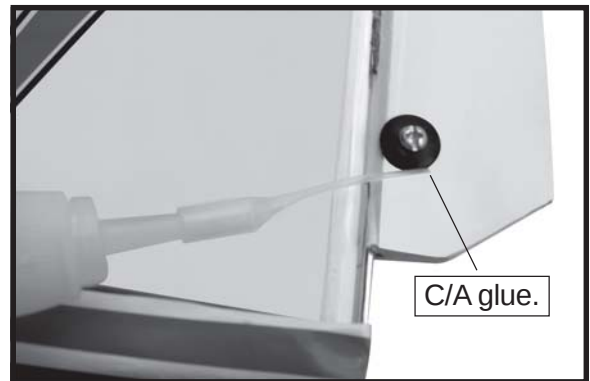
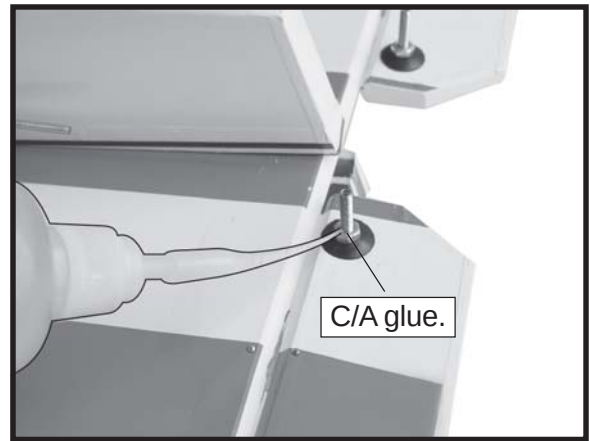
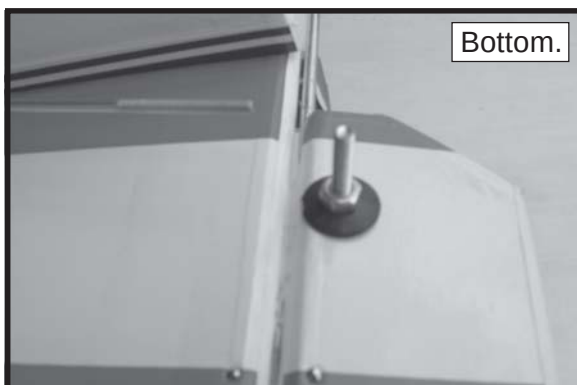


1) Drill through 6mm (diameter) the elevator using the control horn as a guide and screw the control horn in place.



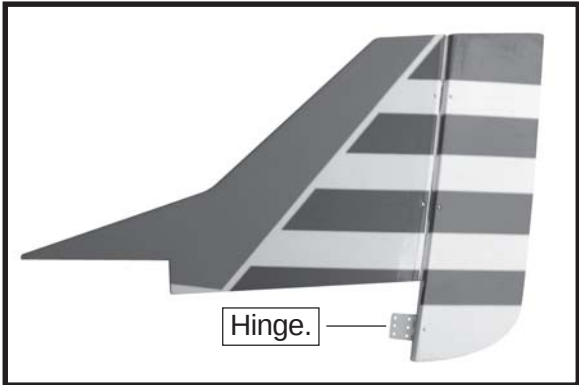
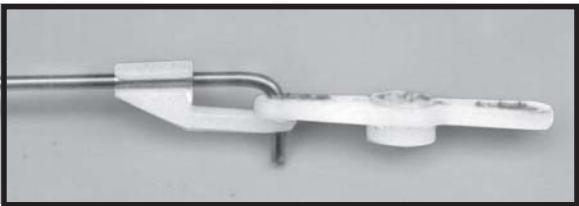
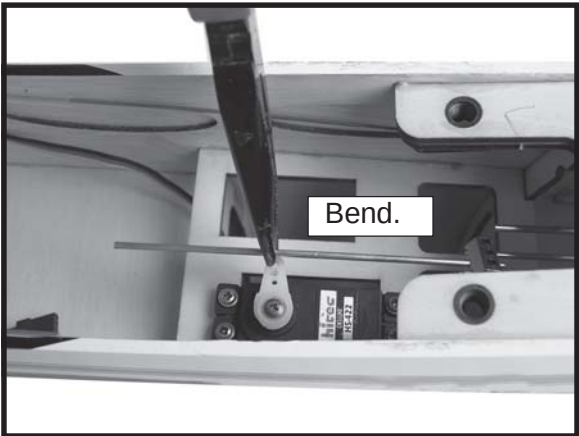


