

# Direct Airscale



scale model

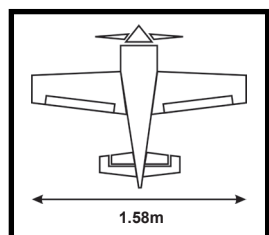
Code : 4131

## TECHNICAL INSTRUCTIONS

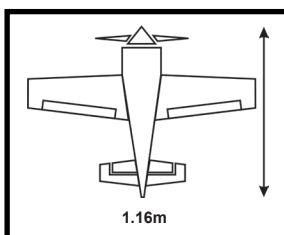
May change without notice



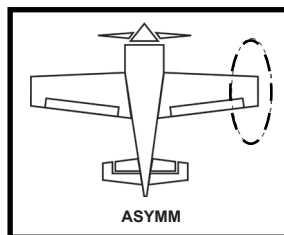
## SPACE WALKER ELECTRO



1.58m



1.16m



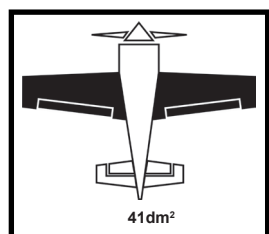
ASYMM



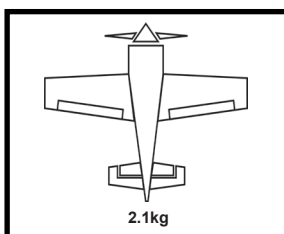
install Kit



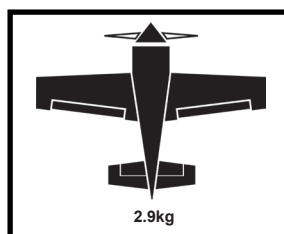
NO



41dm<sup>2</sup>



2.1kg



2.9kg



install Kit



YES

### SERVOS

- Ailerons
- Rudder + wheel
- Elevator
- Flaps
- Retract
- Gas or bec

## CONGRATULATIONS.

Thank you for choosing a *Direct Airscale* model. If you have any problems do not hesitate to consult our website. Especially the section *CLUB DA* (Direct Airscale club) for each plane where you will find information. You also can consult me directly by phone but try to be a maximum shorter 😊. Thank you. You also can participate in the interaction you'll find at general chapter *CLUB DA*.

For our **SPACE WALKER electro** we respected the concept of scale to provide a lightweight, economical airplane engine but can collect any aerobatics as it is true that wood (balsa and ctp) and good quality wing serious manufacturer key can provide you with any "envelope" that will accept any physical injuries you inflict it. . . Significantly higher than the real one! To tell you whether or not you fly model. One day yes, one day not, can be a good answer. Our decor is different from that intended by designers like spider-man but still takes one chosen by many U.S. homebuilders. Have fun, let you go, fly quiet or clownish, our "space walker" is made for this.

## WARNING

If you are inexperienced with basic r/c flight we strongly recommended you contact the nearest model aircraft club. Experienced members will help you to install additional accessories to put your aircraft airworthy. The club will ensure your training and you will avoid flying illegally and destroy your aircraft from the first flight.

## ADDITIONAL ITEMS REQUIRED.

- Propulsion set depending your choice : gas or electric.
- Radio set minimum 4 channels.
- 4 servos.
- Propeller.
- Electric lipo pack or Ni-Mh.
- Switch or Bec controller and fuse.

## TOOLS AND SUPPLIES.

- Thick cyanoacrylate glue.
- 30 minute epoxy.
- Electric drill.
- Assorted drill bits.
- Modelling knife.
- Straight ruler.
- Miscellaneous sandpaper.
- 90° builder's triangle.
- Wire cutters.
- Tape & T-pin
- A set of small keys 6 section
- A set of screw drivers

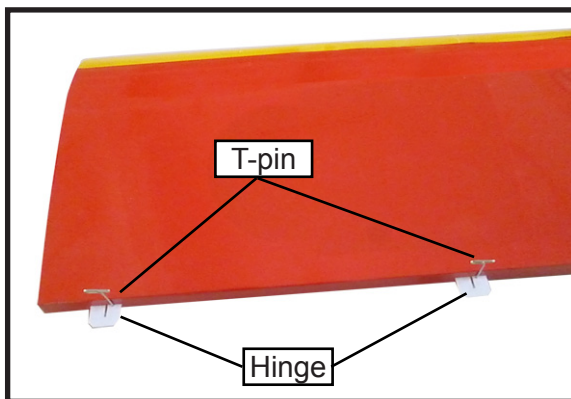
## KIT CONTENTS.

- Light and rigid balsa and plywood construction
- Fuselage and wings built and Oracover® covered
- Decoration and lettering placed
- 2 Pilots included
- 2 dash boards
- Aluminum landing gear
- Fiber wheel cover decorated
- Large diameter wheels
- Controlled tail wheel
- Spinner
- Fiber cowl
- Electric motor installation kit (part wooden lipo kit ...)
- All mounting hardware, screws, fittings, linkages, ...
- Mounting instructions in English with photos
- Country translation send beside

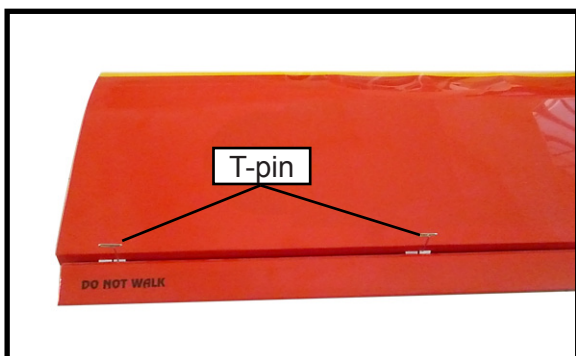
## HINGING THE AILERON.

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

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

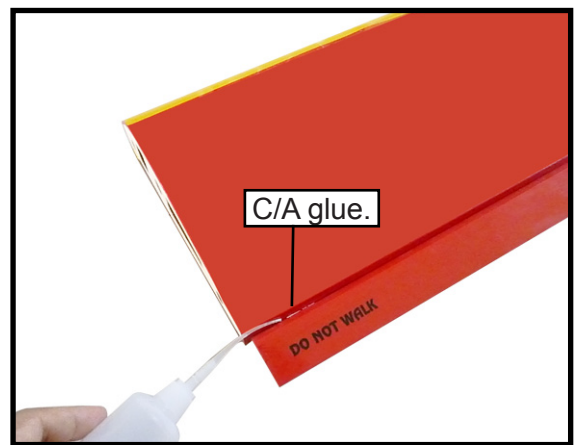


- 3) Slide the aileron on the wing panel until there is only a slight gap. The hinge is now centered on the wing panel and aileron. Remove the T-pins and snug the aileron against the wing panel. A gap of 1/64" or less should be maintained between the wing panel and aileron.



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

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



- 5) Turn the wing panel over and deflect the aileron in the opposite direction from the opposite side. Apply thin C/A glue to each hinge, making sure that the C/A penetrates into both the aileron and wing panel.
- 6) Using C/A remover/debonder and a paper towel, remove any excess C/A glue that may have accumulated on the wing or in the aileron hinge area.
- 7) Repeat this process with the other wing panel, securely hinging the aileron in place.

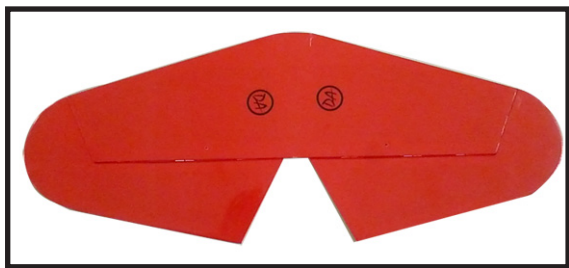
- 8) After both ailerons are securely hinged, firmly grasp the wing panel and aileron to make sure the hinges are securely glued and cannot be pulled out. Do this by carefully applying medium pressure, trying to separate the aileron from the wing panel. Use caution not to crush the wing structure.



