



Master Scale kit Edition Cessna 152 Aerobat 80", 20cc

Code : MSK01.174

ASSEMBLY MANUAL

"Graphics and specifications may change without notice".



Specifications:

Wingspan-----	79.9 in-----	203.0 cm.
Wing area-----	911.4 sq.in-----	58.8 sq.dm.
Weight-----	9.9 lbs-----	4.5 kg.
Length-----	55.9 in-----	142 cm.
Recommended engine size ---	20cc.	
	0.91 cu.in / 2 stroke.	
	1.00 - 1.25 cu.in / 4 stroke.	

Radio System required 5 channels with 8 servos.



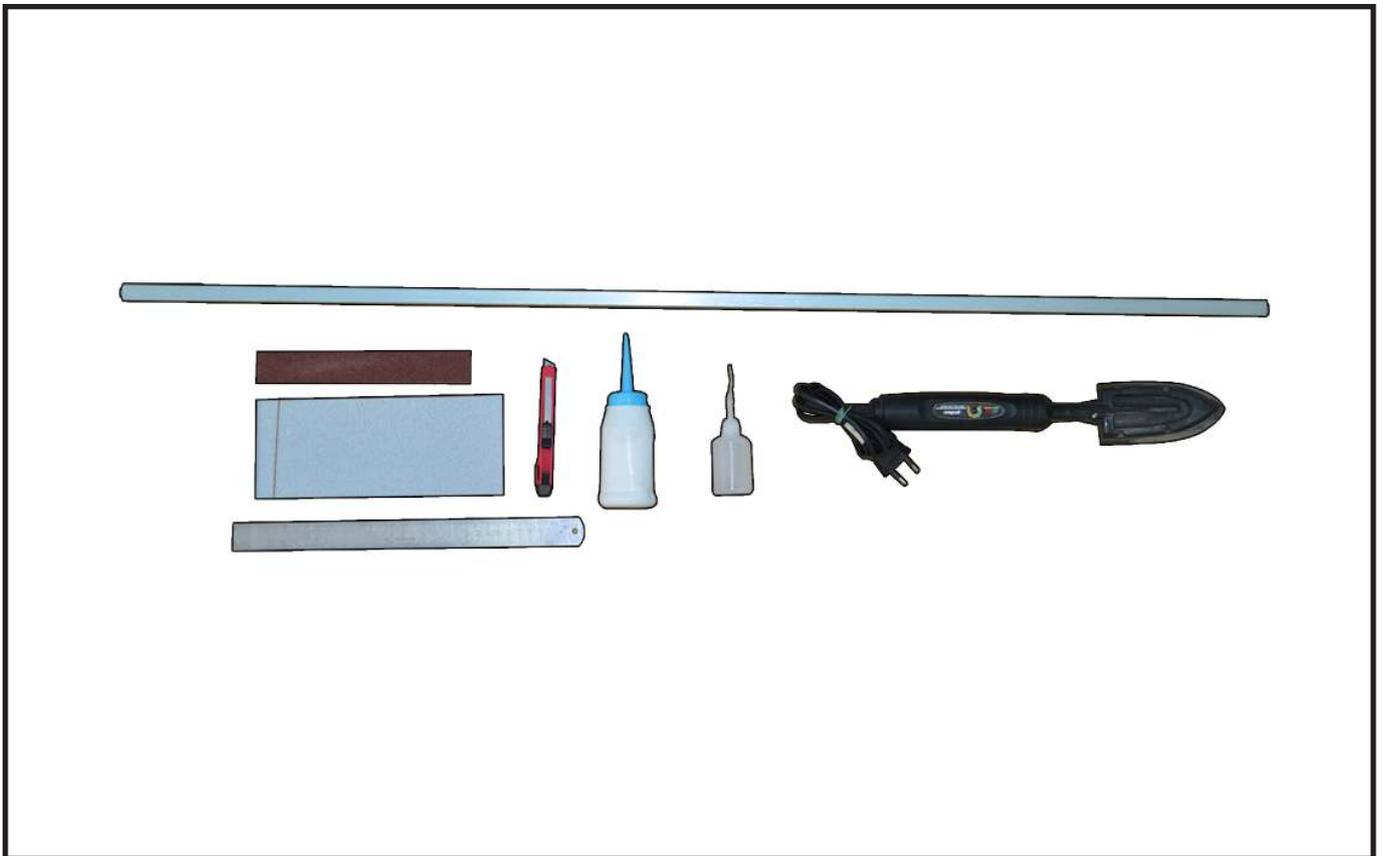
INTRODUCTION

- Congratulations and thank you for purchasing the **Master Scale Kit Edition Cessna 152 Aerobat 80", 20cc**. We are pleased to bring you this scale **Cessna 152 Aerobat 80", 20cc**. with this kit you can achieve whatever level of detail you like. Just by following the instruction and finishing the plane in scale-looking trim scheme, beginning scale modelers will end up with a model that very much represents and full-size P-51. Experienced builders will find ways to add even more detail, making the **Master Scale Kit Edition Cessna 152 Aerobat 80", 20cc** competitive in scale contents.

GETTING PREPARE TO BUILD AS

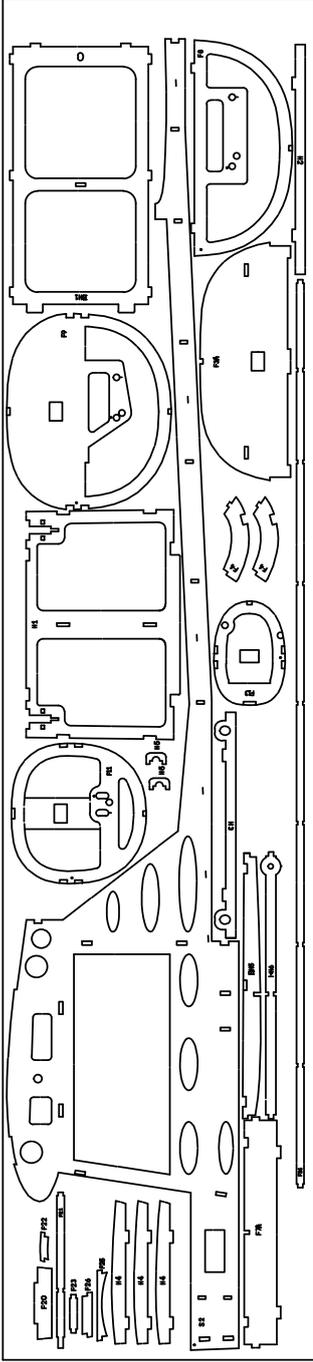
- Here is a list of supplies you should have on hand while you are building. Some of these are optional. Use your own experience to decide what you need.

- Getting prepare to build as:
- Flat Iron
- White Glue
- CA Glue
- Epoxy Glue
- Ruler
- Cutter
- Sandpaper Bar
- Aluminum Square Fixed Tool

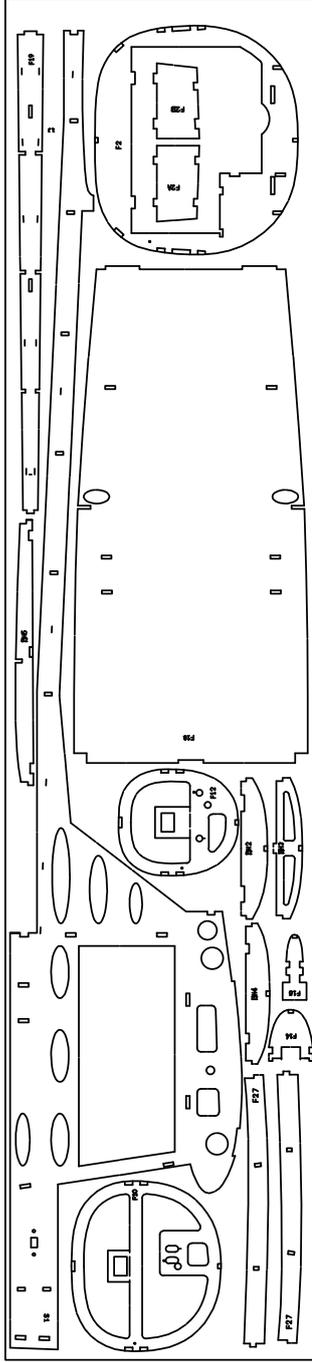


DIE-CUT PATTERNS

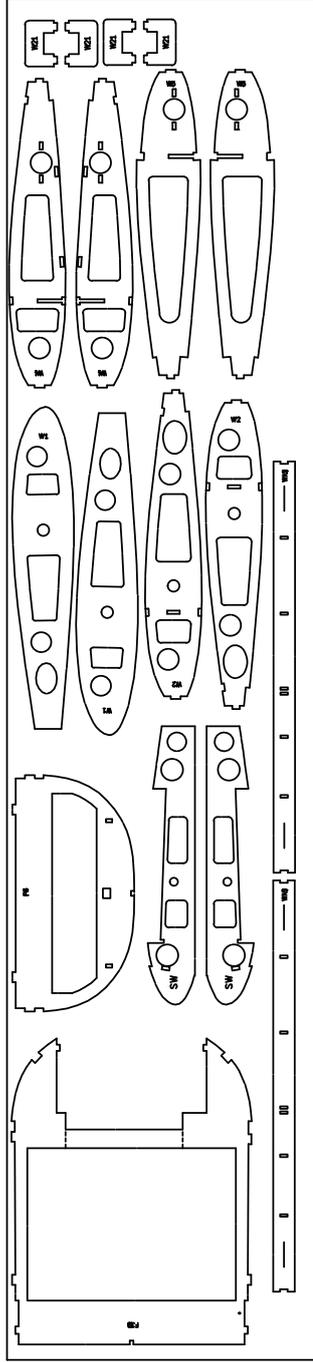
2.7mm balsa plywood 1100mmx250mm (1 per kit)



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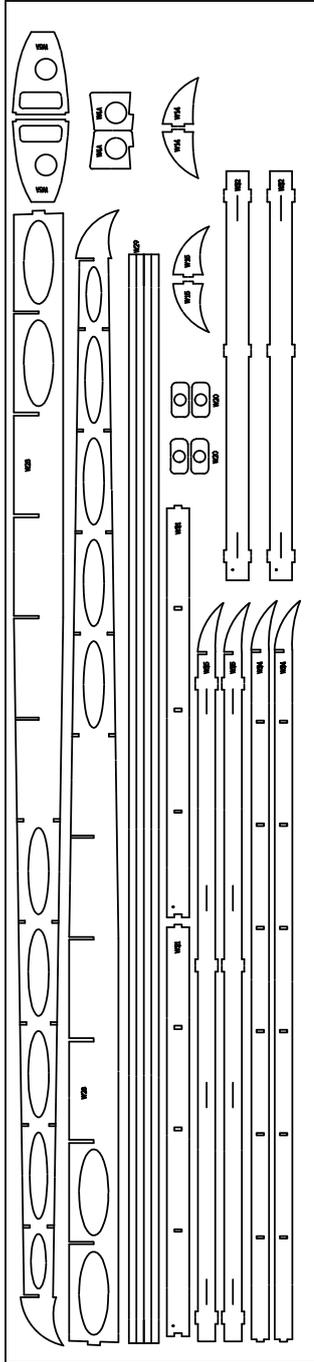


2.7mm balsa plywood 1100mmx250mm (1 per kit)

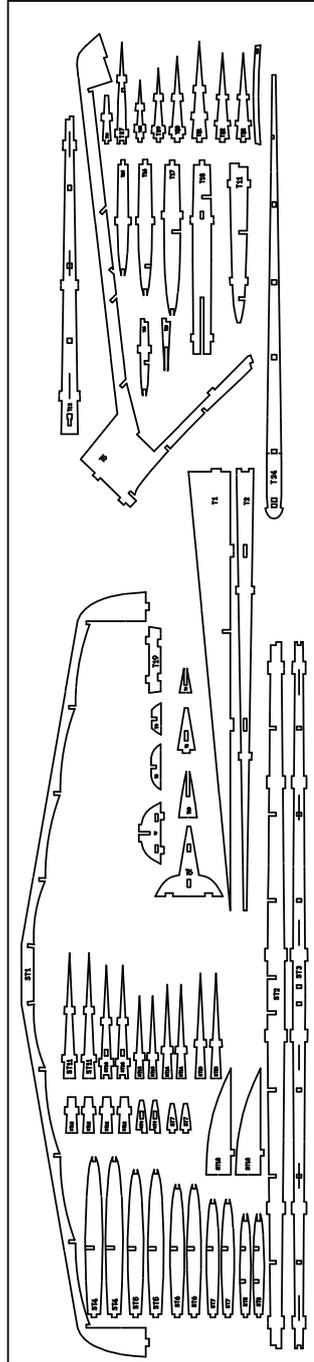


DIE-CUT PATTERNS

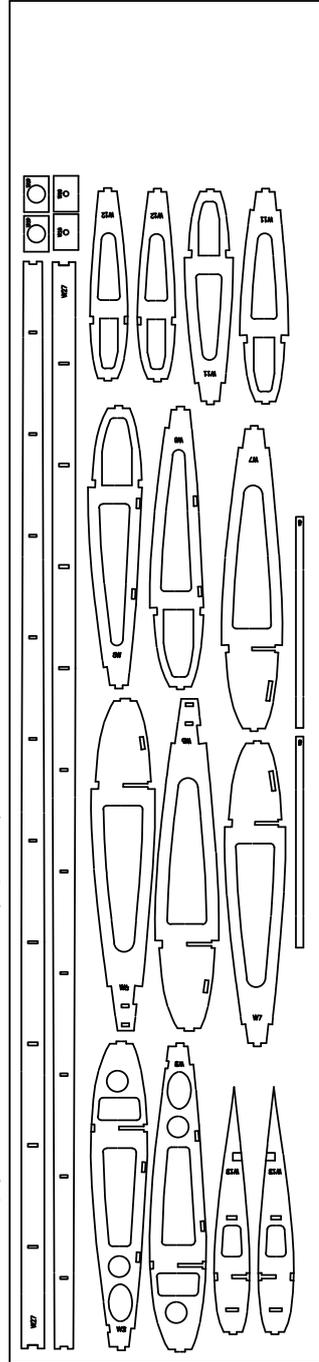
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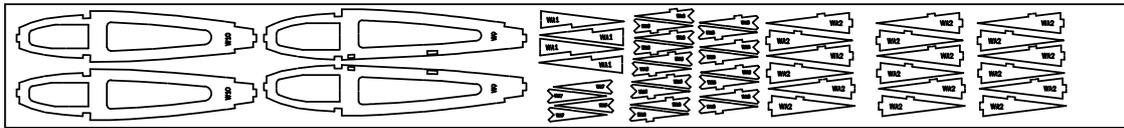


2mm balsa plywood 1100mmx250mm (1 per kit)

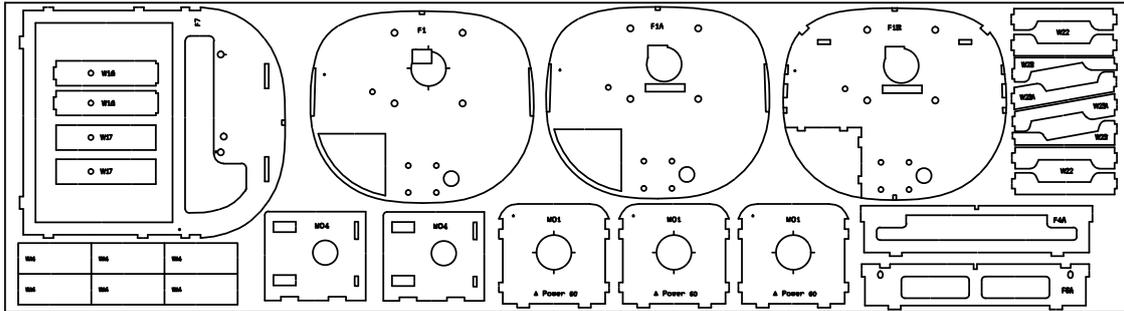


DIE-CUT PATTERNS

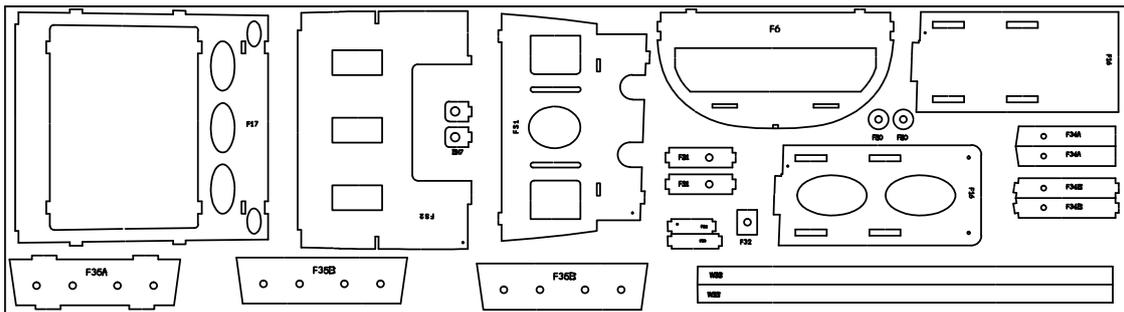
2mm balsa plywood 900mmx100mm (1 per kit)



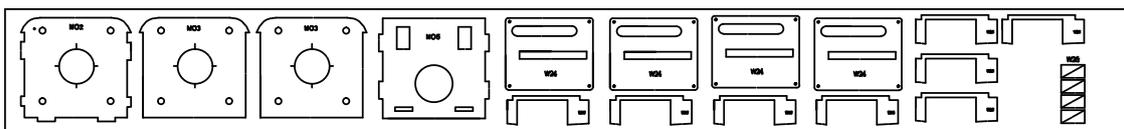
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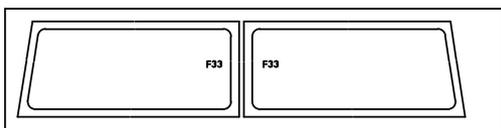
3mm balsa plywood 900mmx250mm (1 per kit)



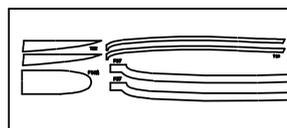
3mm balsa plywood 900mmx100mm (1 per kit)



2mm plywood 400mmx100mm(1 per kit)

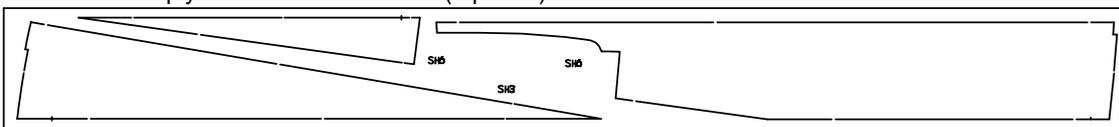


8mm balsa 230mmx100mm(1 per kit)

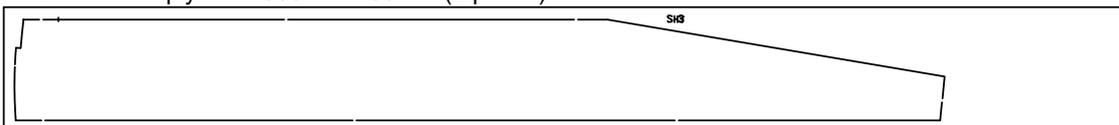


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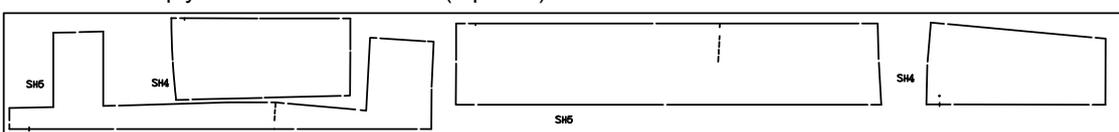
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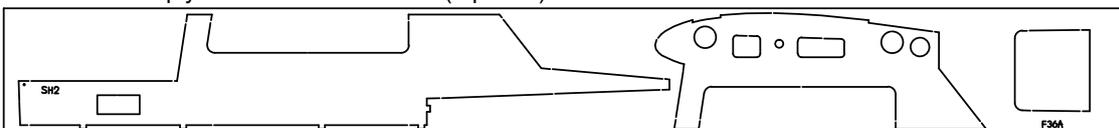
2mm balsa plywood 900mmx100mm (2 per kit)



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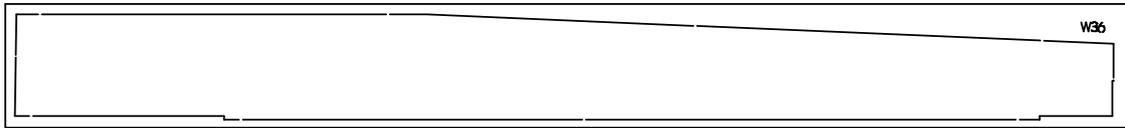


2mm balsa plywood 900mmx100mm (1 per kit)



DIE-CUT PATTERNS

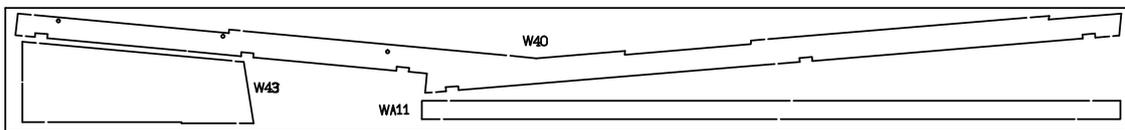
2mm balsa 900mmx100mm (2 per kit)



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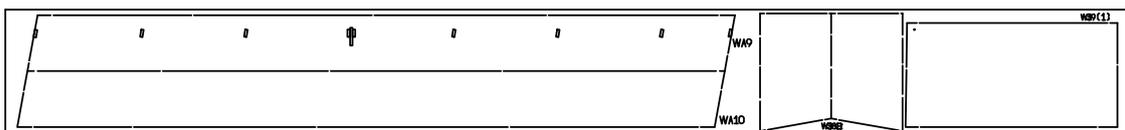
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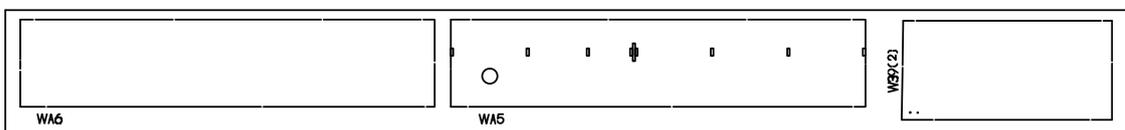
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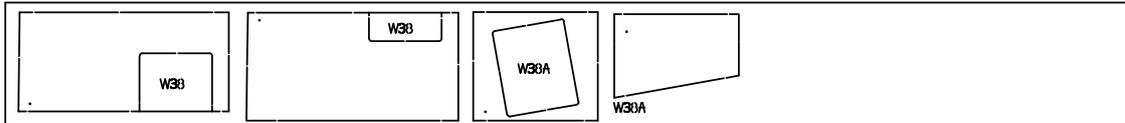
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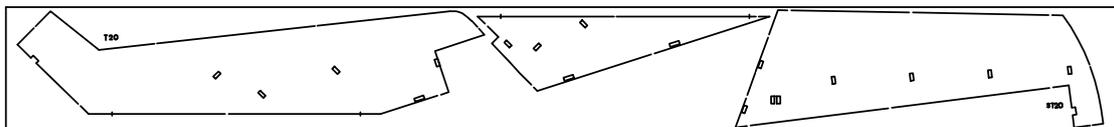


2mm balsa 900mmx100mm (2 per kit)

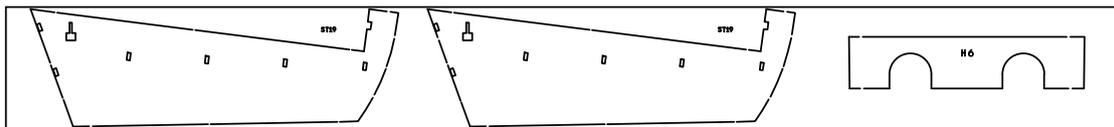


DIE-CUT PATTERNS

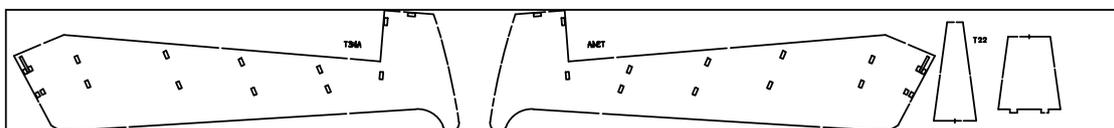
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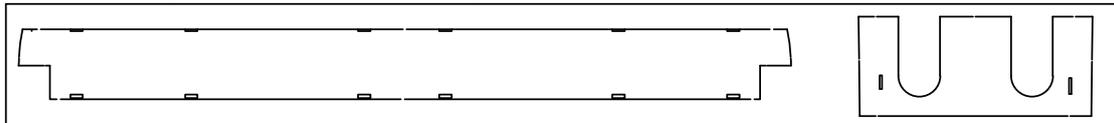
2mm balsa plywood 900mmx100mm (1 per kit)



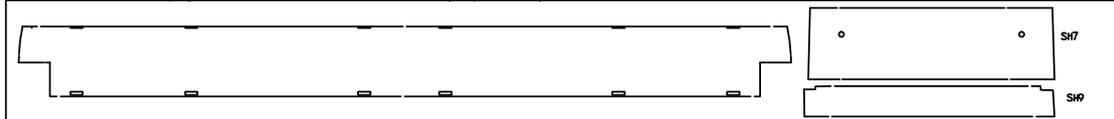
2mm balsa plywood 900mmx100mm (1 per kit)



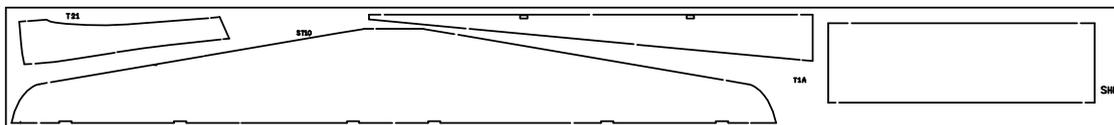
2mm balsa plywood 950mmx100mm (1 per kit)



2mm balsa plywood 900mmx100mm (1 per kit)



2mm balsa plywood 900mmx100mm (2 per kit)



PREPARE BEFORE BUILDING

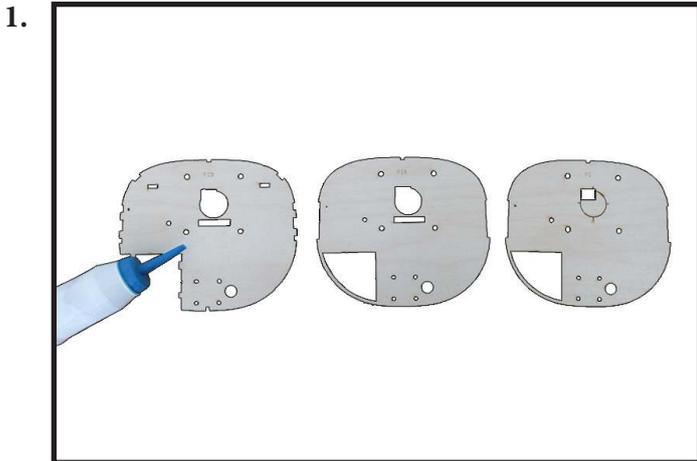
Please kindly see the plan drawing and compare to die-cut pattern to pick the parts of fuselage, the parts of wing, the parts of rudder and stabilizer. They were shown by the difference name code. Please lightly remove the die-cut parts by paper cutter blade. Please make lightly clean smoke stains on them by a sanding tool so that the glue absorbs quickly.