□ 2) Install control horn as same as picture below.

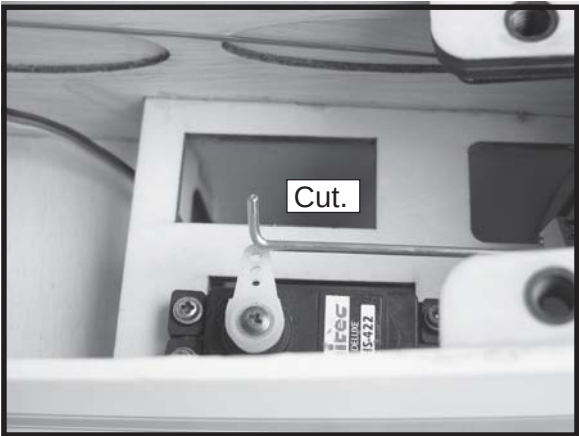


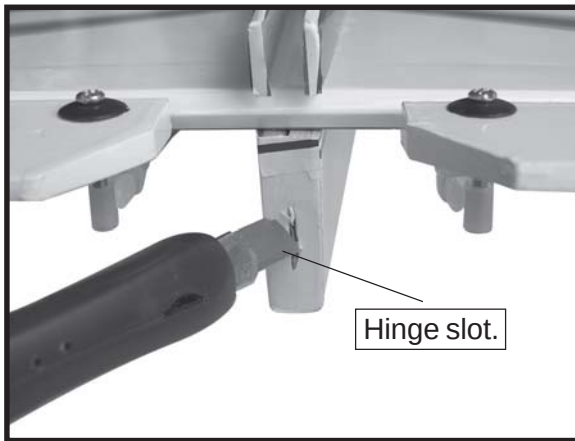


VERTICAL STABILIZER INSTALLATION.



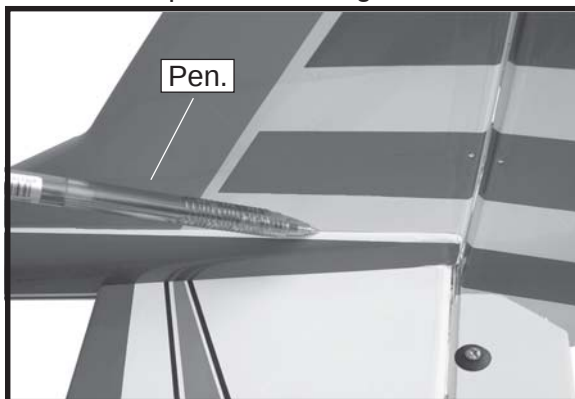
□ 1) Using a modeling knife, remove the covering from the top of the fuselage and the covering from over the precut hinge slot cut into the lower rear portion of the fuselage This slot accepts the lower vertical.



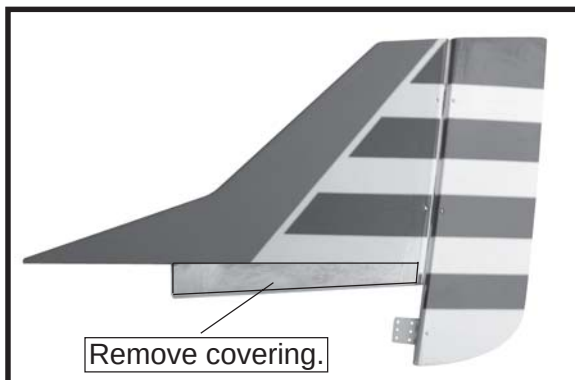


□ 2) Slide the vertical stabilizer into the slot in the top of the fuselage. The bottom edge of the stabilizer should also be firmly pushed against the top of the horizontal stabilizer.