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

### HINGING THE ELEVATOR.


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

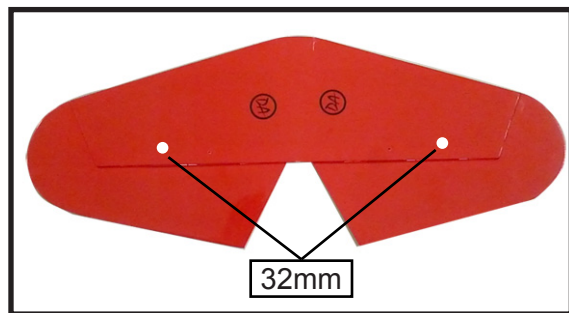


### TURNBUCKLE INSTALLATION.

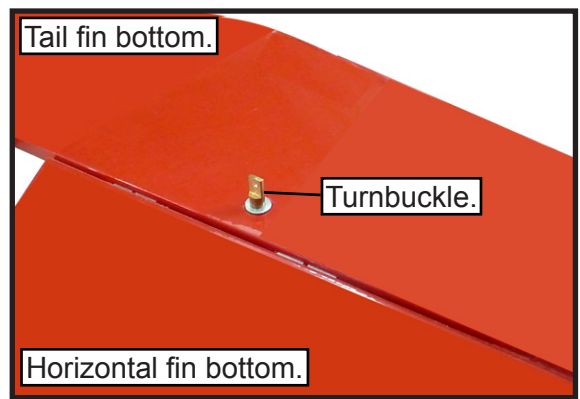


The hole location of turnbuckle shown in picture below.

 *The mounting holes of turnbuckle was pre-drilled at factory.*

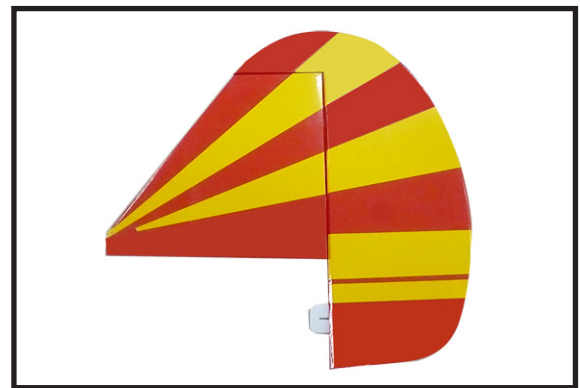


Installing the turnbuckle for tail strut of horizontal fin as same as pictures below.




### HINGING THE RUDDER.

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

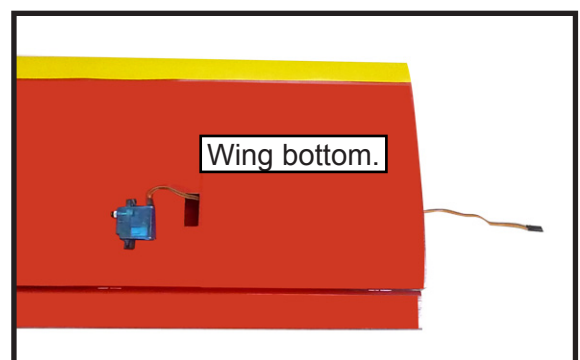


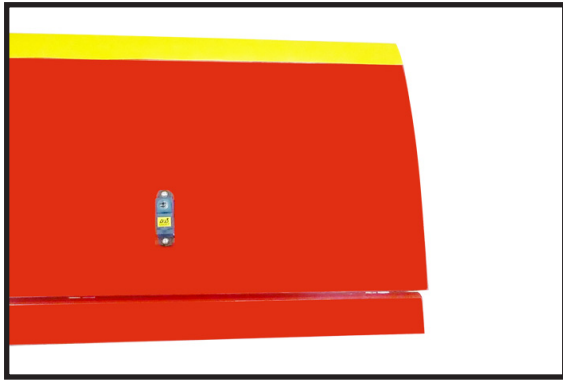
### INSTALLING THE AILERON SERVO.

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

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

Attach the thread to the servo lead and carefully thread it through the wing.

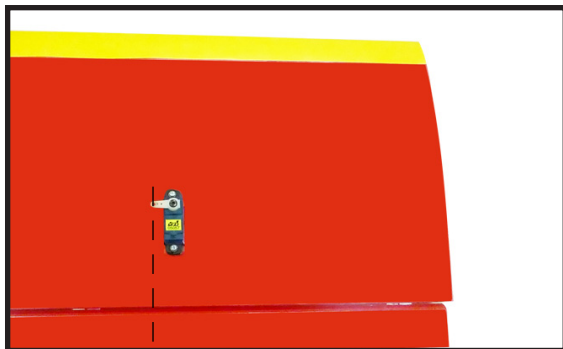




2) Secure the servos with the screws provided with your radio system.

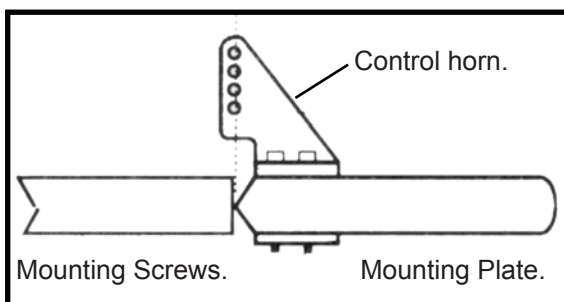
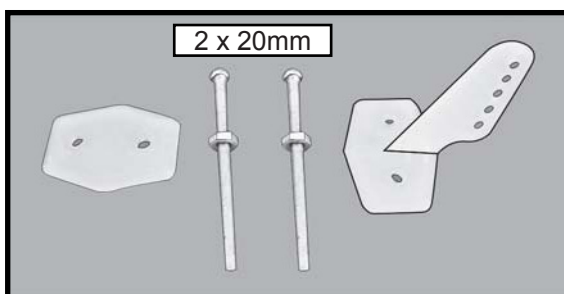
### INSTALLING THE AILERON LINKAGE.

1) Using a ruler & pen to draw a straight line as picture below.



2) Locate the two nylon control horns, two nylon control horn backplates and four machine screws.

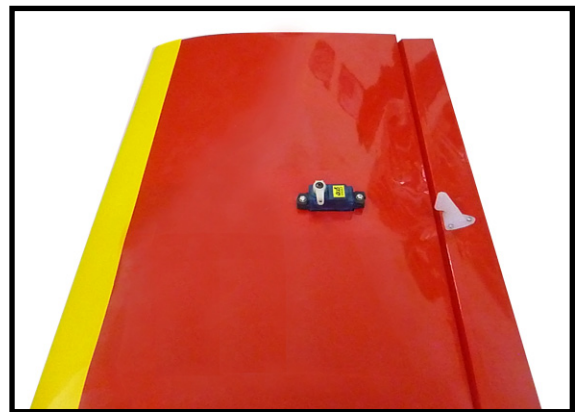
3) Position the aileron horn on the bottom side of aileron. The clevis attachment holes should be positioned over the hinge line.