THE FUSELAGE

As if you were sitting in the cockpit and distinguish left side and right side of model . **NOTE: Regulations for the right side. It is small point which was marked on each former and fuselage side.**

* Firewall

Locate and assemble 3 layers of engine mount include F1, F1A and F1B in order by epoxy as photo shown (photo 1). **NOTE: The small point is regulations for the right side.** And then, use heavy flat thing pressed on F1 block (3 layers assembled) until epoxy dries to ensure firewall block is not warped.



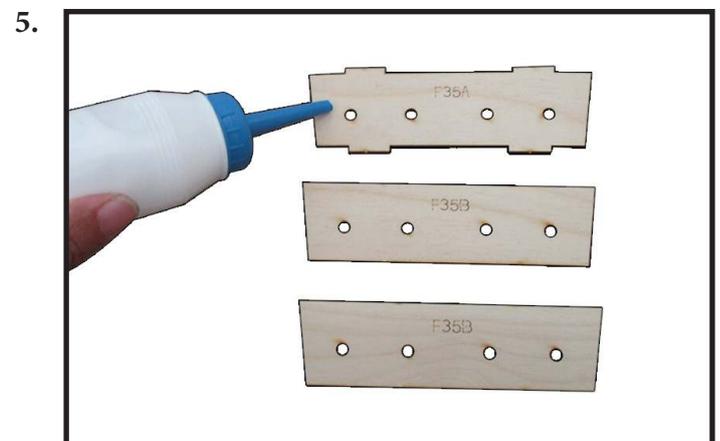
* Strut mount.

Locate and assemble W34A to W34B (strut mount) by epoxy as photo shown (photo 3 and 4). **NOTE: Apply to assemble left side and right side are symmetrical to each other.**

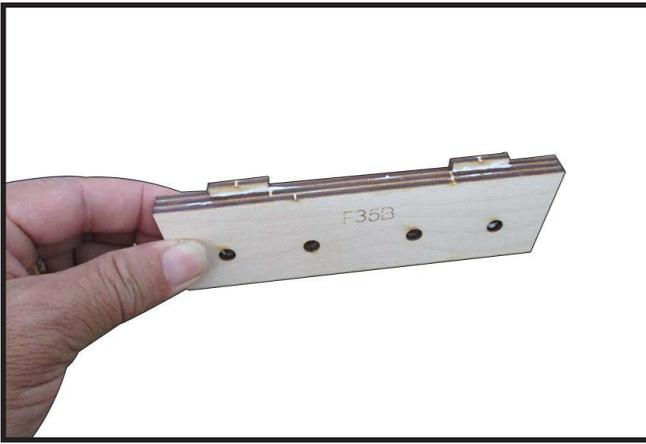


* Landing Gear mount.

Locate and assemble 3 layers of landing gear mount include F35A , F35B (2pcs) by epoxy as photo shown (photo 5 and 6). And then, use heavy flat thing pressed on F35 block (3 layers assembled) until epoxy dries to ensure firewall block is not warped.



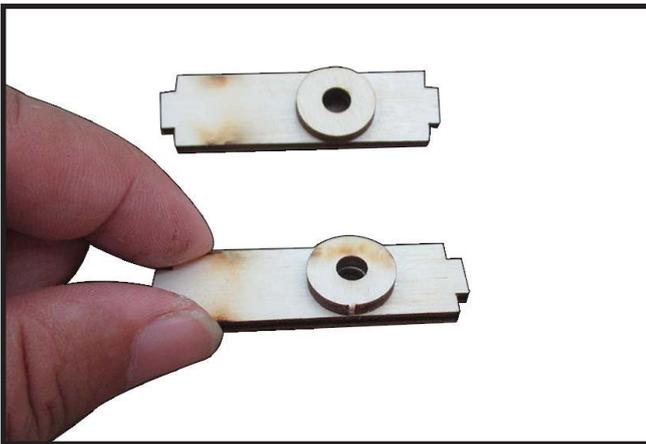
6.



*** Antenna mount.**

Locate and assemble W30 to W31 (antenna mount) by epoxy as photo shown (photo 7).

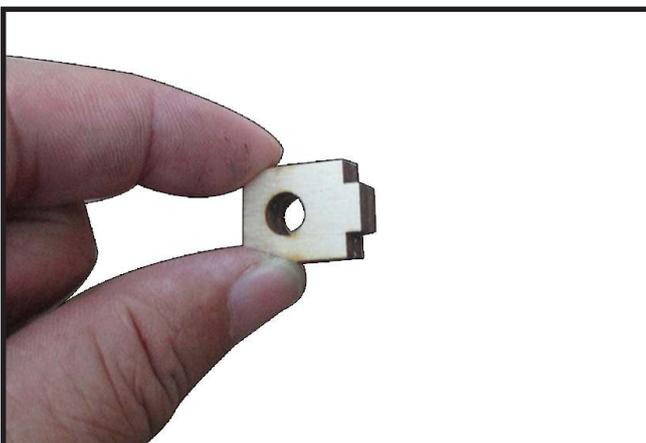
7.



*** Bottom Hatch tab.**

Locate and assemble BH7 (Bottom Hatch tab) by epoxy as photo shown (photo 8).

8.



*** Assemble hard- wear to the position of holes were drilled available on Firewall (Engine mount and Nose Gear mount), Landing Gear mount, Antenna mount, Bottom Hatch tab, Strut mount.**

Locate and assemble Pronged T-Nuts M4 to engine holes of F1 (firewall) ; Pronged T-Nuts M3 to Nose gear mount holes of F1 (firewall) as photo shown (photo 9).

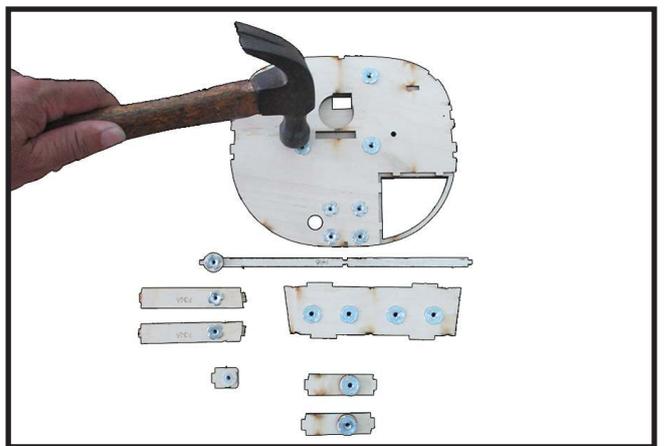
Locate and assemble Pronged T-Nuts M4 to holes of F35 (landing gear mount) as photo shown (photo 9).

Locate and assemble Pronged T-Nuts M4 to holes of F31 (antenna mount) as photo shown (photo 9). The Antenna is removable at here.

Pronged T-Nuts M3 to holes of F34 (Strut mount) as photo shown (photo 9).

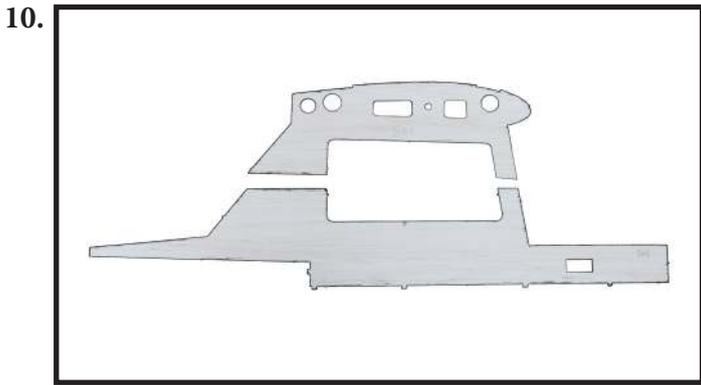
The next assembly is Plastic Well Nut M4 to holes of F31 (Bottom Hatch tab) as photo shown (photo 9).

9.

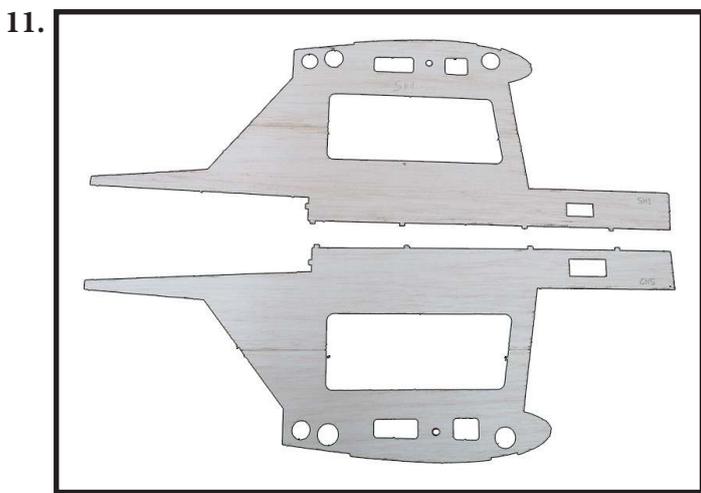


*** The fuselage side.**

Arrange two pieces SH1 (left fuselage side) and weld together to become a fuselage side by CA glue. Then, do like this for SH2 (the right fuselage side) as photo shown (photo 10) **NOTE: The small point is regulations for the right side.**

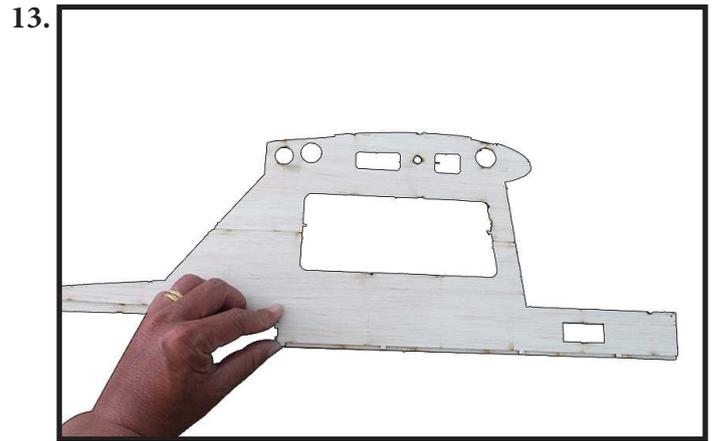
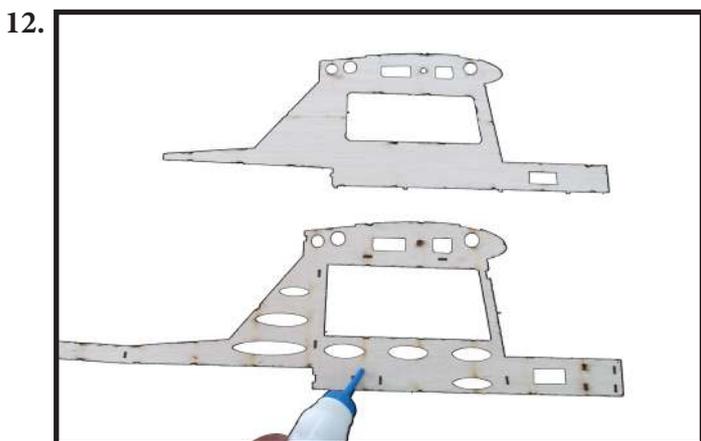


Finished SH1 (left fuselage side) and SH2 (the right fuselage side) as (photo 11).

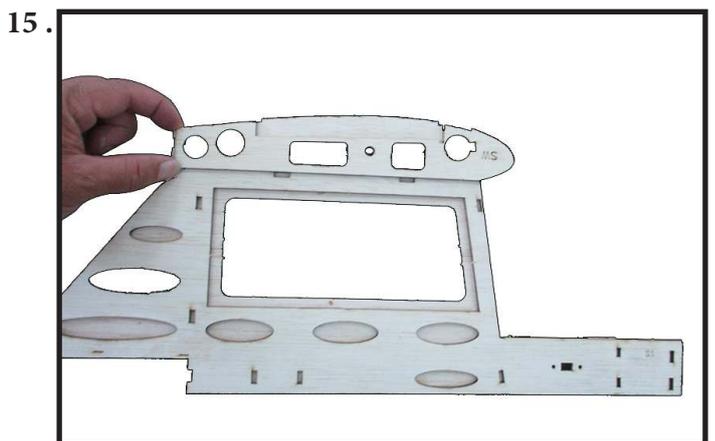
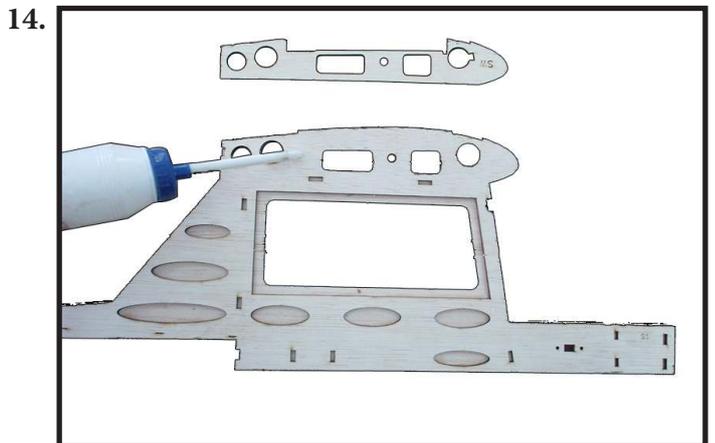


Locate and assemble S2 to SH2 (right side) by epoxy as photo shown (photo 12,13). Then, locate and assemble S1 to SH1 (left side). Use heavy flat thing pressed on Fuselage Side until epoxy dries to ensure firewall block is not warped.

NOTE: Apply to assemble left fuselage side and right fuselage side are symmetrical to each other. The small point is regulations for the right side.



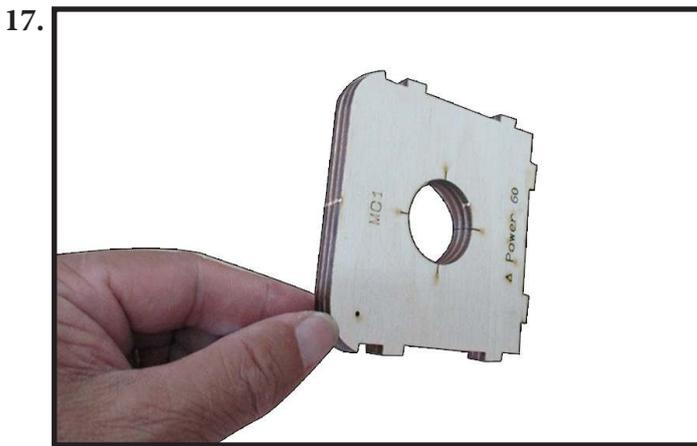
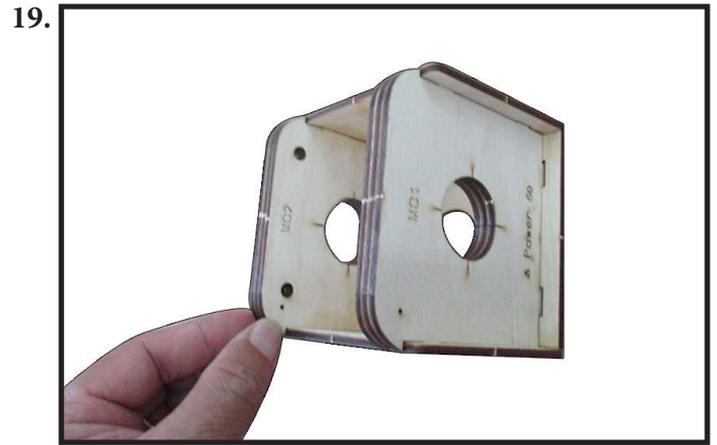
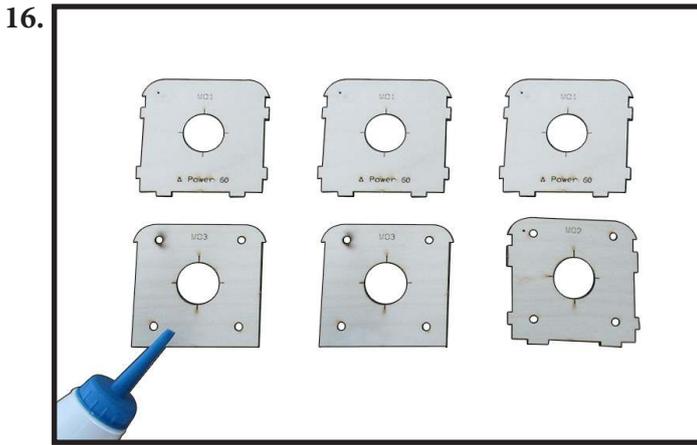
Locate and assemble SW1 to left fuselage side as photo shown (Photo14,15). Then, locate and assemble SW2 to right fuselage side by epoxy glue.



* Electric Motor mount.

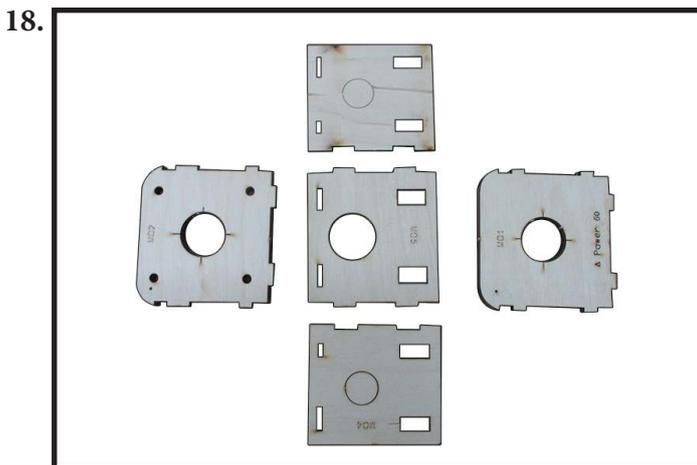
Please skip this step if you use the gasoline engine.

Locate and apply MO1 (3pcs); MO3 to MO2 (2pcs). (Photo 16,17).



First, reinforce the triangle at two angle inside (perpendicular angle of MO3 and MO4) as photo shown. Then, measure the length of electric motor, so that adjust and locate position of MO1. This time, reinforce the triangle at two angle inside (perpendicular angle of MO1 and MO4). (Photo 20).

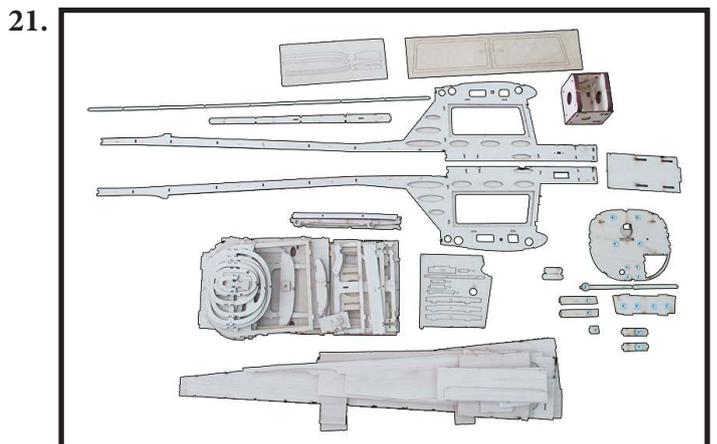
All parts are available for assembly the mount of motor. (Photo 18).



Locate and assemble 5 pieces to become the motor mount box (Photo 19).

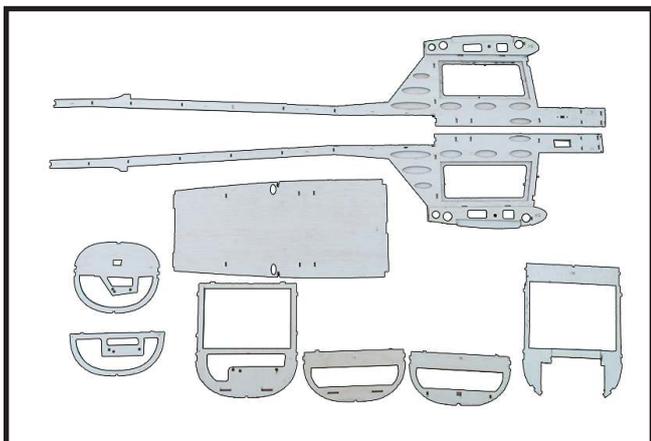
*** Build the fuselage.**

As shown (photo 21). All parts are available for fuselage assembly.



Pick some parts as shown (photo 22). Include SH1, SH2, F3B, F5, F6, F7, F8, F9, F18.

22.



Locate and build F3 into assembly SH1, S1 as (Photo 25).

25.

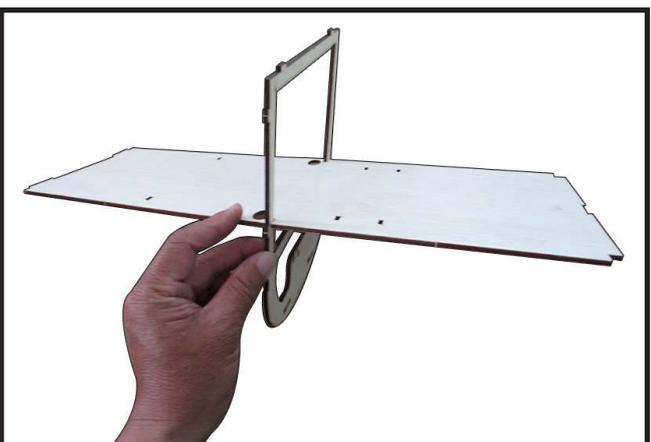


Locate and assemble F7 to F18 as (Photo 23).

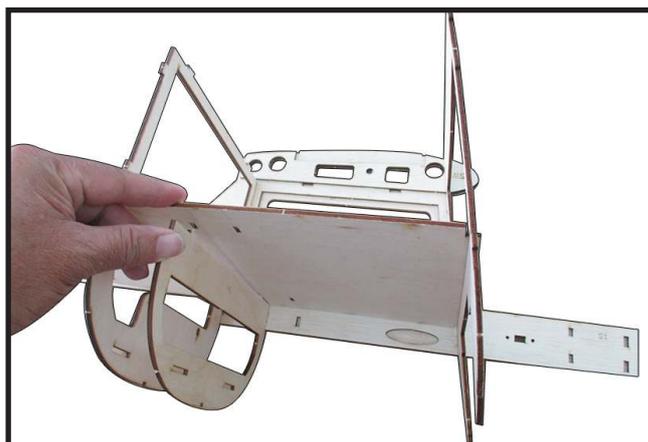
NOTE: The small point is regulations for the right side.

