



CESSNA TURBO SKYLANE 182 ELECTRIC 69" WINGSPAN PNP

Code : SEA 376 PNP electric

ASSEMBLY MANUAL

"Graphics and specifications may change without notice".



Specifications:

| | |
|---------------------|--|
| Type----- | PNP electric |
| Wingspan----- | 69 in----- (174.5 cm) |
| Overall Length----- | 49.1 in----- (124.8 cm) |
| Wing Area----- | 612.3 sq.in----- (39.5 dm ²) |
| Flying Weight----- | 3.3 kg----- (7.3 lbs) |
| Radio----- | 5 channels with 6 servos |
| Motor----- | size 70E |
| ESC 65A/ Lipo 5s-6S | 4000mAh-5000mAh |



INTRODUCTION

Thank you for choosing the **CESSNA TURBO SKYLANE 182 ELECTRIC 69" WINGSPAN PNP ARTF** by **SG MODELS**. The **CESSNA TURBO SKYLANE 182 ELECTRIC 69" WINGSPAN PNP** 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 **CESSNA TURBO SKYLANE 182 ELECTRIC 69" WINGSPAN PNP** is simply a joy.

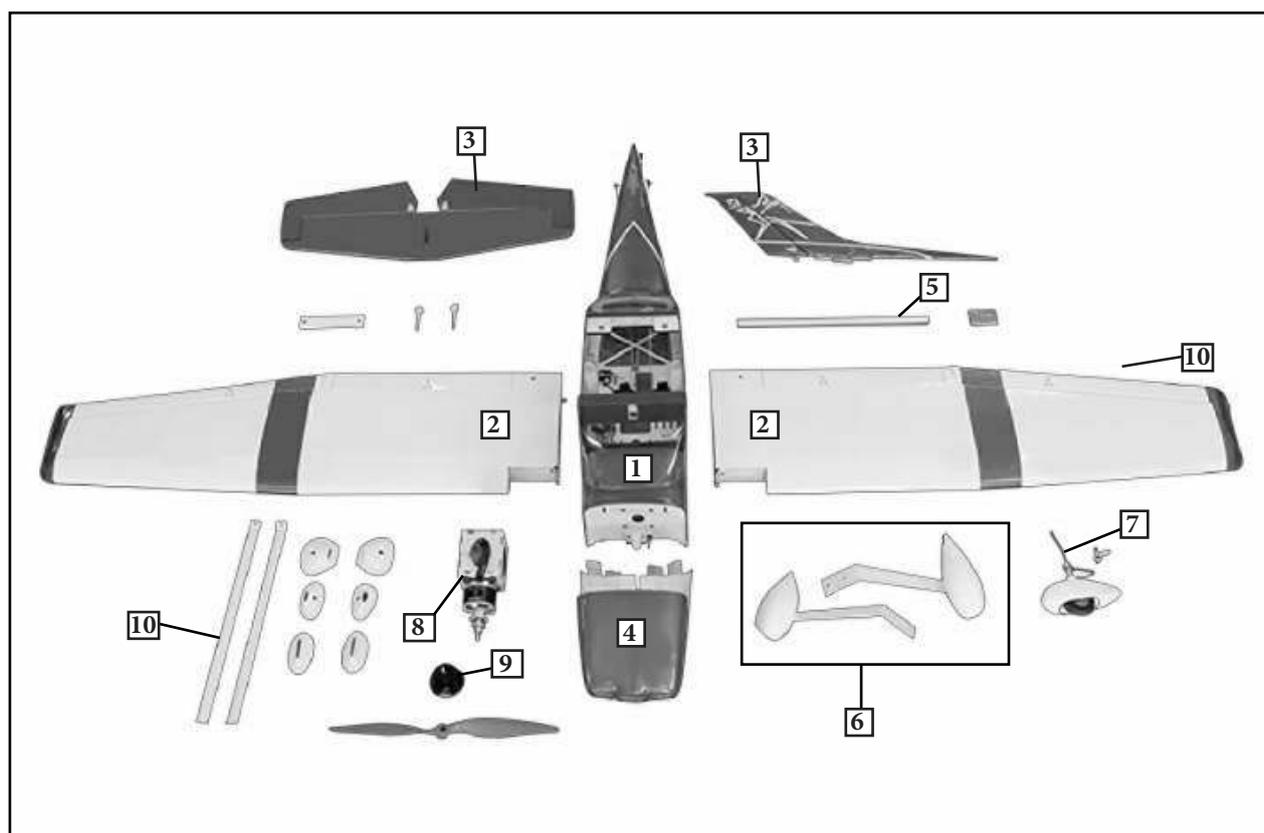
This instruction manual is designed to help you build a great flying aeroplane. Please read this manual thoroughly before starting assembly of your **CESSNA TURBO SKYLANE 182 ELECTRIC 69" WINGSPAN PNP** Use the parts listing below to indentify all parts.

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



KIT CONTENTS

SEA376 PNP electric CESSNA TURBO SKYLANE 182 ELECTRIC 69" WINGSPAN PNP

1. Fuselage
2. Wing set (2)
3. Tail set (2)
4. Cowling
5. Wing tube
6. Landing gear
7. Nose Landing gear
8. Ep Motor box
9. Spinner
10. Wing Strut

ADDITIONAL ITEMS REQUIRED

- Full-range, six-plus-channel transmitter and receiver; 6S 4000mAh to 5000mAh LiPo battery with TX60 or TX60 connector; LiPo battery charger
Flying weight: 8 to 10 pounds.
- Computer radio 5 channel with 6 servos.
- Glow plug to suit engine.
- Propeller to suit engine.
- Protective foam rubber for radio system.

TOOLS & SUPPLIES NEEDED

- Thin cyanoacrylate glue.
- Medium cyanoacrylate glue.
- 30 minute epoxy.
- 5 minute epoxy.
- Hand or electric drill.
- Assorted drill bits.
- Modelling knife.
- Straight edge ruler.
- 2mm ball driver.
- Phillips head screwdriver.
- 220 grit sandpaper.
- 90° square or builder's triangle.
- Wire cutters.
- Masking tape & T-pins.
- Thread-lock.
- Paper towels.

RECEIVER INSTALLATION

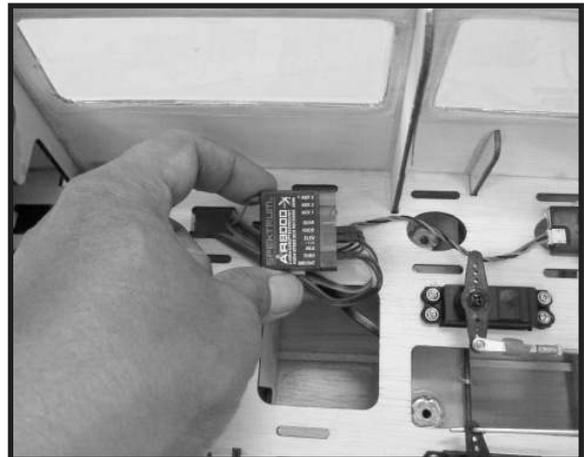
Make the connections from the rudder and elevator servos to the receiver. Also connect the extensions for the flaps and ailerons.

All servo extensions have been provided when using an eight channel radio. No Y-harnesses will be required. Mixing at the transmitter will be required.

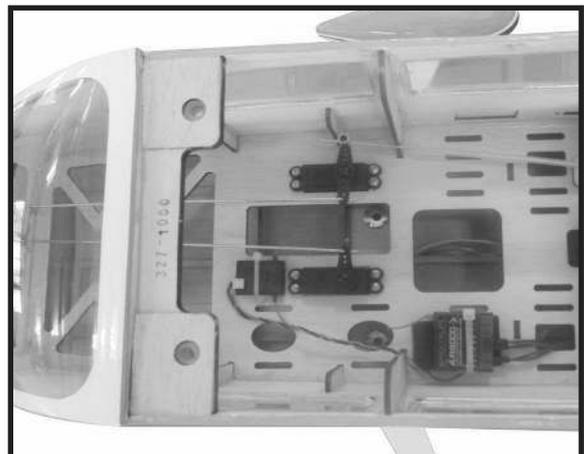
When using a six channel radio, a Y-harness has been included for the flaps. Mixing at the transmitter will be required to operate the ailerons.

Using a five channel radio will require the use of the included Y-harness for the flaps, and an additional Y-harness (SPMA3058) for the ailerons.

1.

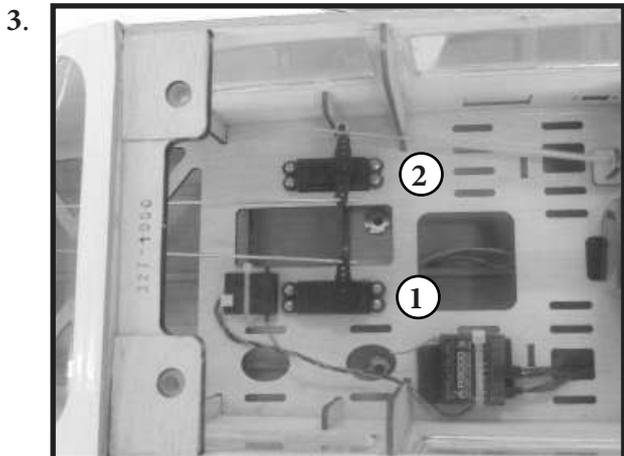


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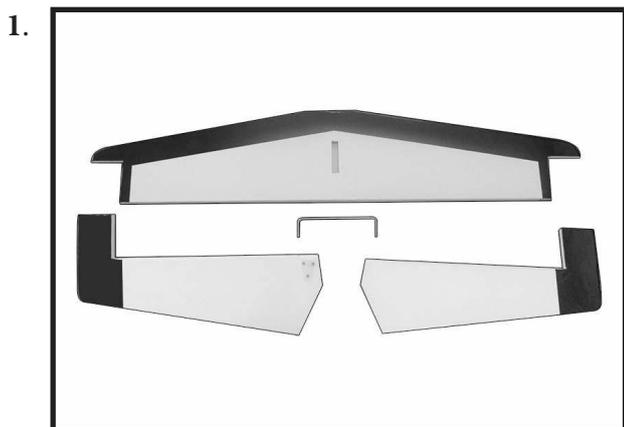


Secure the receiver in the fuselage. Use the instructions included with the receiver for additional mounting details. Make sure none of the wires from the receiver interfere with the operation of the servos.

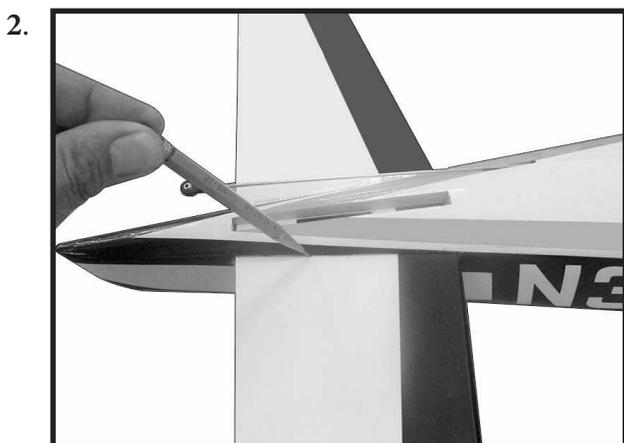
Check that the servo arms for the elevator (1) and rudder (2) are at 90-degrees to the pushrods. Adjust the sub-trim of the radio or reposition the servo arms as necessary.