□ 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.

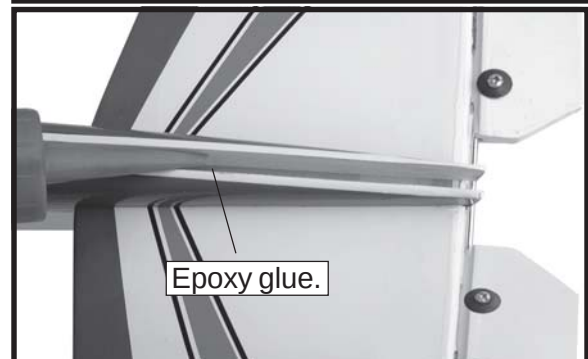
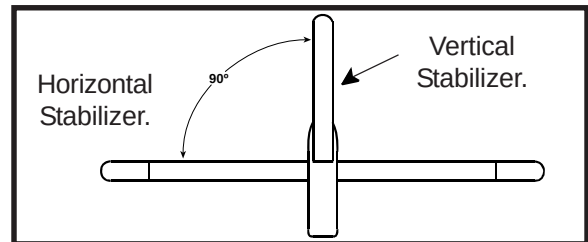


□ 4) Now, remove the vertical stabilizer and using a modeling knife, carefully cut just inside the marked lines and remove the film of the vertical stabilizer. Just as you did with the horizontal stabilizer, make sure you only press hard enough to cut the film, not the balsa vertical stabilizer.

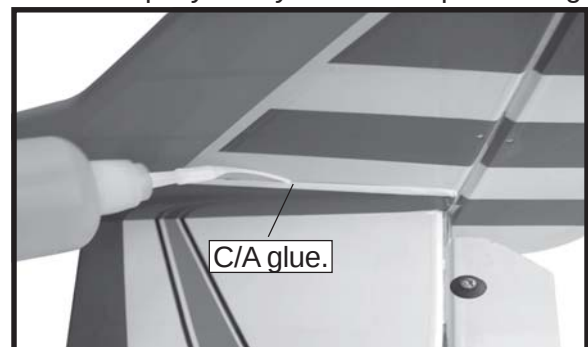


⚠ When cutting through the covering to remove it, cut with only enough pressure to only cut through the covering itself. Cutting into the balsa structure may weaken it.

□ 5) Slide the vertical stabilizer back in place. Using a triangle, check to ensure that the vertical stabilizer is aligned 90 degree to the horizontal stabilizer.

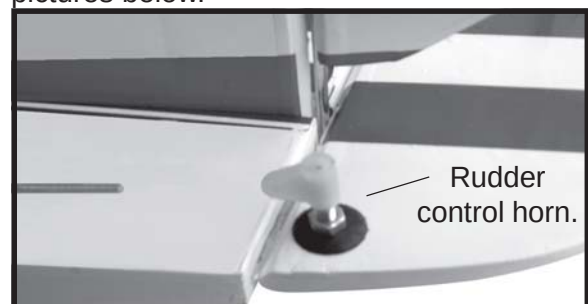


□ 6) When you are sure that everything is aligned correctly, mix up a generous amount of 30 minute epoxy. Apply a thin layer to the slot in the mounting platform and to the vertical stabilizer mounting area. Apply epoxy to the lower rudder hinge. Set the stabilizer in place and re-align. Double check all of your measurements once more before the epoxy cures. Remove any excess epoxy using a paper towel and rubbing alcohol and hold the stabilizer in place with T-pins or masking tape. Allow the epoxy to fully cure before proceeding.