Locate and build F4, F5 into assembly SH1, S1, F18 as (Photo 26 and 27). Then, locate and build assembly SH2, S2 at the right side as (Photo 28).

23.



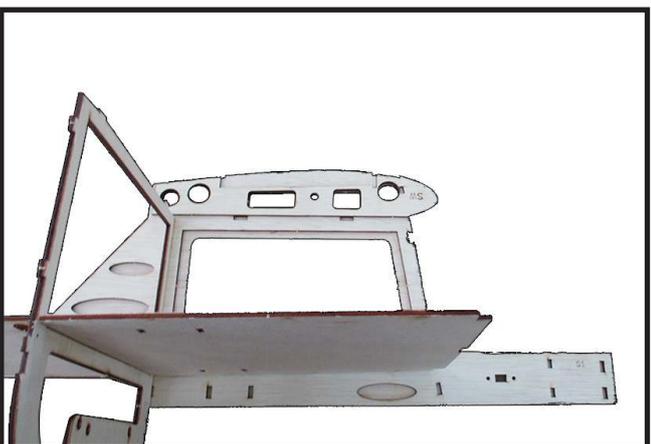
26.



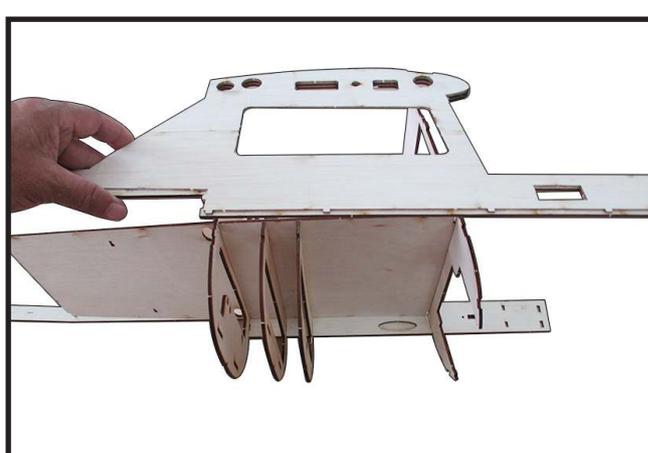
Locate and build assembly SH1, S1 into assembly 27. F7, F18 as (Photo 24).

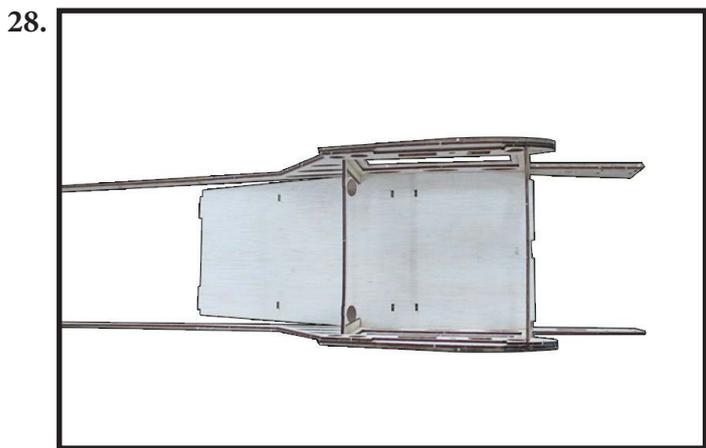
NOTE: The small point is regulations for the right side.

24.



27.

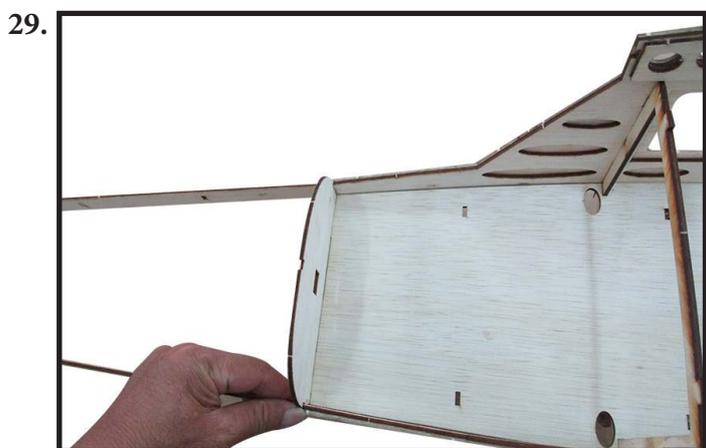




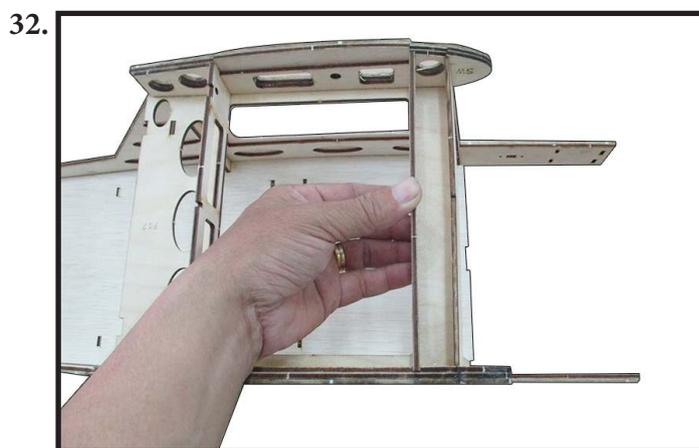
Locate and assemble F8, F9 as (Photo 29).



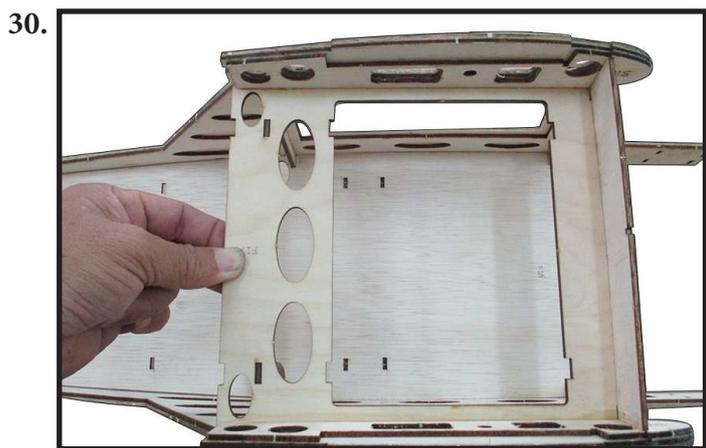
Locate and assemble F4A as (Photo 32).



Locate and assemble F17 as (Photo 30).



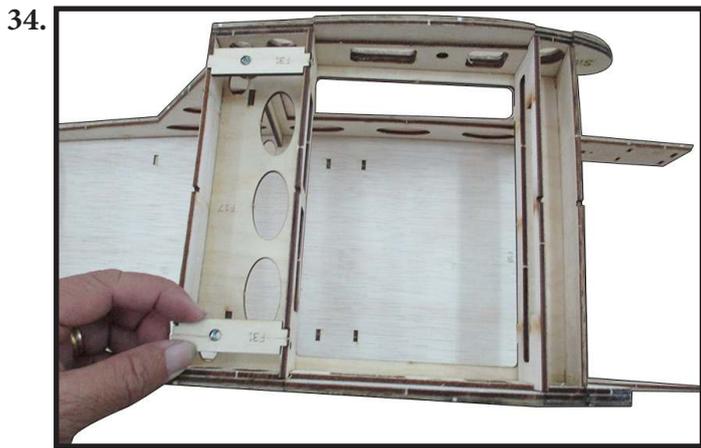
Locate and assemble F7A as (Photo 33).



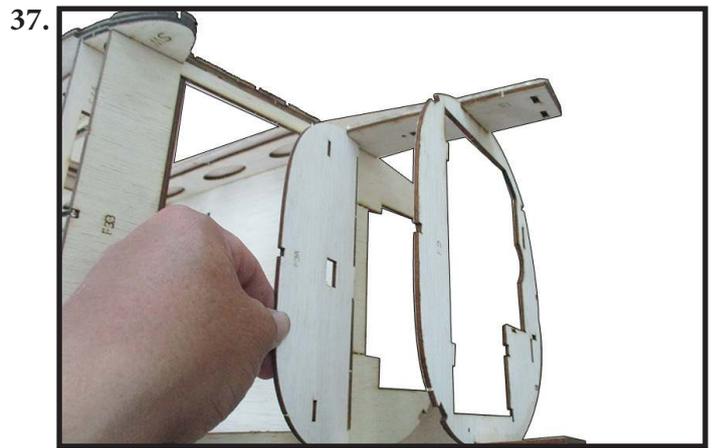
Locate and assemble F6A as (Photo 31).



Locate and assemble F31 as (Photo 34).



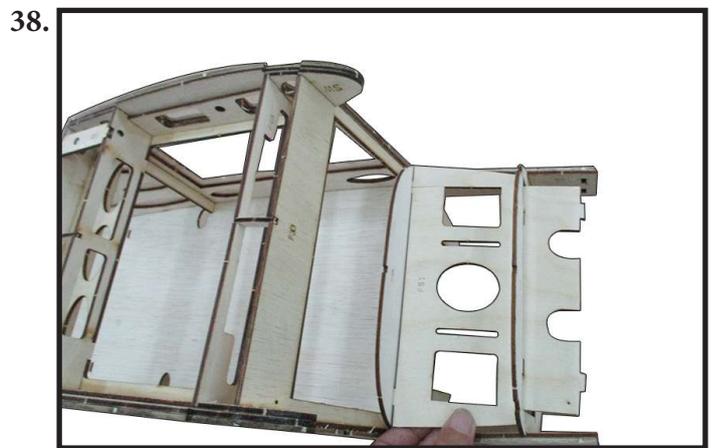
Locate and assemble F25 as (Photo 35).



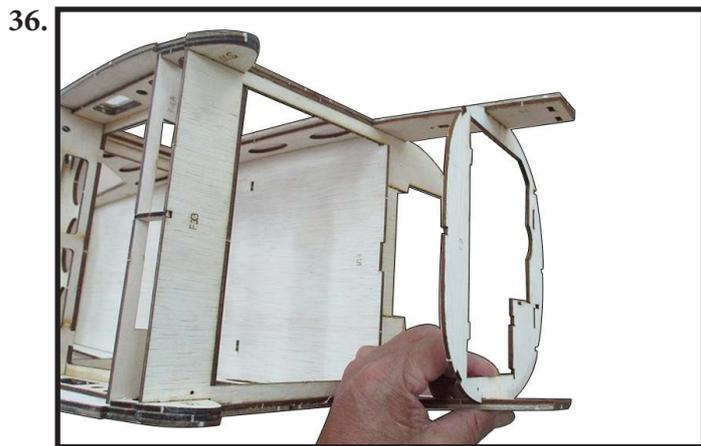
Locate and assemble FS1 as (Photo 38).



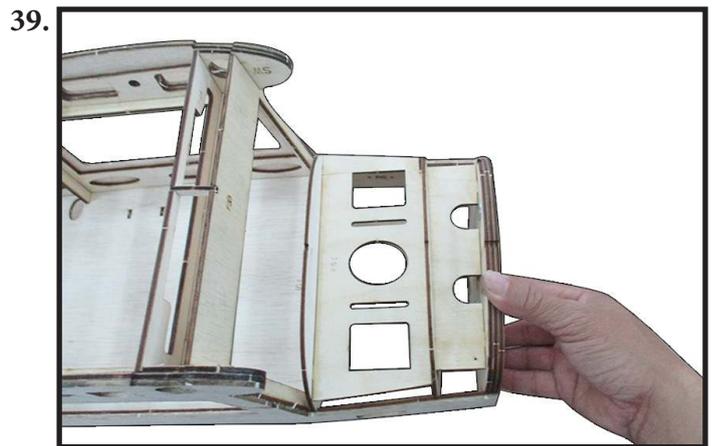
Locate and assemble F2 as (Photo 36).



Locate and assemble F1 as (Photo 39).

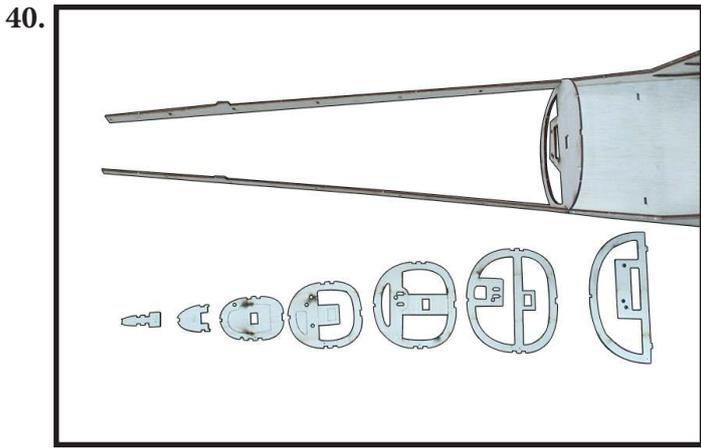


Locate and assemble F3A as (Photo 37).

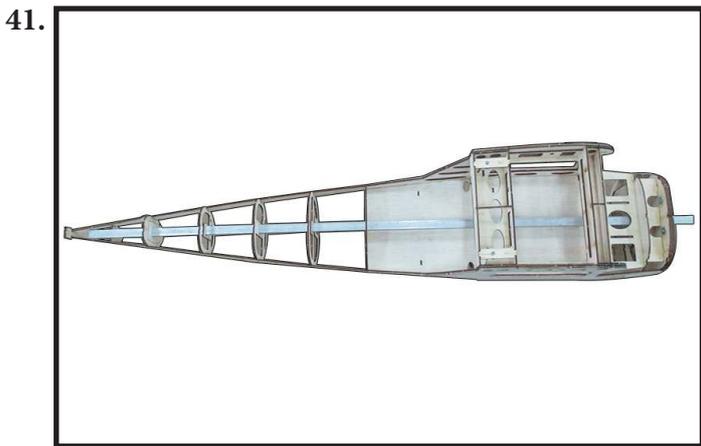


Locate and assemble the former, one after another in order F10- F15 as (Photo 40).

NOTE: The small point is regulations for the right side.

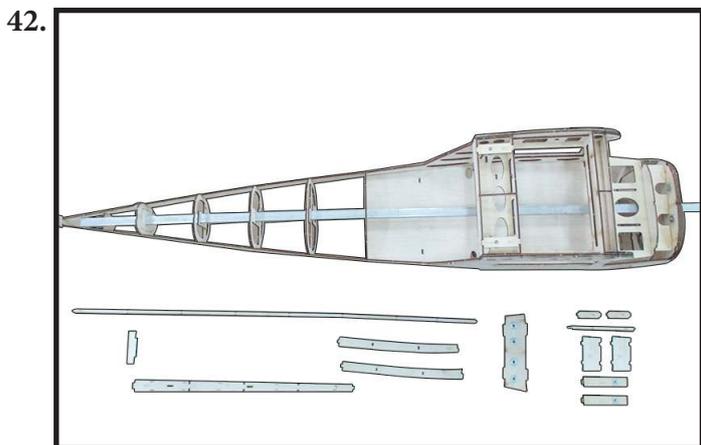


Attach the aluminum square tool bar to the square hole at each former. It is through along to fuselage to adjust to fuselage straight. Remove it after finishing covering balsa sheet for fuselage (photo 41).

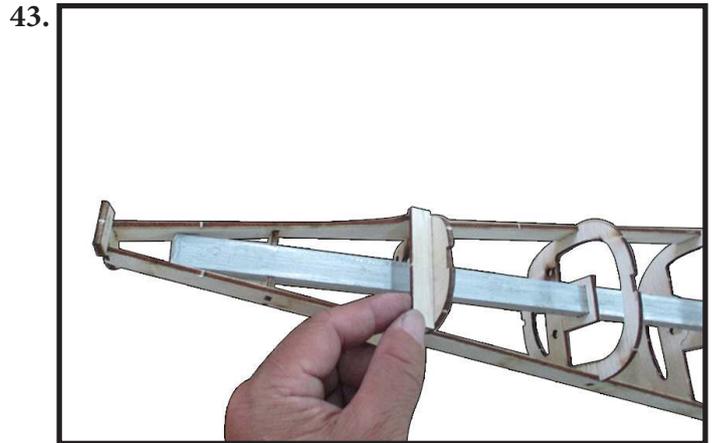


Locate and assemble all the mount are shown as (Photo 42).

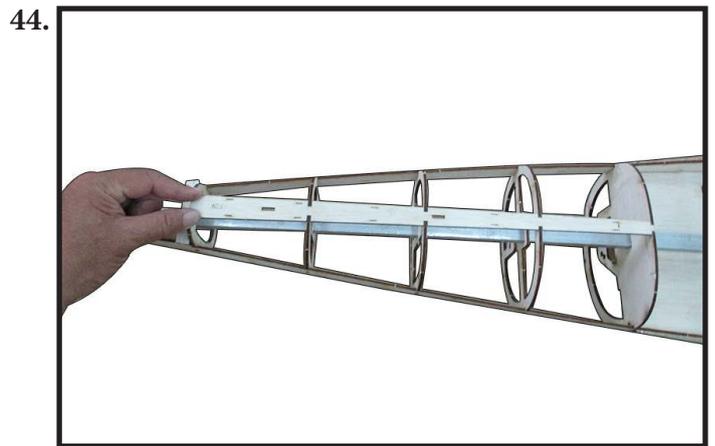
NOTE: The small point is regulations for the right side.



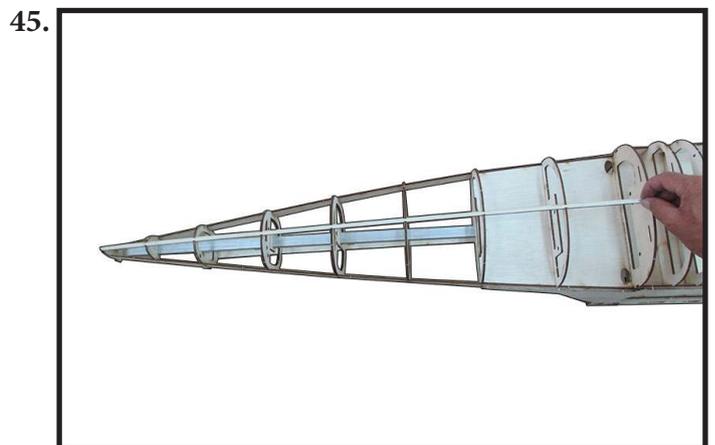
Locate and assemble F20 (the mount of the stabilizer) are shown as (Photo 43).



Locate and assemble F19 (the mount of the stabilizer) are shown as (Photo 44).



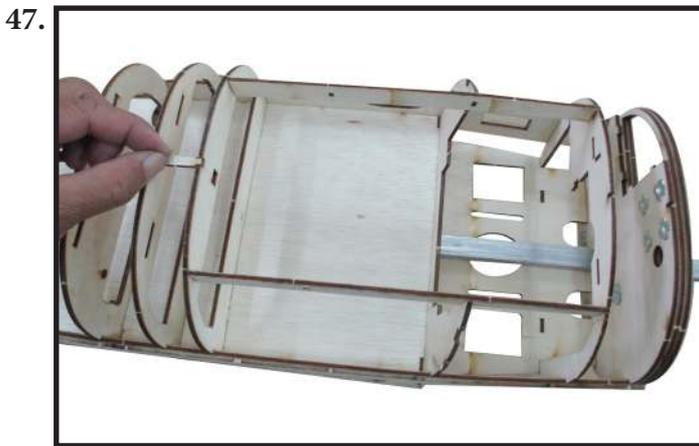
Locate and assemble F24 shown as (Photo 45).



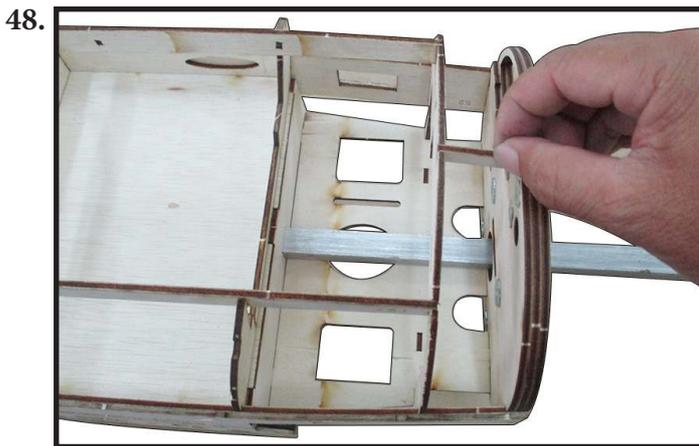
Locate and assemble F27 (two sides shown as (Photo 46).



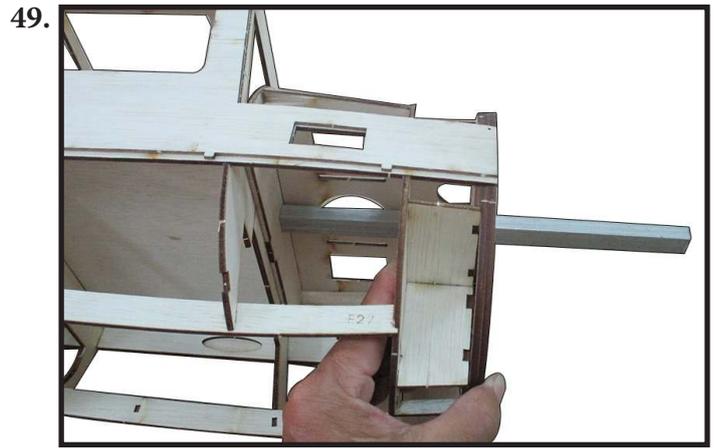
Locate and assemble F23 shown as (Photo 47).



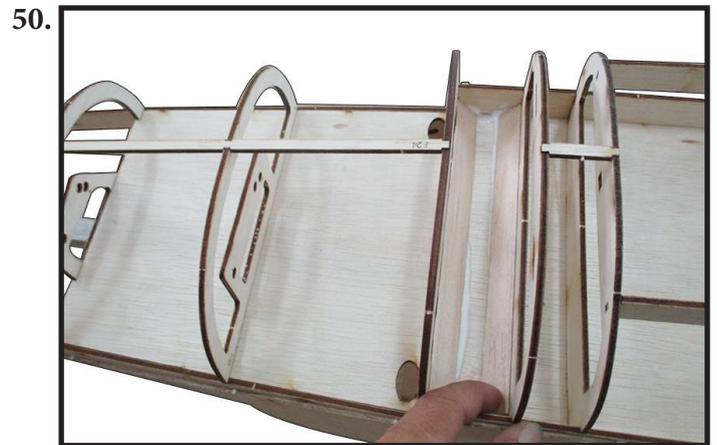
Locate and assemble F26 shown as (Photo 48).



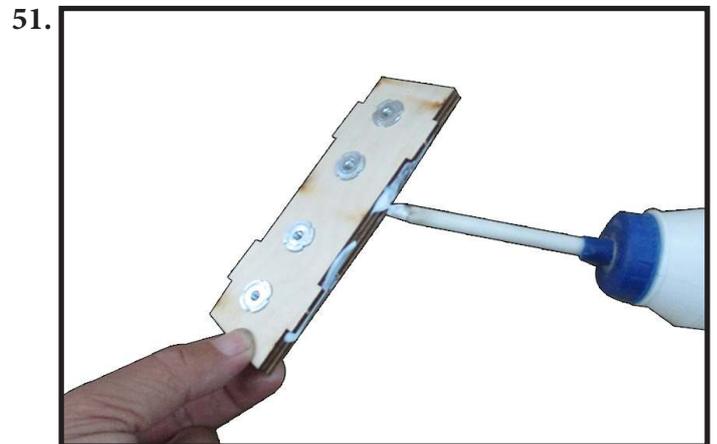
Locate and assemble F2A, F2B shown as (Photo 49).

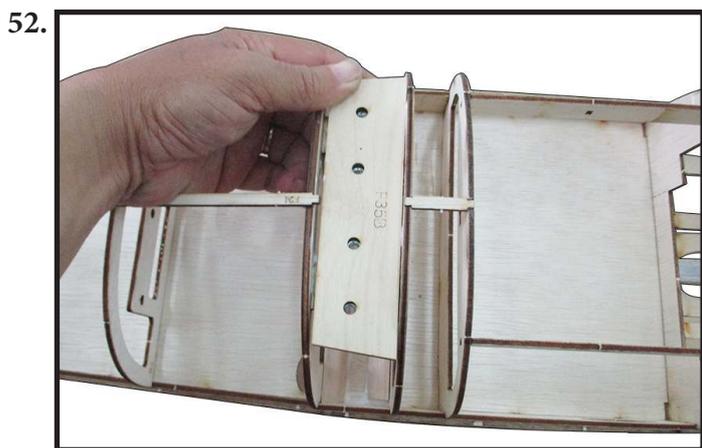


Locate and assemble two triangle balsa bars to reinforce F6, F7 shown as (Photo 50).