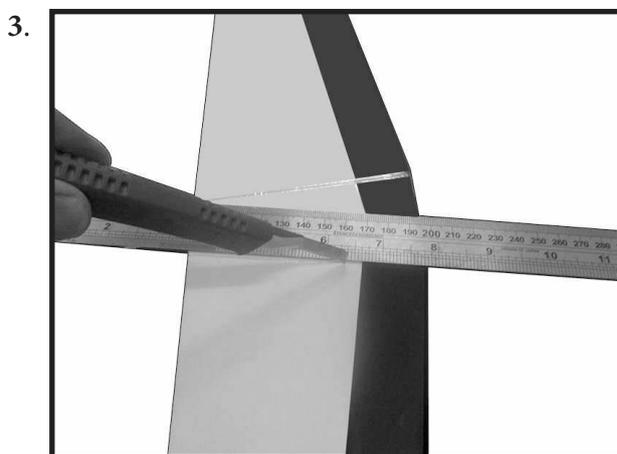
INSTALLING THE HORIZONTAL STABILIZER



Check all alignments. Mark the outline of the fuselage on the top and bottom of the stabilizer.



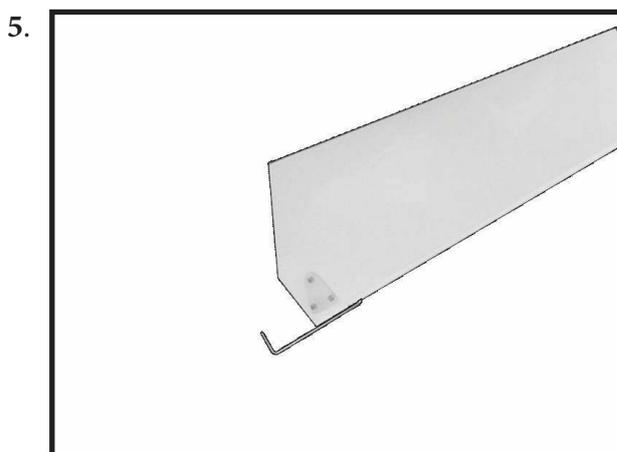
Use a ruler and carefully cut the covering 1/8 inch (3mm) inside the line drawn on the stabilizer to remove the covering from the center of the stabilizer. Remove the top and bottom covering. Use care not to cut into the underlying wood, weakening the stabilizer.



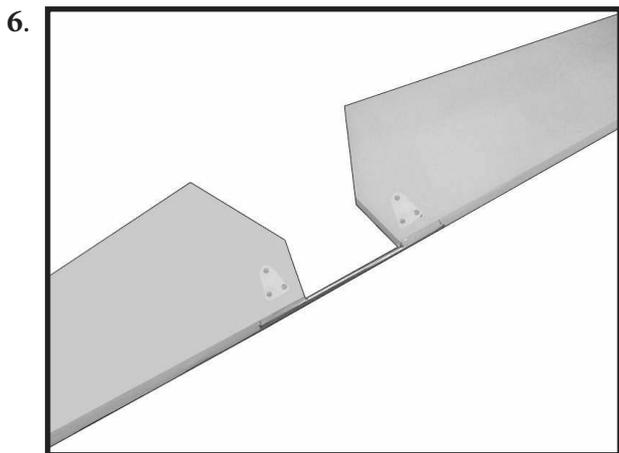
Lightly sand the elevator joiner wire where it contacts the elevators. Use a paper towel and isopropyl alcohol to remove any oil or debris from the joiner.



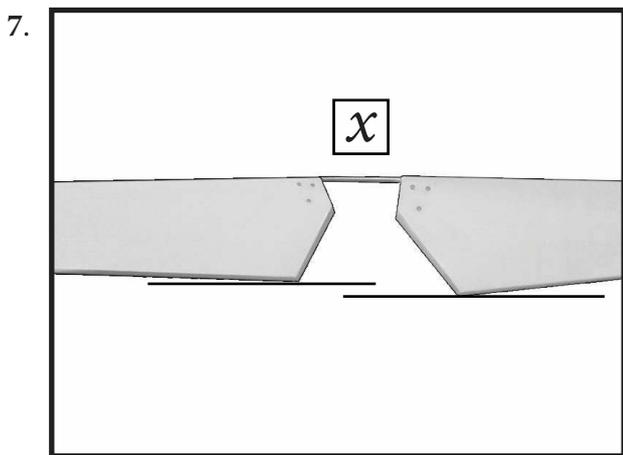
Fit the joiner wire into the elevator halves.



The elevator joiner wire must be flush with the leading edge of the elevator as shown.

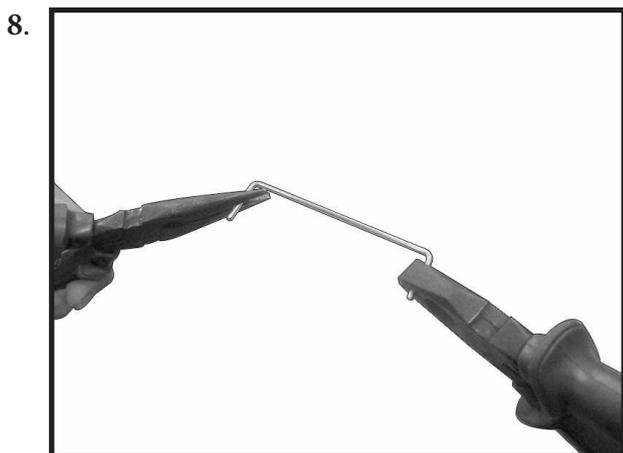


Check to make sure the elevator halves are in alignment with each other.

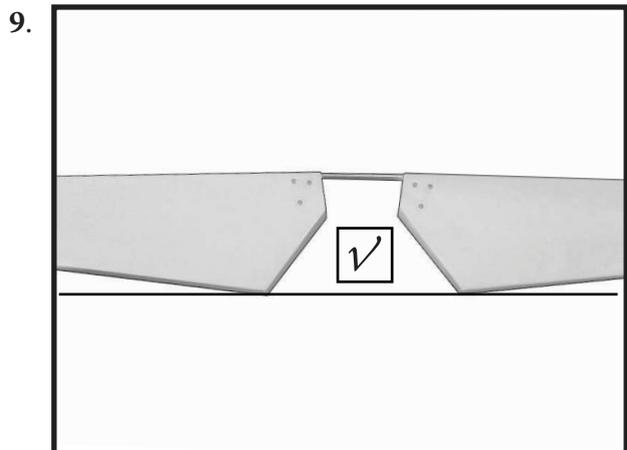


If the elevators are not in alignment, use pliers to bend the joiner wire slightly to bring the halves into alignment.

Poorly aligned elevators will cause problems with trimming your model in flight



Continue the assembly of your model once joiner wire has been correctly checked and adjusted.



Remove the elevators from the joiner wire. Fit the joiner wire into the fuselage, noting the position from the previous step. This will guarantee the joiner is placed correctly so the elevators will be oriented as prepared in the previous step.

The slot for the elevator horn will be located on the bottom right of the fuselage when the elevators are installed.

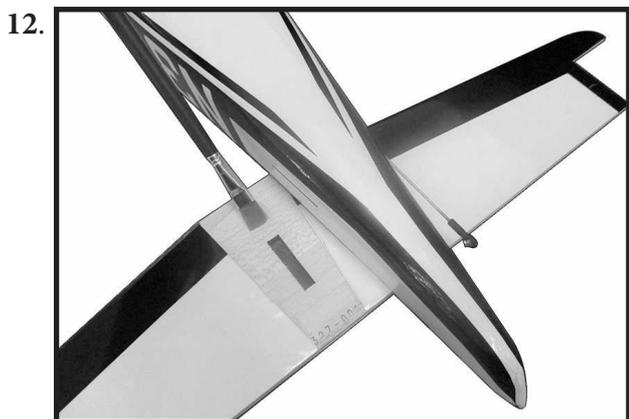


Slide the stabilizer partially into the fuselage so the wood at the center is exposed. Mix 1/2 ounce (15ml) of 30-minute epoxy. Use an epoxy brush to apply the epoxy to the exposed wood on the top of the stabilizer.



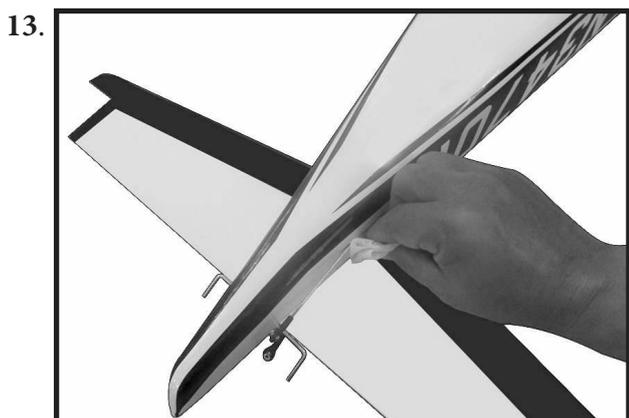
Carefully turn the model over and apply epoxy to the exposed wood on the bottom of the stabilizer. Slide the stabilizer back into position.

Use care not to get epoxy on the elevator joiner wire.

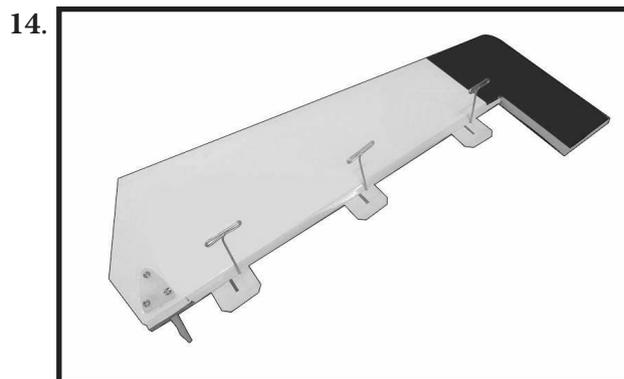


Once the alignment of the stabilizer has been verified, use a paper towel and isopropyl alcohol to remove any excess epoxy from the fuselage and stabilizer. Allow the epoxy to fully cure before proceeding.

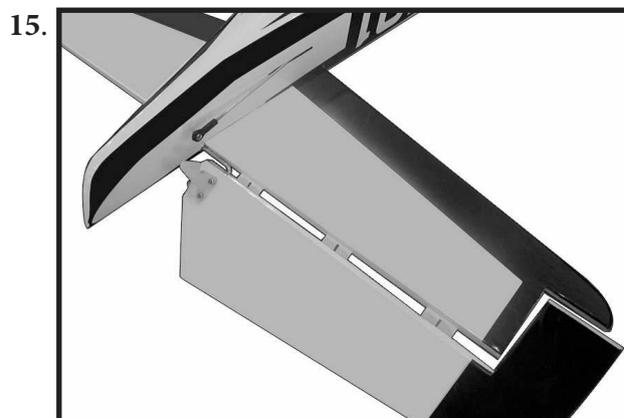
If you find epoxy on the joiner wire, use the paper towel and isopropyl alcohol to clean the joiner.