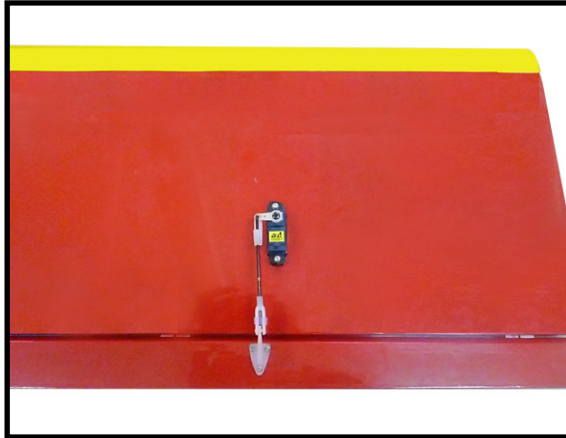
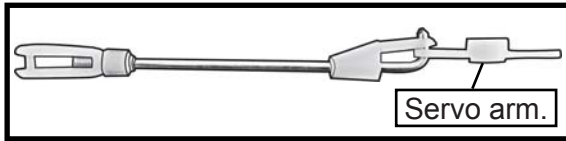
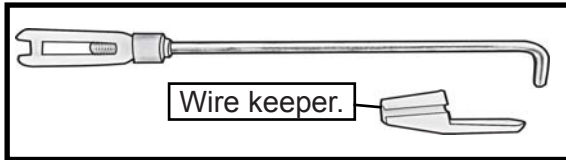


4) Using a 1mm drill bit and the control horns as a guide, drill the mounting holes through the aileron halves.

5) Mount the control horns by inserting the screws through the control horn bases and aileron halves, then into the mounting backplates. Do not overtighten the screws or the backplates may crush the wood.

6) Connect the linkage as shown and secure the control wire with a wire keeper.

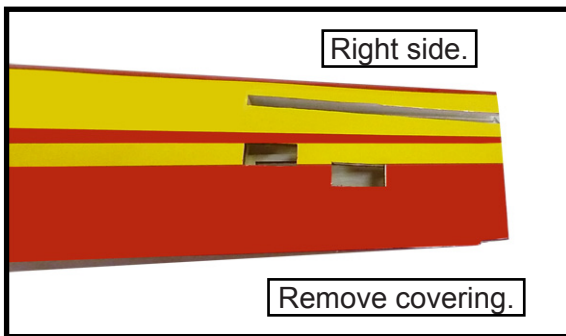




Repeat the procedure for the other aileron servo.

### INSTALLING THE FUSELAGE SERVOS.

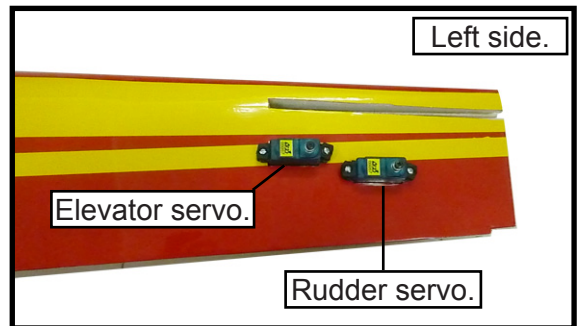
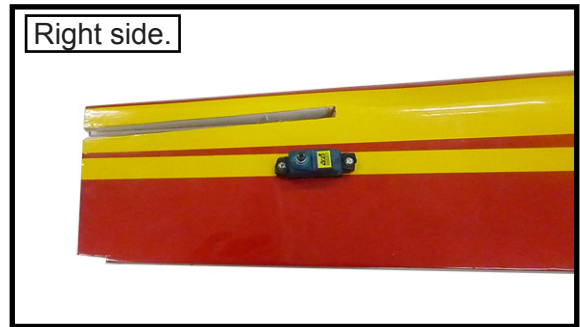
1) Locate and cut out the covering film from the servo holes in both sides of fuselage.



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

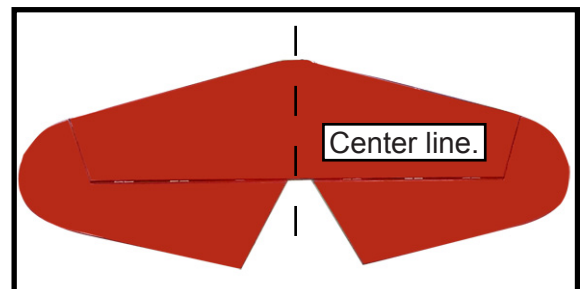
**!** Because the size of servos differ, you may need to adjust the size of the precut opening in the mount. The notch in the sides of the mount allow the servo lead to pass through.

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



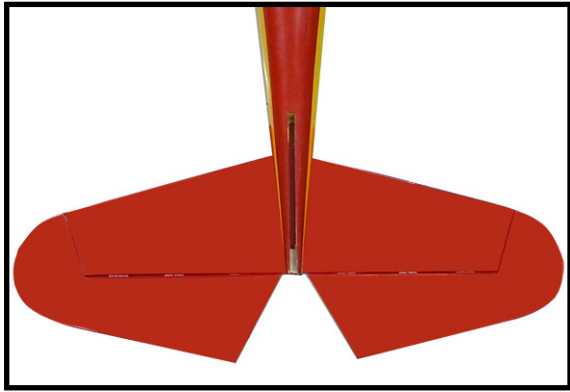
### HORIZONTAL STABILIZER.

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

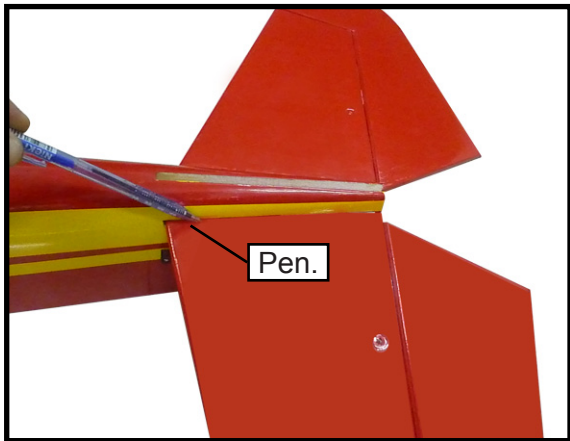


2) Using a modeling knife, carefully remove the covering at mounting slot of horizontal stabilizer ( both side of fuselage).

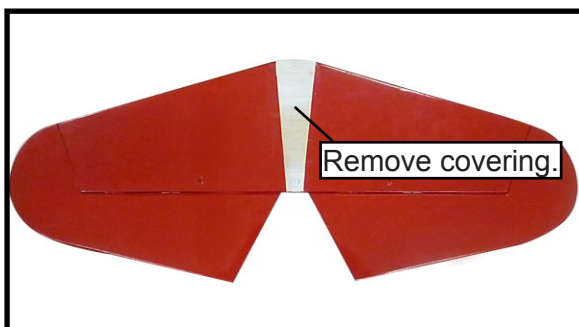
3) Slide the stabilizer into place in the precut slot in the rear of the fuselage. The stabilizer should be pushed firmly against the front of the slot.



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

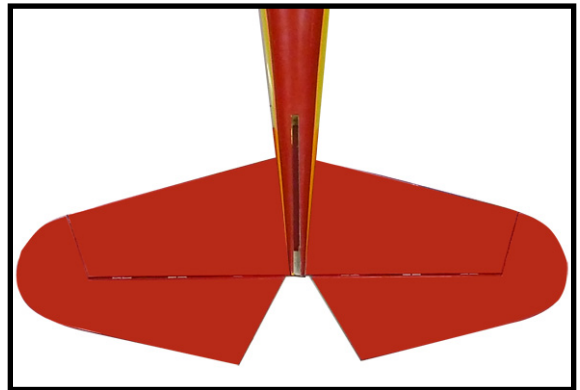


5) Remove the stabilizer. Using the lines you just drew as a guide, carefully remove the covering from between them using a modeling knife.

