



Instruction Manual book

PIPER CUB-EP



SPECIFICATION

- ☐ Wingspan : 1,530mm 60.24 in.
- ☐ Length : 940mm 37.01in.
- ☐ Weight : 1.2kg 2.64 Lbs.
- ☐ Parts listing required (not included) .
- ☐ Battery: 3 CELLS-LI-POLY-11.1V-3,500 mA.h.
- ☐ Electric motor : AXI 2808/24.
KMS 2814/08.
- ☐ Radio : 04 channels.
- ☐ Servo : 04 servos.
- ☐ Propeller : 9 x 5
- ☐ Speed control : 25A.

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 **PIPER CUB-EP**. 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.

Tail section assembly

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

NOTE.

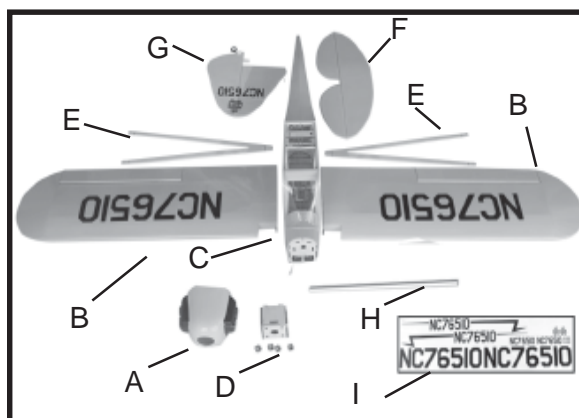
Please trial fit all the parts. Make sure you have the correct parts and that they fit and are aligned properly before gluing! This will assure proper assembly. **PIPER CUB-EP** ARF is hand made from natural materials, every plane is unique and minor adjustments may have to be made. However, you should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

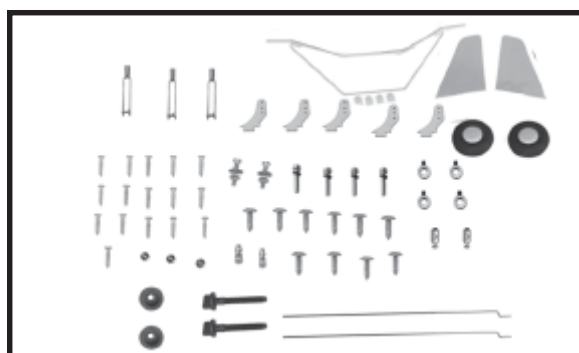
- + This is not a toy
- + Be sure that no other flyers are using your radio frequency.
- + The glow plug clip must be securely attached to the glow plug.
- + Do not flip the propeller with your fingers.
- + Keep loose clothing and wires away from the propeller.
- + Do not start the engine if people are 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.

REPLACEMENT LARGE PARTS



- A. Cowling.
- B. Wing panel.
- C. Fuselage.
- D. Motor mount wood.
- E. Wing struts.
- F. Horizontal stabilizer.
- G. Vertical stabilizer
- H. Aluminium wing dihedral brace.
- I. Decal sheet.

REPLACEMENT SMALL PARTS

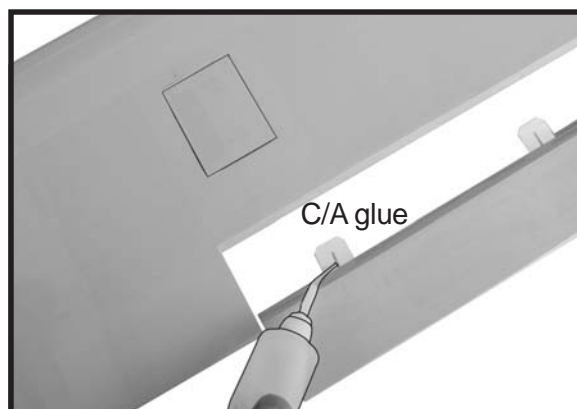
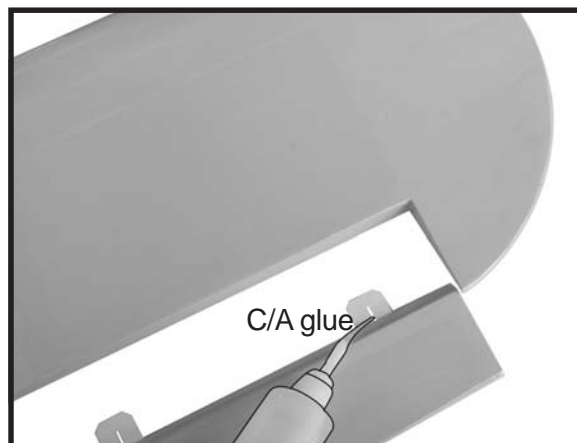
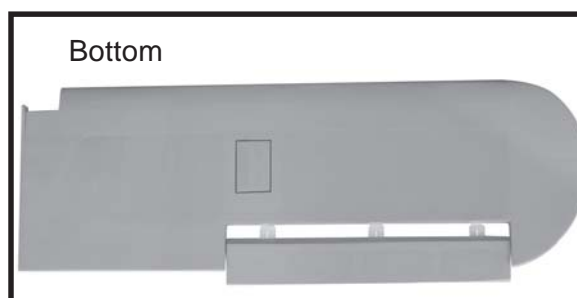


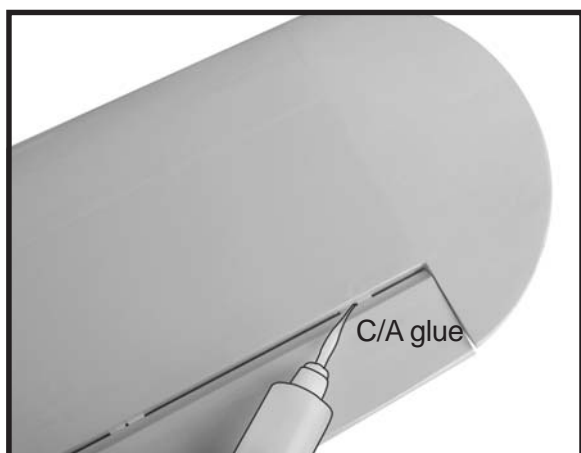
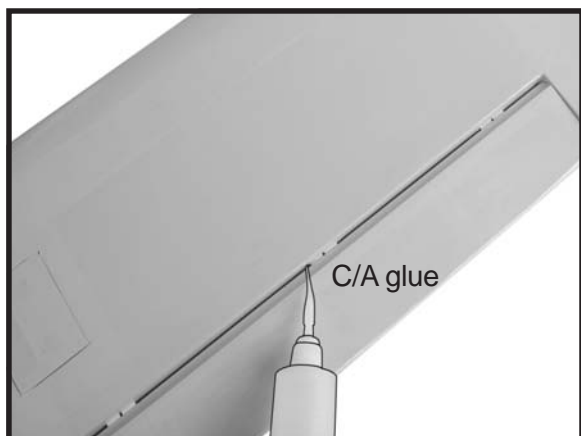
INSTALLING THE AILERON SERVOS.

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

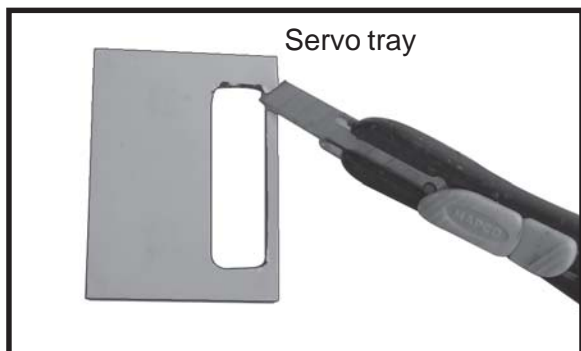


Bottom

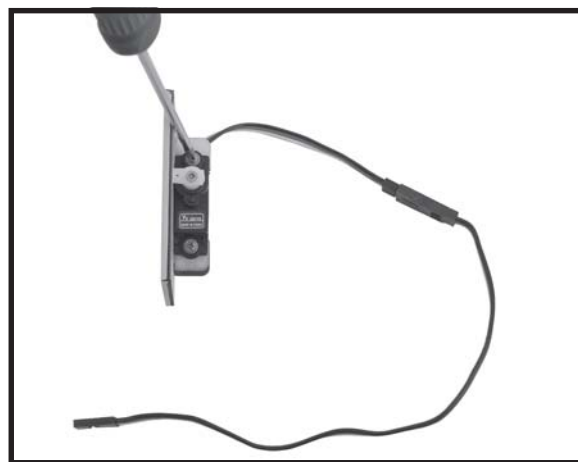




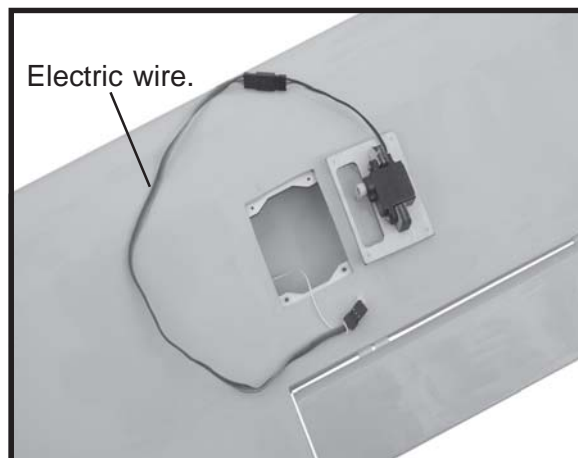
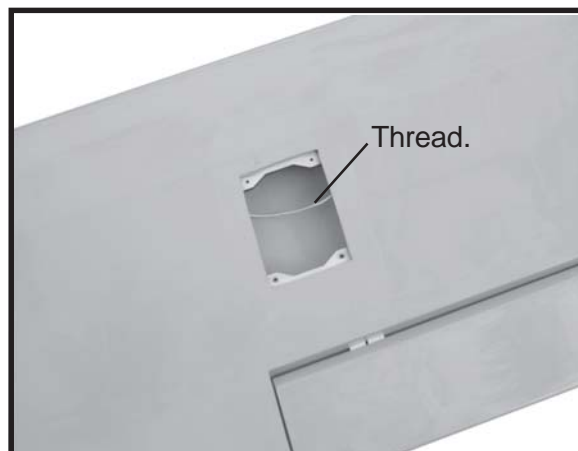
□ 2. Using a modeling knife, remove the covering servo tray.