Use a pin vise and 1/16-inch (1.5mm) drill bit to drill a hole in the center of each hinge slot to allow the CA to wick into the hinge. Drill holes in both the elevators and stabilizer surfaces at this time. Place a T-pin in the center of each hinge along side the slot in the hinge. This will help center the hinge when it is placed in the elevators. Slide the hinges into position with the T-pin resting against the edge of the control surface.



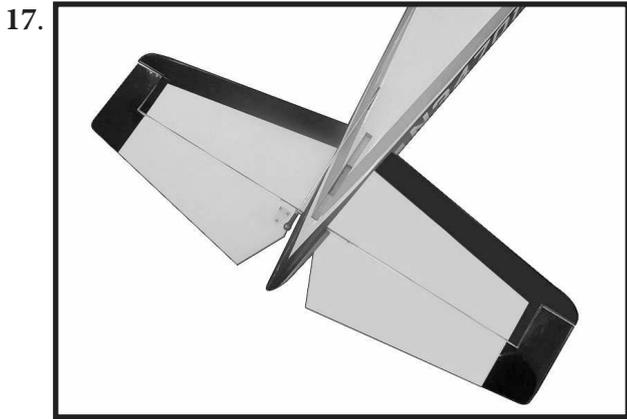
Fit the elevator into position on the stabilizer. Guide the joiner wire and hinges into position.



Fit the elevator so the leading edge fits tightly against the trailing edge of the stabilizer.

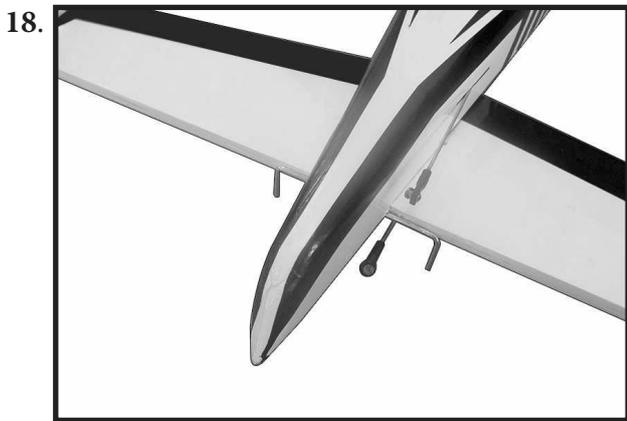


Check the fit of both elevators at this time. Once checked, remove the elevators.



Use a small strip of the clear packaging material and slide it between the joiner wire and stabilizer. Make sure the packing material is cut so it does not obstruct the hinge slot. Use a small piece of low-tack tape to hold the packing material in position.

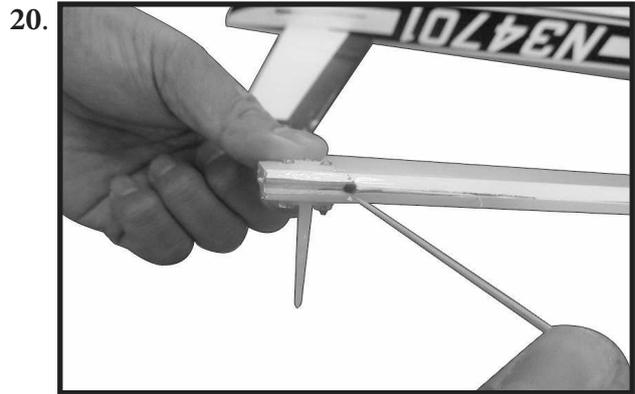
The clear packing material is used to prevent accidentally gluing the elevators or joiner wire to the stabilizer.



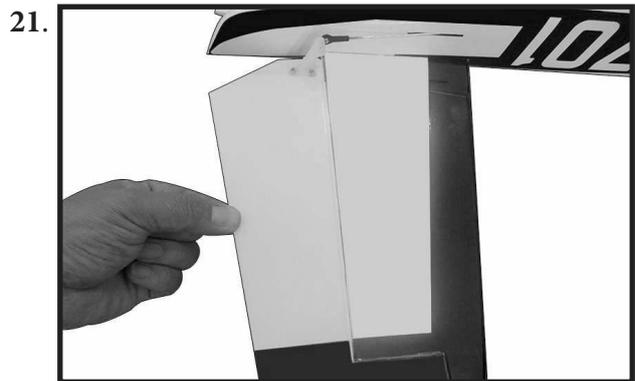
Mix a small amount of 15-minute epoxy. Use a toothpick to apply epoxy to the joiner wire.



Use a toothpick to apply epoxy to the stabilizer where it contacts the joiner wire.



Fit the elevators back into position. Remove the T-pins and slide the elevators tightly against the stabilizer. Use a paper towel and isopropyl alcohol to remove any excess epoxy before it begins to cure.

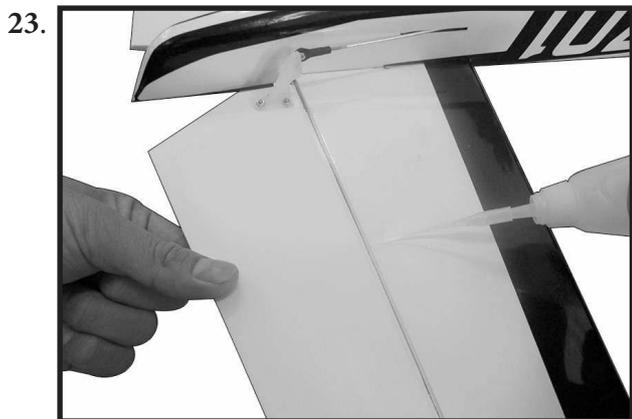


Check the alignment of the elevators in relationship to the stabilizer at the tips. There should be enough gap between the balance tab and stabilizer to they can move freely.

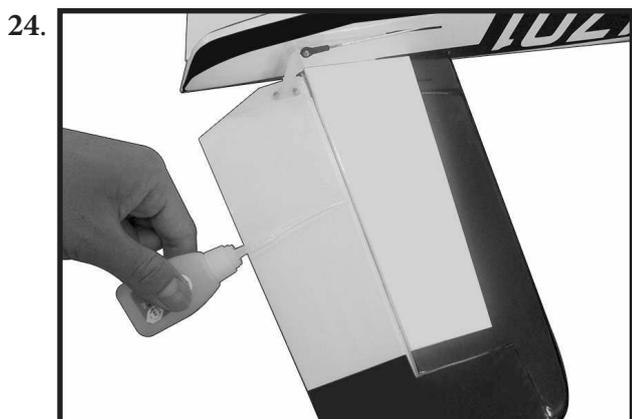
Do not use CA accelerator when gluing hinges. The CA must be allowed to soak into each hinge to provide the greatest bond between the hinges and surrounding wood.



Flex the elevator slightly, making sure to keep the gap between the elevator and stabilizer as narrow as possible. Saturate each of the hinges using thin CA. Apply CA to the top of the hinges.



Flex the elevator slightly, making sure to keep the gap between the elevator and stabilizer as narrow as possible. Saturate each of the hinges using thin CA. Apply CA to the bottom of the hinges. Allow the CA to cure before proceeding.



Gently pull on the fixed and moving surface to make sure the hinges are glued securely. If not, reapply thin CA to any hinges that are found loose.



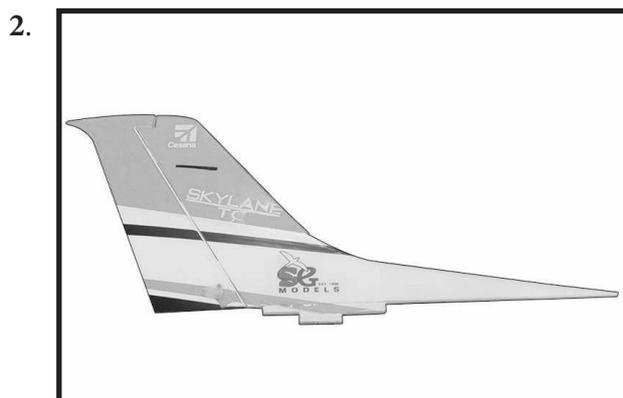
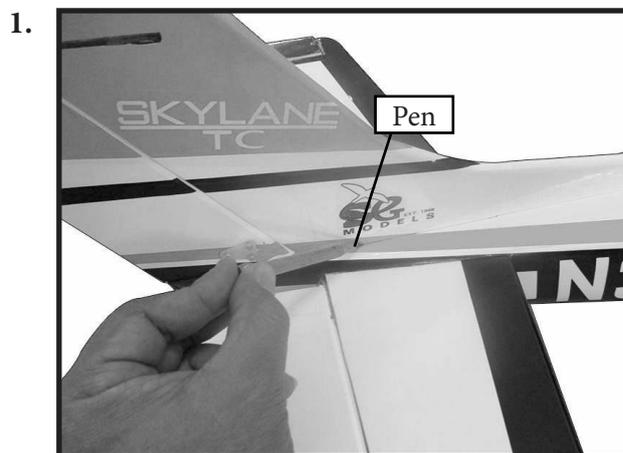
Flex the control surface through its range of motion a few times to break-in the hinges. This will reduce the initial load on the servo when the surface is first actuated.