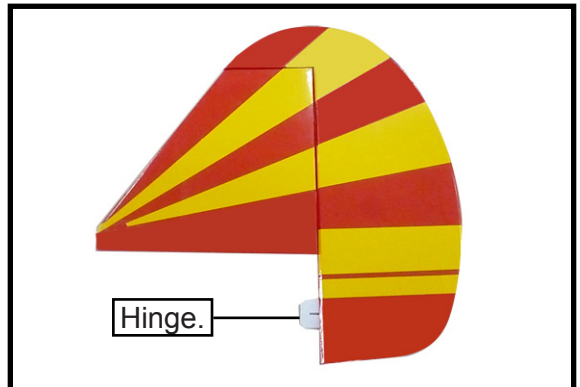


**⚠ When cutting through the covering to remove it, cut with only enough pressure to only cut through the covering itself. Cutting into the balsa structure may weaken it.**

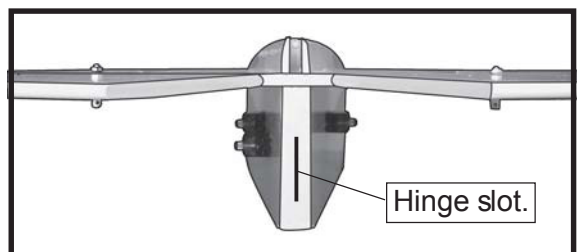
6) When you are sure that everything is aligned correctly, apply C/A glue to the top and bottom of the stabilizer mounting area and to the stabilizer mounting platform sides.



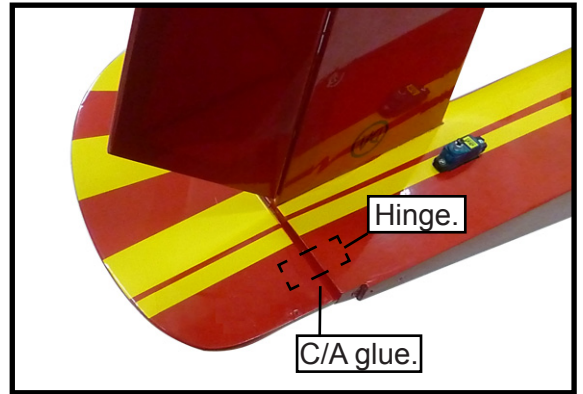
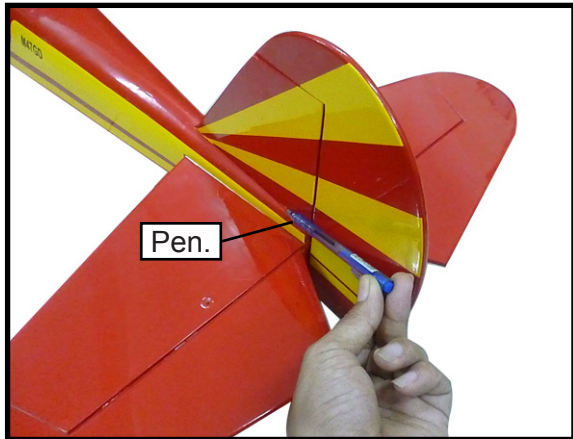
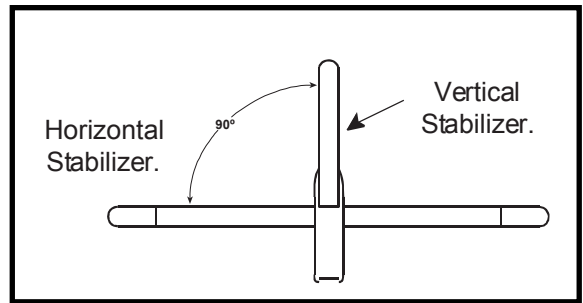
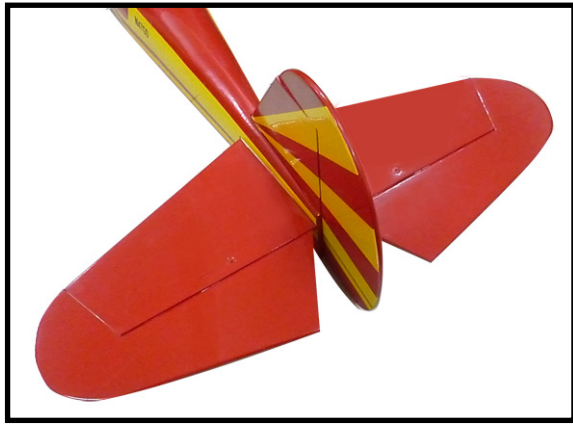
### VERTICAL STABILIZER INSTALLATION.



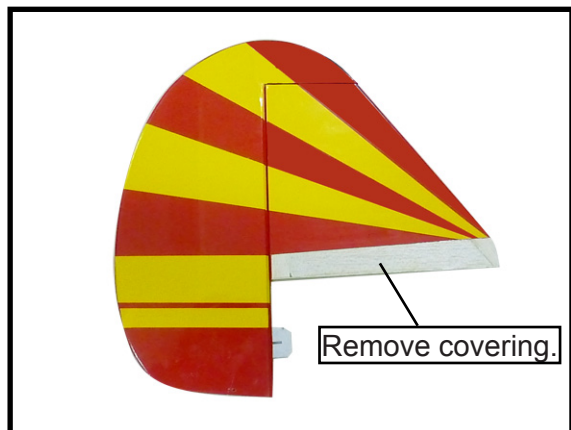
1) Using a modeling knife, remove the covering from over the precut hinge slot cut into the lower rear portion of the fuselage. This slot accepts the lower rudder hinge.



2) Glue the vertical fin in place using same as techniques used to installing the horizontal fin.



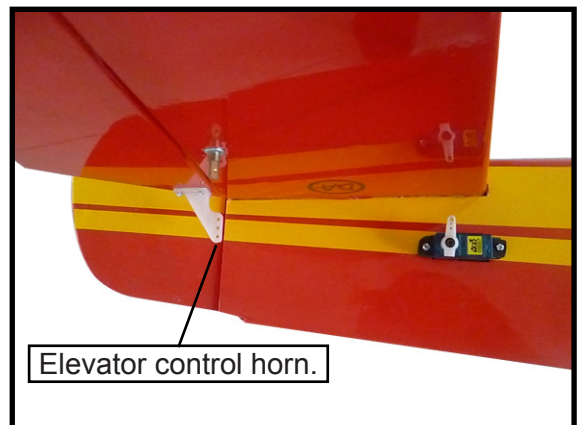
**⚠ When cutting through the covering to remove it, cut with only enough pressure to only cut through the covering itself. Cutting into the balsa structure may weaken it.**



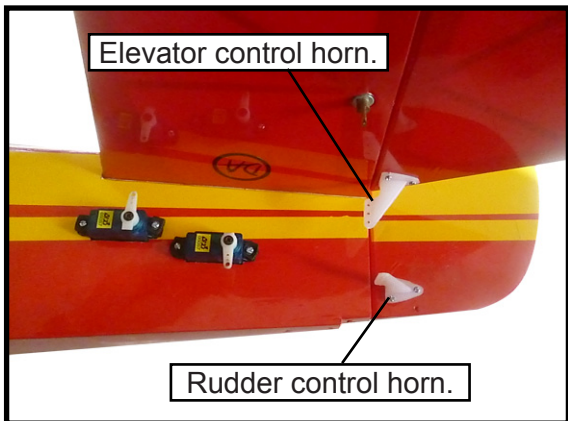
### CONTROL HORN INSTALLATION.

Control horn installation as same as method of aileron wing. See pictures below.