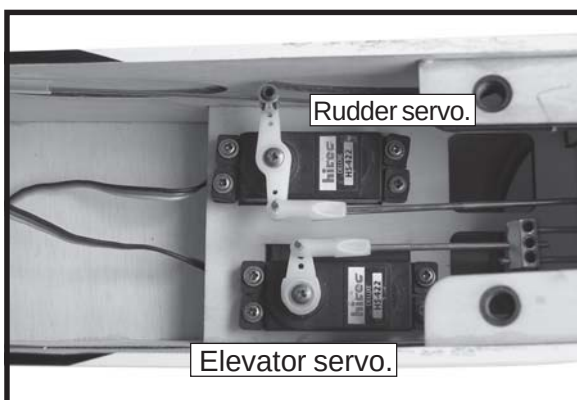
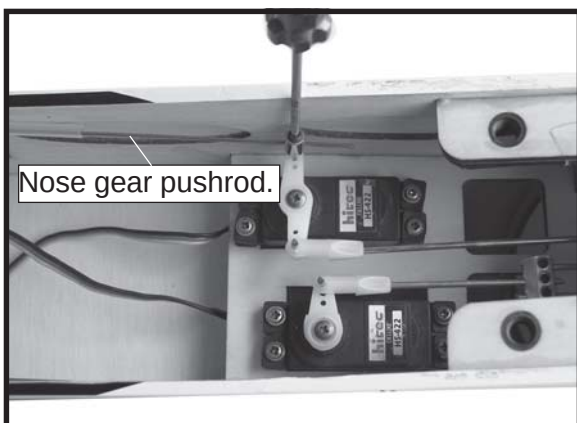
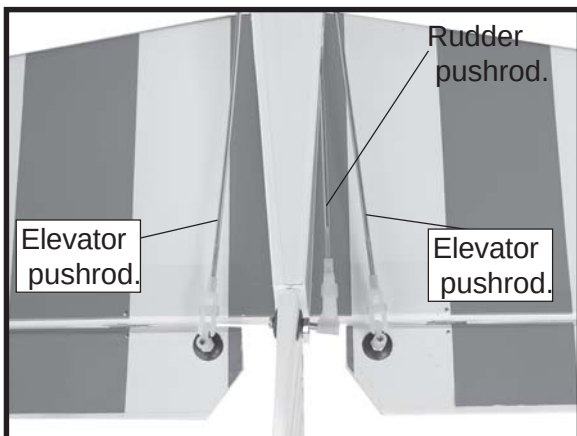
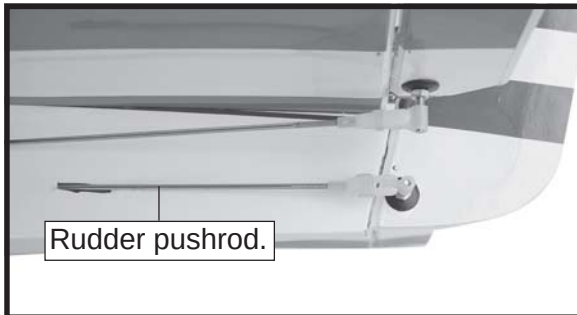
RUDDER CONTROL HORN INSTALLATION.

Rudder control horn install as same as the way of elevator control horn. Please see pictures below.



RUDDER PUSHROD INSTALLATION.

Rudder pushrod install as same as the way of aileron pushrod.