Locate and assemble F35 (the mount of landing gear) to area at between F6 and F7 by epoxy glue shown as (Photo 51,52). Need sanding clear stain smoke at place add glue so that the glue absorb quickly.

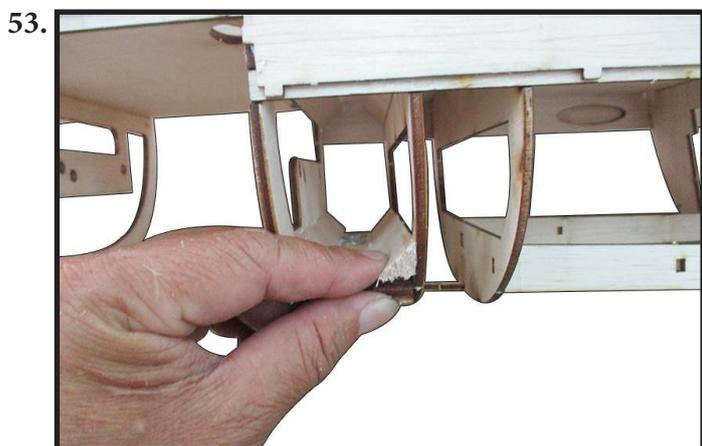




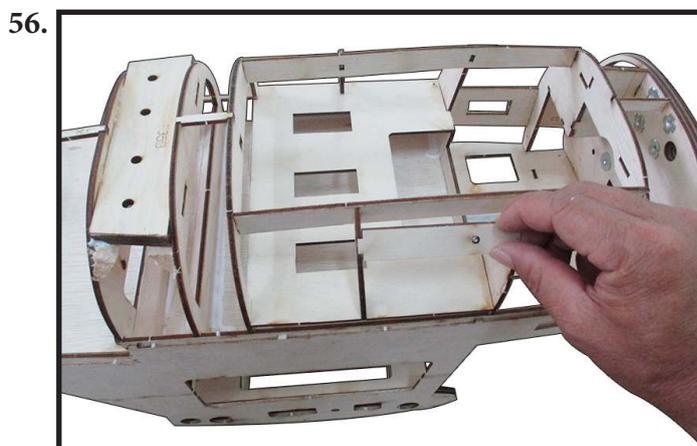
Locate and assemble triangle balsa bar (2 pcs) to reinforce F6, F7 and F35 shown as (Photo 53) to ensure hardly for the mount of landing gear.



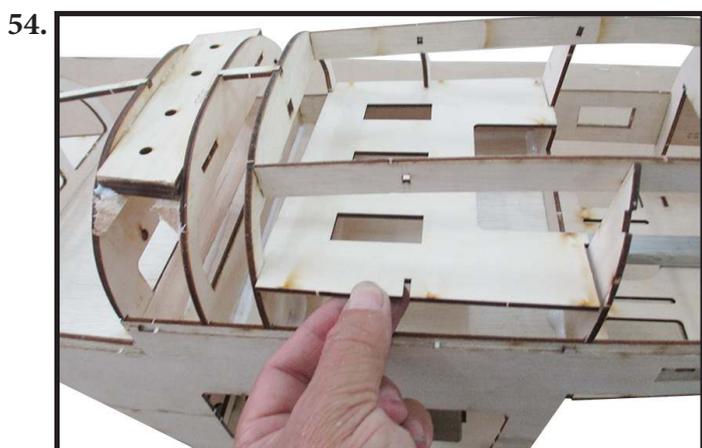
Locate and assemble F34 (the mount of strut) at left side and right side as (Photo 56).



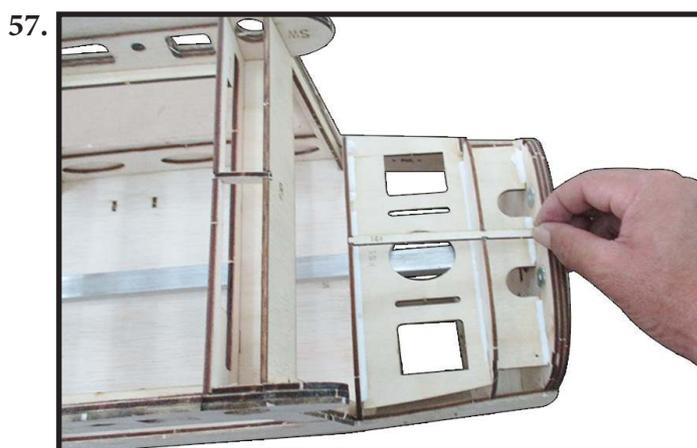
Locate and assemble FS32 (the mount of servo) as (Photo 54).



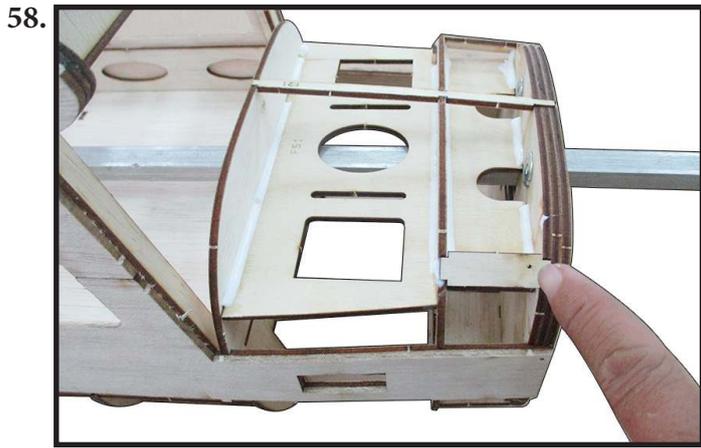
Locate and assemble F21 as (Photo 57).



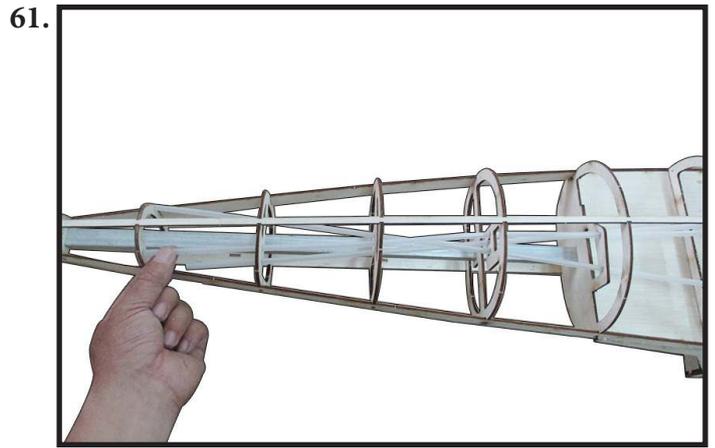
Locate and assemble F4 (two sides) as (Photo 55).



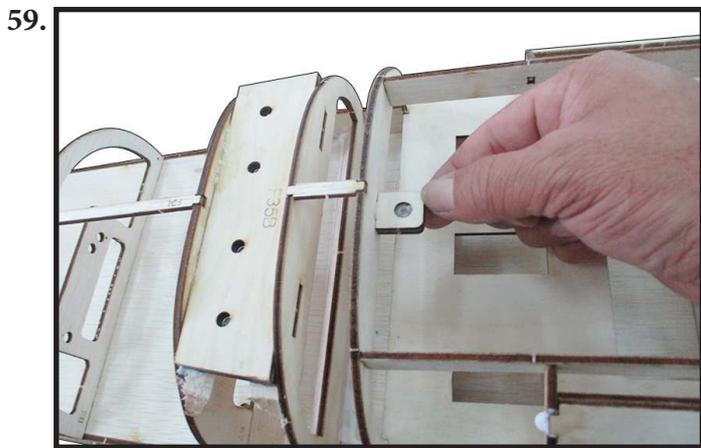
Locate and assemble F28, F29 (the mount of screw for cowling) as (Photo 58).



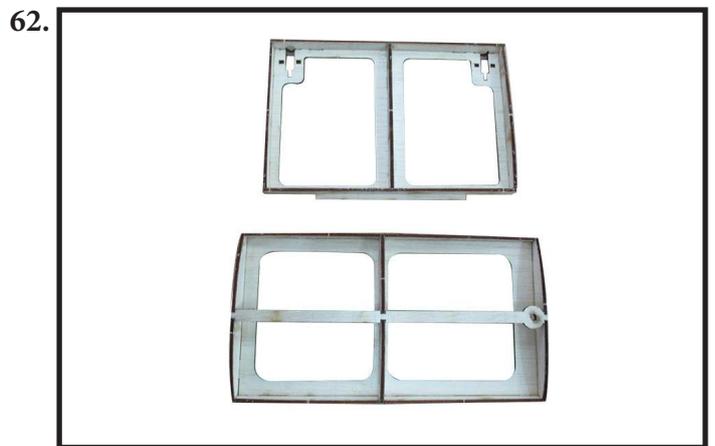
Locate and assemble F27 (the mount of bolt for fuselage hatch) as (Photo 59).



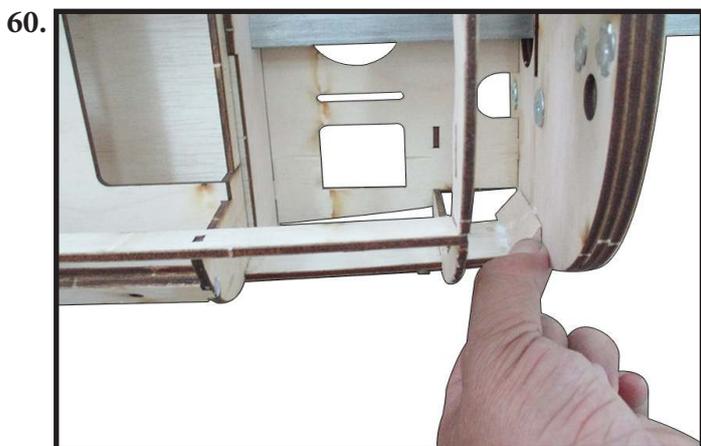
Locate and assemble as the plan drawing for the top fuselage hatch and the bottom fuselage hatch. (Photo 62).



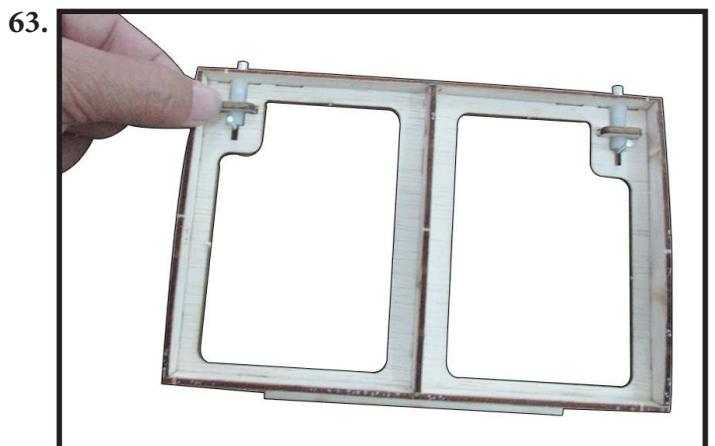
Locate and assemble two triangle balsa bars at two side to reinforce F1 and fuselage side as (Photo 60).



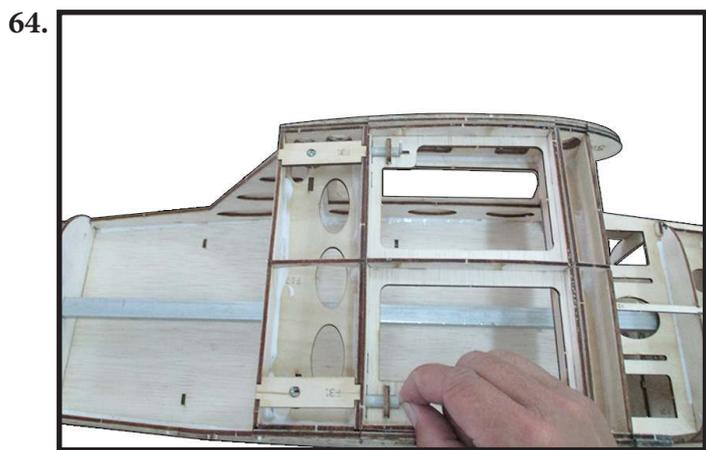
Locate and assemble H5 (washer ring) and the spring pin for the top fuselage hatch. (Photo 63).



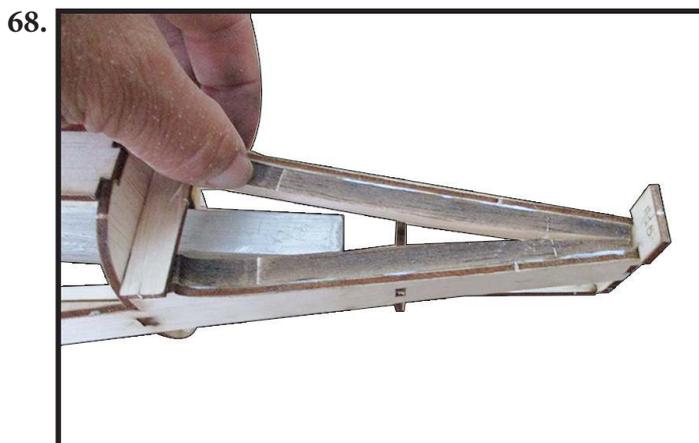
Attach the plastic pushrod tube to the pushrod hole at each former fuselage as photo shown (photo 61).



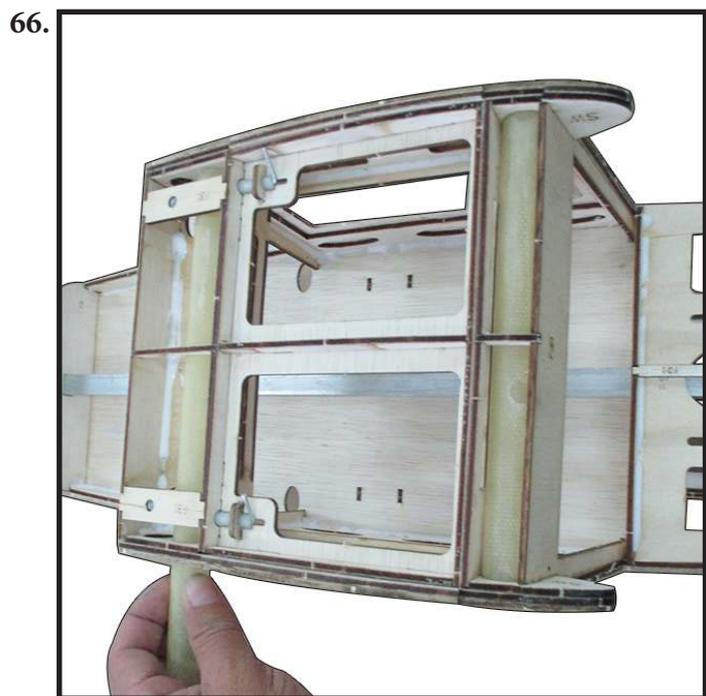
Install the top hatch and the bottom hatch into the fuselage. Then, adjust them fix to fuselage. Photo 64 (top), Photo 65 (bottom).



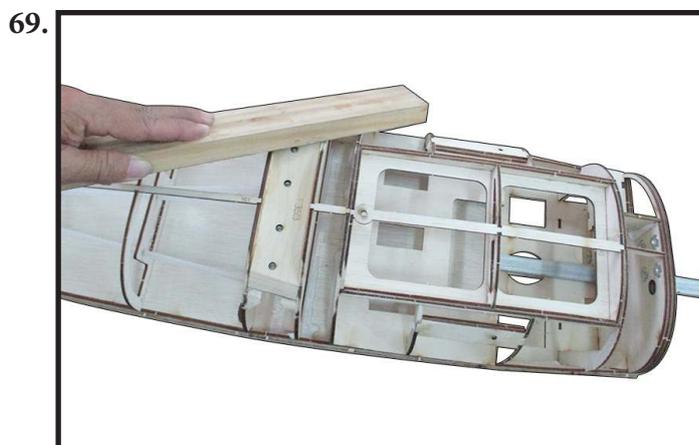
Light sanding F37 (2pcs) .Then, assemble F37 at area intersect to the stabilizer so that increase thickness at this intersection place, ensure strong to mount stabilizer. (Photo 67,68).



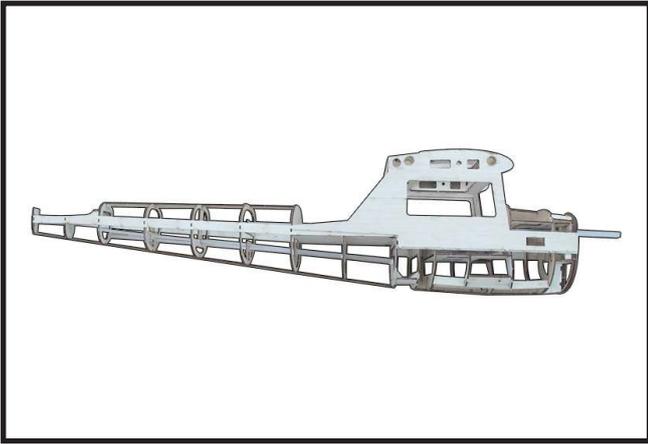
Locate and assemble the fiberglass tunnel (2pcs) for wing tube go through at fuselage. (Photo 66).



Sanding around the fuselage to avoid the rough before covering the sheet. (Photo 69,70).



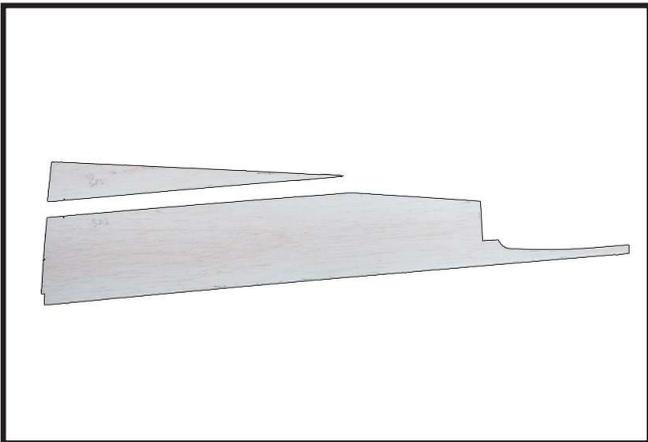
70.



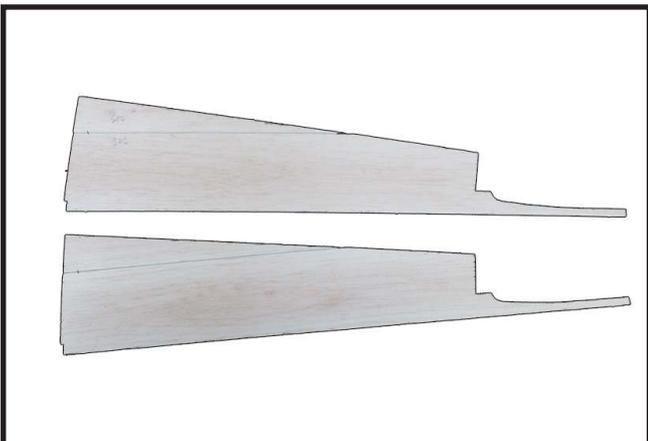
* **Sheeting of the fuselage** (cover to the ribs of fuselage).

Weld together two difference pieces SH6 become a sheet (left and right) by CA glue as photo shown. (photo 71,72).

71.



72.



Put the sheet SH6 at area of fuselage as photo shown (photo 73).

Bend the balsa sheet go to the curve of top area. Then, add CA glue and use the finger at this place until the glue dries as photo shown.

Do the same for the other half of the top area, so that the balsa sheet keep fixed fuselage.

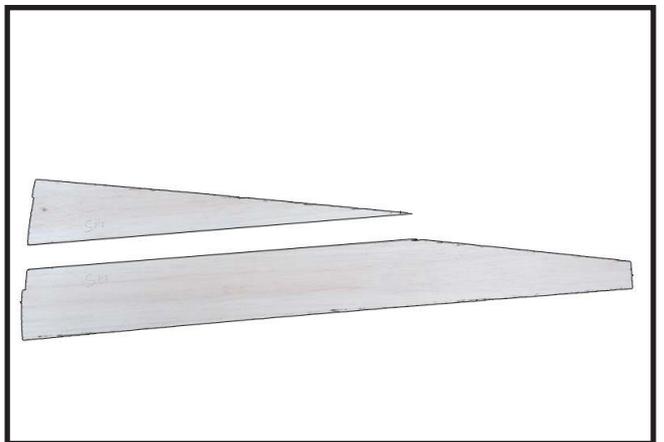
Then, add a little epoxy glue inside at intersect place of all ribs and sheet.

73.

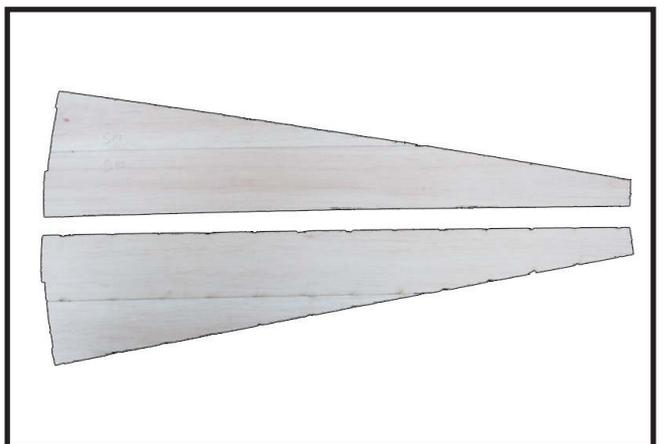


Weld together two difference pieces SH3 become a sheet (left and right) by CA glue as photo shown. (photo 74,75).

74.



75.

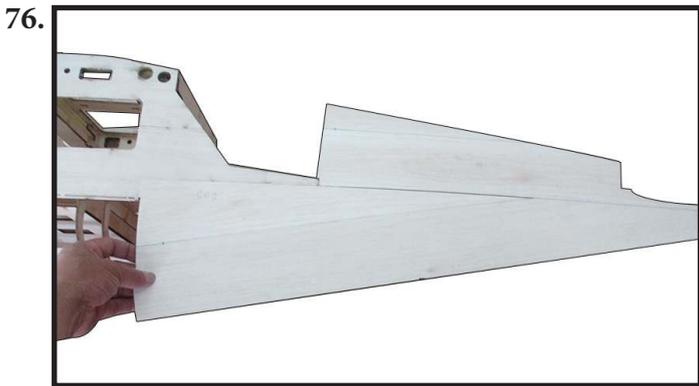


Put the sheet SH3 at area of fuselage as photo shown (photo 76).

Bend the balsa sheet go to the curve of bottom area. Then, add CA glue and use the finger at this place until the glue dries as photo shown .

Do the same for the other half of the bottom area, so that the balsa sheet keep fixed fuselage.

Then, add a little epoxy glue inside at intersect place of all ribs and sheet.



Put the sheet SH5 at area of fuselage as photo shown (photo 79).

79.

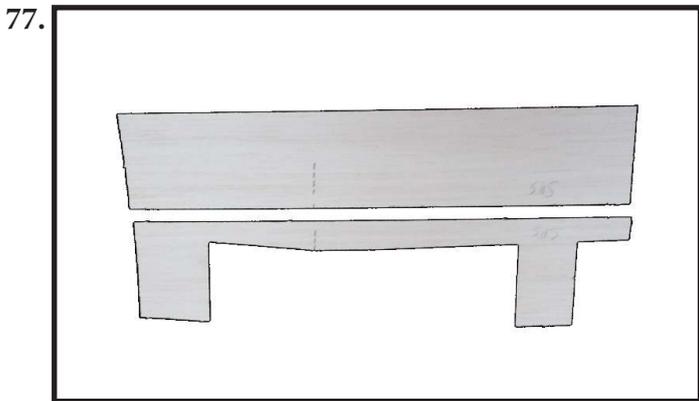


Bend the balsa sheet SH5 go to bottom area and toward area. Then, add CA glue and use the finger at this place until the glue dries as photo shown.

Do the same for the other half of bottom area and toward area, so that the balsa sheet keep fixed fuselage.

Then, add a little epoxy glue inside at intersect place of all ribs and sheet. (Photo 80).

Weld together two difference pieces SH5 become a sheet (left and right) by CA glue as photo shown. (photo 77,78).



80.



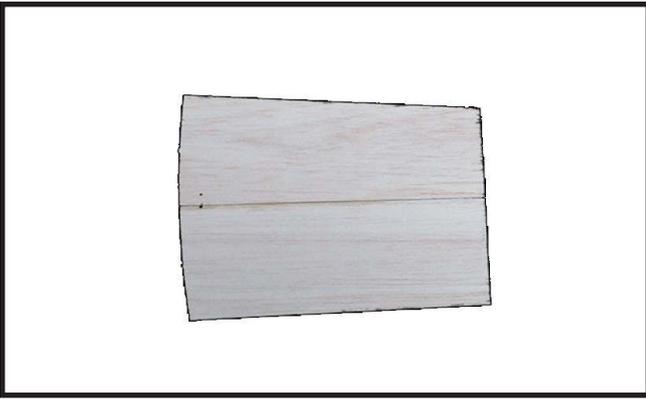
Weld together two difference pieces SH1 become a sheet (left and right) by CA glue as photo shown. (photo 81,82).