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

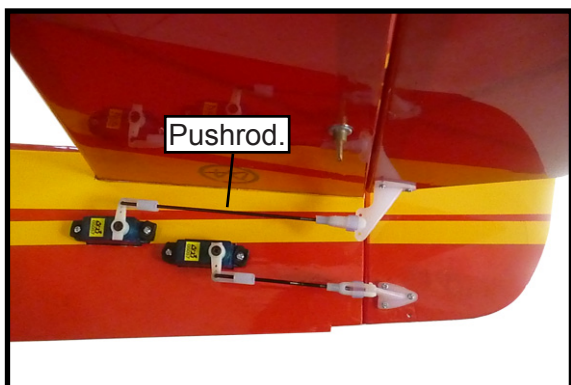
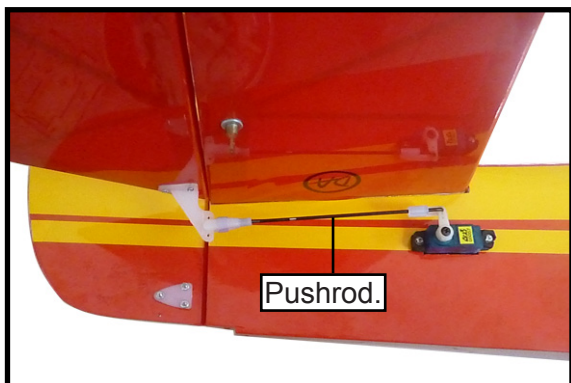






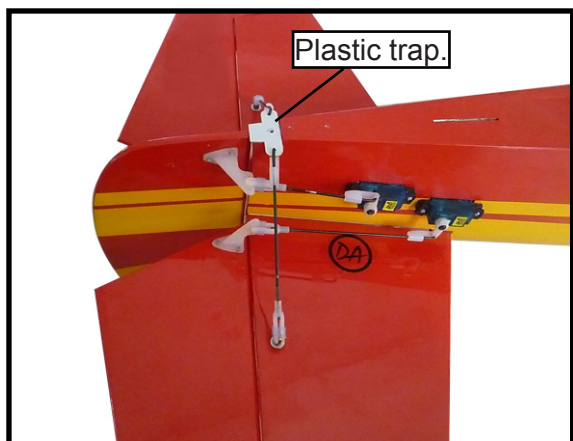
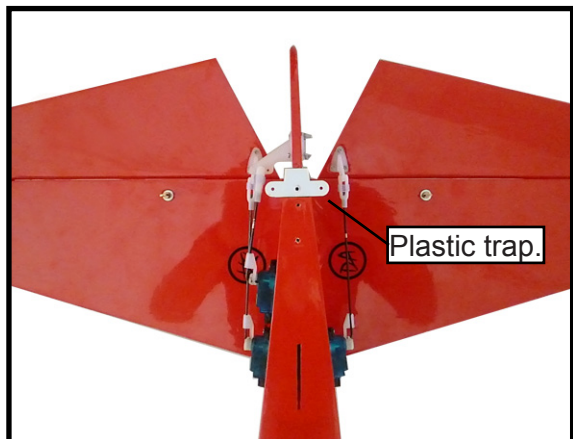
**PUSHROD INSTALLATION.**

Pushrod install as same as method of pushrod os aileron. See pictures below.



**INSTALLING TAIL STRUT SYSTEM.**

The tail strut system assembly follow pictures below.



**MOUNTING THE TAIL WHEEL.**

1) Set the tail wheel assembly in place on the plywood plate. The pivot point of the tail wheel wire should be even with the rudder hinge line and the tail wheel bracket should be on the plywood plate.

2) Using a pen, mark the locations of the two mounting screws. Remove the tail wheel bracket and drill 1mm pilot holes at the locations marked.

3) Secure the tail wheel bracket in place using two 3x10mm wood screws. Be careful not to overtighten the screws.



#### MOUNTING THE CONTROL CLASP.

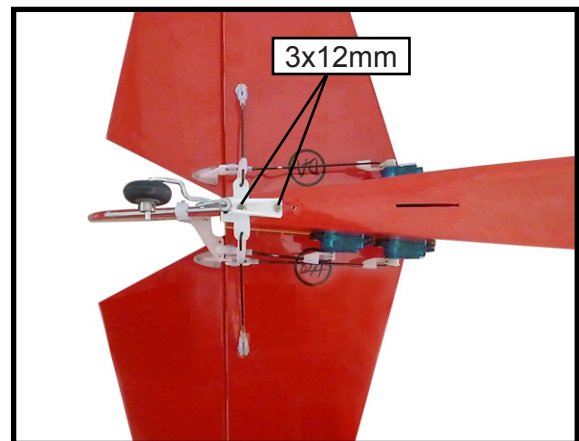
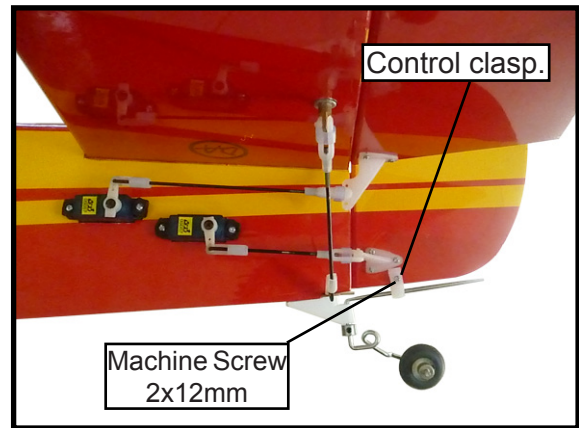
1) Align the tail wheel wire so that the wire is parallel with the bottom of the rudder. The control clasp has a predrilled hole through the top of it. Slide this hole onto the tail wheel wire while sliding the clasp over the bottom of the rudder.

2) Using a ruler and a pen place a mark onto the bottom of the rudder. The back edge of the clasp should line up with this mark. You may find it necessary to bend the tail wheel wire down slightly so it lines up with the clasp without binding.

3) While holding the clasp firmly in place, use a pen and outline the clasp onto the rudder.

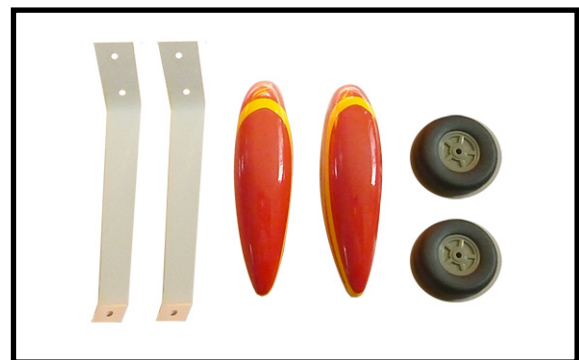
4) Remove the clasp, and using a modeling knife, remove the covering from inside the lines you drew. Use 220 grit sandpaper and carefully roughen the inside surface of the nylon clasp.

5) Slide the clasp back into position and carefully glue it into place using Kwik Bond Thin C/A. Hold the clasp in place until the glue completely cures. Secure by 1 machine screw.