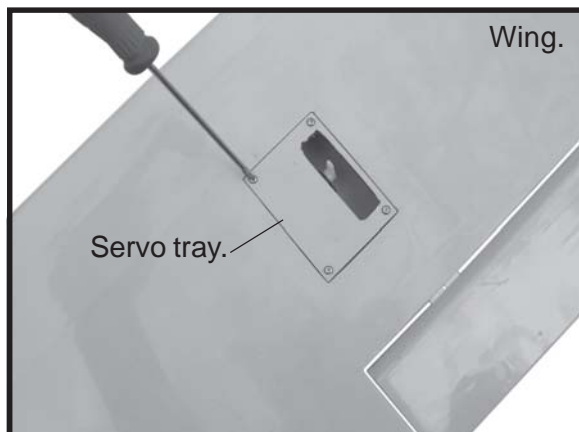
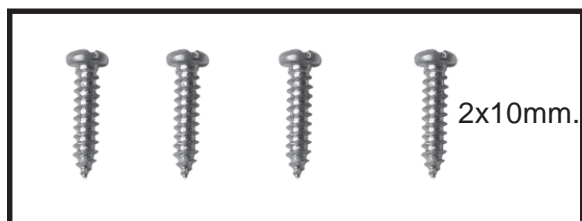
□ 3. Drill 1,5mm pilot holes through the block of wood for each of the four mounting screws provided with the servo. Install servo into aileron servo tray as same as picture below.



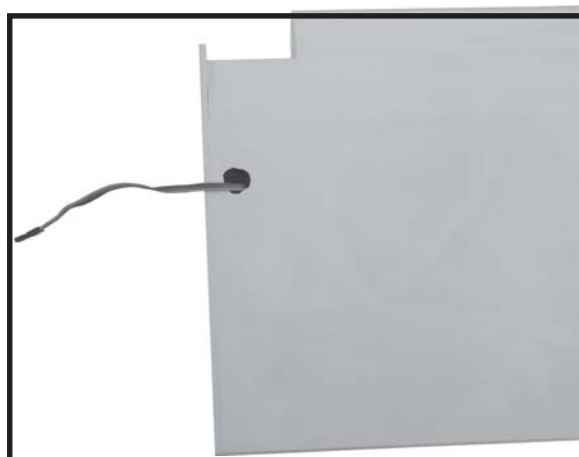
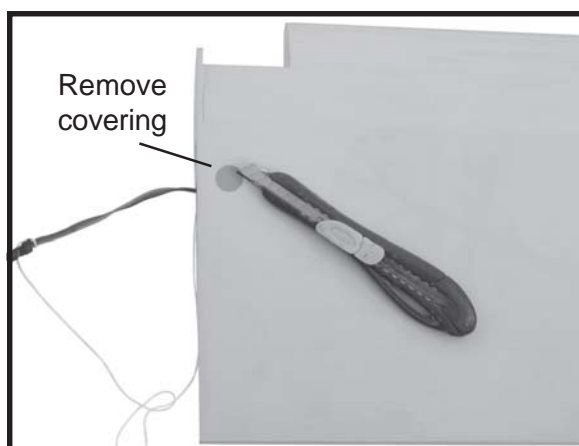
□ 4. Using the thread as a guide and using masking tape, tape the servo lead to the end of the thread: carefully pull the thread out. When you have pulled the servo lead out, remove the masking tape and the servo lead from the thread.



- 5. Instal servo tray with aileron servo into the wing as same as picture below.



- 6. Using a modeling knife, remove the covering wing.

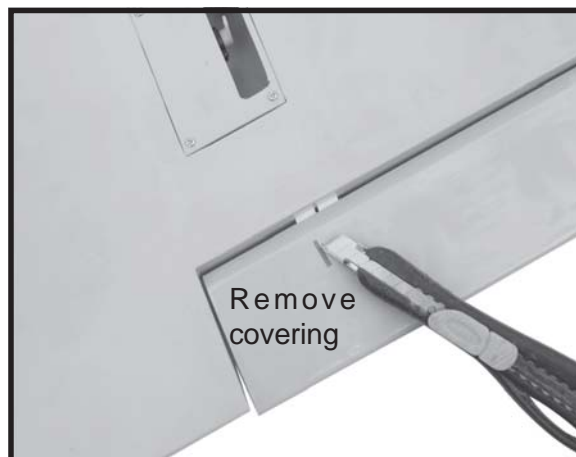


Repeat the procedure for the other wing half.

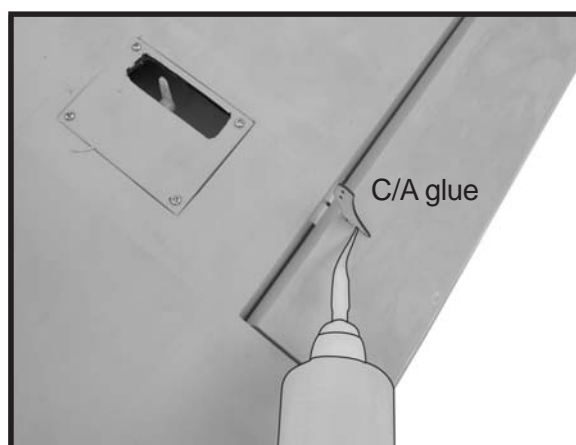
INSTALLING THE AILERON CONTROL HORN.

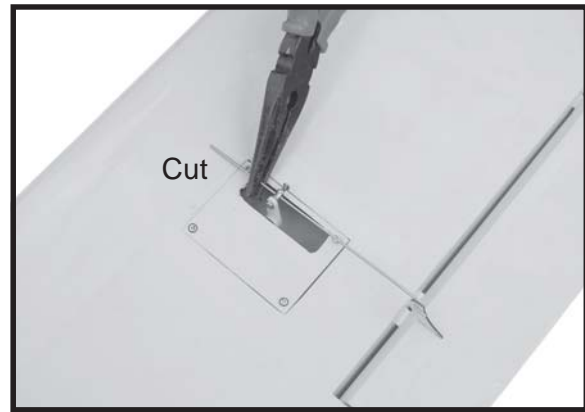
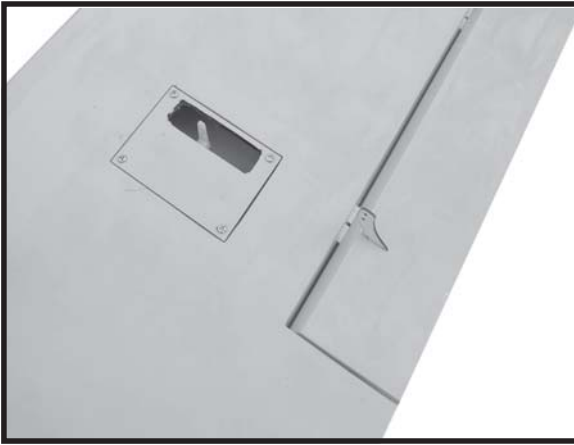


Remove the covering into the precut slot of the aileron.