81.



82.



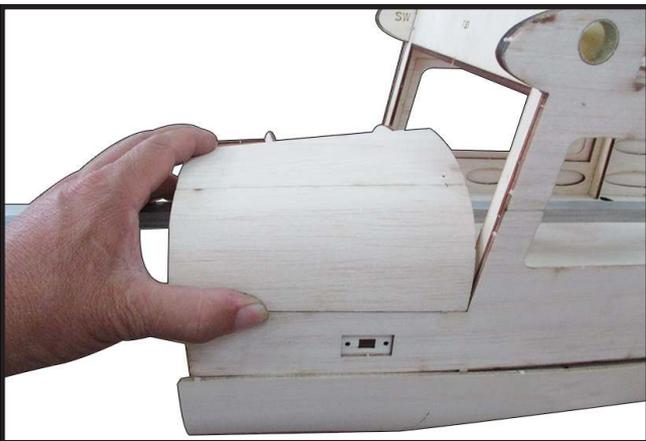
Put the sheet SH1 at area of fuselage as photo shown (photo 83).

Bend the balsa sheet SH1 go to top area and toward area. Then, add CA glue and use the finger at this place until the glue dries as photo shown.

Do the same for the other half of top area and toward area, so that the balsa sheet keep fixed fuselage.

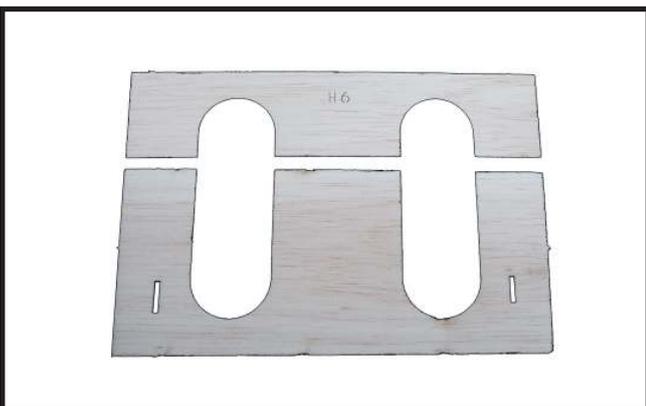
Then, add a little epoxy glue inside at intersect place of all ribs and sheet.

83.



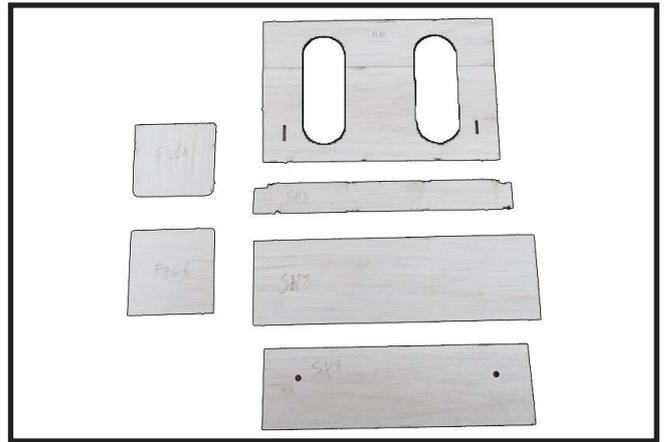
Weld together two difference pieces H6 become a sheet by CA glue as photo shown. (photo 84).

84.



Prepare some balsa sheet as (Photo 85).

85.



Locate and assemble SH9 as (Photo 86).

86.

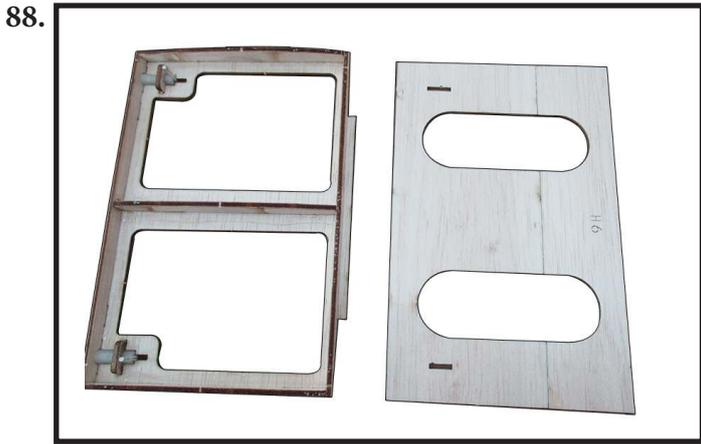


Locate and assemble SH7 as (Photo 87).

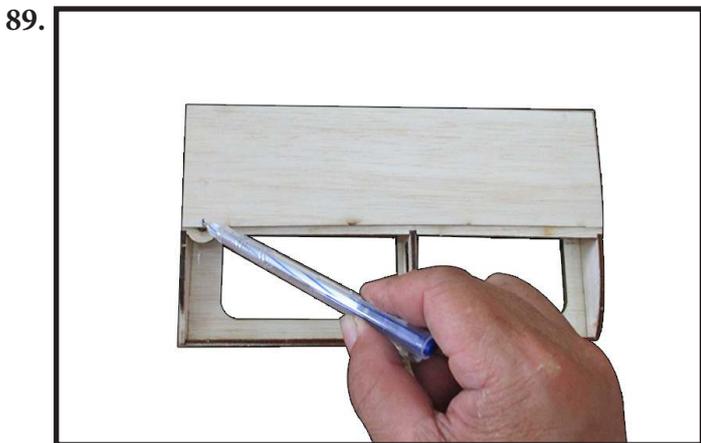
87.



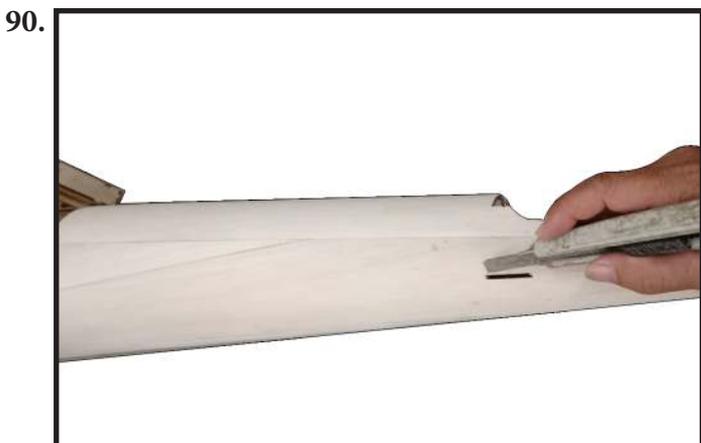
Locate and cover balsa sheet H6 on top hatch as (Photo 88).



Locate and cover balsa sheet SH8 on bottom hatch. After cover a half, use the pen to take a mark for position of bolt's hole as. (Photo 89).



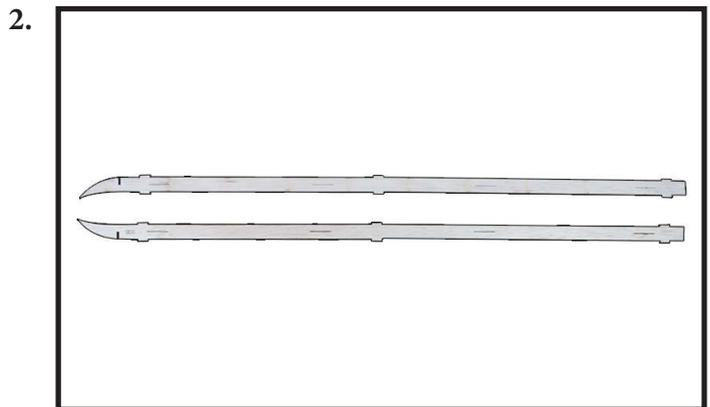
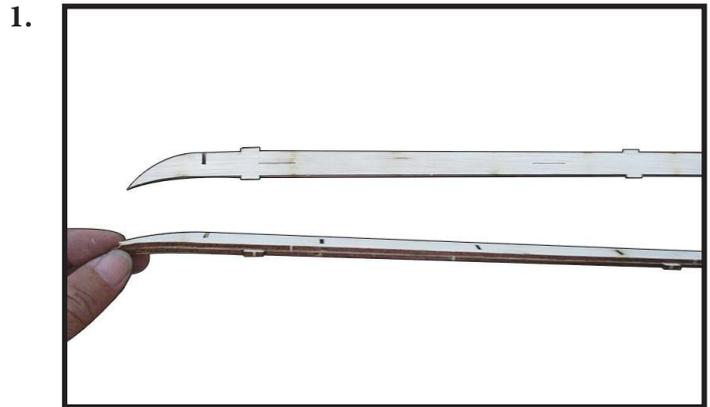
Cut off the sheet to make the exit slot for push rod of rudder and elevator. (Photo 90).



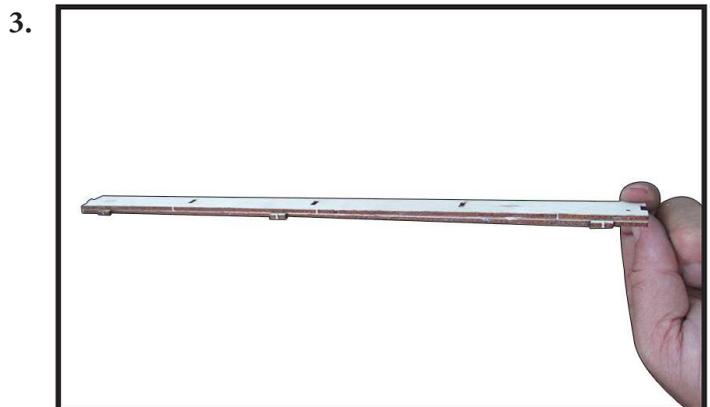
THE WING

* Prepare the trailing edge at of wing.

Locate and apply W34 (2pcs) to W35 by epoxy as photo shown (photo 1 and 2). **NOTE: Apply to assemble trailing edge wing left and trailing edge of wing right are symmetrical to each other.**



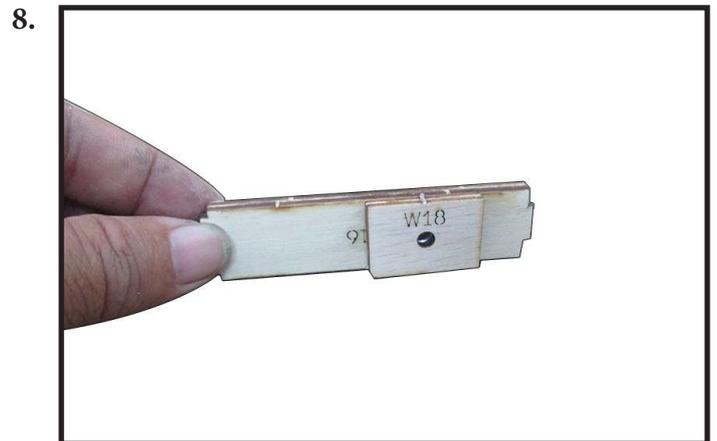
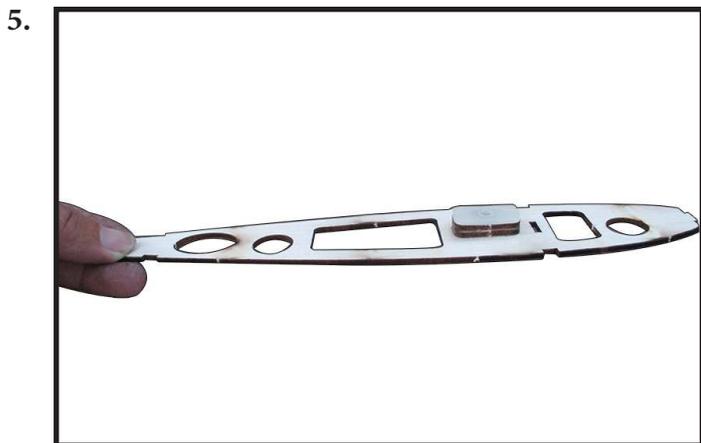
LoLocate and apply W31 to W32 by epoxy as photo shown (photo 3). **NOTE: Apply to assemble trailing edge wing left and trailing edge of wing right are symmetrical to each other.**



Locate and apply W20 (2pcs) to W2 by epoxy 7. as photo shown (photo 4,5). **NOTE: Apply to assemble ribs of wing left and ribs of wing right are symmetrical to each other.**

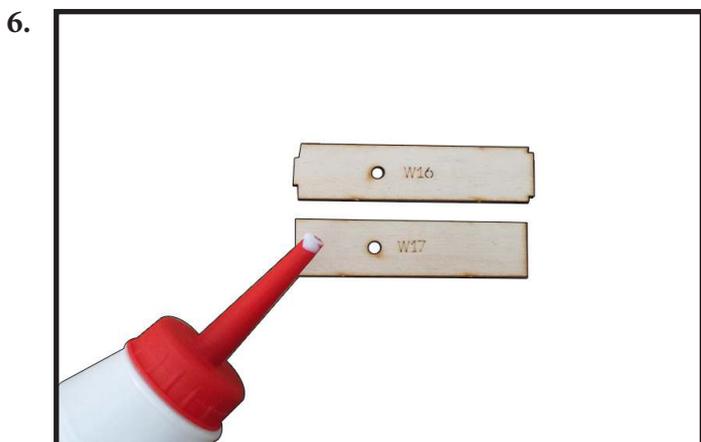


Attach the Pronged T-Nut M3 at hole available on the mount of wing strut. Then, apply W19 and W18 (washer to reinforce Pronged T-Nut M3) to the mount. (Photo 8).

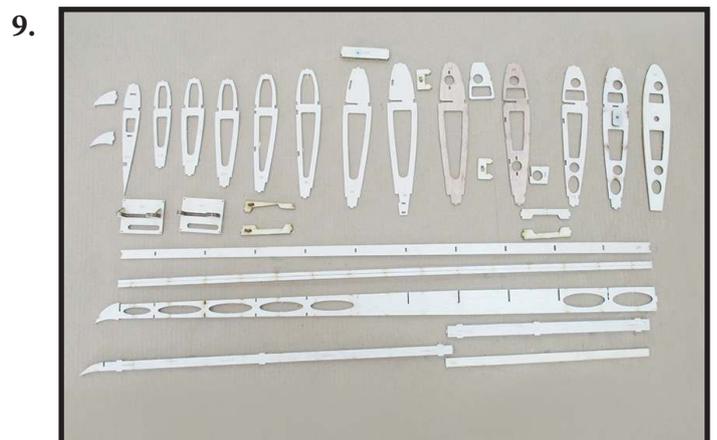


Locate and apply W16 to W17 (the mount of wing strut) by epoxy as photo shown (photo 6,7).

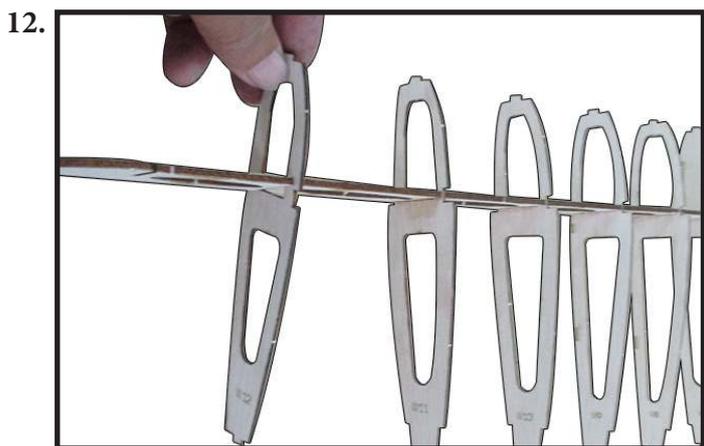
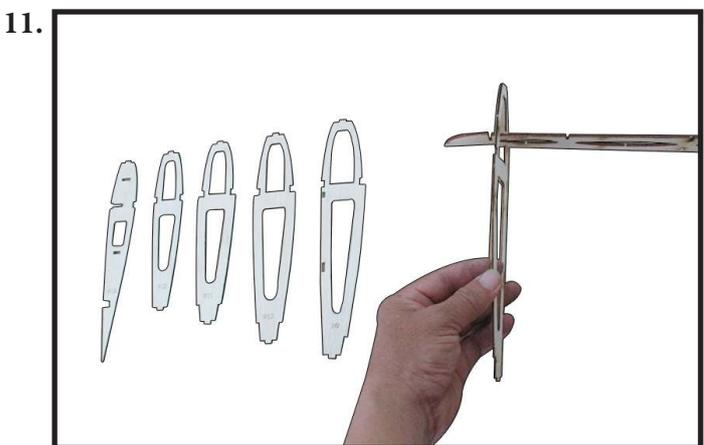
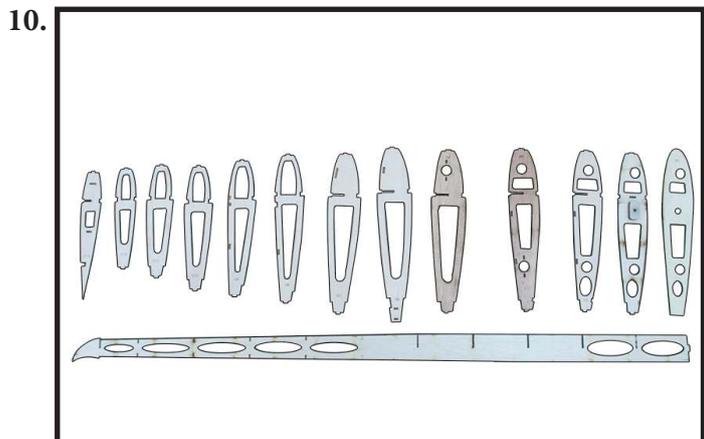
*** Build the wing.**



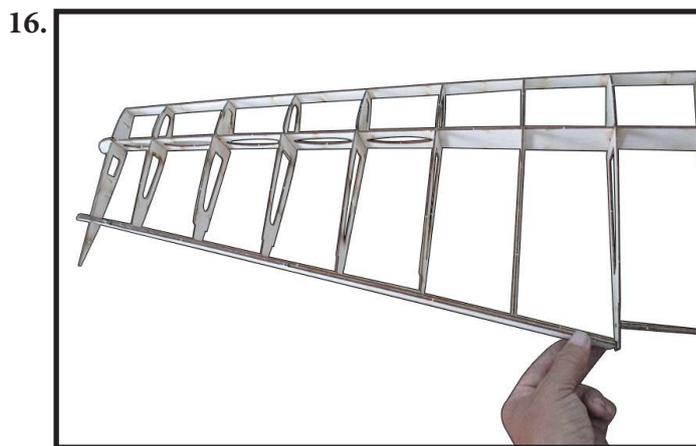
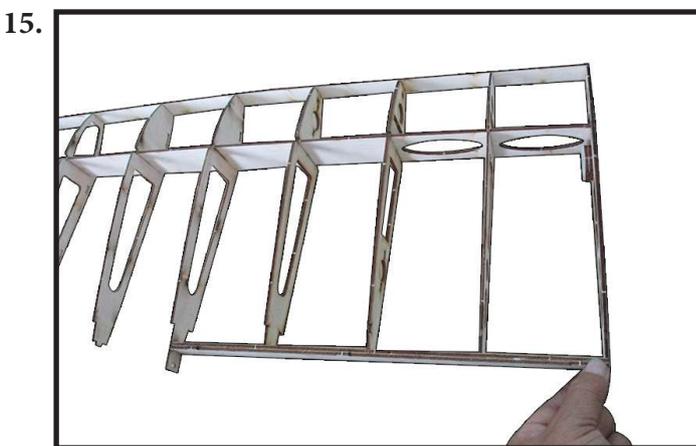
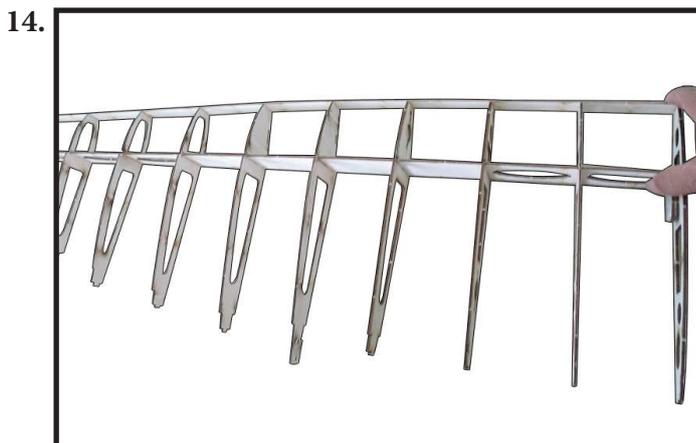
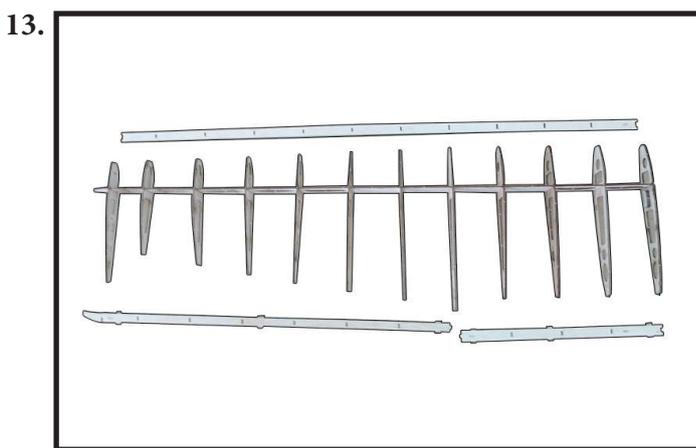
Prepare all parts to assemble a wing (Photo 9). **NOTE: It is recommended to divide all parts into groups of the wing left and groups of wing right before building to avoid assembling them in the same direction.**



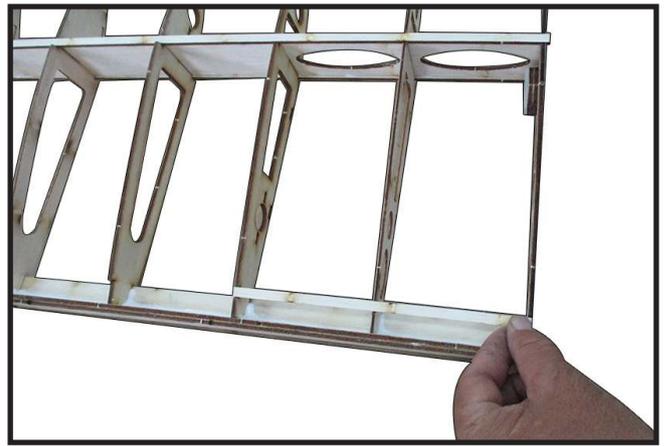
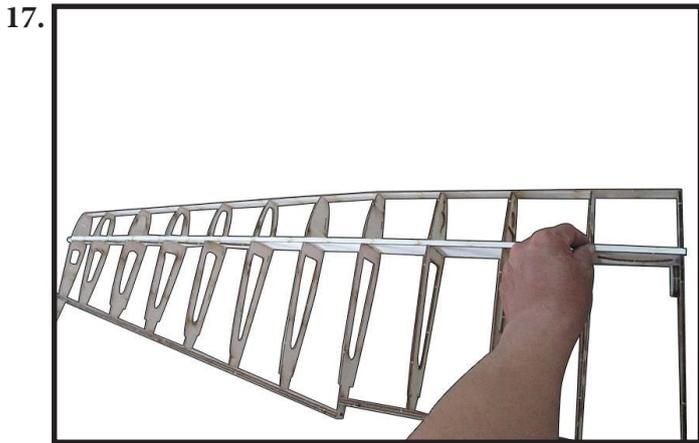
Locate and assemble W2 to W13 with W28 (main wing spar) by CA glue as shown photo (Photo 10,11,12).



Locate and assemble leading edge W27 and trailing edge W31, W34 by CA glue as shown photo (Photo 13,14,15,16).