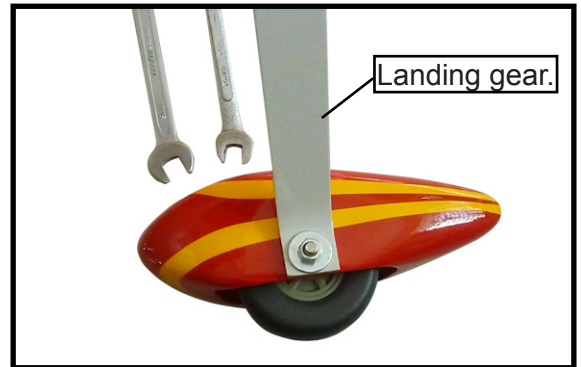
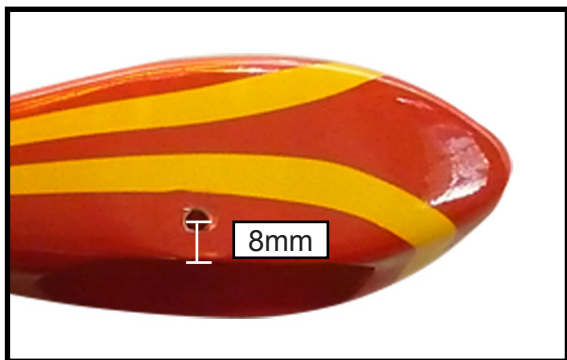
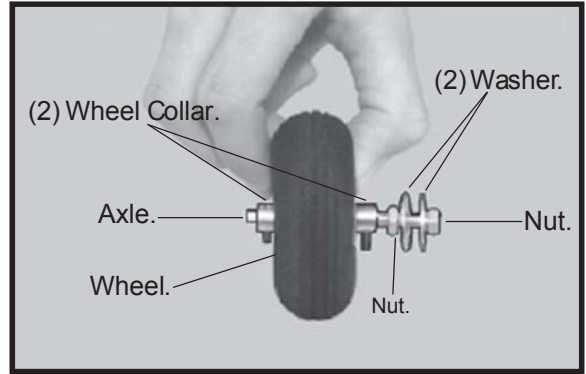
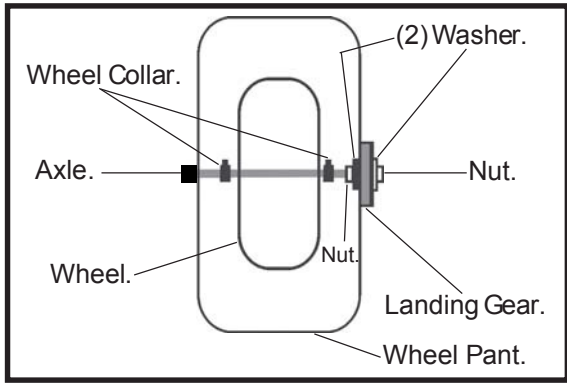


#### WHEEL AND WHEEL PANTS INSTALLATION.

1) Assemble and mounting the wheel pants as shown in the following pictures.

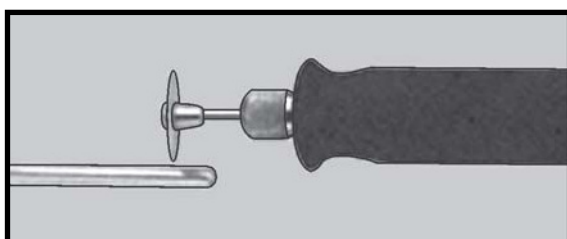
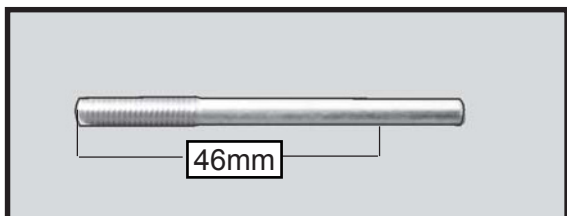


2) Follow diagram below for wheel pant installation :



3) You have to trim each axle using a tool cutting and cut-off wheel.

**⚠ Caution when cutting the axles and wear protective goggles.**



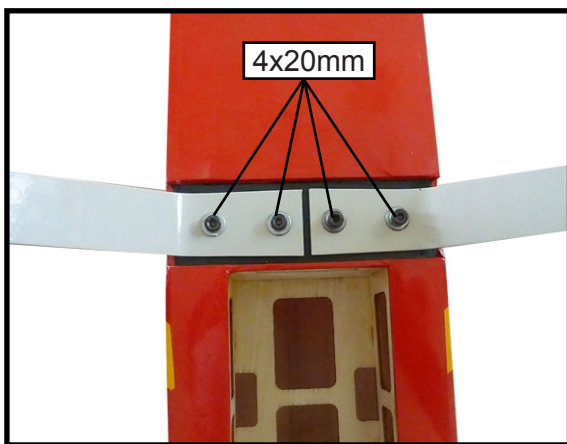
4) A drop of C/A glue on the wheel collar screws will help keep them from coming loose during operation.

Repeat the process for the other wheel.

### INSTALLING THE MAIN LANDING GEAR.

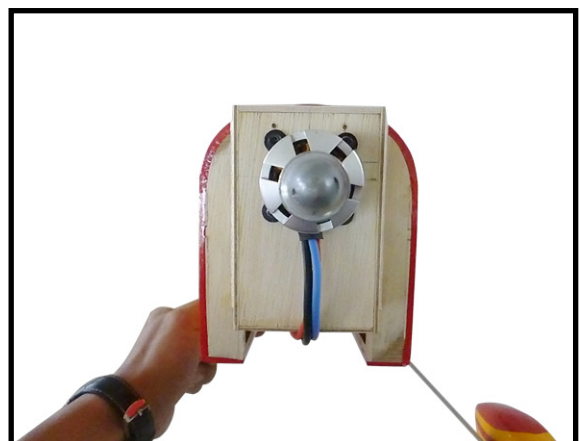
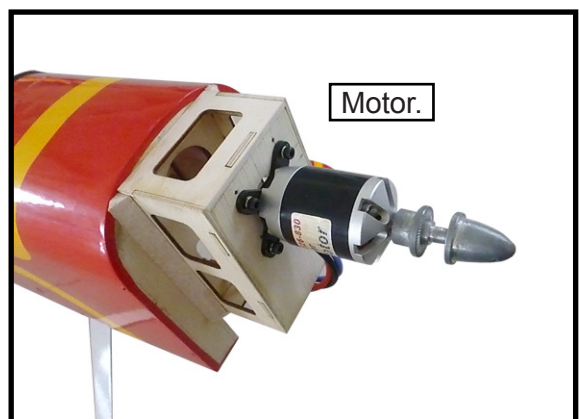
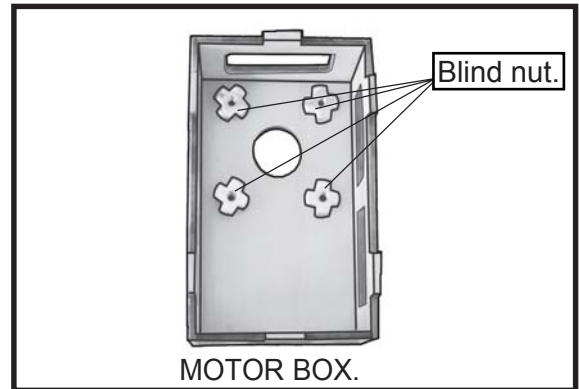
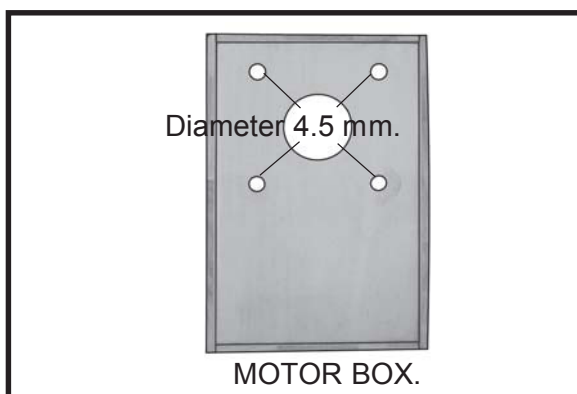
1) The blind nuts for securing the landing gear are already mounted inside the fuselage.