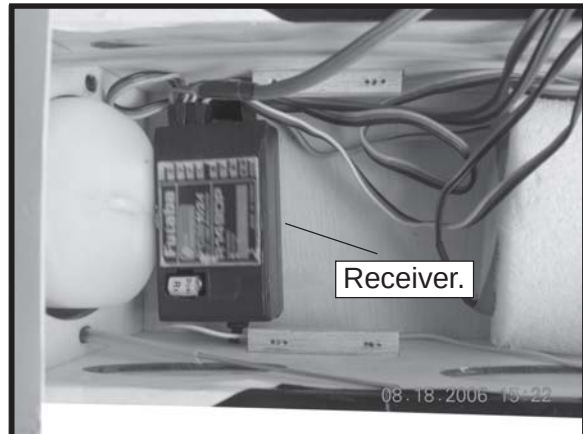
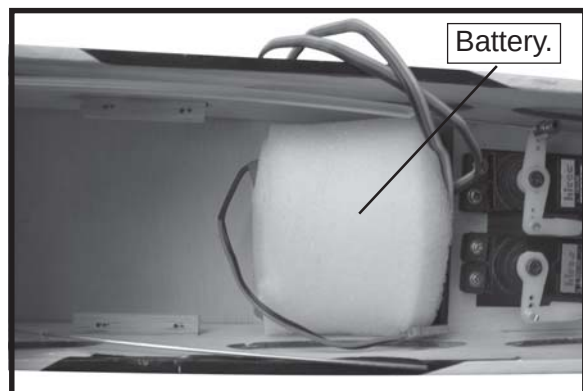
**INSTALLING THE RECEIVER AND BATTERY.**

□ 1) Plug the servo leads and the switch lead into the receiver. Plug the battery pack lead into the switch.

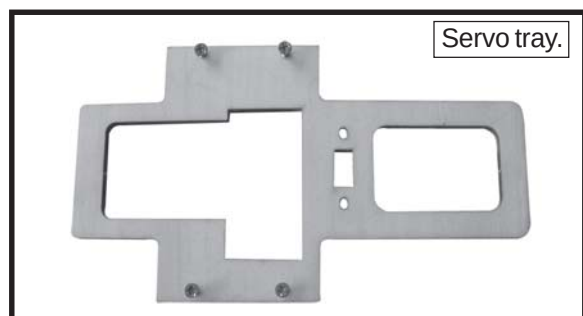
□ 2) Wrap the receiver and battery pack in the protective foam to protect them from vibration.

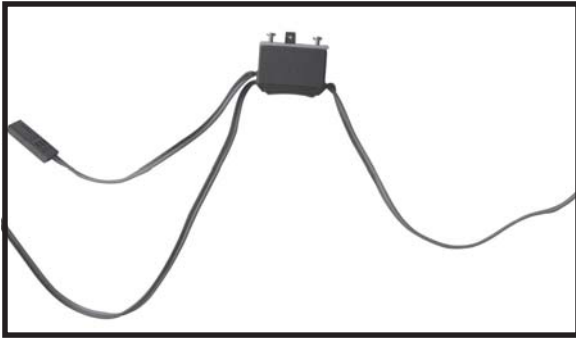
□ 3) Do not permanently secure the receiver and battery until after balancing the model.

□ 4) Using a 2mm drill bit, drill a hole through the side of the fuselage, near the receiver, for the antenna to exit.

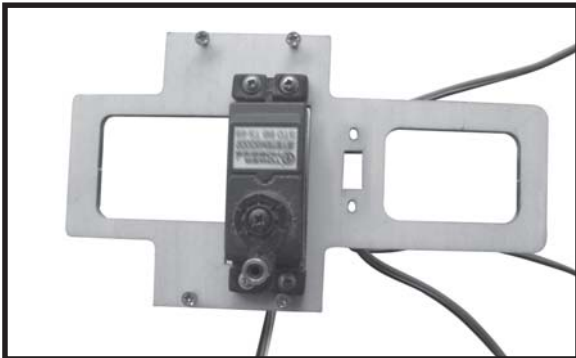
**SWITCH-THROTTLE SERVO INSTALLATION.**

See pictures below.