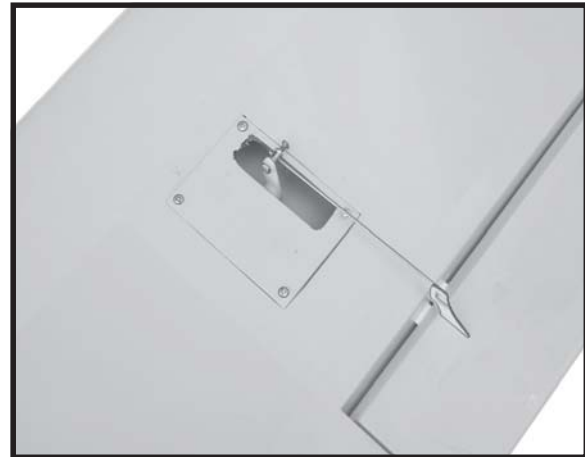
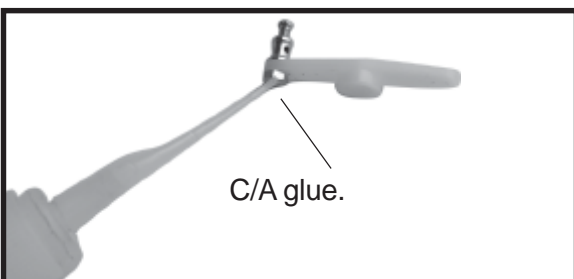
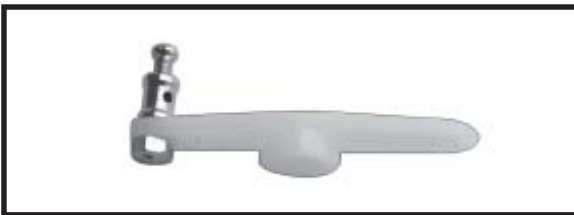
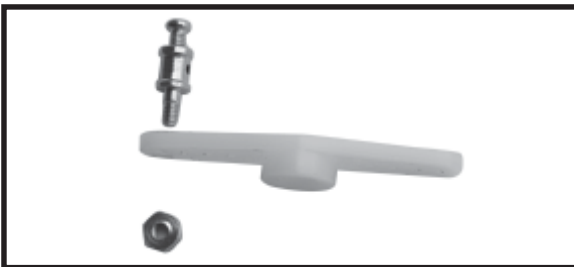


Insert the aileron control horn into aileron as picture below.





Attach the micro control connector to the servo arms. Be sure to use the lock tie but it could free rotation.



Repeat the procedure for the other wing half.

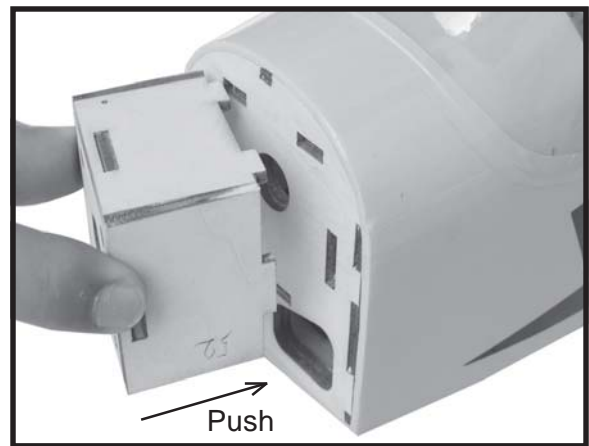
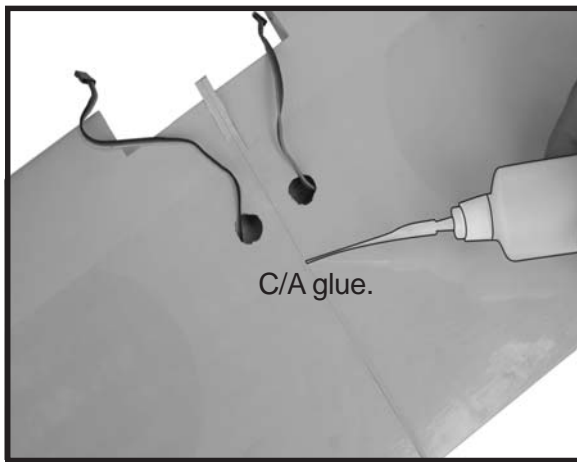
JOINING THE WING HALVES.

- ☐ 1. Locate the aluminium wing dihedral brace.



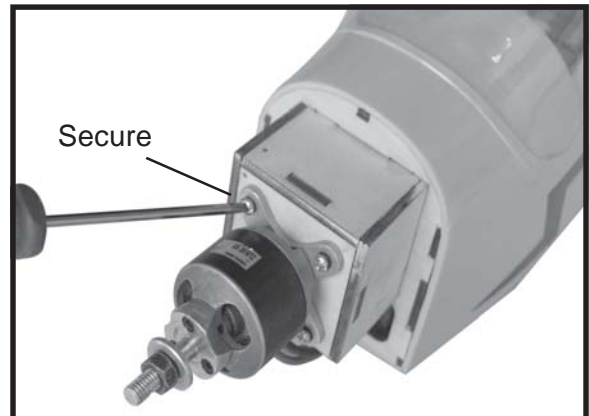
- ☐ 2. Test fit the dihedral brace into each wing half. The brace should slide in easily.





INSTALLING ELECTRIC MOTOR.

See pictures below:



INSTALLING THE COWLING-SPINNER.

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.

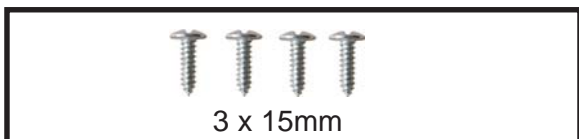




□ 2. While keeping the back edge of the cowl flush with the marks, align the front of the cowl with the crankshaft of the engine. The front of the cowl should be positioned so the crankshaft is in **nearly** the middle of the cowl opening. Hold the cowl firmly in place using pieces of masking tape.

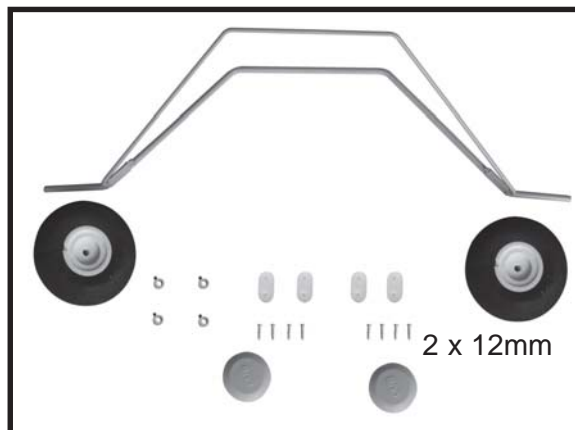
□ 3. Slide the cowl back over the engine and secure it in place using four wood screws. See picture below.

□ 4. 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.

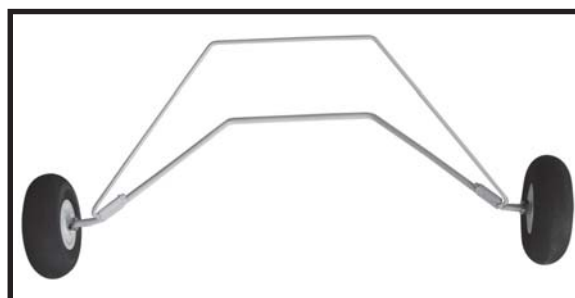


INSTALLING LANDING GEAR.

PARTS REQUIRED



Repeat the process for the other wheel.



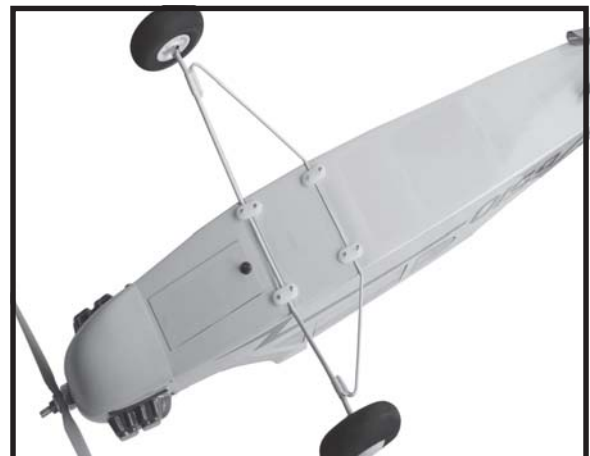
INSTALLING THE MAIN LANDING GEAR.



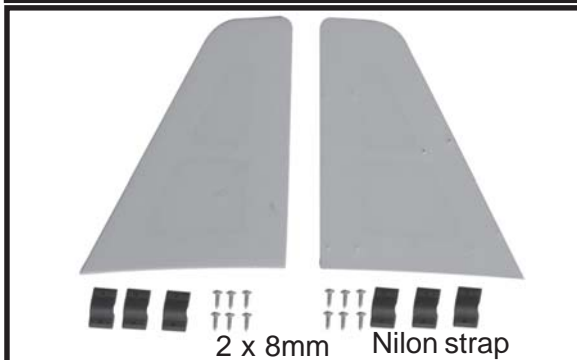
Remove the covering on the precut slot.



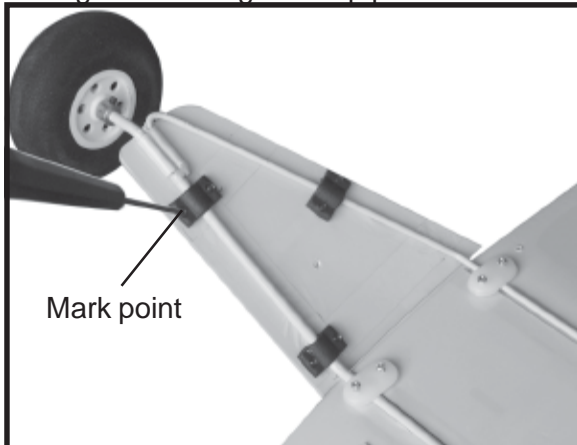
Drill a hole 1.5mm diameter.