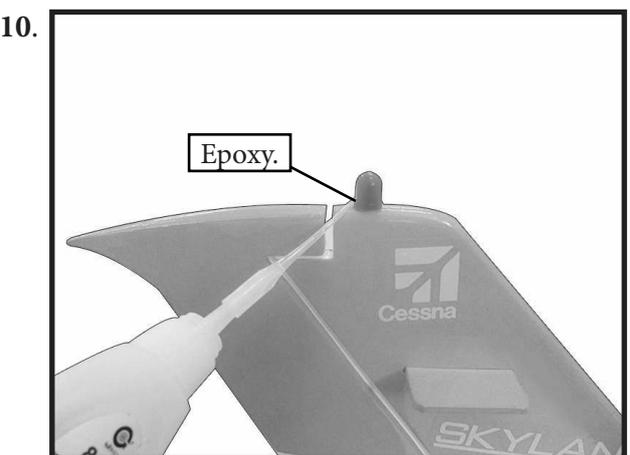
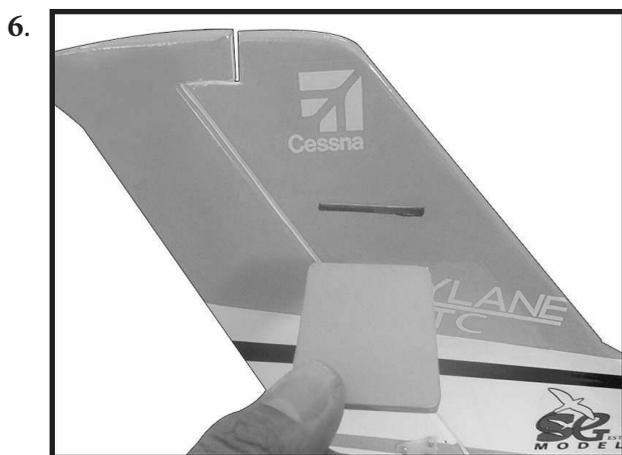
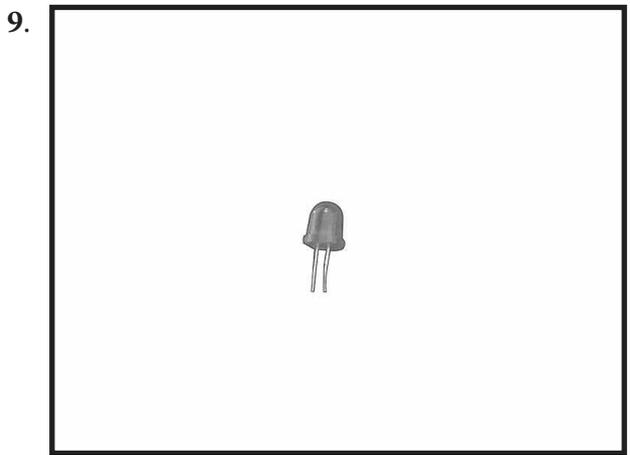
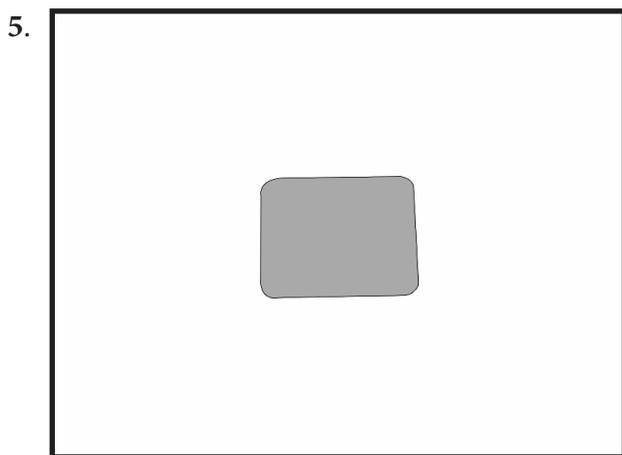
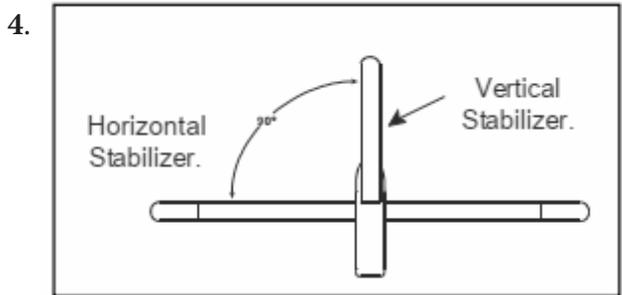
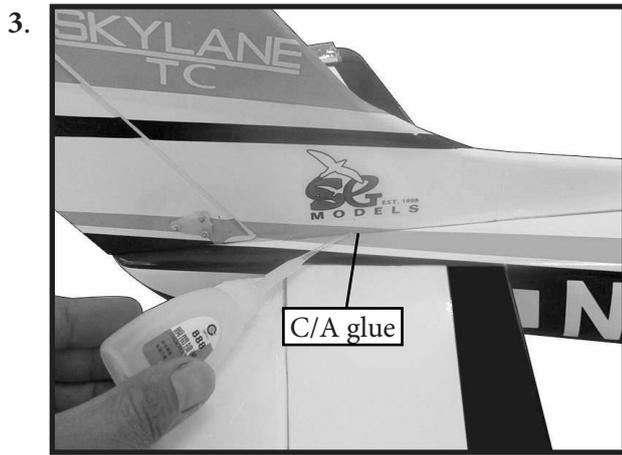


HINGING THE RUDDER

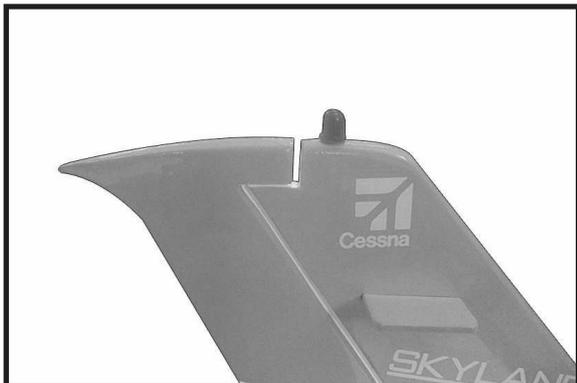
Glue the top two rudder hinges in place using the same techniques used to hinge the ailerons.

The lower hinge will be glued when the fi/rudder assembly is attached to the fuselage.





11.



ELEVATOR AND RUDDER LINKAGE CONNECTIONS

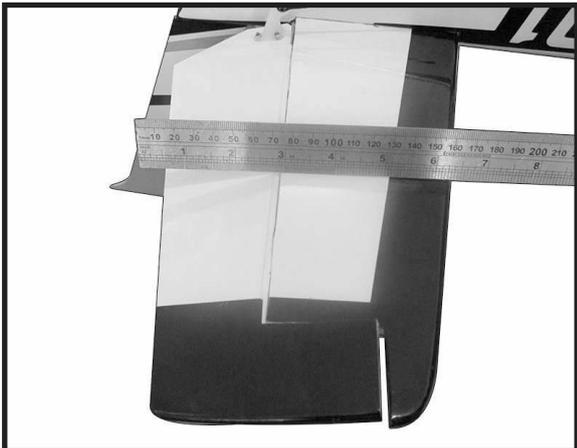
Remove the 2mm nut from the elevator ball link. Thread then screw Use a 1.5mm hex wrench to thread the screw through the center hold of the elevator control horn.

1.



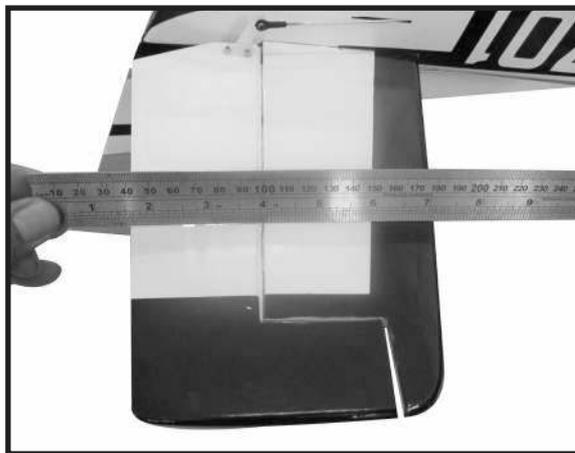
With the radio on and the elevator stick and trim centered, use a ruler to check that the elevator is aligned with the stabilizer.

2.



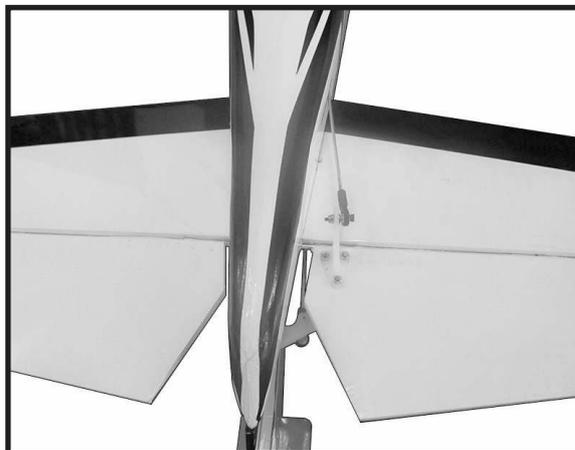
If the elevator and stabilizer are not aligned, thread the ball on the elevator in or out to correct the alignment. Make sure to thread the ball end at the control horn and servo arm equally as not to damage the ball ends.

3.



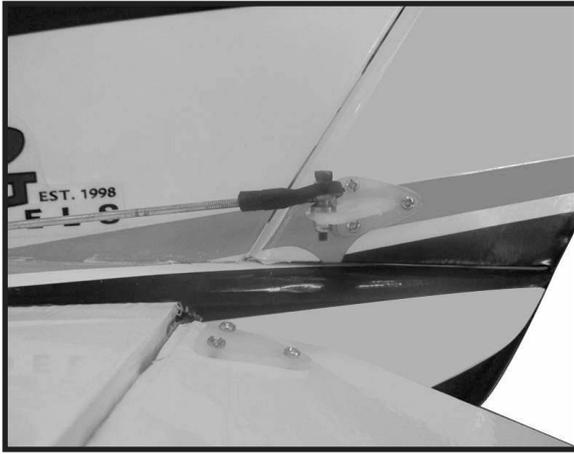
Once the elevator and stabilizer are aligned, use a 1.5mm hexn wrench to tighten the screw while holding the 2mm locknut with hemostats or needle nose pliers.

4.

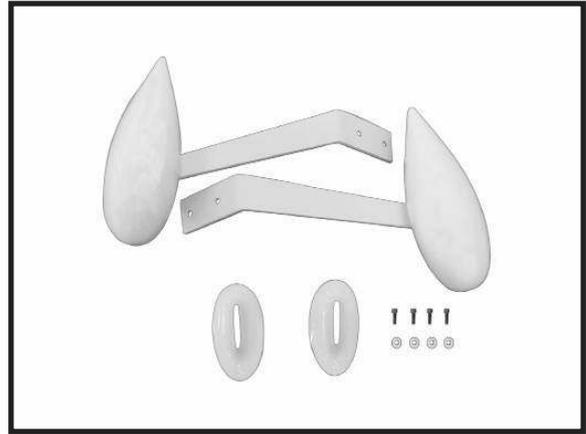


Repeat the steps for the elevator to attach the rudder pushrod and ball end to the rudder control horn.

5.

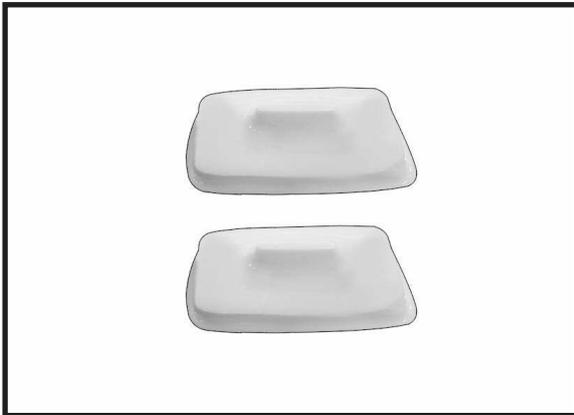


4.



LANDING GEAR INSTALLATION

1.



5.