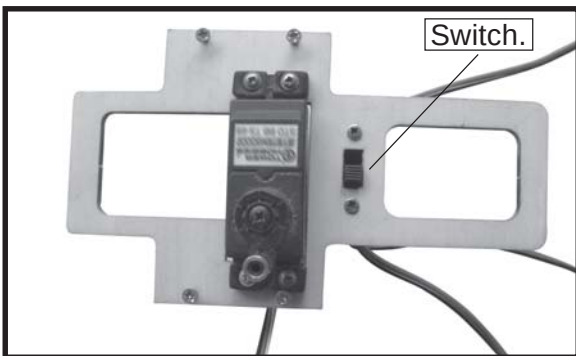




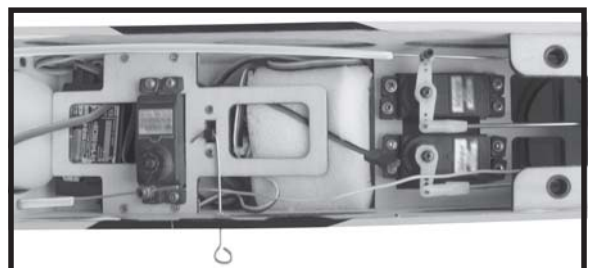
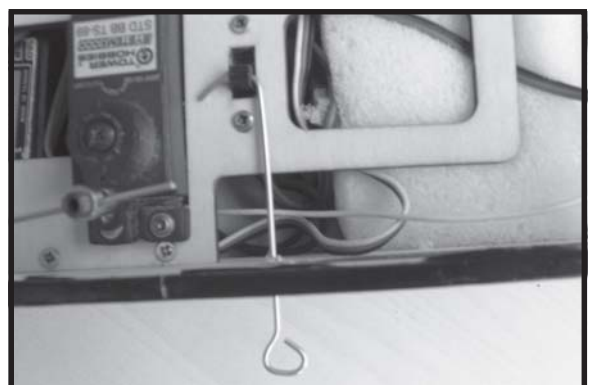
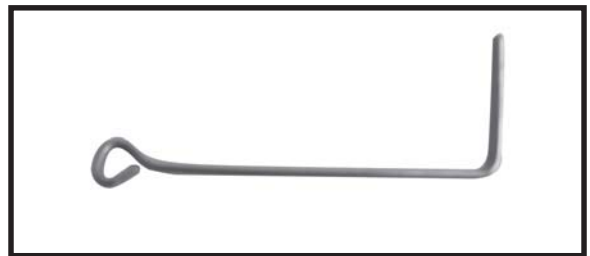
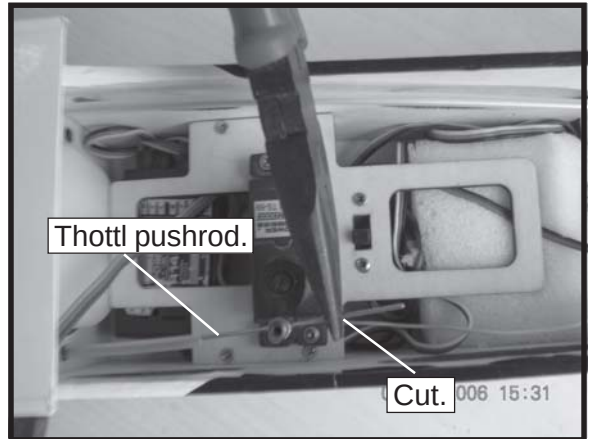
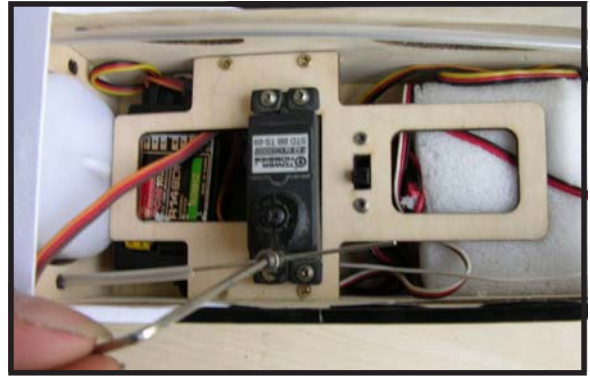
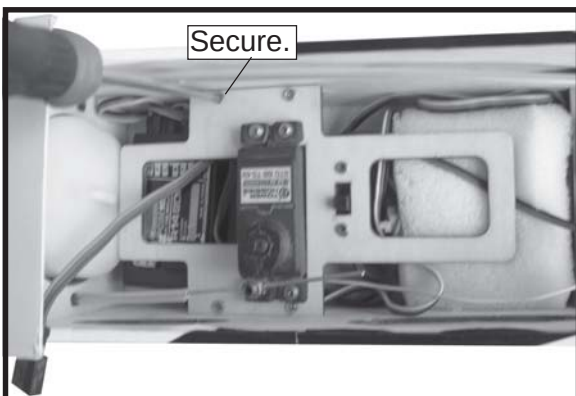
- 1) Install the throttle servo and the switch in the servo tray.