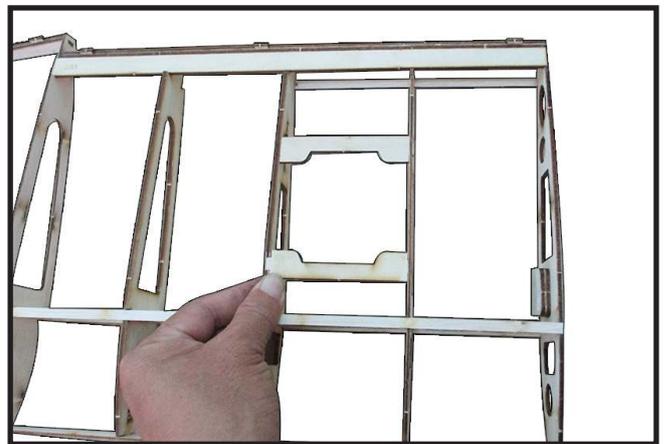
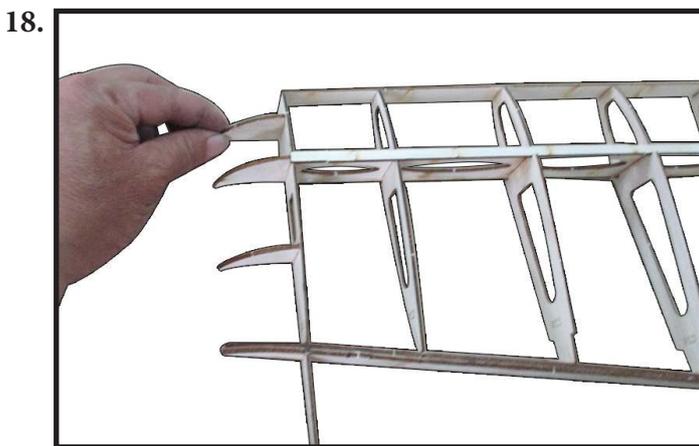


Locate and assemble cap strip stock W29 by CA glue as shown (Photo 17).



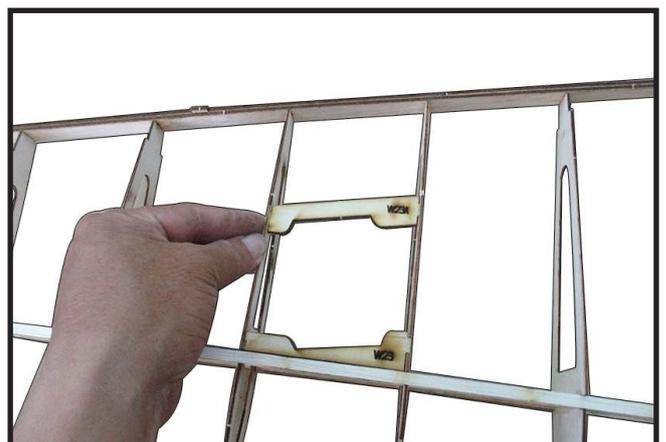
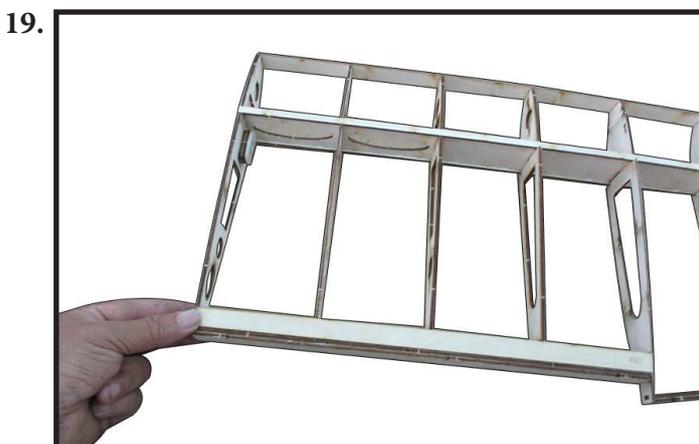
Locate and assemble the mount of Flap's servo W22 by CA glue as shown (Photo 21).

Locate and assemble rib of tip W14, W15 by CA glue as shown (Photo 18).



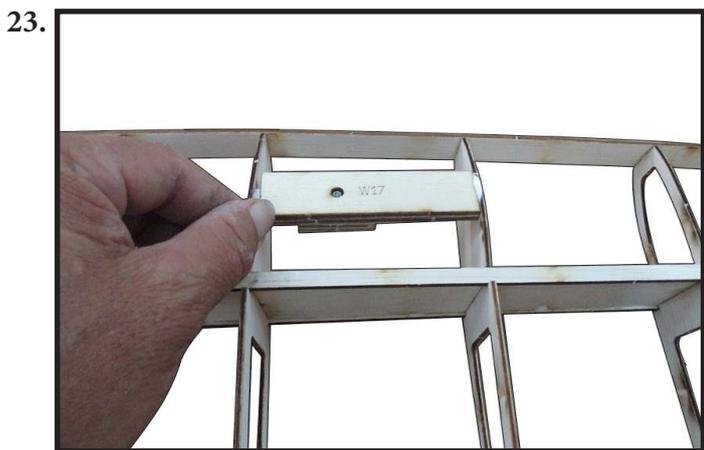
Locate and assemble the mount of Aileron's servo W23 ,W23A by CA glue as shown (Photo 22).

Locate and assemble the sheet W33 to reinforce hinge by CA glue as shown (Photo 19).

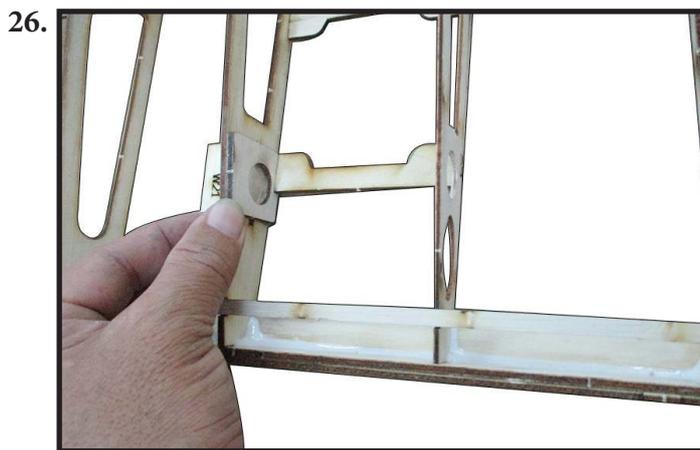


Locate and assemble the mount of strut W16 and W17 by CA glue as shown (Photo 23).

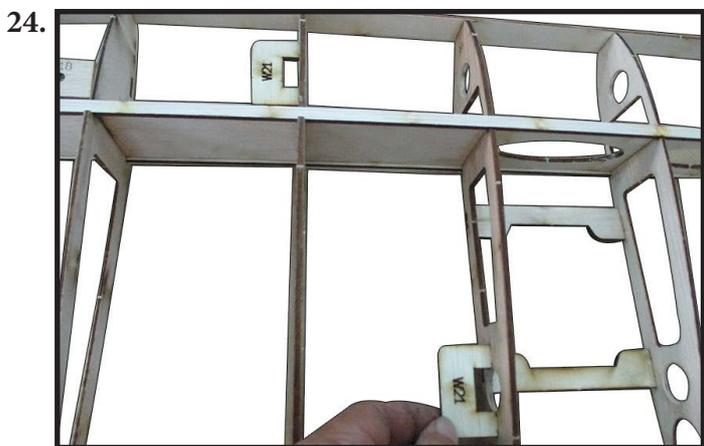
Locate and assemble the cap strip W30 to reinforce hinge by CA glue as shown (Photo 20).



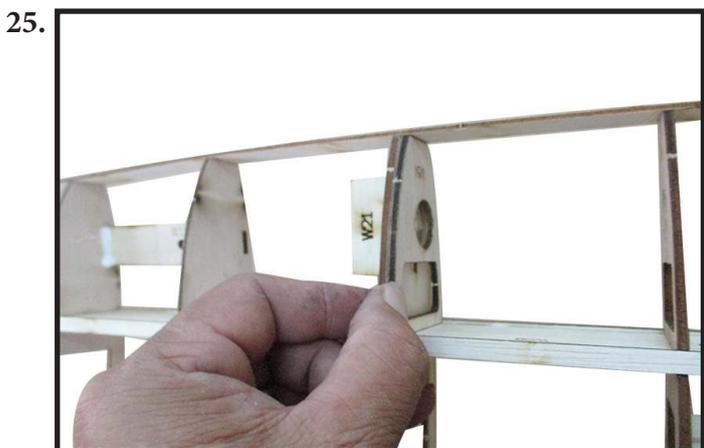
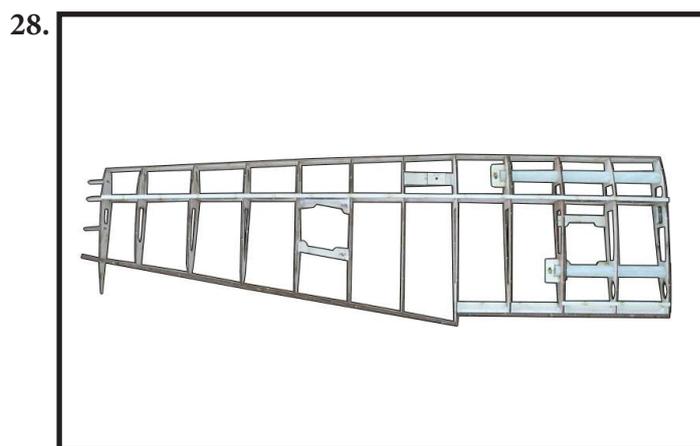
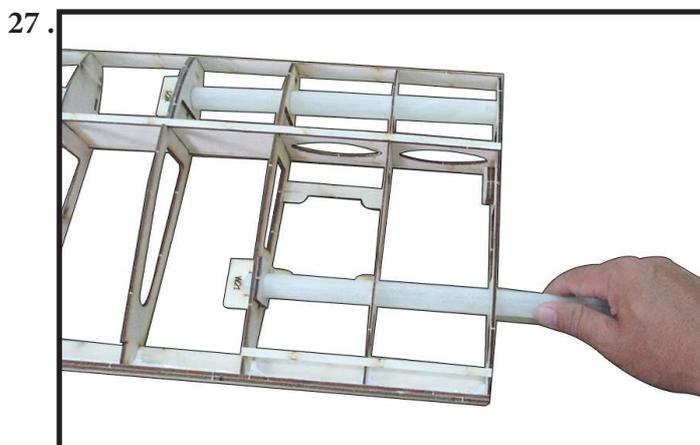
Locate and assemble the lock of wing tube W21 to W4, W5 by CA glue as shown (Photo 24).



Locate and assemble wing tube. Light sanding the wing tube to it can through to holes easily as photo shown (photo 27,28).

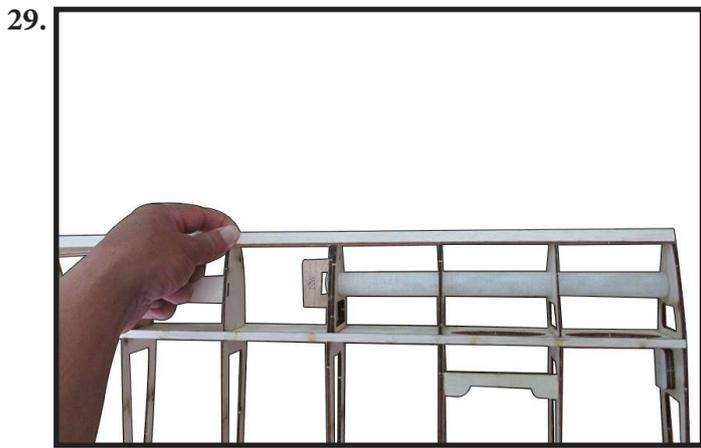


Locate and apply W5A to W5 by CA glue as shown (Photo 25).

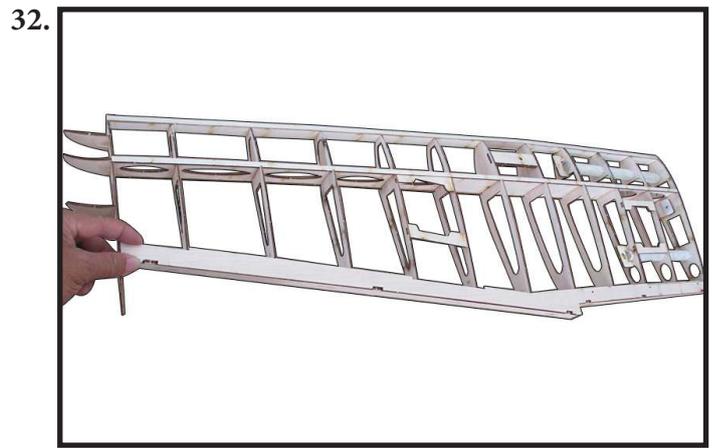


Locate and apply W4A to W4 by CA glue as shown (Photo 26).

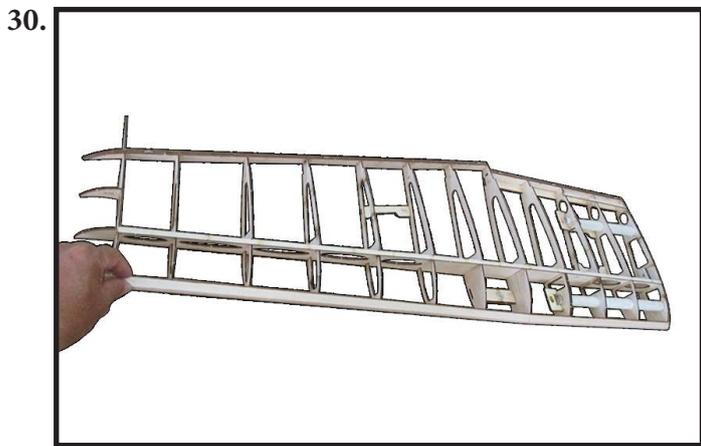
Locate and assemble the 8mm balsa leading edge (photo 29).



Sanding around at weld places for avoid rough so that covering sheet easily (photo 30).



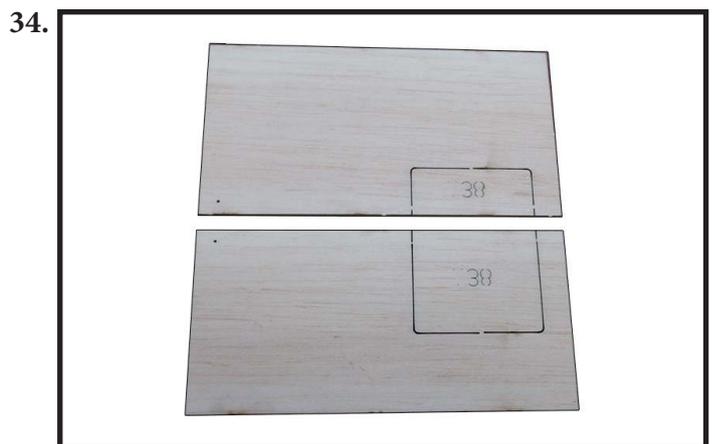
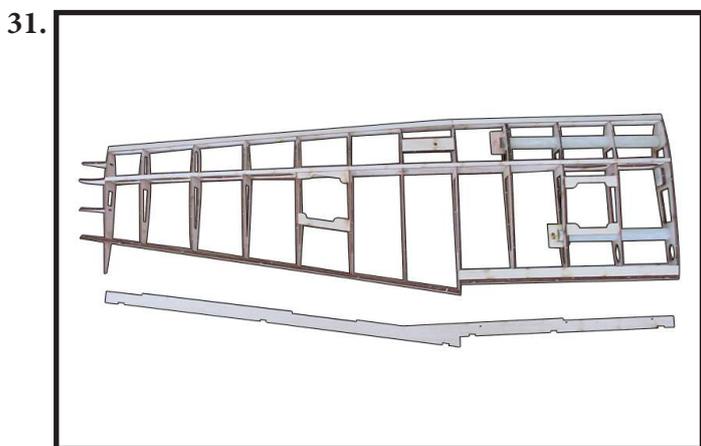
Cover sheet W37 at bottom, and W36 at top (Photo 33).



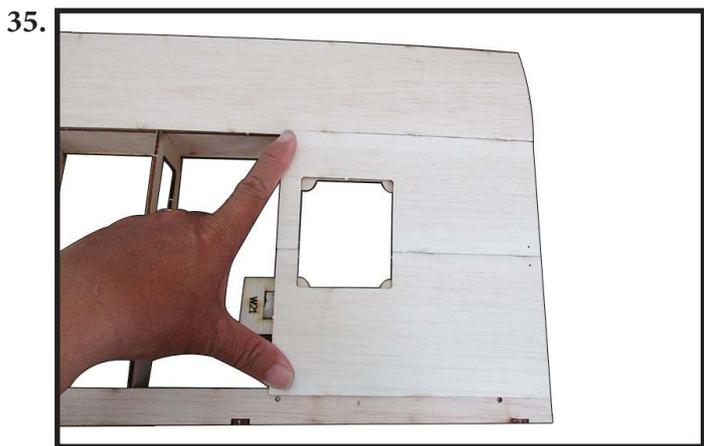
*** Finishing The Outer Wing Panels.**

Cover sheet W40 at bottom, and W41 at top (Photo 31,32).

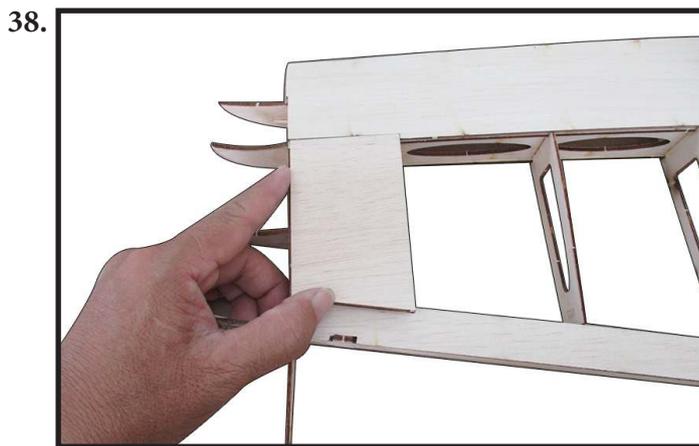
Weld two parts of W38 together to become a sheet (Photo 34).



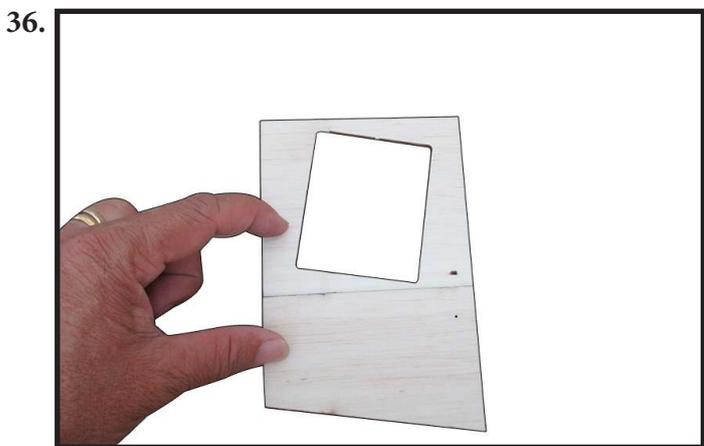
Cover sheet W38 to wing at Flap servo as (photo 35).



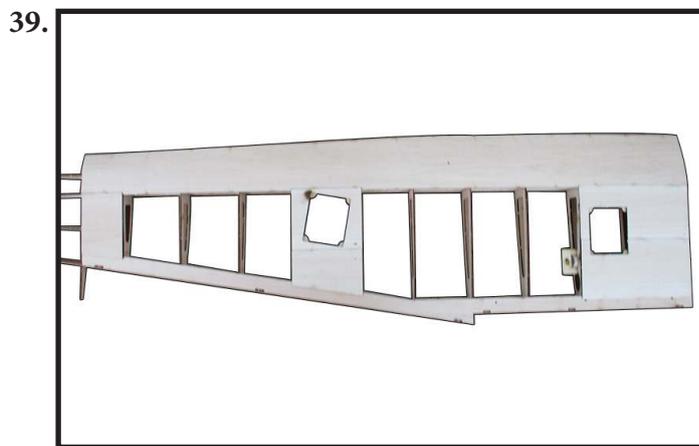
Weld two parts of W38A together to become a sheet (Photo 36).



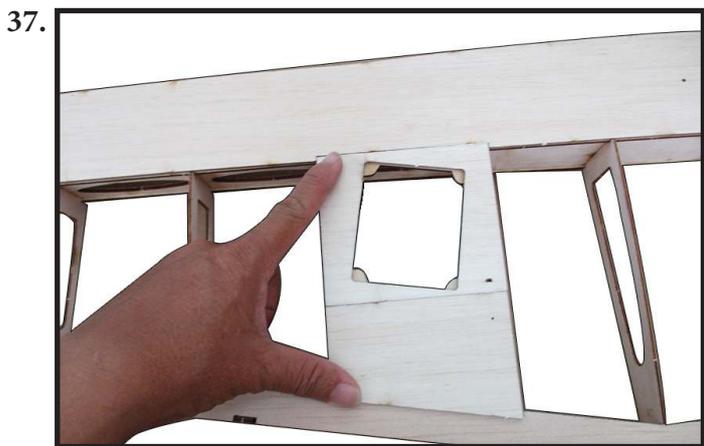
Finish cover sheet for wing at bottom as (photo 39).



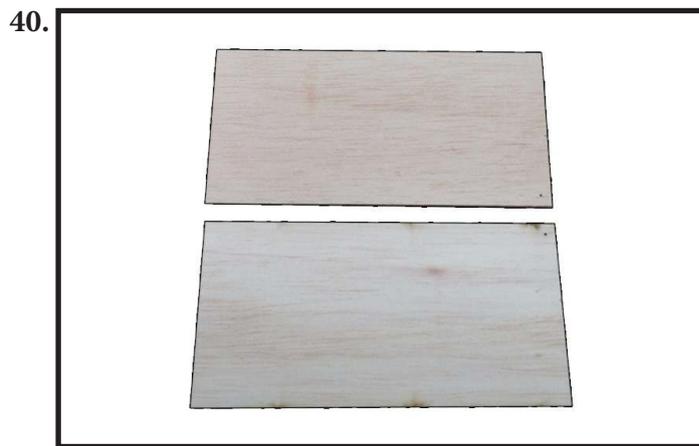
Cover sheet W38A to wing at Aileron servo as (photo 37).



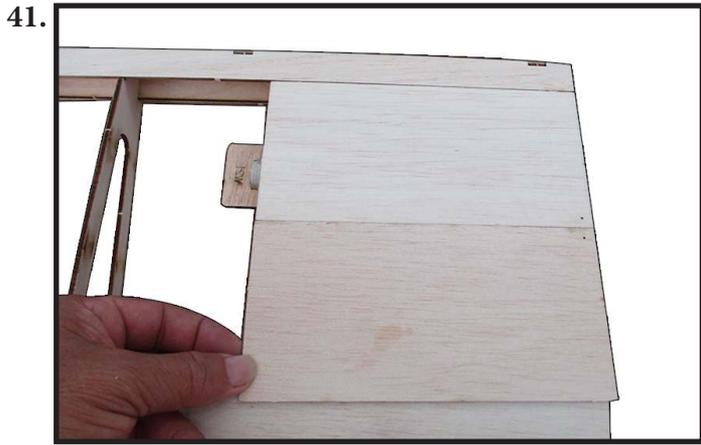
Weld two parts of W39 (1) and W39 (2) together to become a sheet (Photo 40).



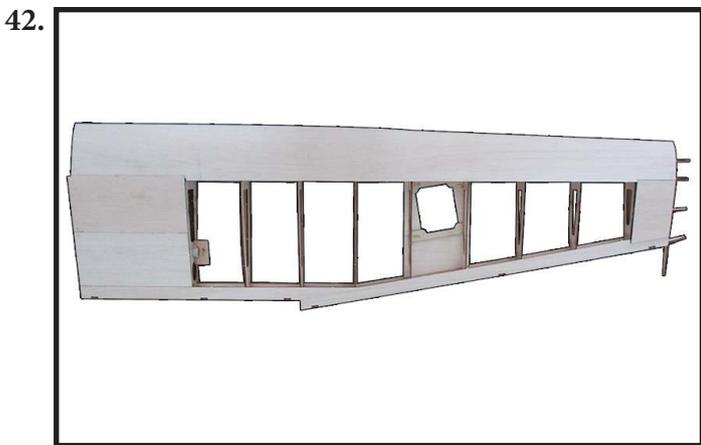
Cover sheet W38B to wing as (photo 38).



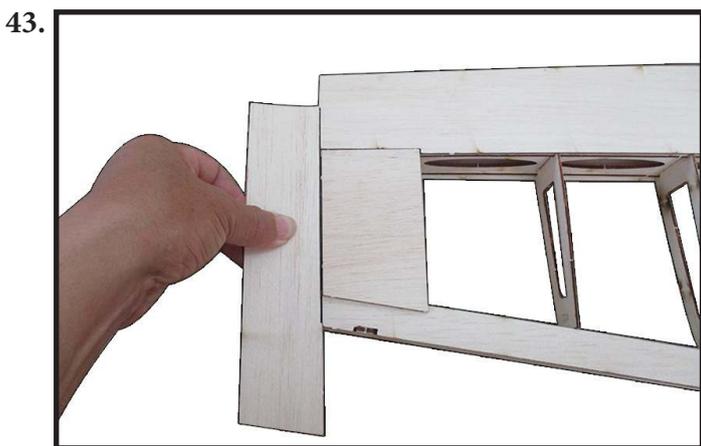
Cover sheet W39 to wing as (photo 41).