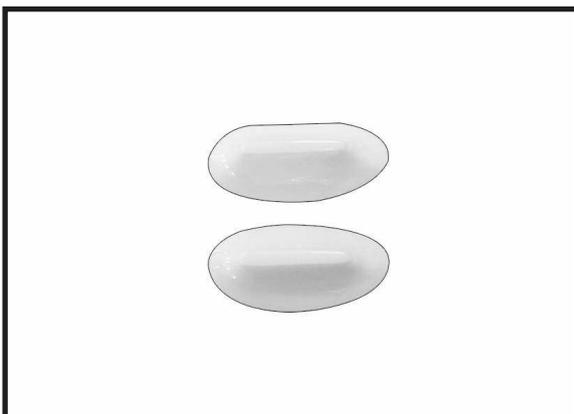
2.



6.

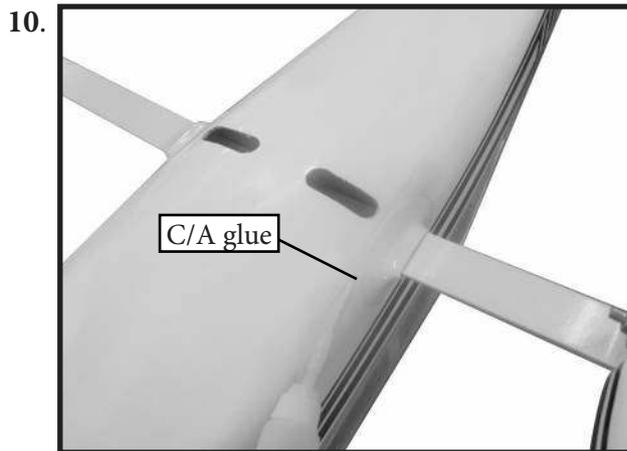
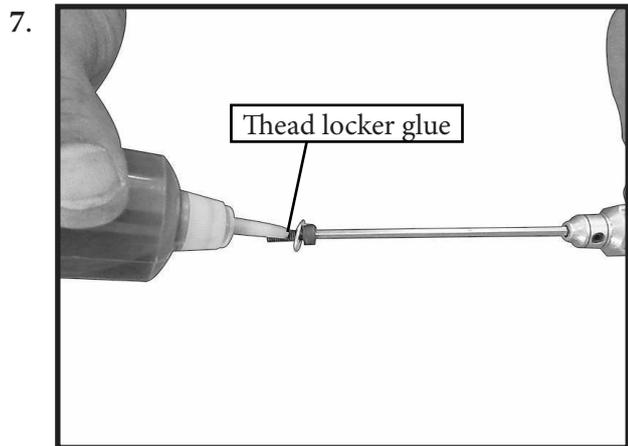


3.

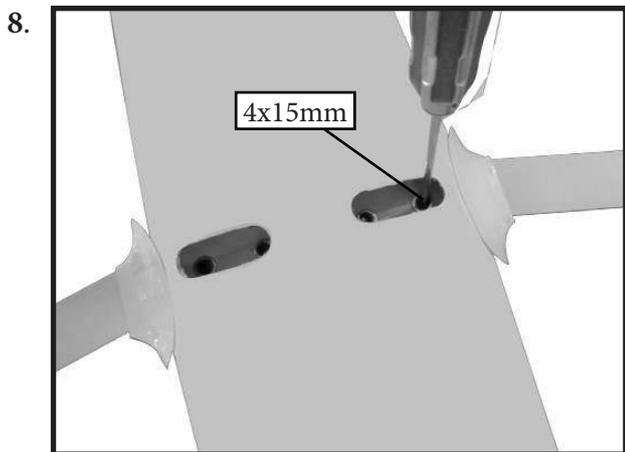


Slide an M4 washer on the M4 x 20 socket head cap screw. Place a drop of threadlock on the screw. Prepare all three screws.

It is not essential to use threadlock if the model will be disassembled for transport.

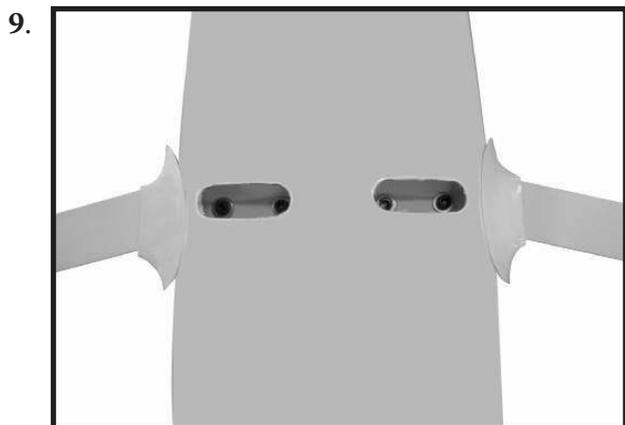


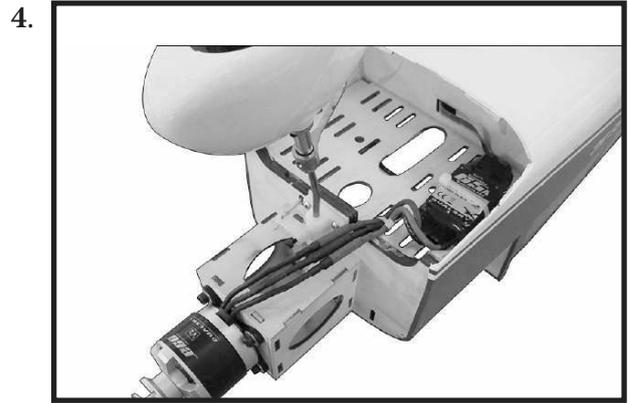
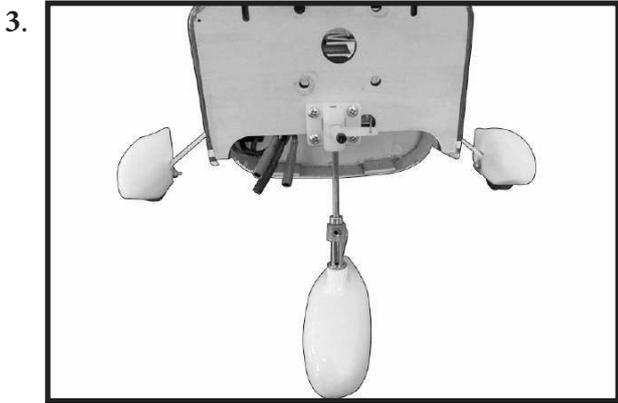
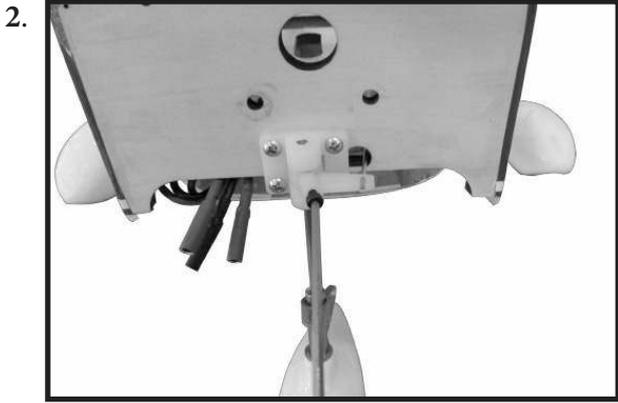
Use the screws to attach the landing gear to the bottom of the fuselage. Use a 3mm hex wrench to tighten the screws. Do not over-tighten the screws and damage the fuselage.



INSTALL NOSE GEAR

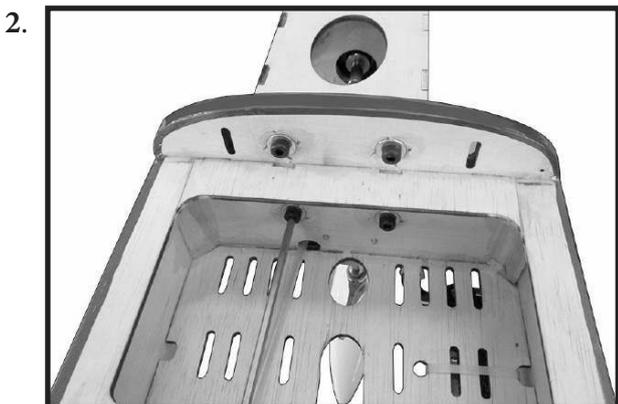
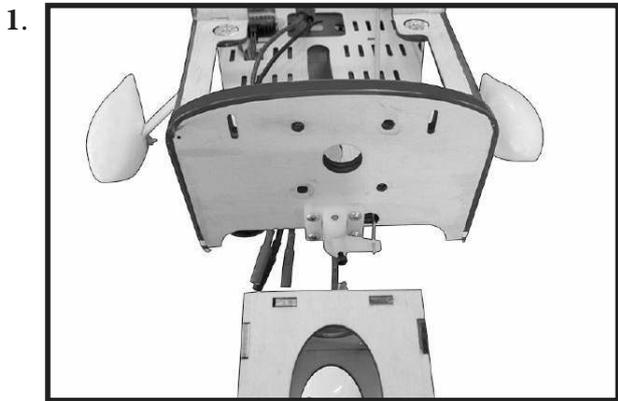
Locate the items necessary to attach the nose landing gear that are included with your model.





ELECTRIC POWER CONVERSION

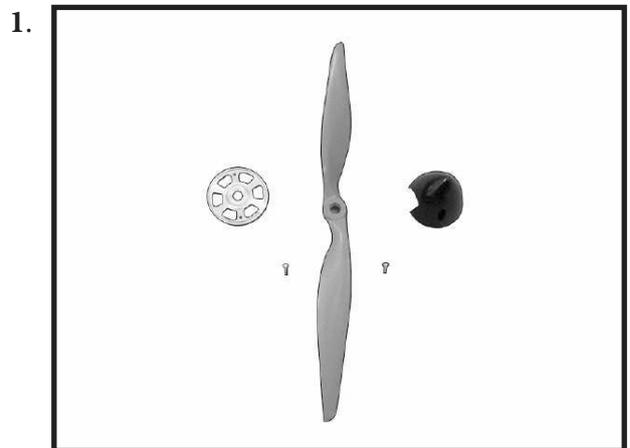
- Please see below pictures.



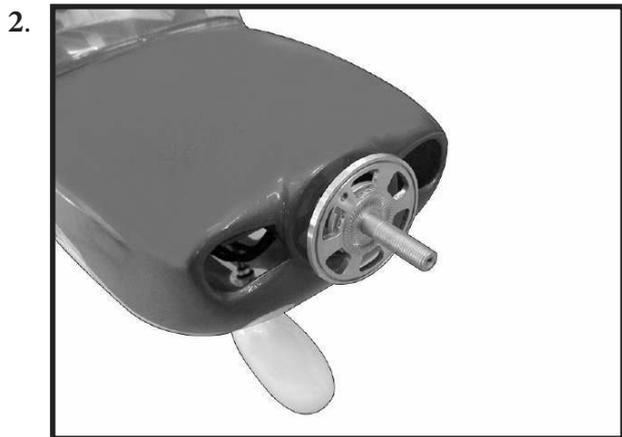
MOTOR BATTERY AND PROPELLER INSTALLATION

The photo shows the order of the items as installed on the motor.

Use caution around the motor once the propeller has been installed. The propeller can cause injury if the motor starts when the battery is connected.