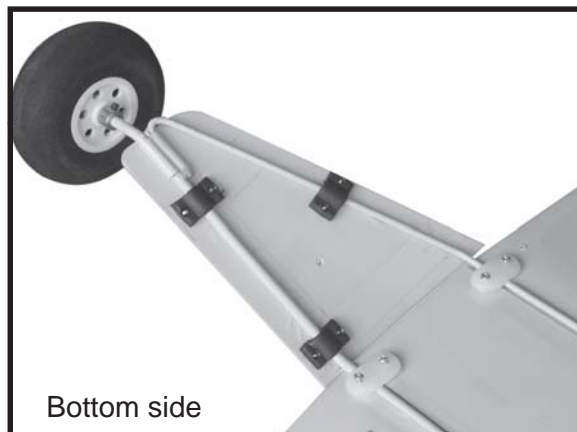
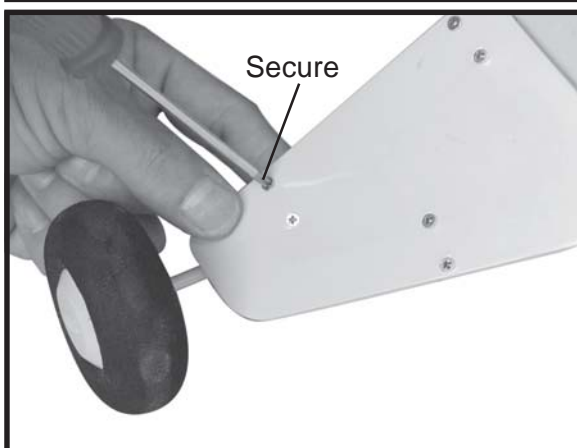
INSTALLING THE MAIN GEAR WHEELS.



- Mark the shape of the plywood on the left and right side using a felt-tip pen.



Drill 2mm holes through the ply wood for each of six mounting screws.

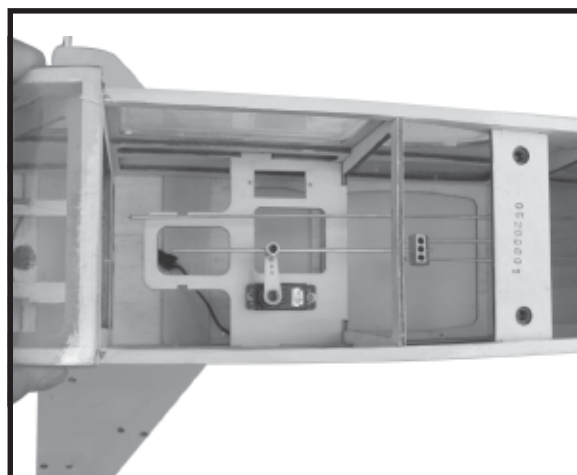
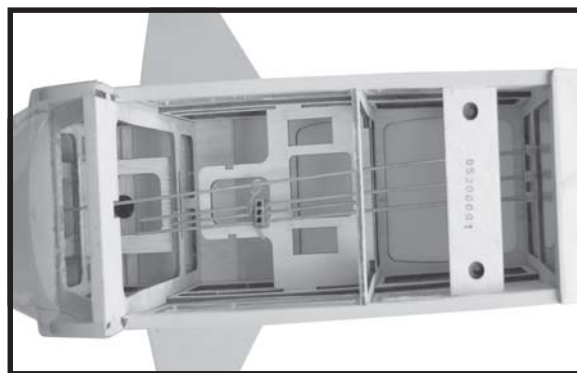


ELEVATOR INSTALLATION.

SERVO INSTALLATION.

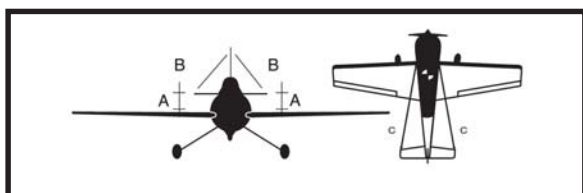


- 1. Install the rubber grommets and brass collets into the elevator servo. Test fit the servo into the servo tray.
- 2. Mount the servo to the tray using the mounting screws provided with your radio system.

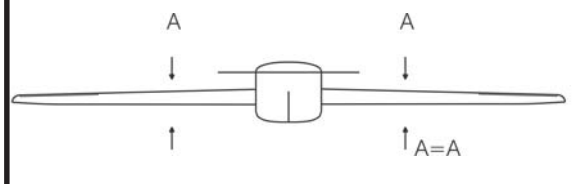


HORIZONTAL STABILIZER INSTALLATION.

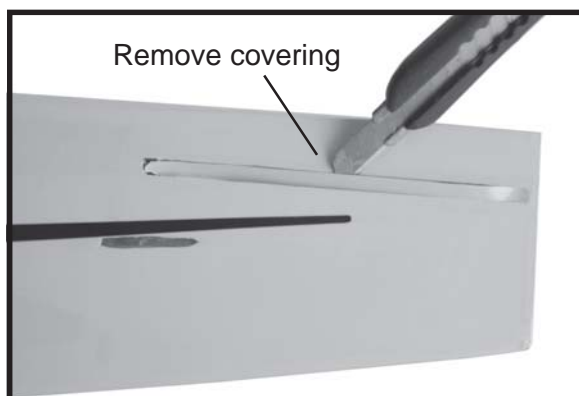
See pictures below:



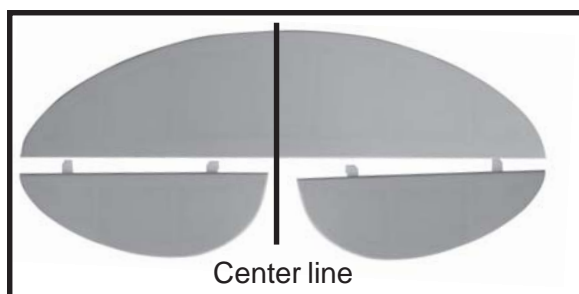
Check to make sure the wing and stabilizer are parallel. If they are not, lightly sand the opening in the fuselage for the stabilizer until the stabilizer is parallel to the wing.



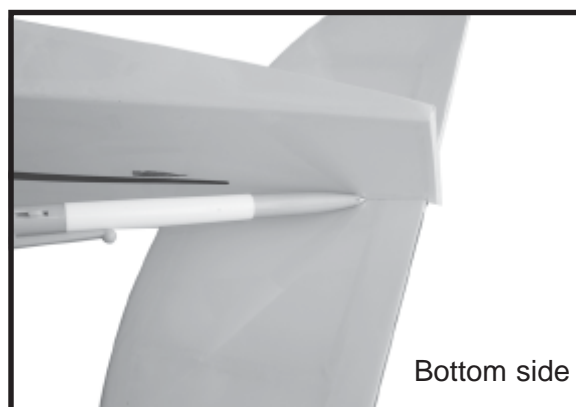
- ☐ 1) Using a modeling knife, carefully remove the covering from over the vertical stabilizer mounting slot in the top of the fuselage.



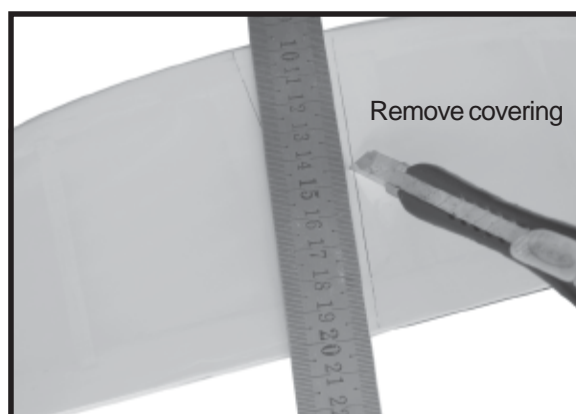
- ☐ 2) Draw a center line onto the horizontal stabilizer. Then slide the horizontal into the fuselage.