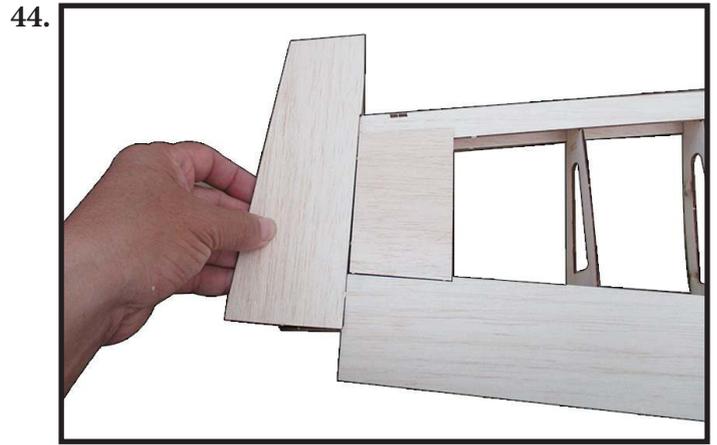
Finish cover sheet for wing at top as (photo 42).



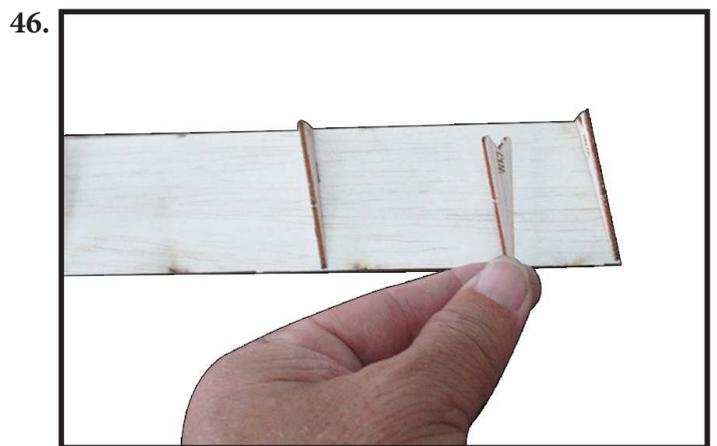
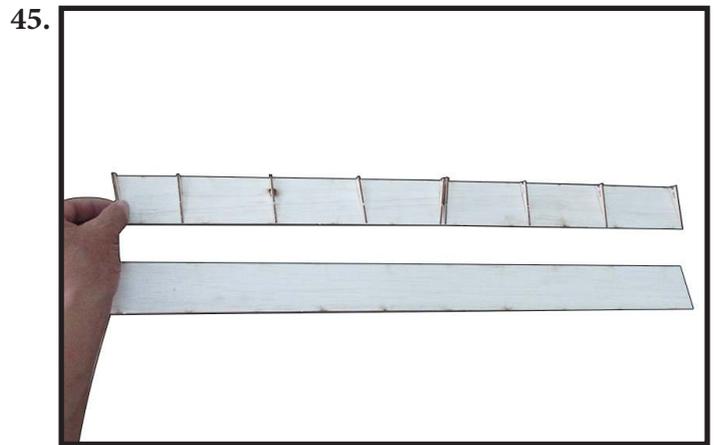
Cover sheet W42 to wing tip at bottom as (photo 43).



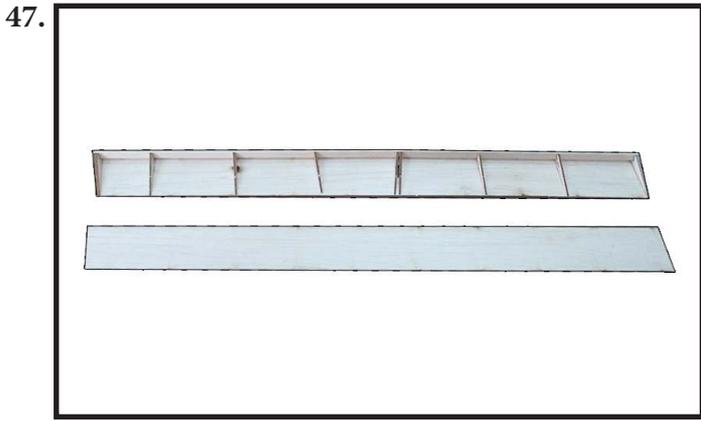
Cover sheet W43 to wing tip at top as (photo 44).



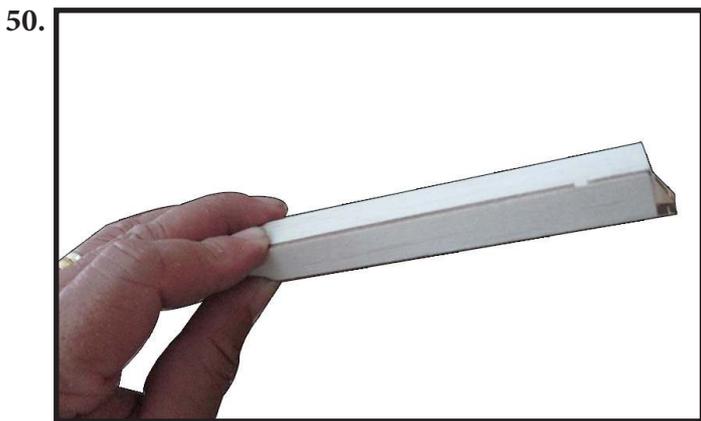
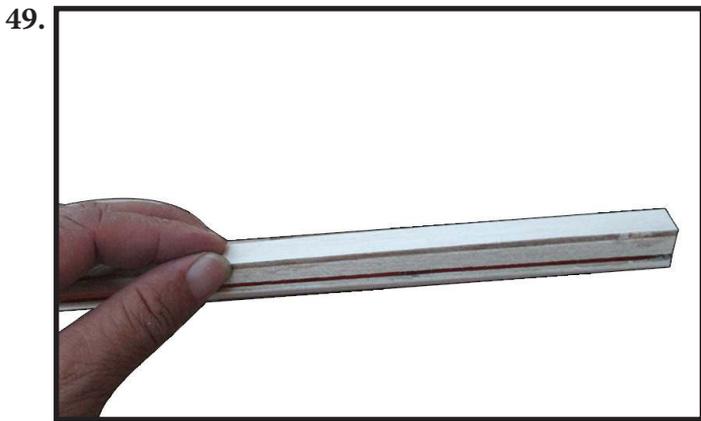
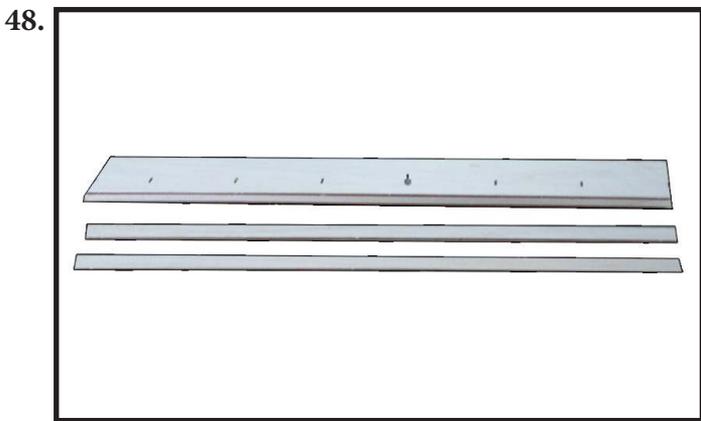
Locate and assemble the aileron (ribs WA7, ribs WA8 to sheet WA9) as (photo 45,46).



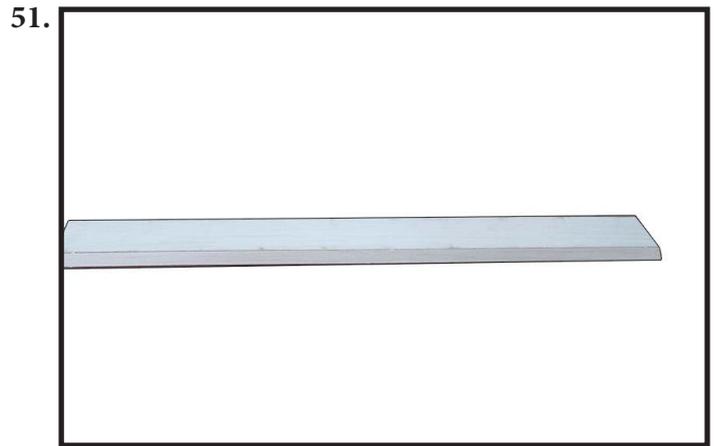
Locate and assemble 6x6 balsa stick (Leading edge of Aileron) .Then, cover sheet WA10 at rest side. And use heavy flat thing pressed on Aileron until epoxy dries to ensure it is not warped as (Photo 47).



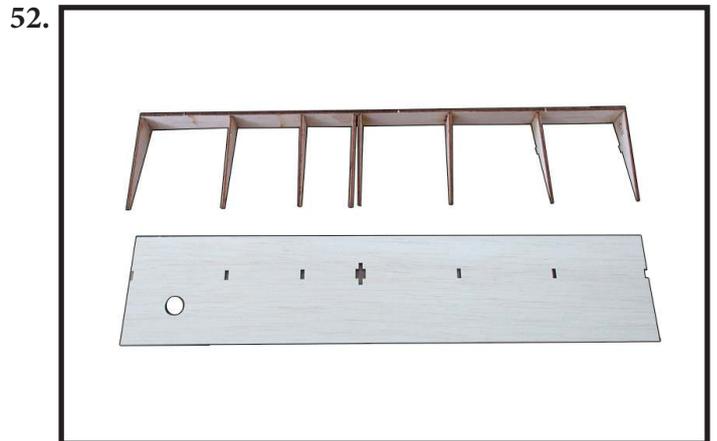
Locate and apply sheet W11 and W12 at two sides of Leading edge as (photo 48,49,50).



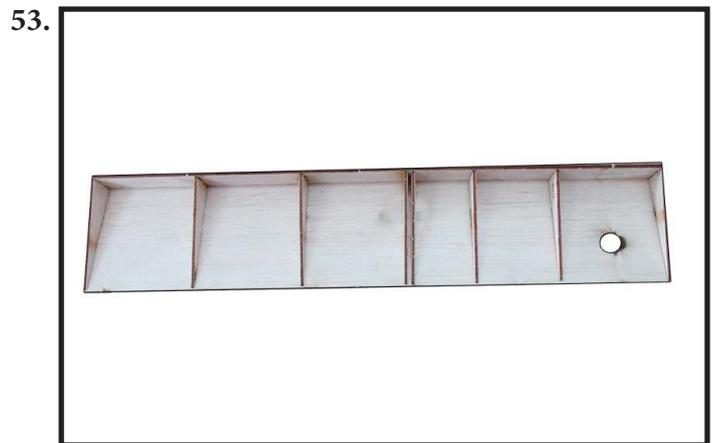
Finish cover sheet as (photo 51).



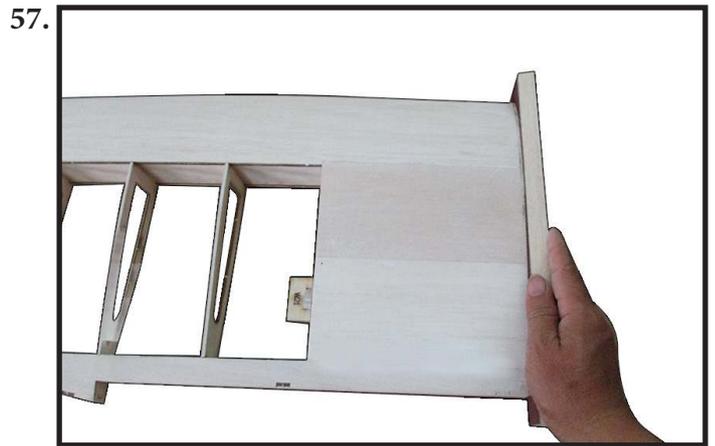
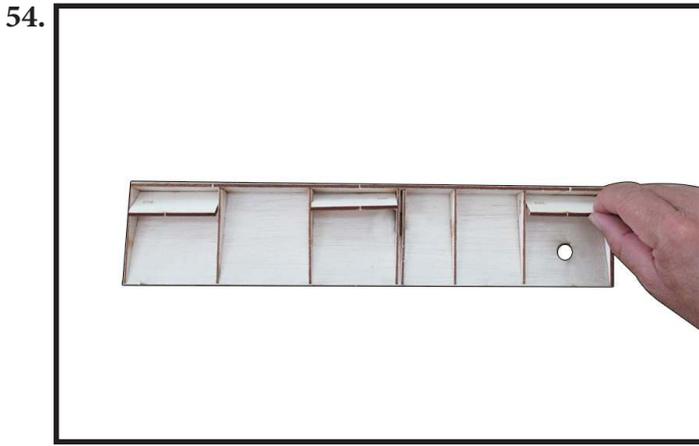
Locate and assemble the flap (ribs WA1, ribs WA2, to Leading edge of flap WA3) as (photo 52).



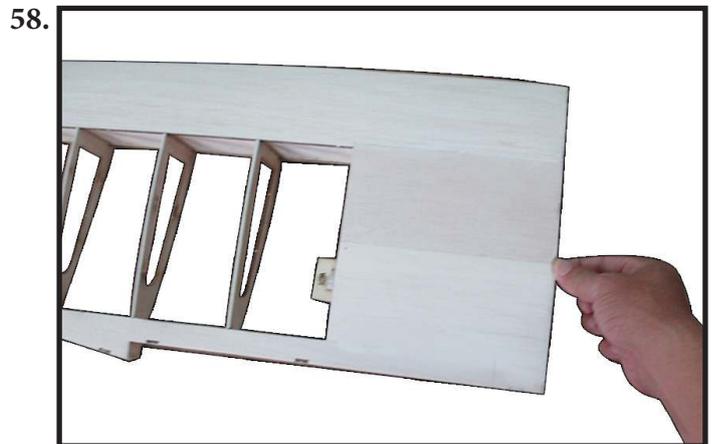
Locate and assemble the rib's frame of flap to sheet WA5 by CA glue as (photo 53).



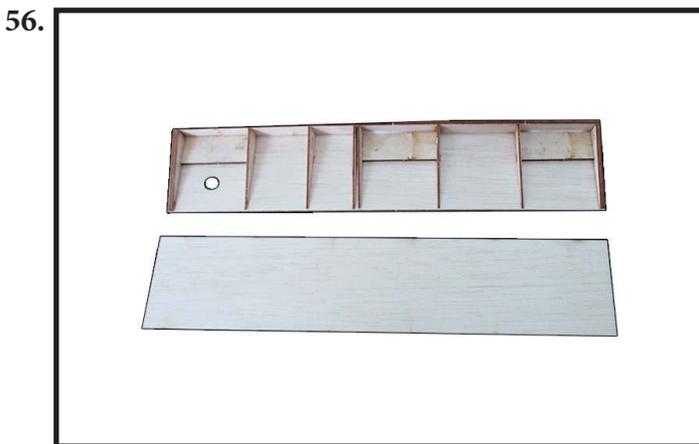
Locate and assemble the reinforce of flap WA4 to sheet WA5 by CA glue, apply three pieces for each (flap left and flap right) as (photo 54,55).



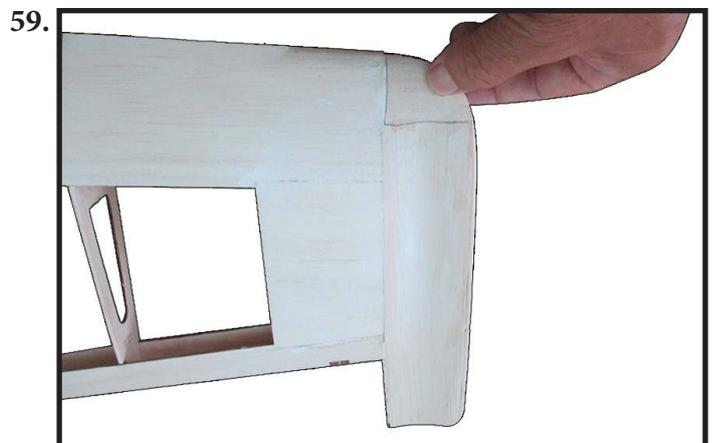
Locate and apply W1 to W2. And then set up wing to fuselage by sanding until fitting (no gap between wing and fuselage). (Photo 58).



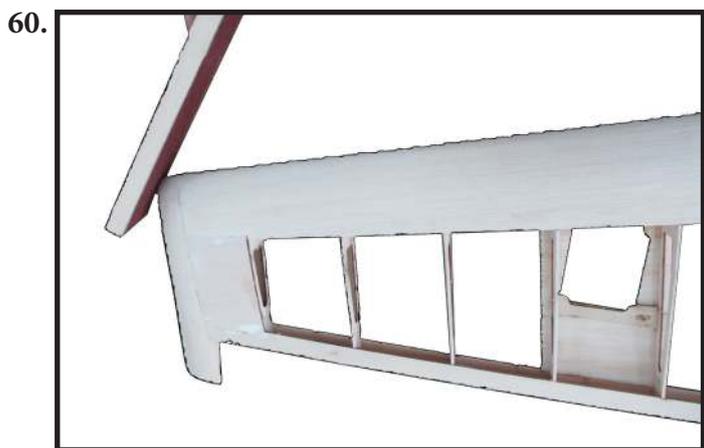
Cover sheet WA6 at rest side. And then use heavy flat thing pressed on Flap until epoxy dries to ensure it is not warped as (photo 56).



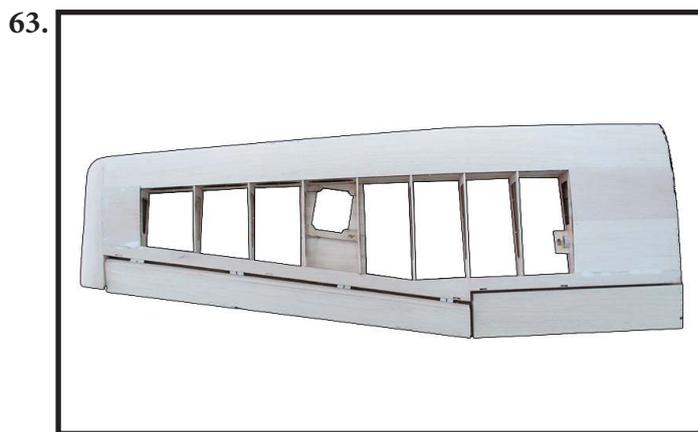
Locate and assemble the rectangle balsa block to space tip. And then sanding rounded until fitting as (Photo 59,60).



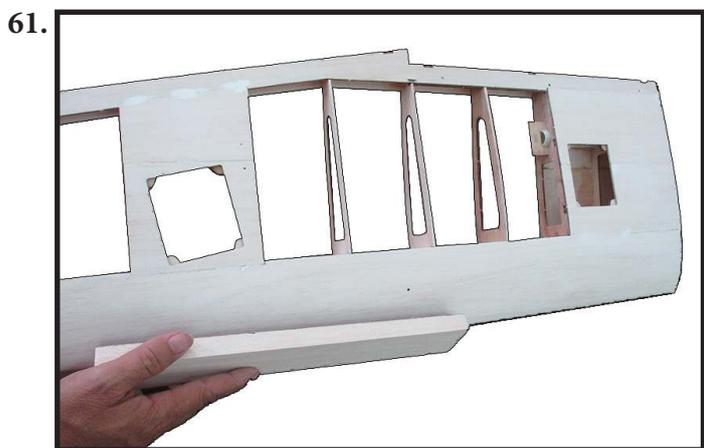
Sanding the place of root W2 for smooth. (Photo 57).



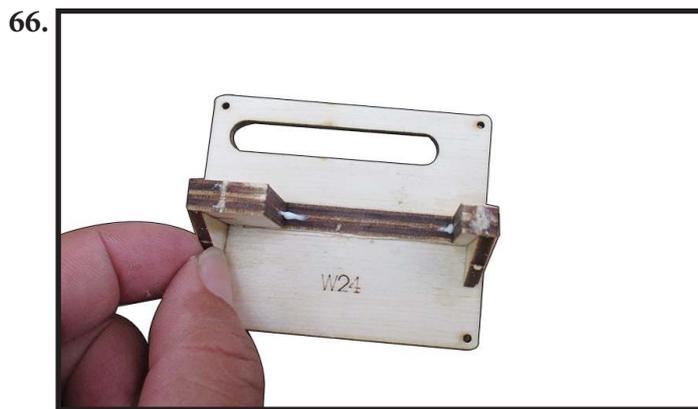
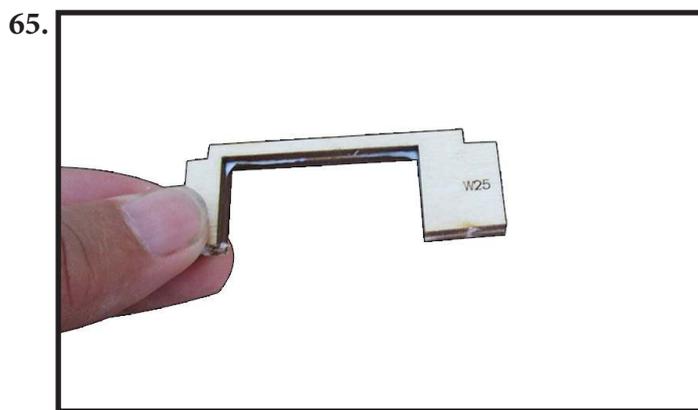
Sanding rounded leading edge area until the shape seamless W1 as (Photo 61).



Assemble the wing servo mount by epoxy glue. (Photo 64,65,66).



Take the mark for hinge's position of Aileron and sawn the slot of hinge. **Note: cut off the slot fit so that avoid so wide cause CA hinge will fall out.** (Photo 62).

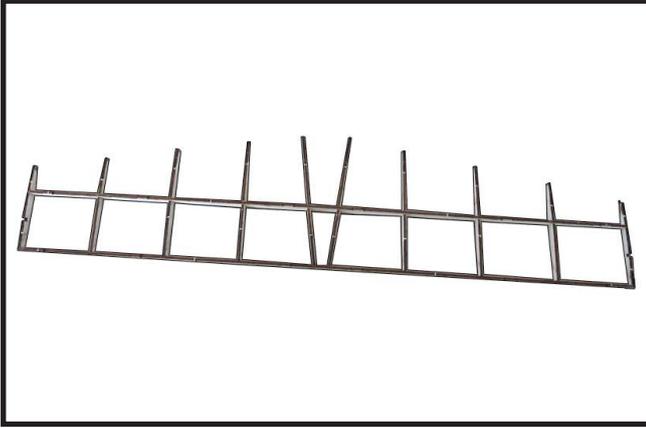


Finish built as (photo 63).

THE STABILIZER AND ELEVATOR

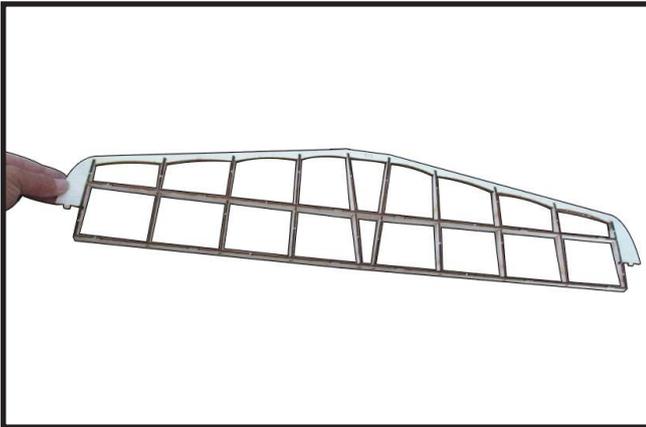
Locate and assemble one after another one from ST4 – ST8 into ST2 and ST3 to become the rib's frame Stabilizer by CA glue as (photo 1).

1.



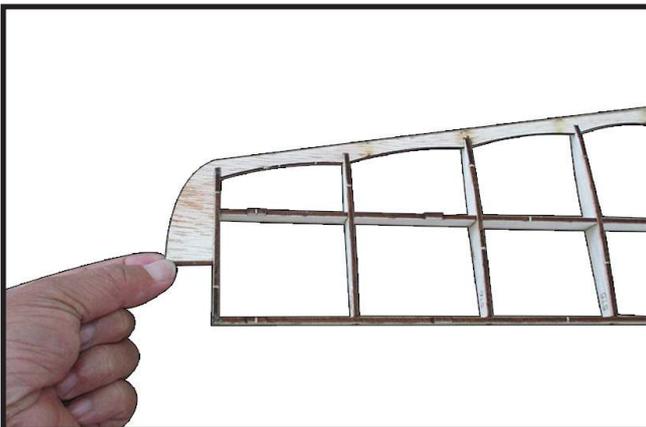
Locate and assemble ST1 (the leading edge of Stabilizer) as (photo 2).

2.