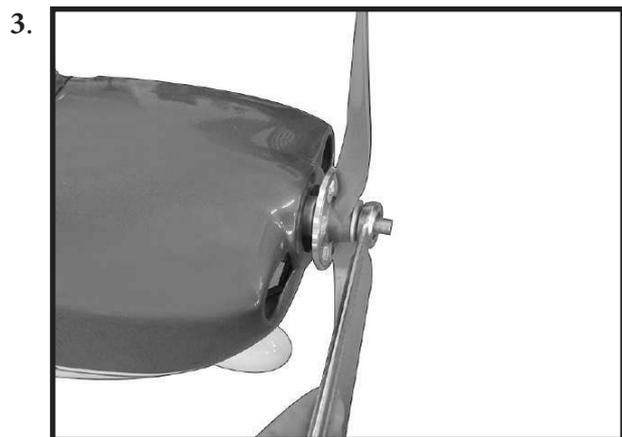


Slide the propeller adapter, propeller drive washer and spinner backplate on the motor shaft.



Fit the propeller on the adapter. Thread the propeller nut on the adapter and tighten the nut using a 7/8-inch socket or box end wrench.

Do not use pliers to tighten the nut, as they will damage the aluminum nut over time.

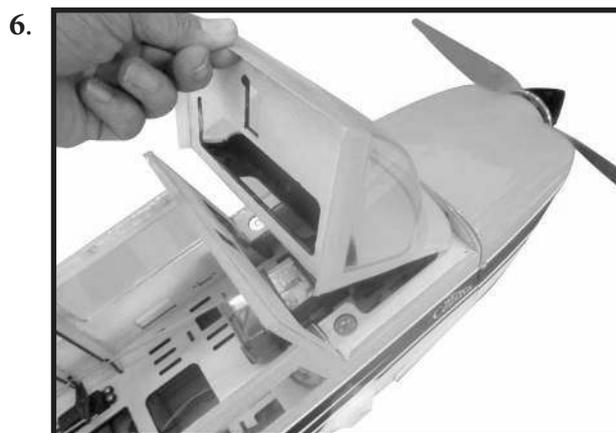


Fit the spinner cone in position. Position the spinner cone so it does not contact the propeller. Secure the spinner cone using the provided screw and 1.5mm hex wrench.



Secure the motor battery in the fuselage using the hook and loop straps.

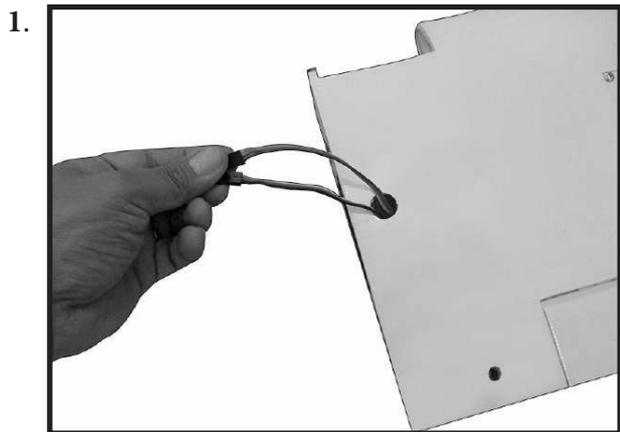
Use hook and loop tape (not included) between the battery and battery tray to secure the battery during more aggressive flying.



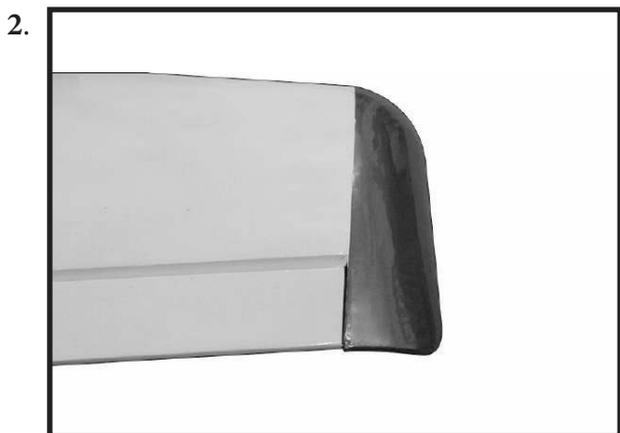


WING INSTALLATION

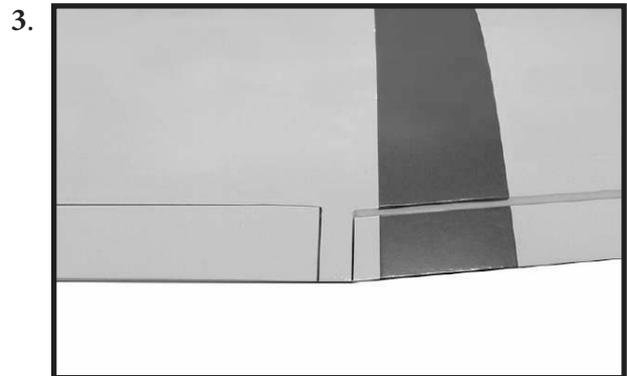
Connect the leads from the flap and aileron extensions to the leads from the wing. Mark each lead so they can be re-connected in the same positions.



With the radio on and the aileron stick and trim centered, check that the aileron is aligned with the wing tip. Adjust the linkage as necessary to correct the alignment.

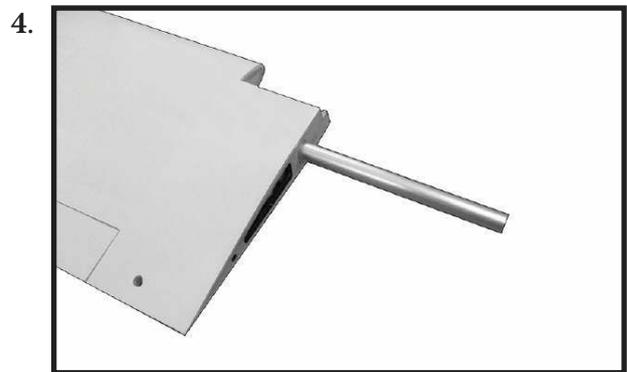


With the radio on and the flap switch centered, check that the flap is aligned with the aileron. Adjust the linkage as necessary to correct the alignment.

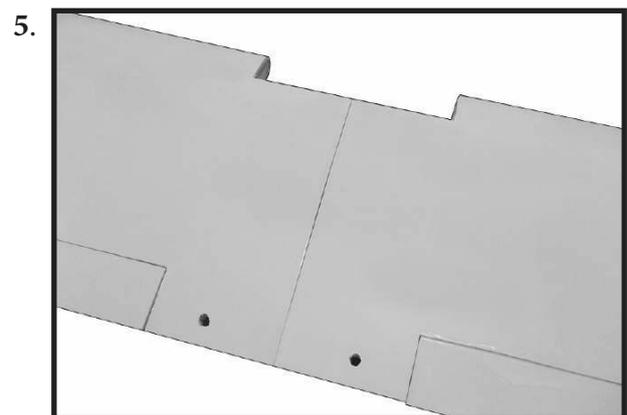


Slide the wing tube into the wing tube socket.

The wing tube may be a tight fit in the socket. Polishing the wing tube with fine sandpaper or steel wool will help ease the installation of the wing tube. Do not force the wing tube in the sockets as it can damage the structure inside the wing.

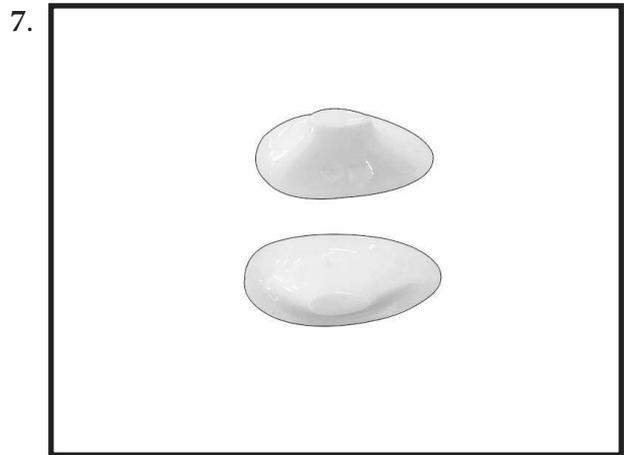
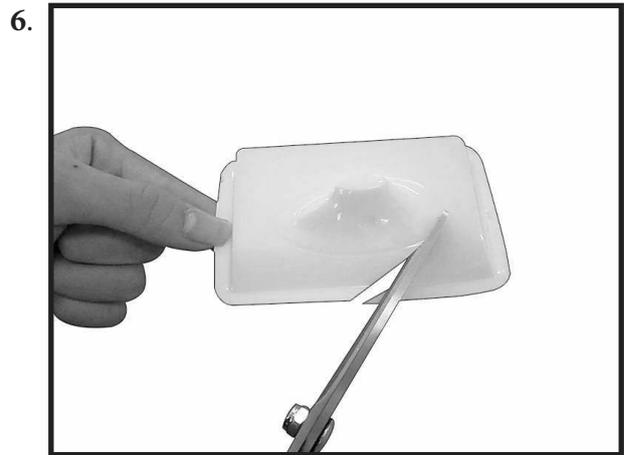
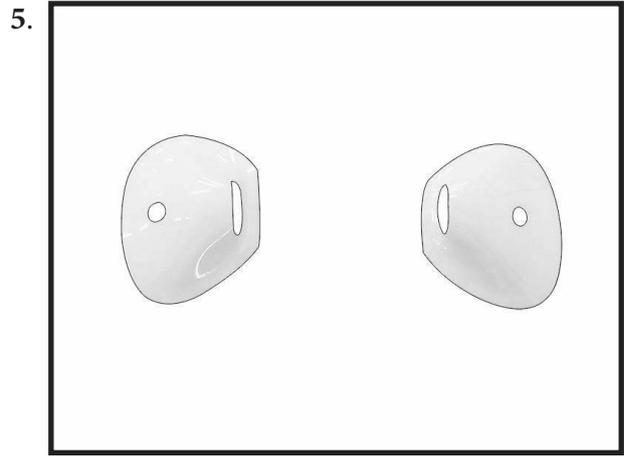
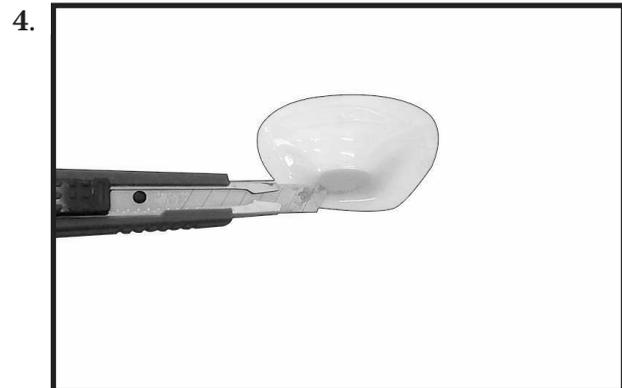
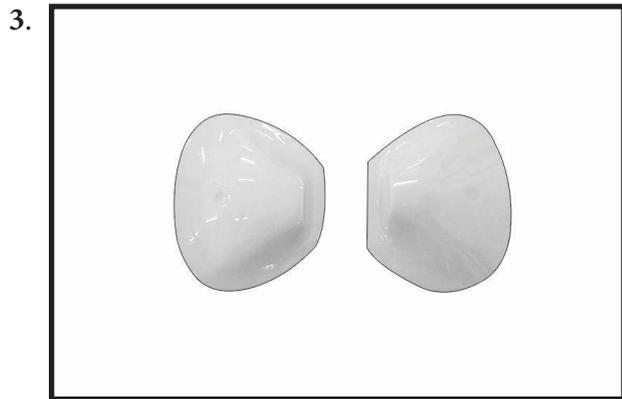