2) Using the hardware provided, mount the main landing gear to the fuselage.



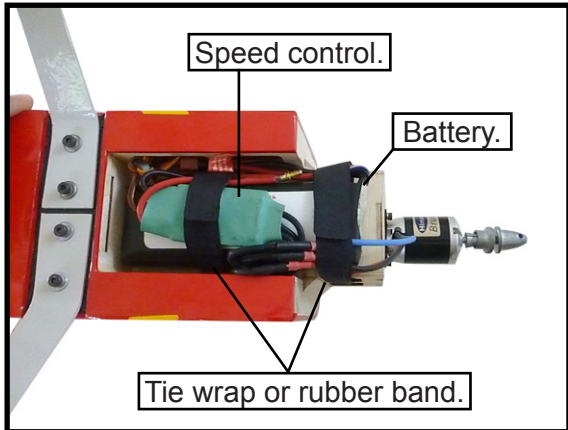
### INSTALLING ELECTRIC MOTOR.

There are 2 mounting box for your option. It is depended your motor size.



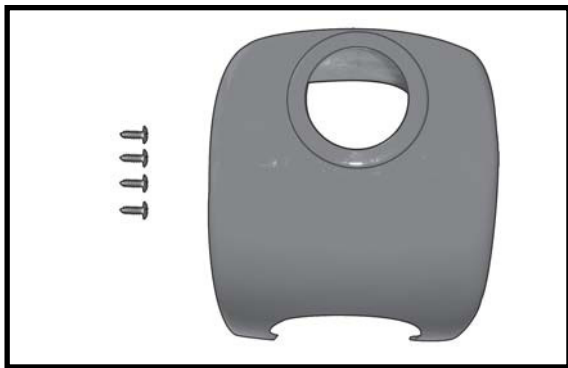
**INSTALLING THE BATTERY.**

See pictures below :



**COWLING INSTALLATION.**

See pictures below :



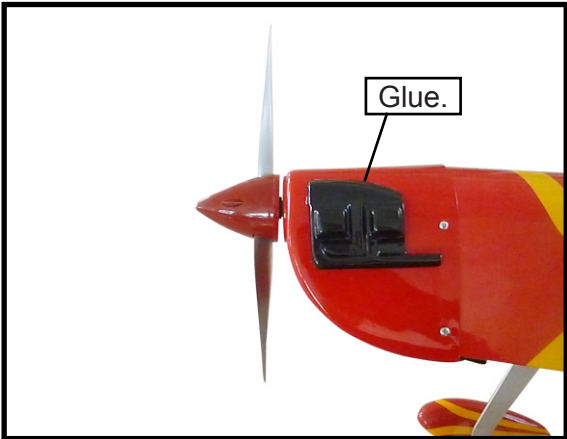
Slide the fiberglass cowl over the engine and line up the back edge of the cowl with the marks you made on the fuselage then trim and cut.



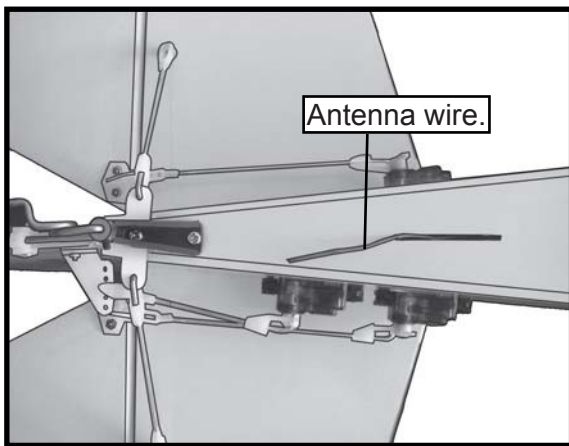
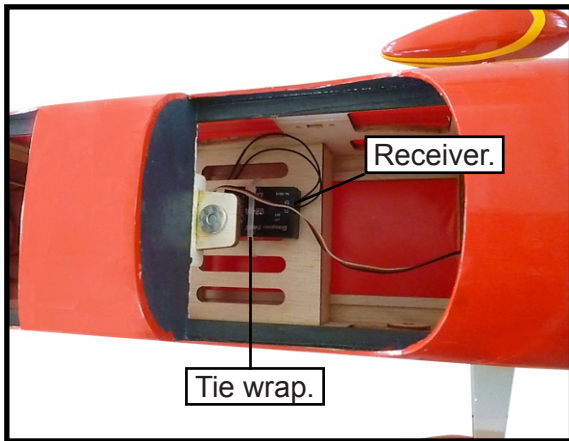
Secure the cowl with the screw provide with hardware.

**DUMMY ENGINE INSTALLATION.**

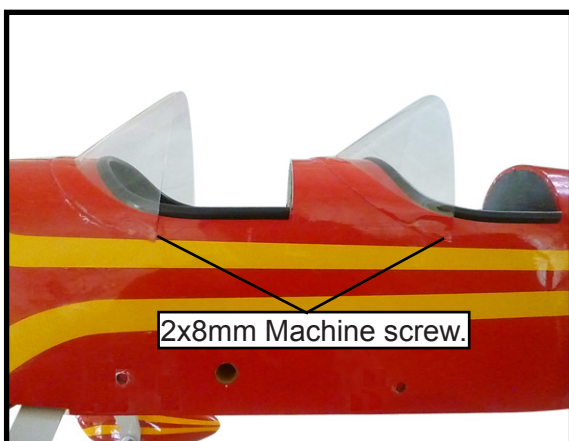
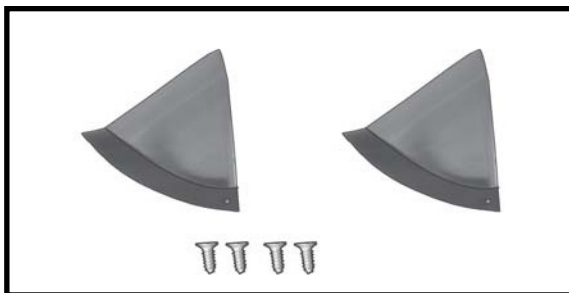
See pictures below :



## INSTALLING THE RECEIVER.

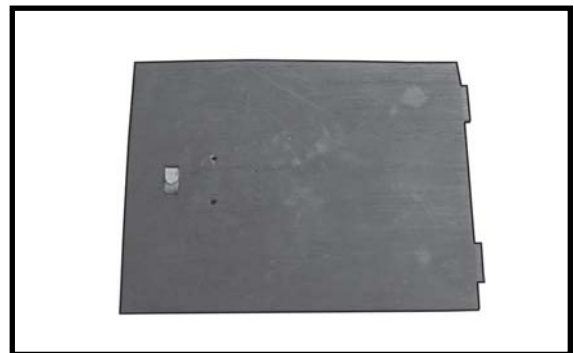
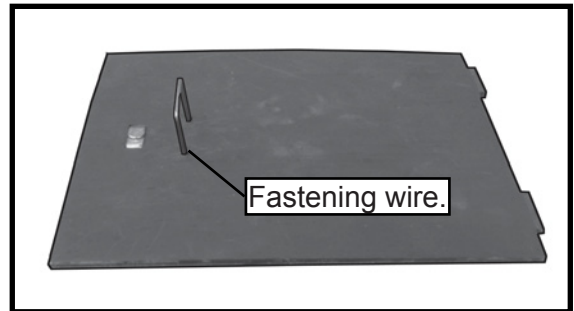