- 2) Secure the switch in place using the two machine screws provided with the radio system.

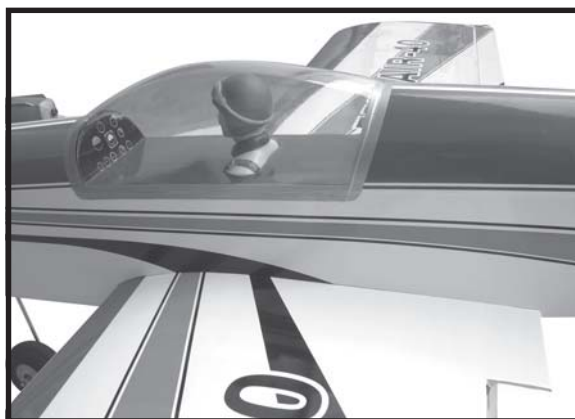
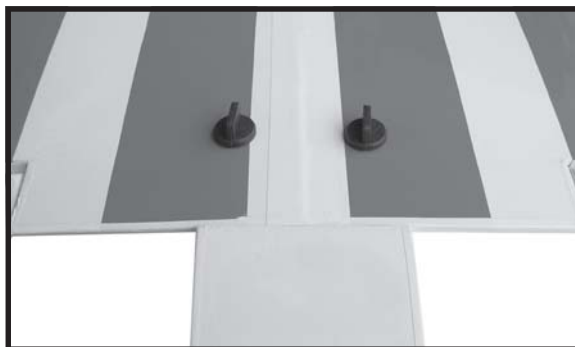
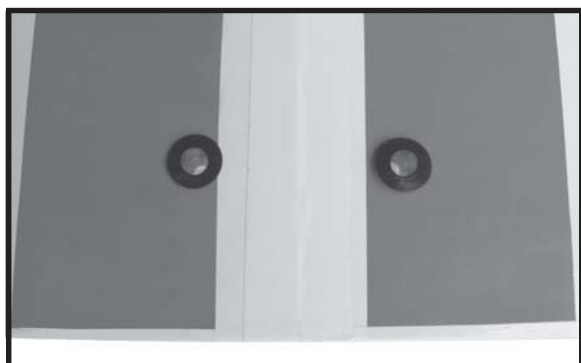
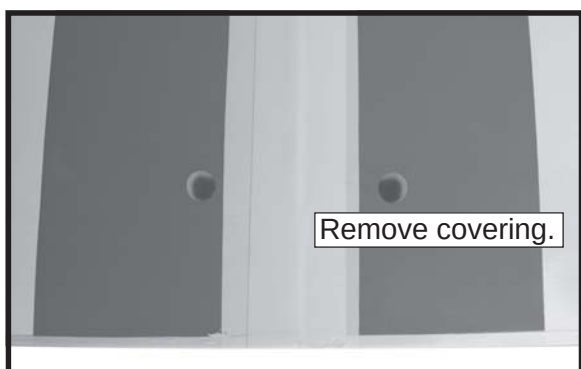
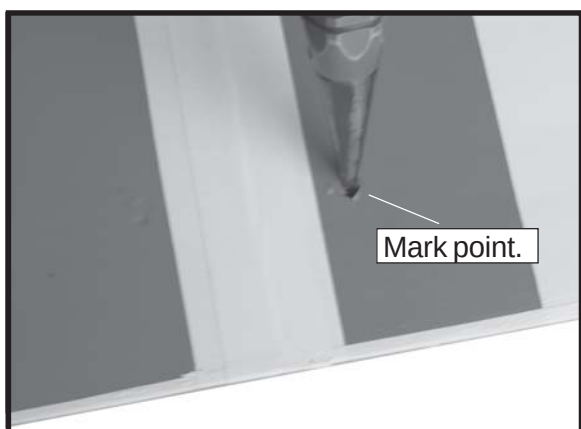


Secure servo tray on to the fuselage.