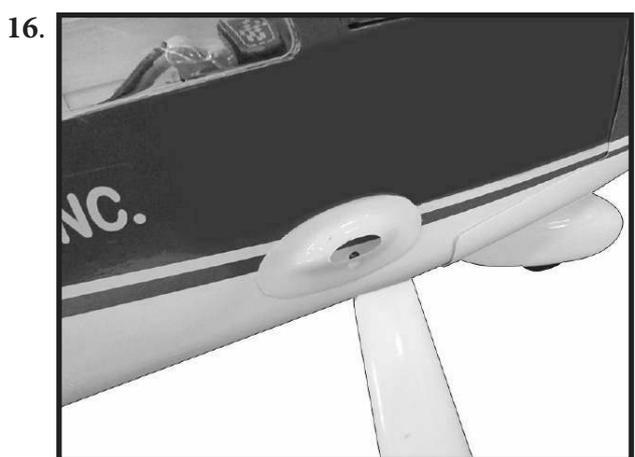
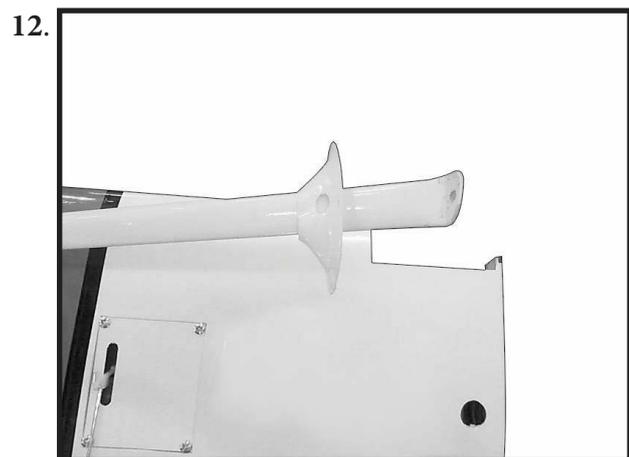
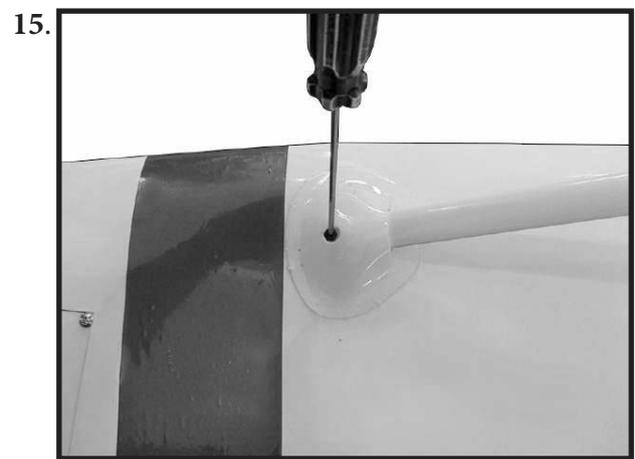
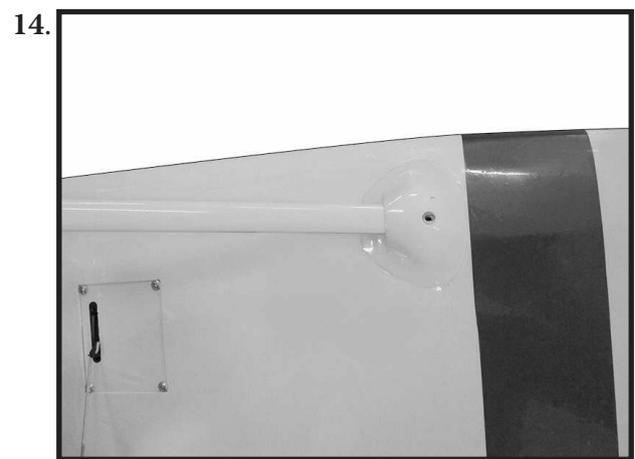
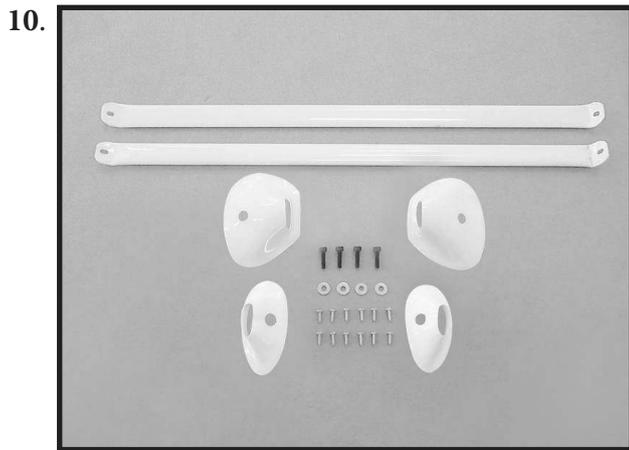
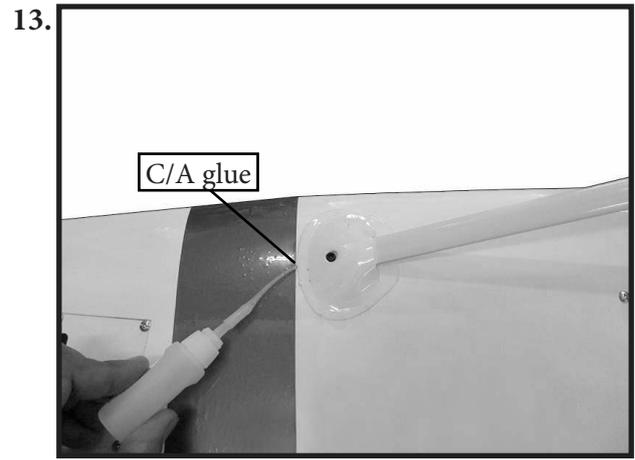
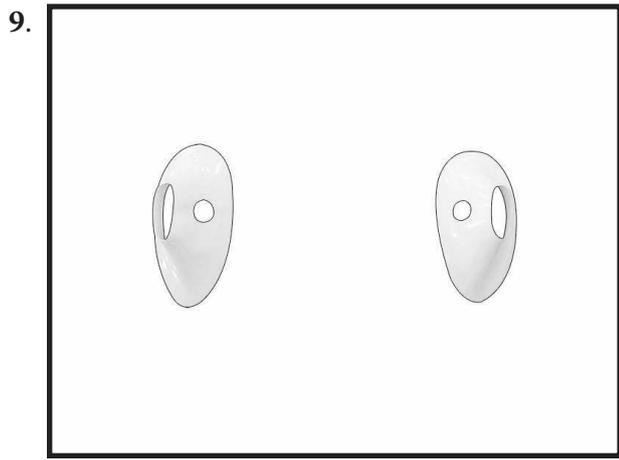
Slide the wing panels together. They will fit tightly together when in the correct position.

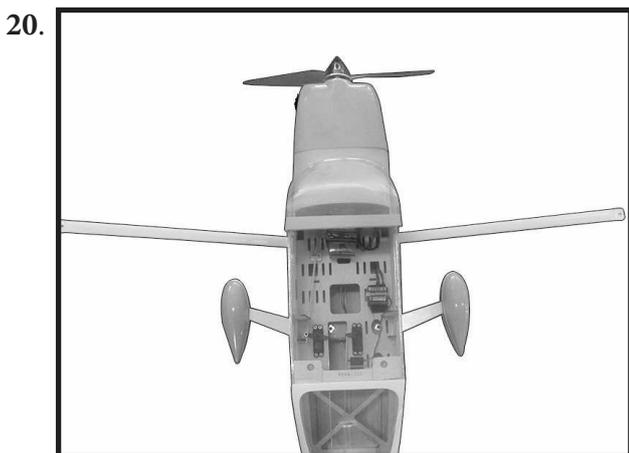
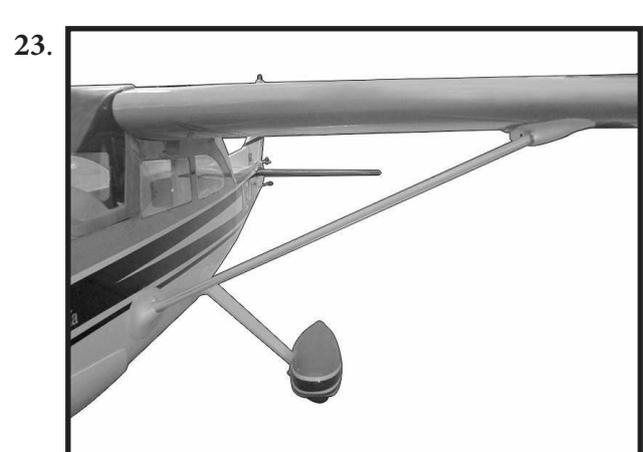
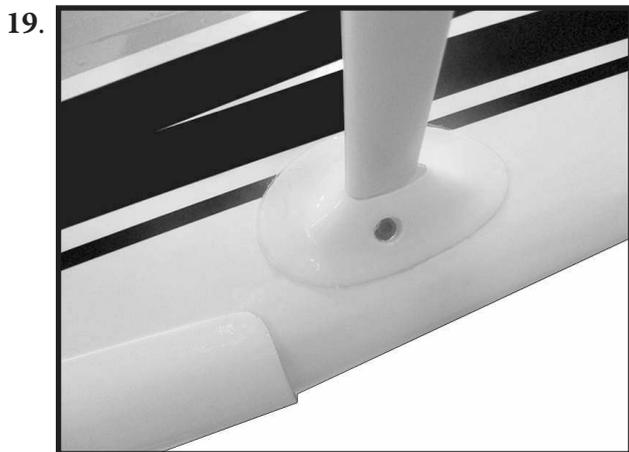
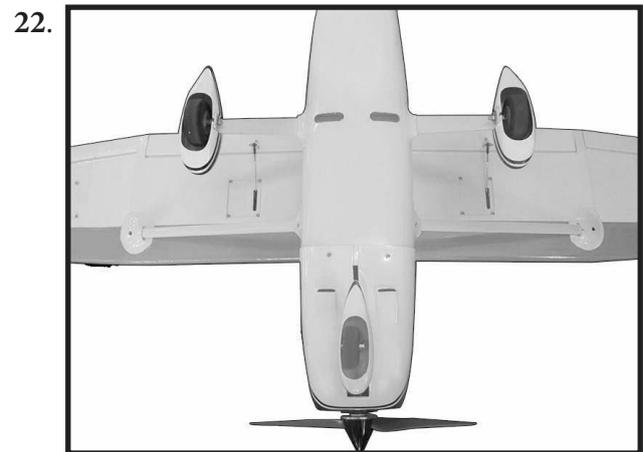
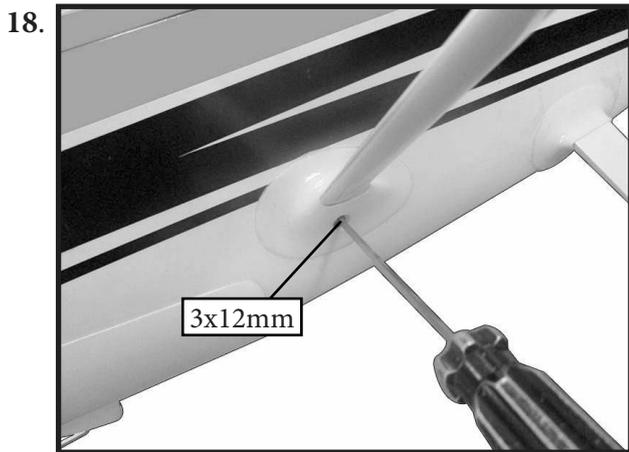
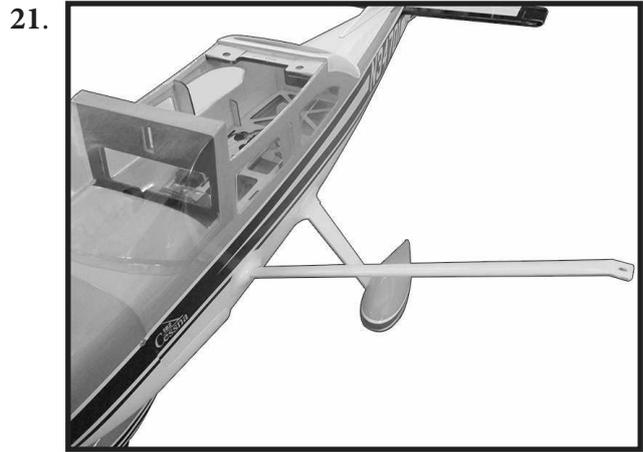
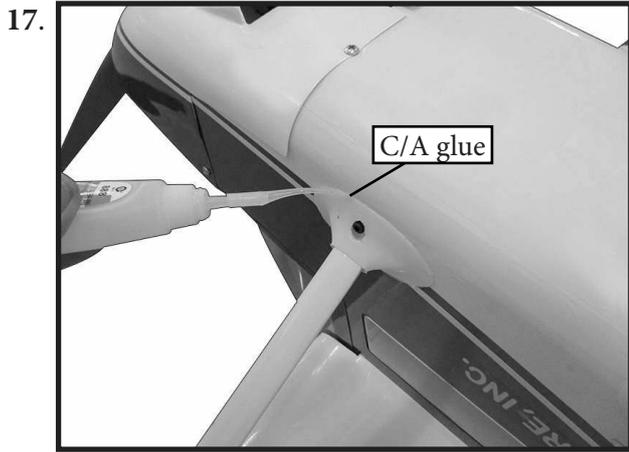