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

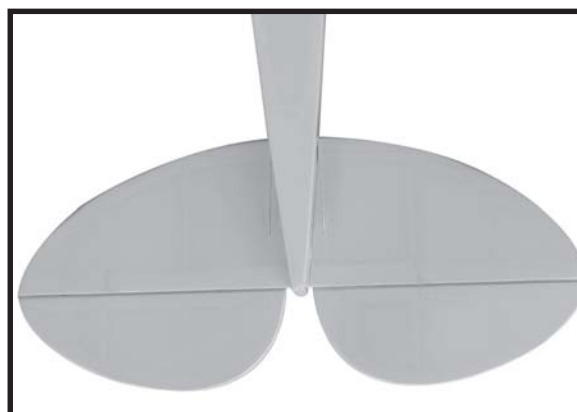
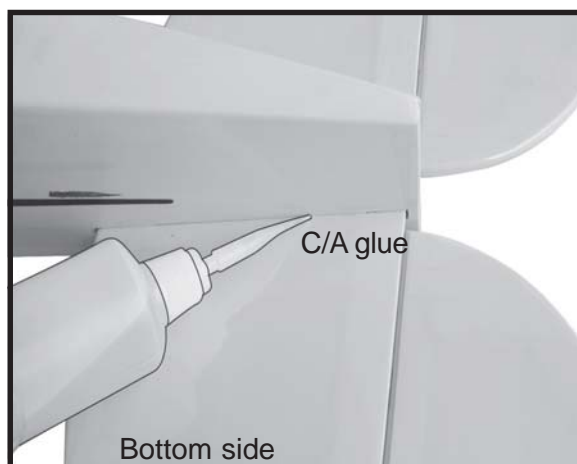
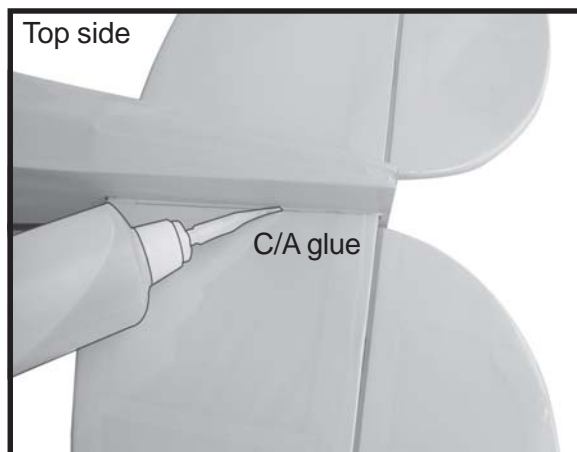
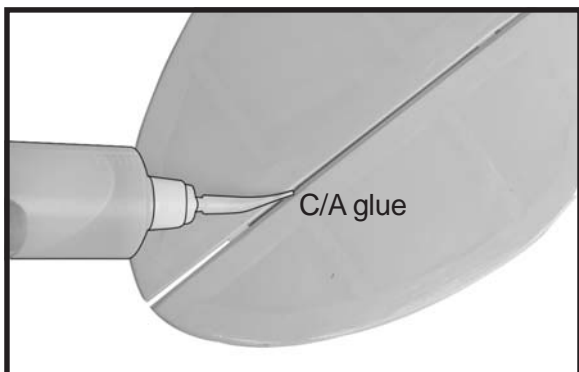
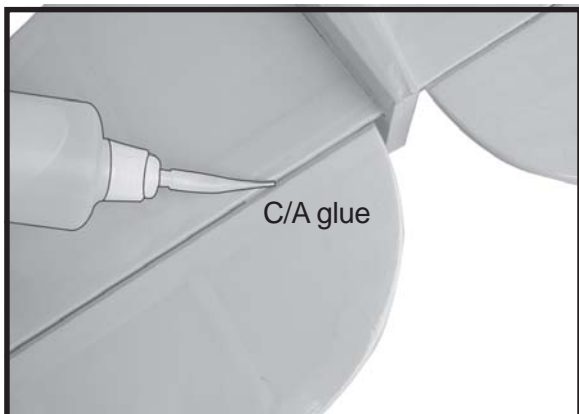
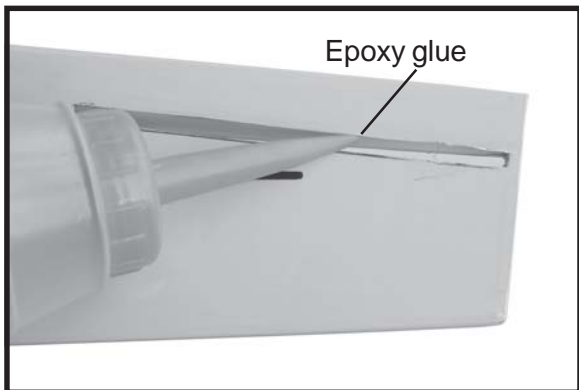


- ☐ 4) With the stabilizer held firmly in place, use a pen and draw lines onto the stabilizer where it and the fuselage sides meet. Do this on both the right and left sides and top and bottom of the stabilizer.



- ☐ 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.

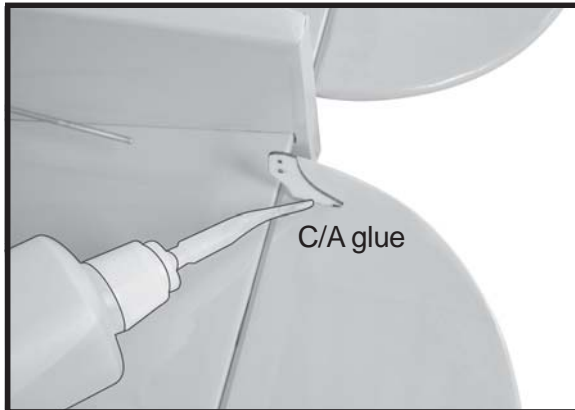


□ 6) When you are sure that everything is aligned correctly, mix up a generous amount of Flash 30 Minute Epoxy. Apply a thin layer to the mounting slot in the top of the fuselage and to the sides and bottom of the vertical stabilizer mounting area. Apply epoxy to the bottom and top edges of the filler block and to the lower hinge also. Set the stabilizer in place and re-align. 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. Allow the epoxy to fully cure before proceeding.

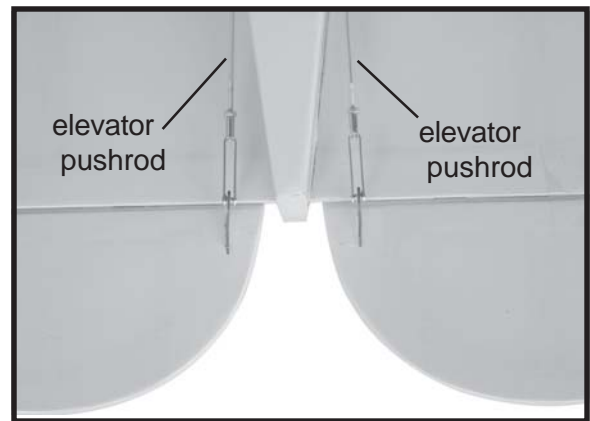
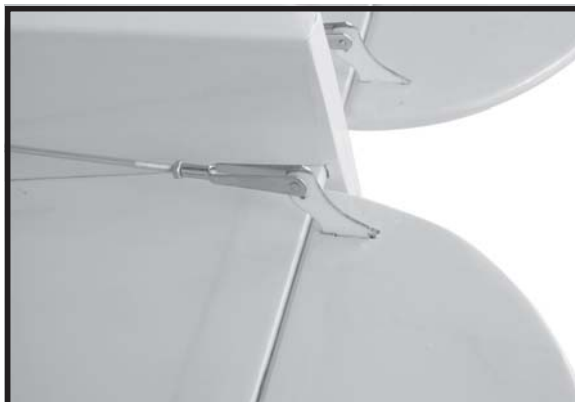
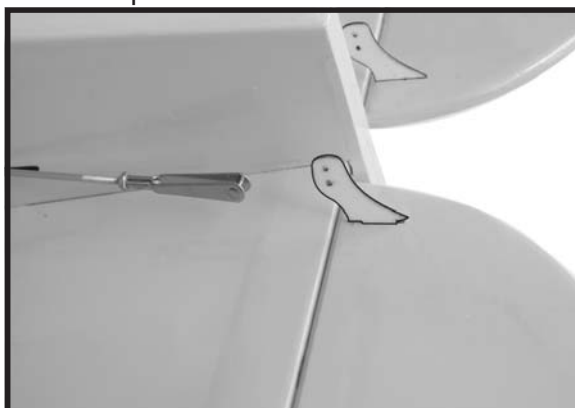
CONTROL HORN INSTALLATION.



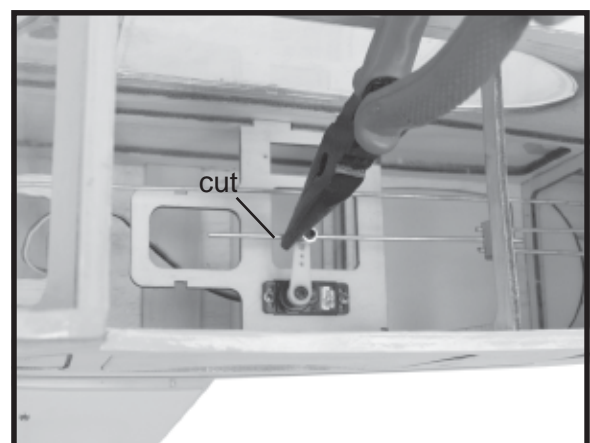
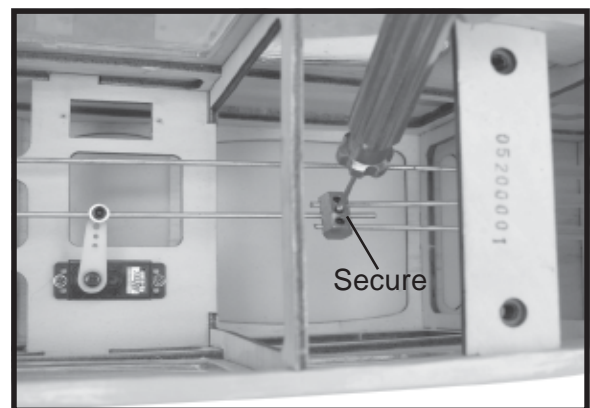
Control horns elevator as same as method of aileron wing. See pictures below:

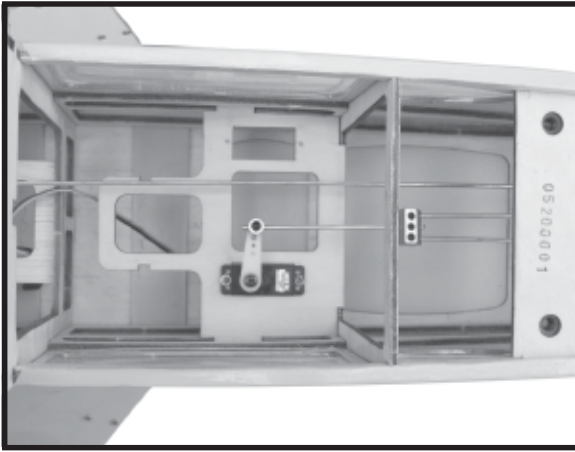


ELEVATOR PUSHROD INSTALLATION.
Elevator pushrod install as same as the way of aileron pushrod.