ATTACHMENT WING-FUSELAGE.

See pictures below:

**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 **100mm** BACK FROM THE LEADING EDGE OF THE WING.

❑ 2) Turn the airplane upside down. Place your fingers on the masking tape and carefully lift the plane .

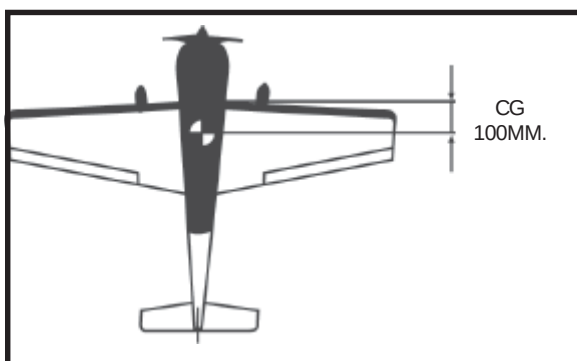
Accurately mark the balance point on the top of the wing on both sides of the fuselage. The balance point is located 100mm back from the leading edge. This is the balance point at which your model should balance for your first flights. Later, you may wish to experiment by shifting the balance up to 10mm 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 weigh* to the nose. If the nose drops, it is "nose heavy" and you must add weight* to the tail to balance.

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

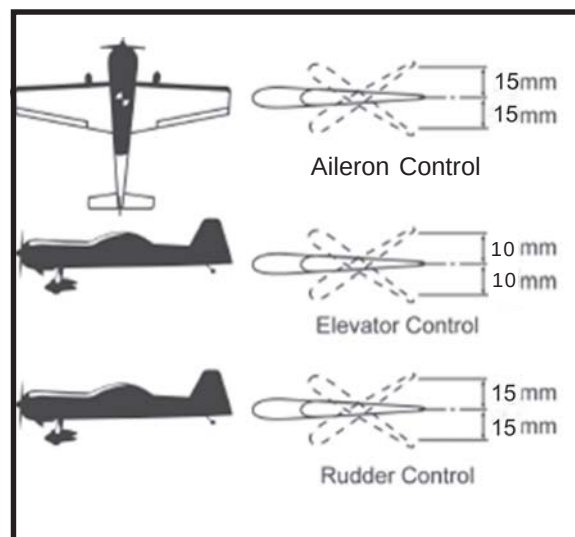
*If possible, first attempt to balance the model by changing the position of the receiver battery and receiver. If you are unable to obtain good balance by doing so, then it will be necessary to add weight to the nose or tail to achieve the proper balance point.



CONTROL THROWS.

- ☐ 1) We highly recommend setting up a plane using the control throws listed.
- ☐ 2) The control throws should be measured at the widest point of each control surface.
- ☐ 3) Check to be sure the control surfaces move in the correct directions.

Ailerons : 15mm up 15mm down.
 Elevator : 10mm up 10mm down.
 Rudder : 15mm right 15mm left.



PRE-FLIGHT CHECK.

- ☐ 1) Completely charge your transmitter and receiver batteries before your first day of flying.
- ☐ 2) Check every bolt and every glue joint in your plane to ensure that everything is tight and well bonded.
- ☐ 3) Double check the balance of the airplane.
- ☐ 4) Check the control surface.
- ☐ 5) Check the receiver antenna . It should be fully extended and not coiled up inside the fuselage.
- ☐ 6) Properly balance the propeller.

We wish you many safe and enjoyable flights with your SPEED AIR - 40.