**INSTALLATION WING- FUSELAGE
STRUTS**

- Parts requirement. See pictures below.



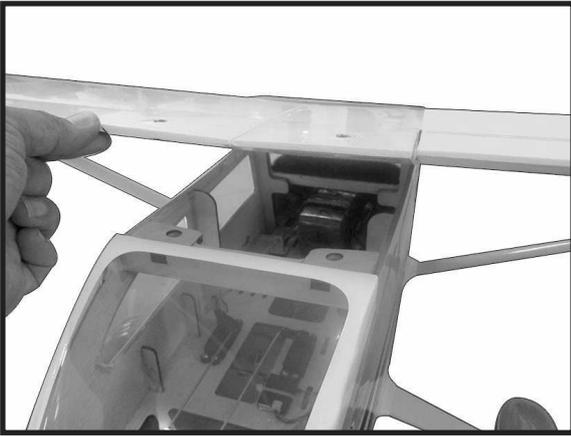




Connect the leads for the flaps and ailerons.

Make sure the extensions will not interfere with the operation of the rudder and elevator servos.

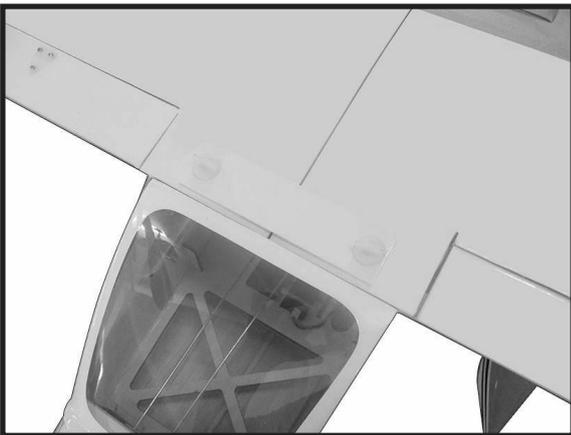
24.



Place the wing bolt plate on the wing, then thread the 1/4-20x 13/4-inch nylon wing bolts into the blind nuts in the fuselage to secure the wing.

Finger-tighten the wing bolts. Overtightening the wing bolts can damage the wing structure or wing bolt plate.

25.



APPLY THE DECALS

- If all the decals are precut and ready to stick. Please be certain the model is clean and free from oily fingerprints and dust. Position decal on the model where desired, using the photos on the box and aid in their location.

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

BALANCING

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

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

2) The recommended Center of Gravity (CG) location for your model is (80mm) back from the leading edge at the center of the wing.

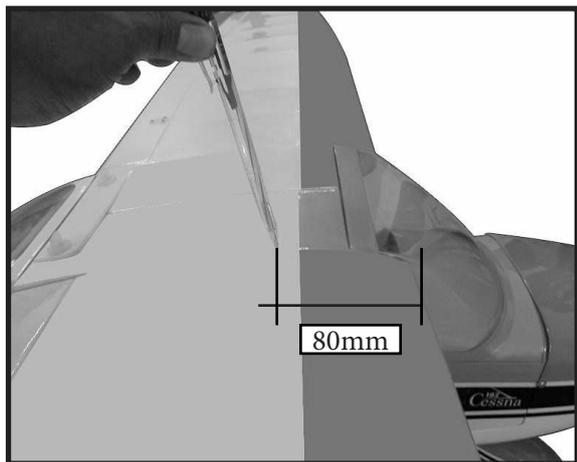
3) When balancing your model, make sure it is assembled and ready for flight. Support the plane upright at the marks made on the wing with your fingers or a commercially available balancing stand. This is the correct balance point for your model.

*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.

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.

1.



CONTROL THROWS

Ailerons:

High Rate :
 Up : 20 mm
 Down : 20 mm
 Low Rate :
 Up : 15 mm
 Down : 15 mm

Rudder:

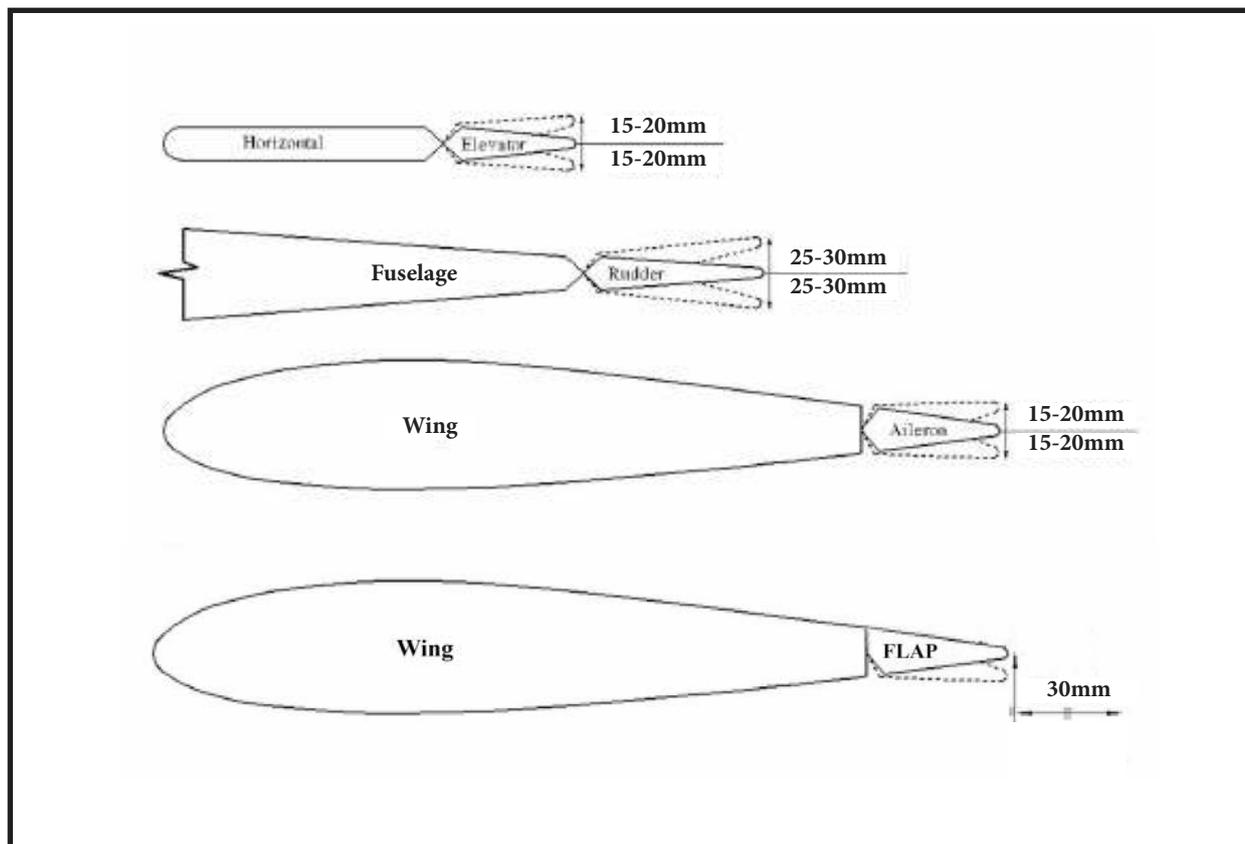
High Rate :
 Right : 30 mm
 Left : 30 mm
 Low Rate :
 Right : 25 mm
 Left : 25 mm

Elevator:

High Rate :
 Up : 20 mm
 Down : 20 mm
 Low Rate :
 Up : 15 mm
 Down : 15 mm

Flap:

Mid : 30mm



FLIGHT PREPARATION

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

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

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

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

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

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

PREFLIGHT CHECK

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

□ 2) Check every bolt and every glue joint in the **CESSNA TURBO SKYLANE 182 ELECTRIC 69" WINGSPAN PNP** 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 CESSNA TURBO SKYLANE 182 ELECTRIC 69" WINGSPAN PNP.

*If you have any queries, or are interested in our products,
please feel free to contact us*

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