ELEVATOR PUSHROD INSTALLATION.

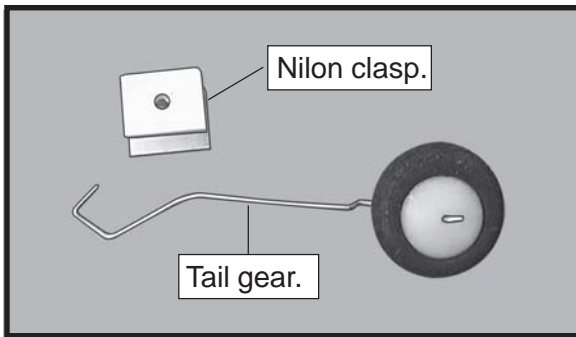




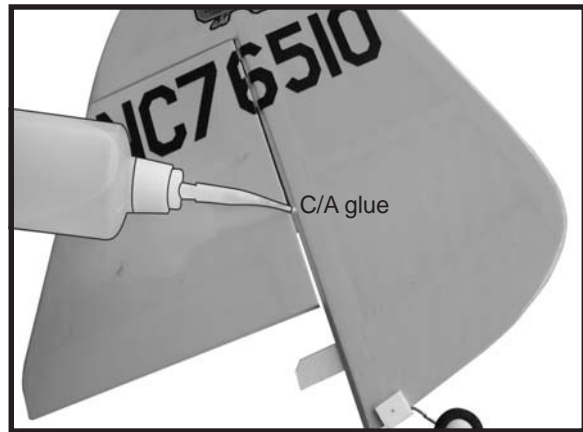
VERTICAL INSTALLATION.

MOUNTING THE TAIL WHEEL BRACKET.

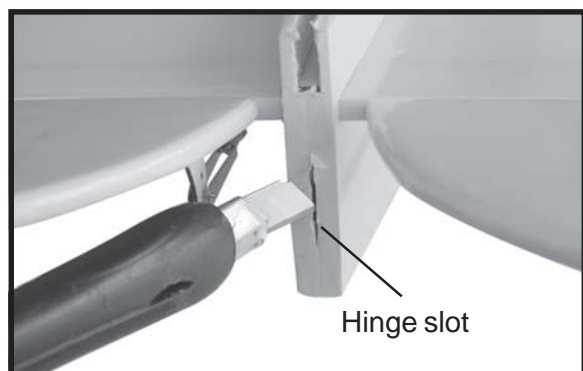
See pictures below:



** Made the slot from the bottom of the rudder and install the tail gear.



□ 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.



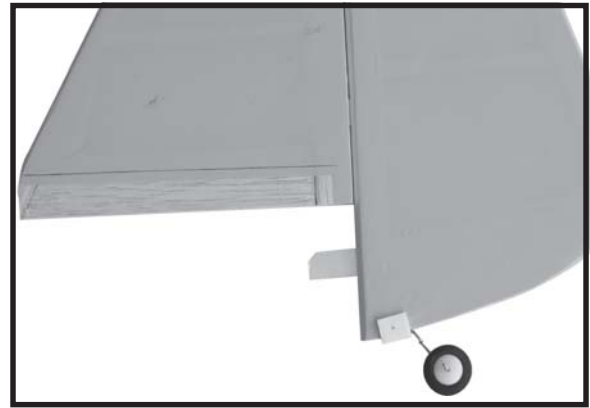
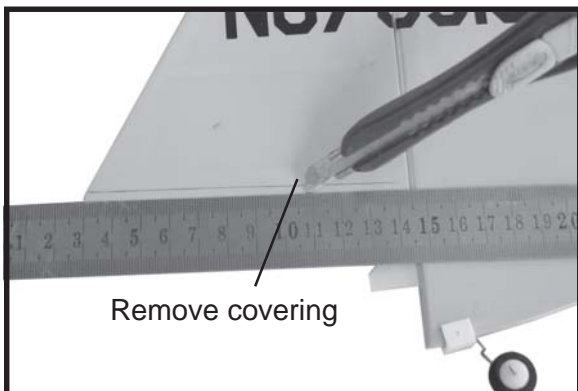
❑ 2) Slide the vertical stabilizer into the slot in the top of the fuselage. The rear edge of the stabilizer should be flush with the rear edge of the fuselage and the lower rudder hinge should engage the precut hinge slot in the lower fuselage. The bottom edge of the stabilizer should also be firmly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

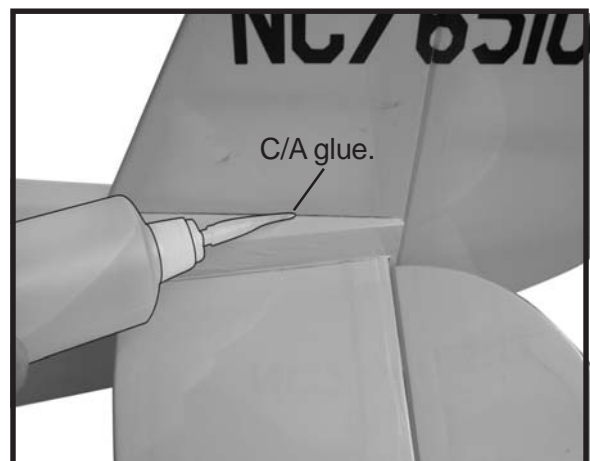
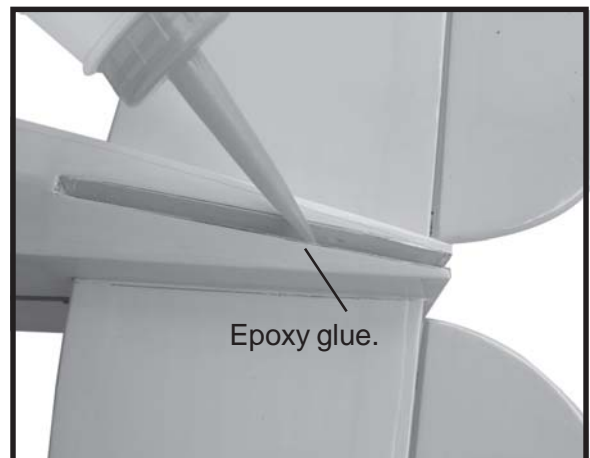
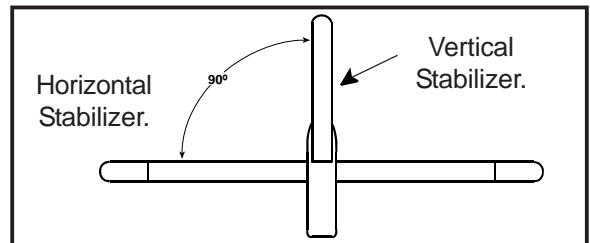


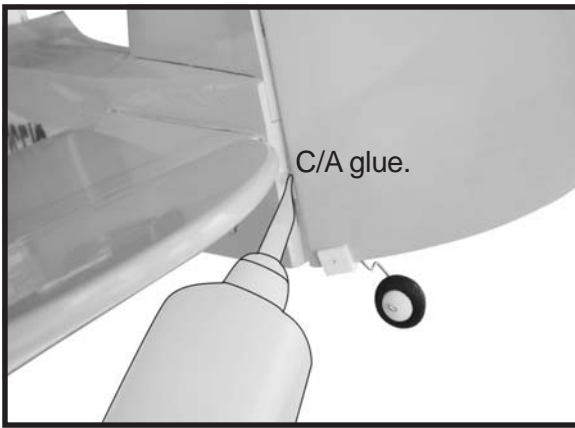
❑ 4) Remove the stabilizer. Using a modeling knife, remove the covering from below the lines you drew. Also remove the covering from the bottom edge of the stabilizer and the bottom and top edges of the filler block. Leave the covering in place on the sides of the filler block.

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.