## WINDSHIELD INSTALLATION.

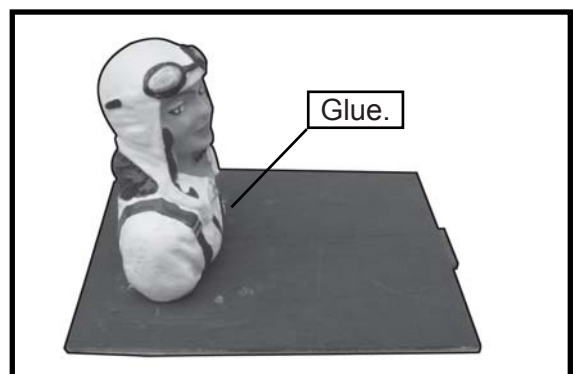
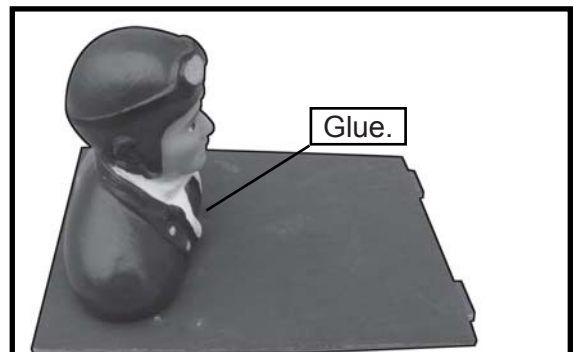


## PILOT INSTALLATION.

1) Remove the fastening wire as same as picture below.

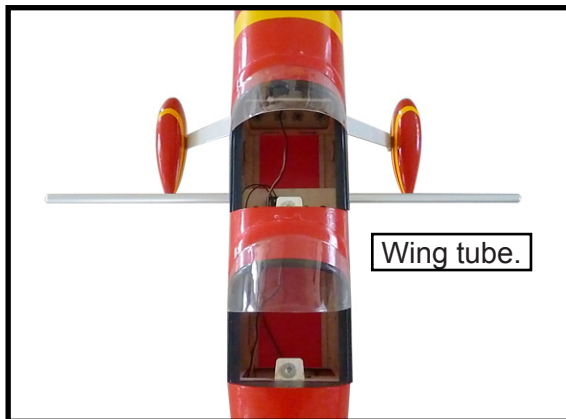


2) Glue the pilot into the position.

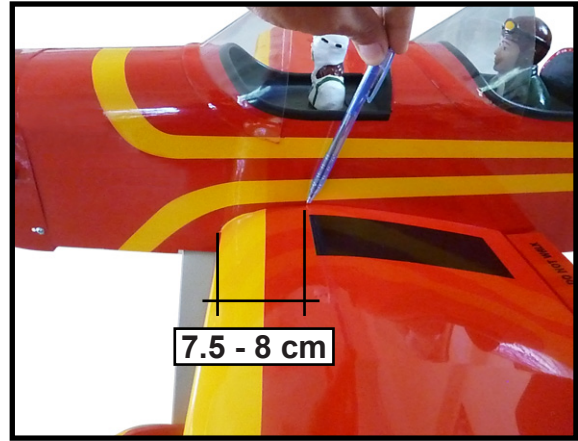
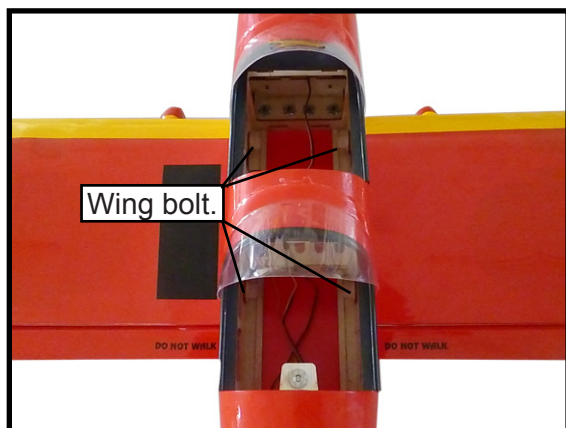
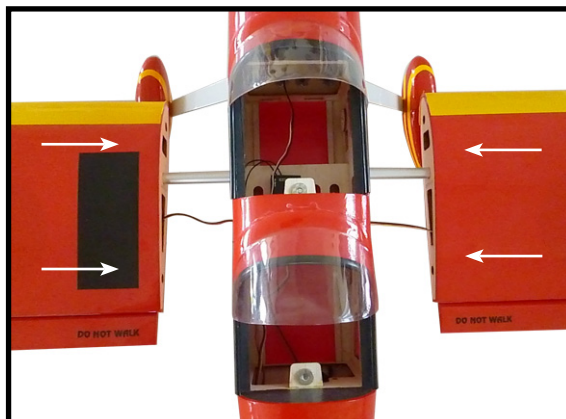


## ATTACHMENT WING-FUSELAGE.

Bolt the wing to fuselage.



Insert two wing panels as 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 back from the leading edge of the wing, measured at wing ROOT.

The value is **7.5-8cm**

2) If the nose of the plane falls, the plane is nose heavy. To correct this first move the battery pack further back in the fuselage. If this is not possible or does not correct it, stick small amounts of lead weight on the fuselage sides under the horizontal stabilizer. If the tail of the plane falls, the plane is tail heavy. To correct this, move the battery and receiver forward or if this is not possible, stick weight onto the firewall. When balanced correctly, the airplane should sit level or slightly nose down when you lift it up with your fingers.

## CONTROL THROWS.

1) We highly recommend setting up the **SPACE WALKER BI-158** using the control throws listed at right. We have listed control throws for both Low Rate (initial test flying/sport flying) and High Rate (aerobatic flying).

2) Turn on the radio system, and with the trim tabs on the transmitter in neutral, center the control surfaces by making adjustments to the clevises or adjustable servo connectors. The servo arms should be centered also.

3) When the elevator, rudder and aileron control surfaces are centered, use a ruler and check the amount of the control throw in each surface. **The control throws should be measured at the widest point of each surface!**

4) By moving the position of the adjustable control horn out from the control surface, you will decrease the amount of throw of that control surface. Moving the adjustable control horn toward the control surface will increase the amount of throw.

#### INITIAL FLYING / SPORT FLYING

Ailerons :	3/16" up	3/16" down
Elevator :	3/8" up	3/8" down
Rudder :	1" right	1" left

#### AEROBATIC FLYING

Ailerons :	3/8" up	3/8" down
Elevator :	1" up	1" down
Rudder :	2" right	2" left

Do not use the aerobatic settings for initial test flying or sport flying.

## MAIDEN FLY.

We will not give you any instructions in this part. This is not the role of a manufacturer and it would be unrealistic and even dangerous to think we can make adjustments prior to first flight just by reading a document. It necessarily requires a minimum of experience and you must get closer to a driver or experienced trainer. This will verify the magnitude and direction of the control and various other settings. Also good battery recharging, fuel quality and other studio and field accessories.

We draw your attention to the danger of handling aircraft with electric motors. Unless it is equipped with sophisticated security, there is a very real risk of starting the engine inadvertently especially when you need to put all the radio equipment energized to start setting the servos. We recommend surrounding the propeller of a large, heavy cloth bath towel for example avoiding such injuries.

Also the recharging of lipos may pose a risk of fire or explosion. This happens when drivers hasty dangerously increase the rate of charge their batteries. The other drawback is to significantly reduce their lifespan.

To start your propulsive you must use specific start table, or any other devices provided in your club or recommended by your tutelage federation.

Never fly alone especially as our lands are often in remote locations where it is difficult to find assistance in the event of an accident.

If you follow these guidelines from the common sense you go in with a lot of fun in the world of model airplanes.

The *Direct Airscale* team wishes you good flights



*a large Vietnamese experience for flying scale airplanes*