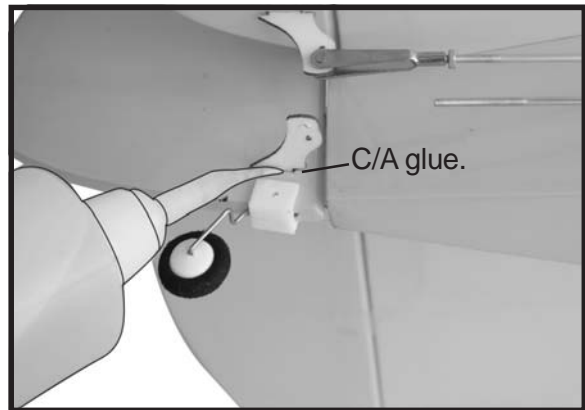


❑ 5) Slide the vertical stabilizer back in place. Using a triangle, check to ensure that the vertical stabilizer is aligned 90° to the horizontal stabilizer.





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

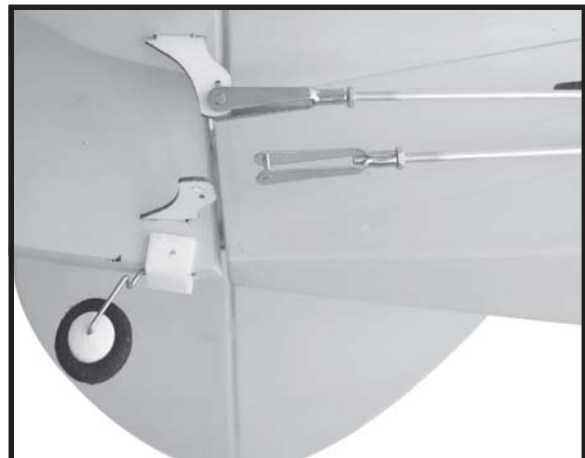


CONTROL HORN INSTALLATION.



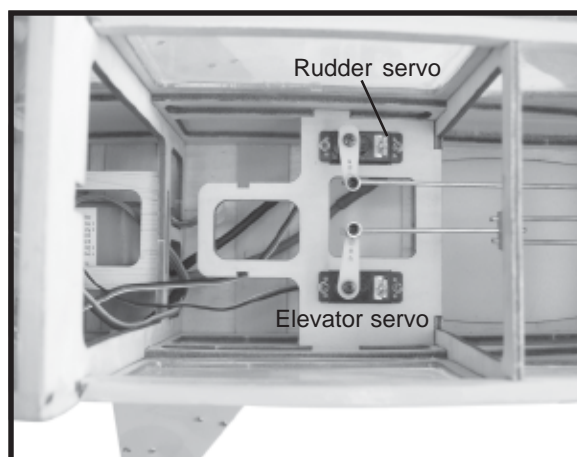
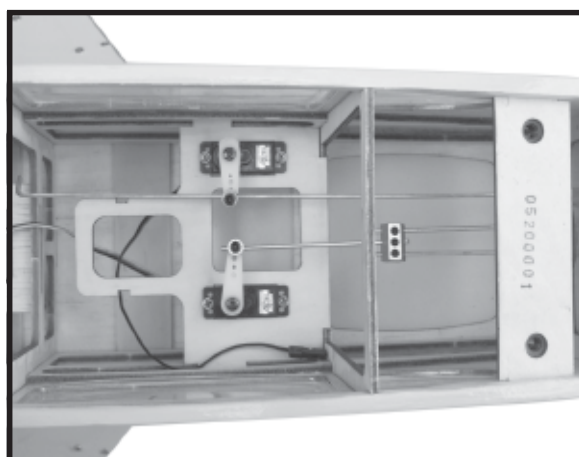
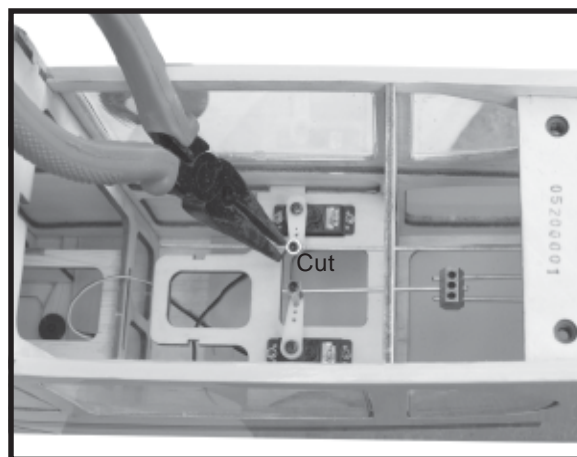
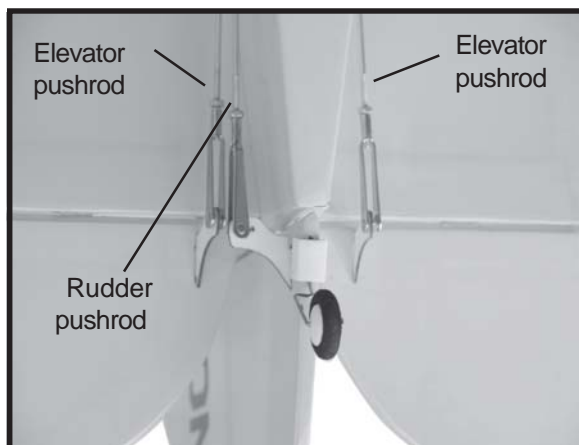
Rudder control horn.

Installing control horns rudder as same as method of aileron wing. See pictures below:



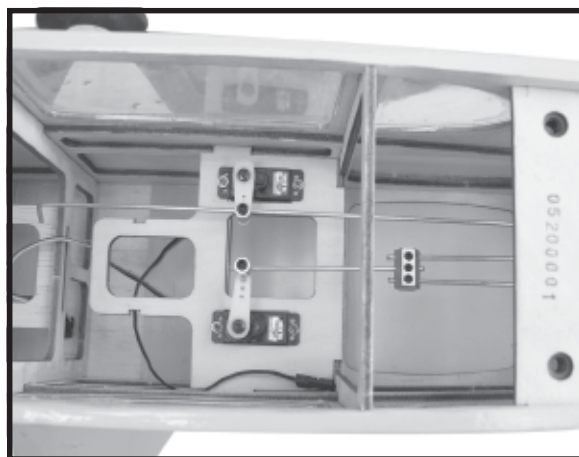
Remove covering into the rudder slot as picture.

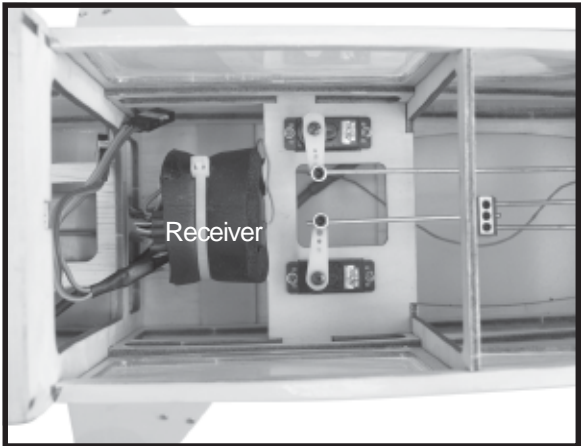
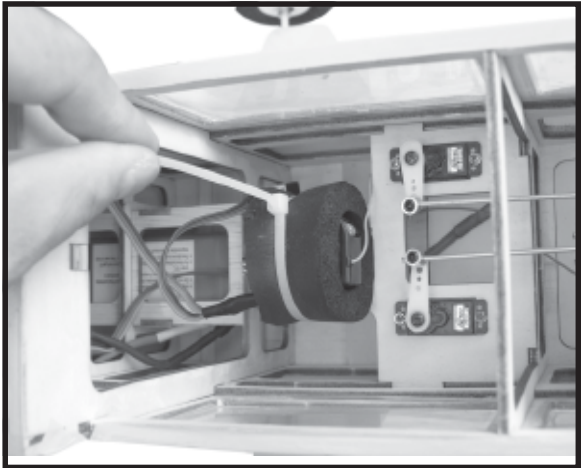
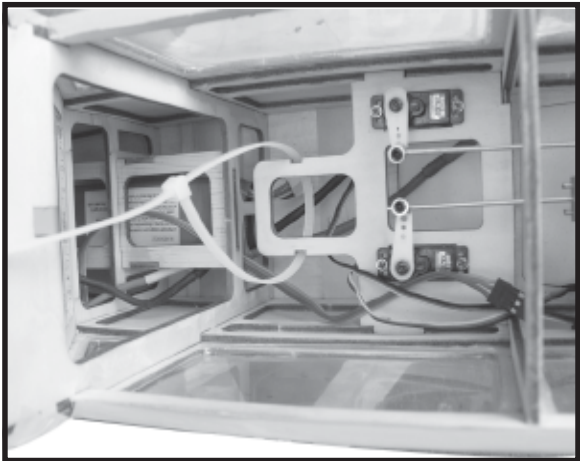
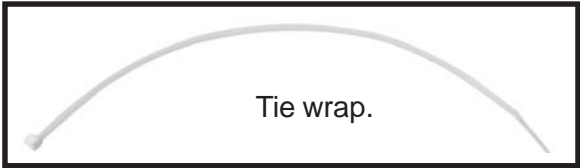
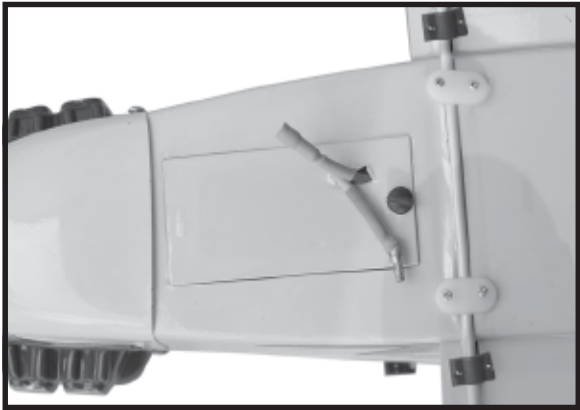
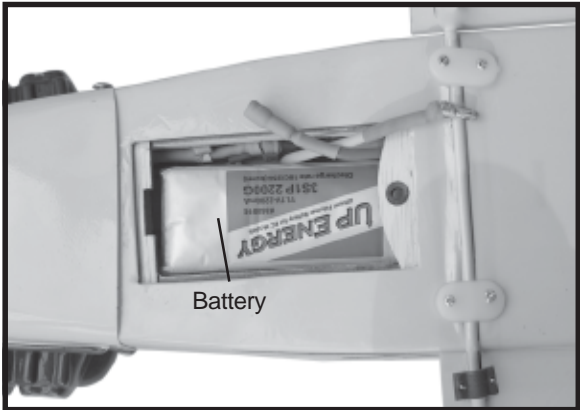




INSTALLING THE RECEIVER AND BATTERY.

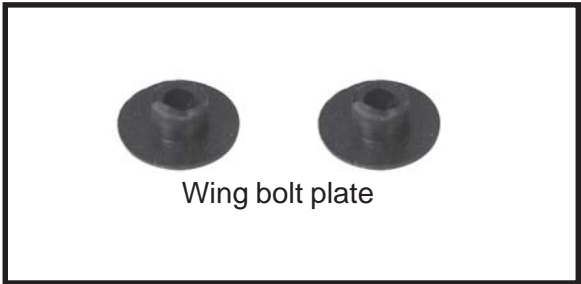
- ☐ 1) Plug the servo leads and the switch lead into the receiver. Plug the battery pack lead into the switch.
- ☐ 2) Wrap the receiver and battery pack in the protective foam to protect them from vibration.
- ☐ 3) Do not permanently secure the receiver and battery until after balancing the model.
- ☐ 4) Using a 2mm drill bit, drill a hole through the side of the fuselage, near the receiver, for the antenna to exit.

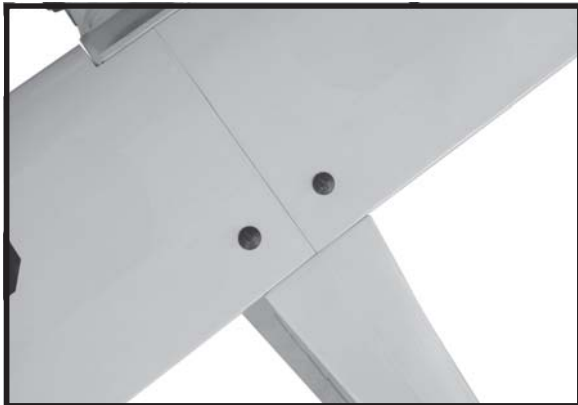
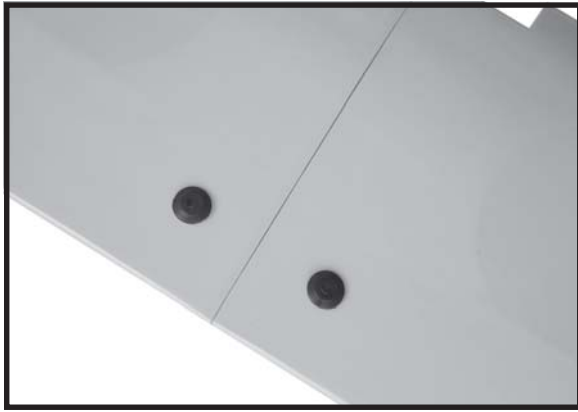




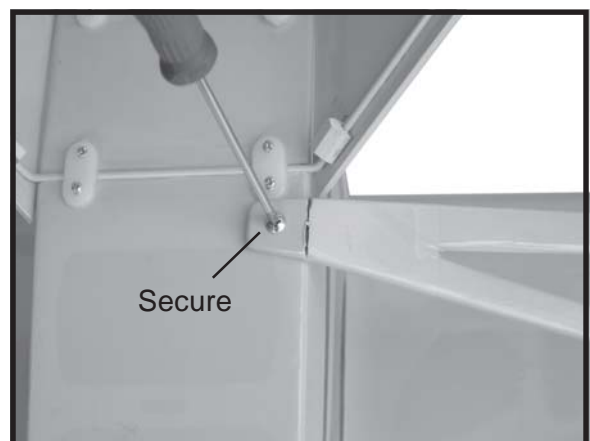
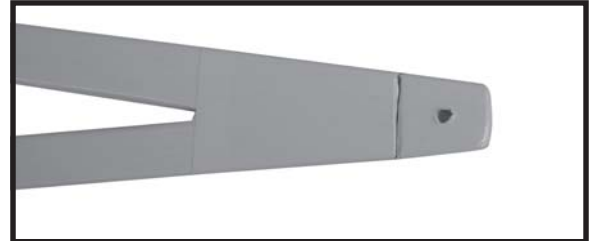
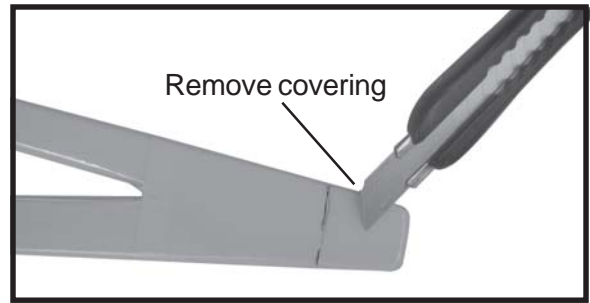
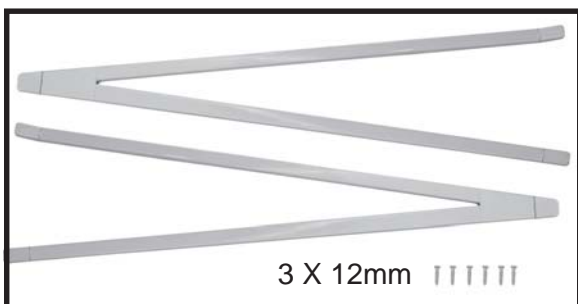
WING JOINING.

Wing attach to fuselage.





WING STRUTS INSTALLATION





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 **60MM** BACK FROM THE LEADING EDGE OF THE WING.

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

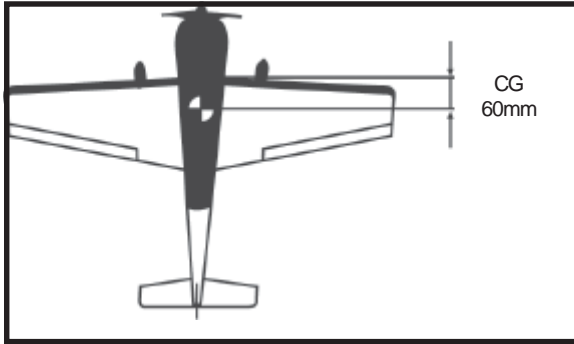
- ☐ 3. Turn the airplane upside down. Place your fingers on the masking tape and carefully lift the plane .

Accurately mark the balance point on the top of the wing on both sides of the fuselage. The balance point is located **60mm** 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 weight* to the nose. If the nose drops, it is "nose heavy" and you must add weight* to the tail to balance.

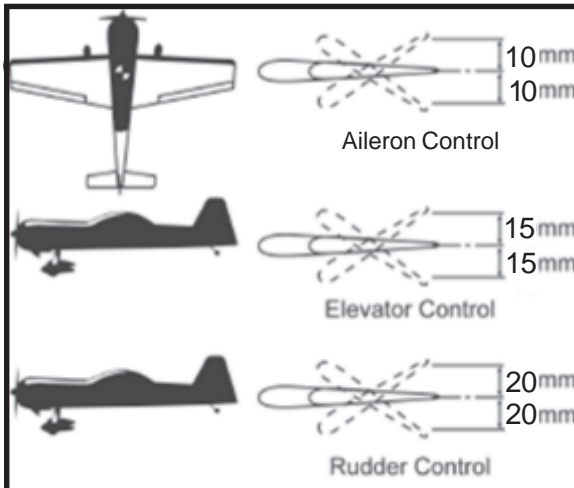
*If possible, first attempt to balance the model by changing the position of the receiver battery and receiver. If you are unable to obtain good balance by doing so, then it will be necessary to add weight to the nose or tail to achieve the proper balance point.



CONTROL THROWS.

- ▶ 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 : 10mm up 10mm down
 Elevator : 15mm up 15mm down
 Rudder : 20mm right 20mm 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 PIPER - CUB.