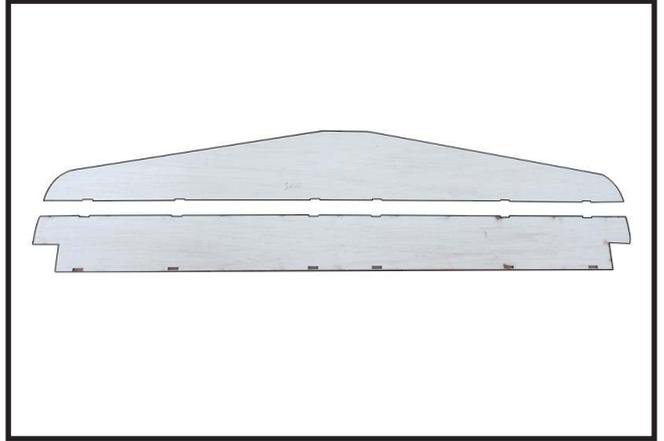
Locate and assemble rib ST9 at two tip end of Stab as (photo 3).

3.

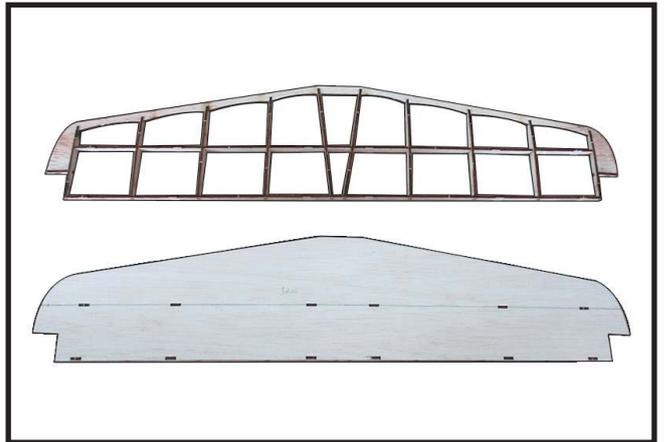


Weld two parts of sheet ST10 to become one. Sanding around frame to remove the rough. Then, cover the sheet ST10 from direction ST3-ST2-ST1. Cover for top and bottom of Stabilizer by CA glue as (photo 4,5,6).

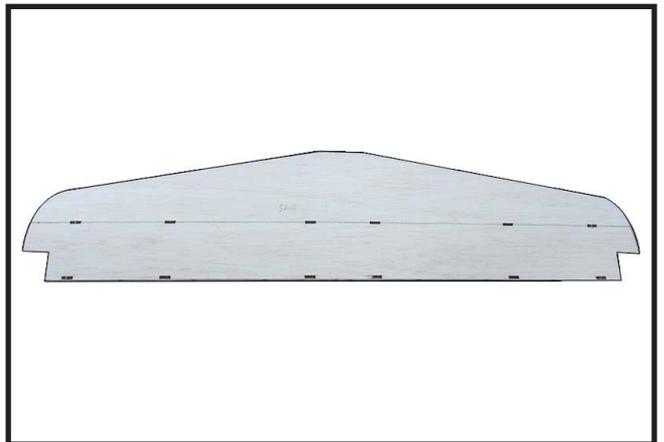
4.



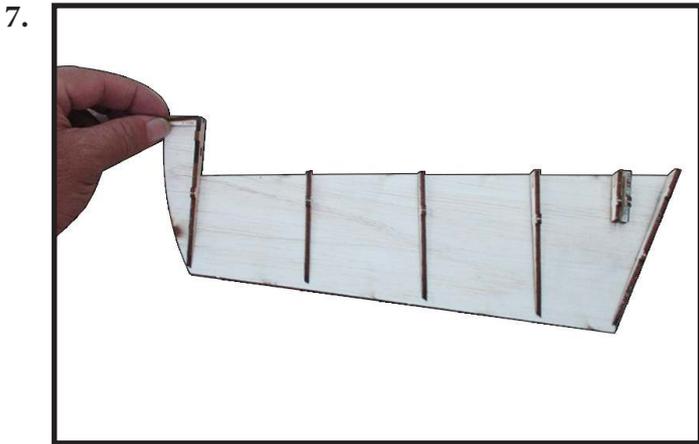
5.



6.

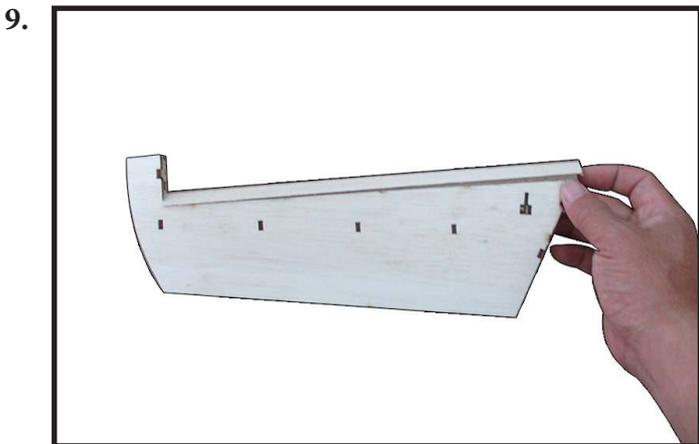
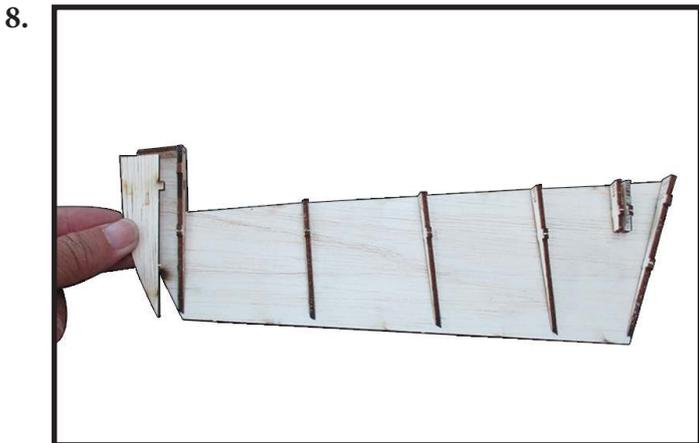


Locate and assemble the elevator. Assemble one after another one from ST11 – ST17 into sheet ST19 by CA glue as (photo 7).

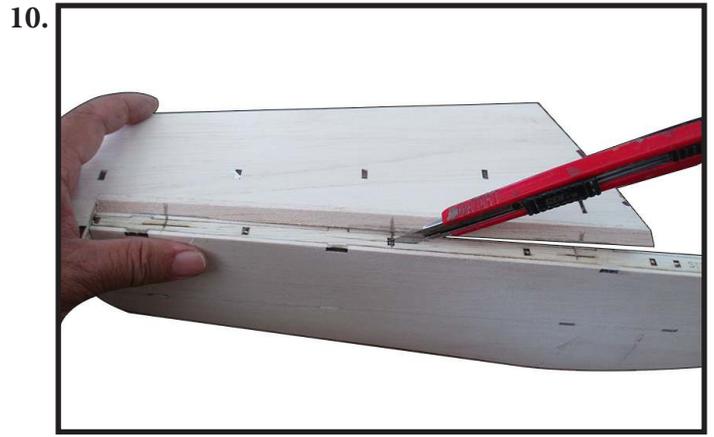


Locate and assemble ST18 by CA glue. (Photo 8).

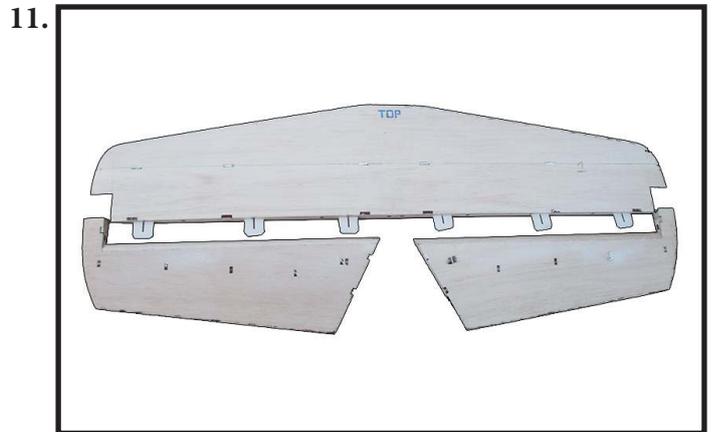
Add little epoxy to all ribs and cover sheet ST20 at the rest side. Apply the triangle balsa stock. Then, cut off excess part of balsa stock for fitting as (photo 9).



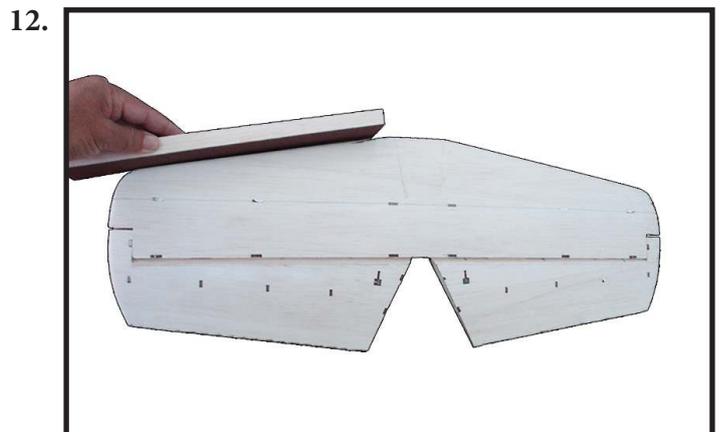
Take the mark for hinge's position of Elevator and sawn the slot of hinge. Note: cut off the slot fit so that avoid so wide cause CA hinge will fall out. (Photo 10).



First, assemble 6 paper hinges to stabilizer. Then, link to elevator. (Photo 11).



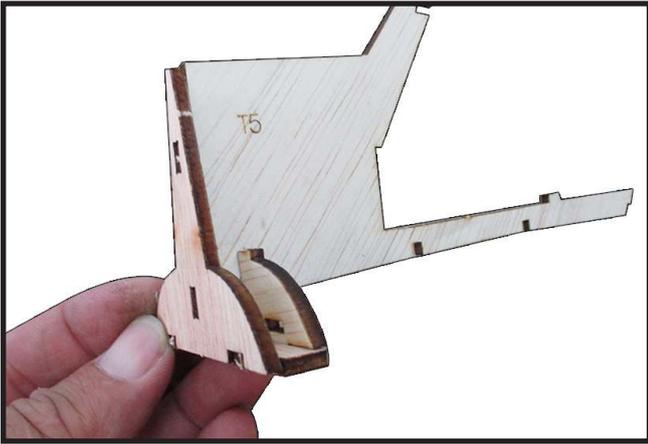
Sanding rounded leading edge area until the shape seamless as (photo 12).



THE FIN AND RUDDER

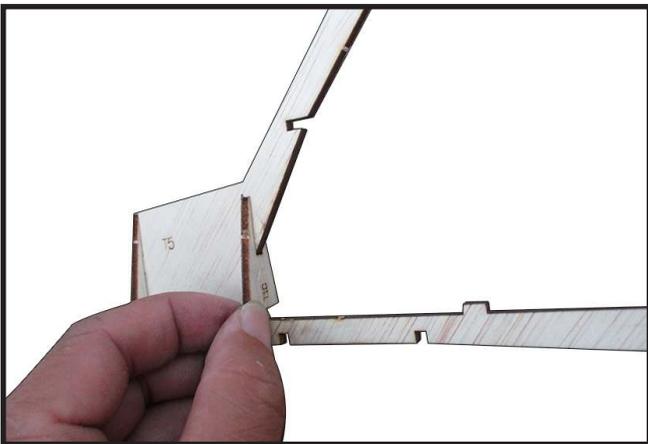
Locate and assemble rib T6, T7 to leading edge T5 by epoxy glue. (Photo 1).

1.



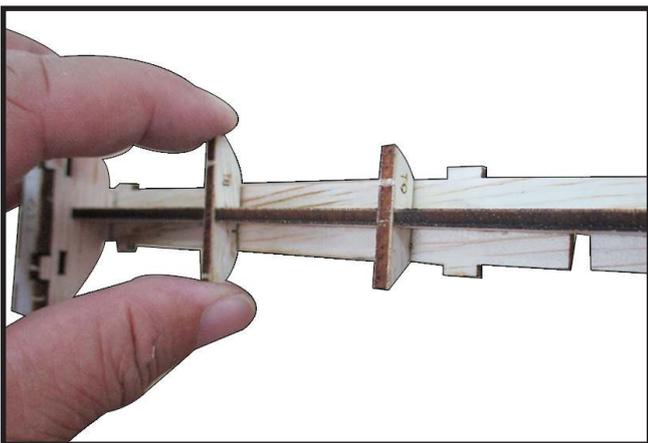
Locate and assemble rib T18. Then, assemble rib T10 by epoxy glue. (Photo 2).

2.



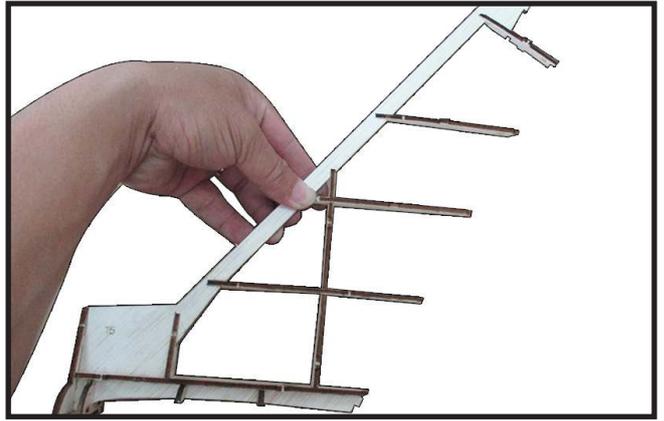
Locate and assemble rib T8 and T9 by epoxy glue. (Photo 3).

3.

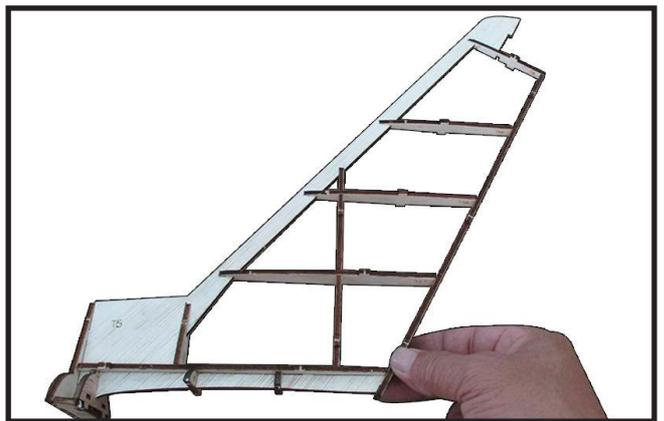


Locate and assemble one after another one from ST11 – ST17 as (photo 4,5).

4.

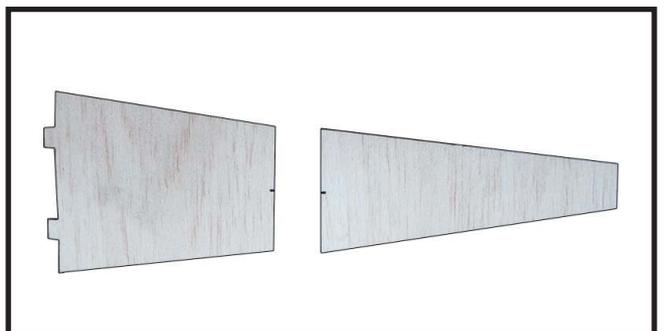


5.



Weld two parts of sheet T22 to become one as (photo 6).

6.

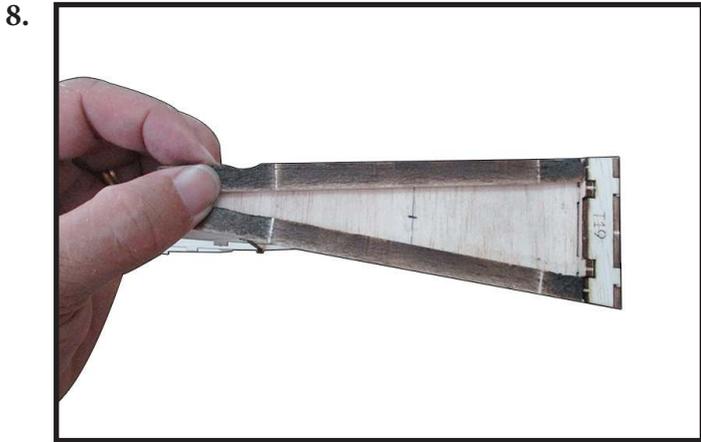


Locate and apply sheet T22 as (photo 7).

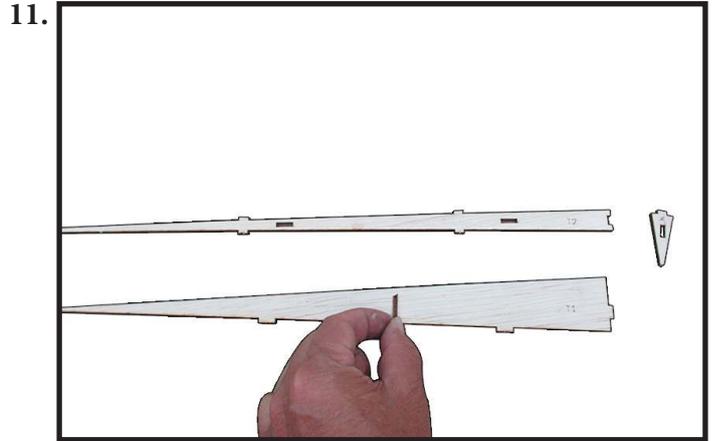
7.



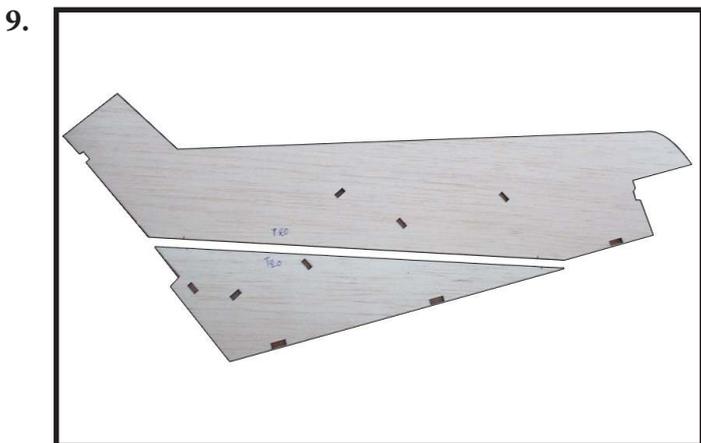
Locate and apply sheet T23 (2pcs) at two sides as (photo 8).



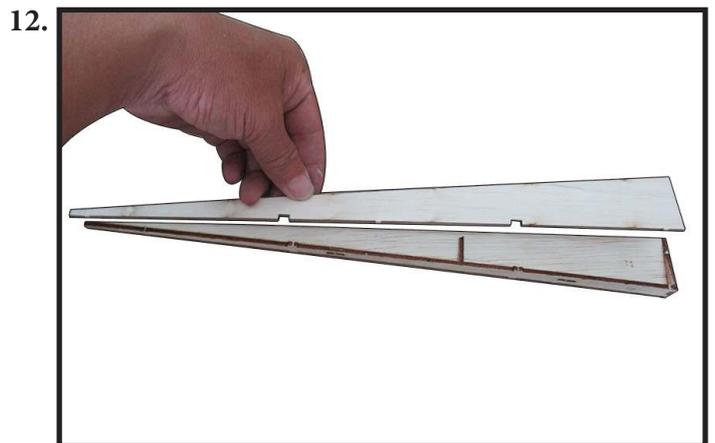
Locate and assemble rib T3, T4 to center rib strip T1. Then assemble T2 (bottom piece) as (photo 11).



Weld two parts of sheet T20 to become one as (photo 9).



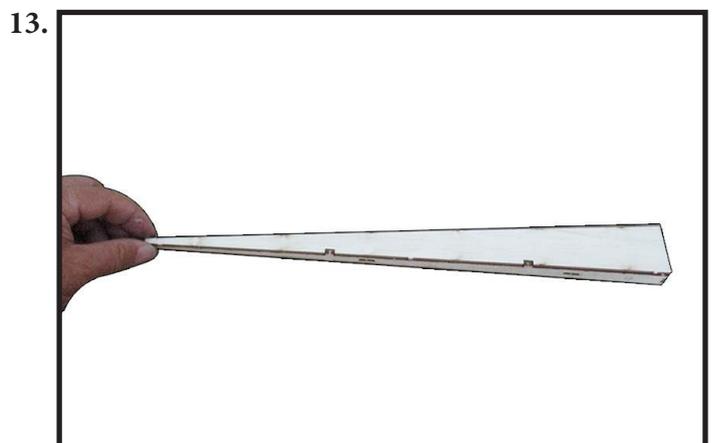
Locate and cover two sheets T1A (at two sides) as (photo 12).



Locate and apply sheet T20 (2pcs) at two sides by CA glue. Then, cover the sheet T20 from direction trailing edge to leading edge. Plug the sheet in all tabs as (photo10).

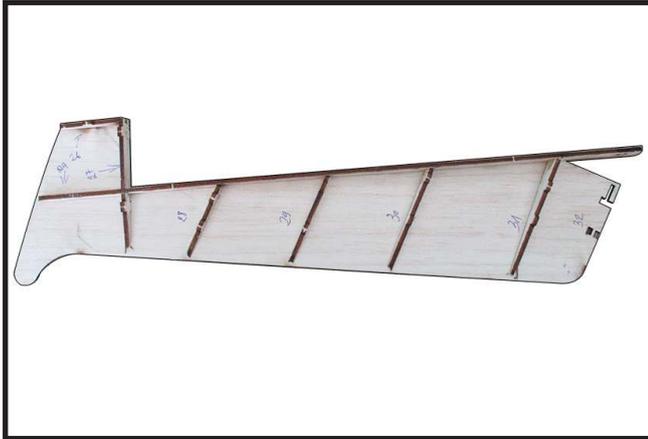


Finish the segment tap of fin as (photo 13).

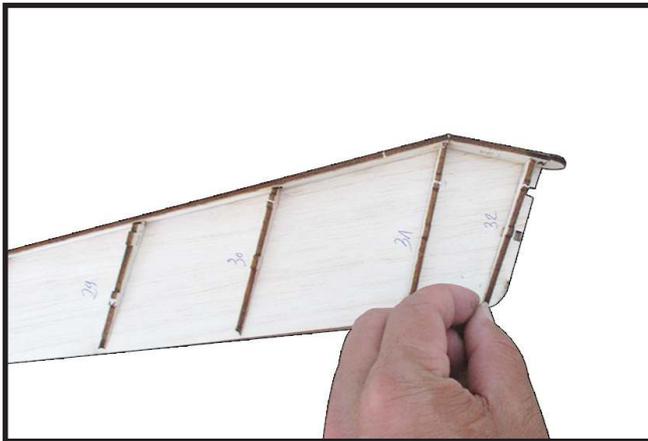


Locate and assemble one after another one from T26 - T32 into leading edge of rudder T24 as (photo 14, 15).

14.

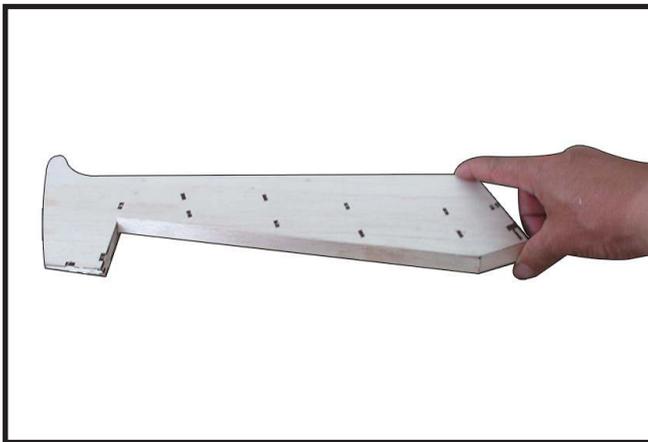


15.

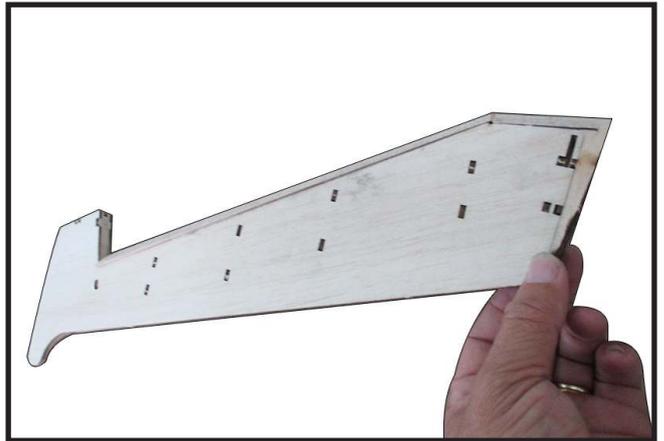


Apply the triangle balsa stock at leading edge of rudder. Then, cut off excess part of balsa stock for fitting as (photo 16,17).

16.



17.



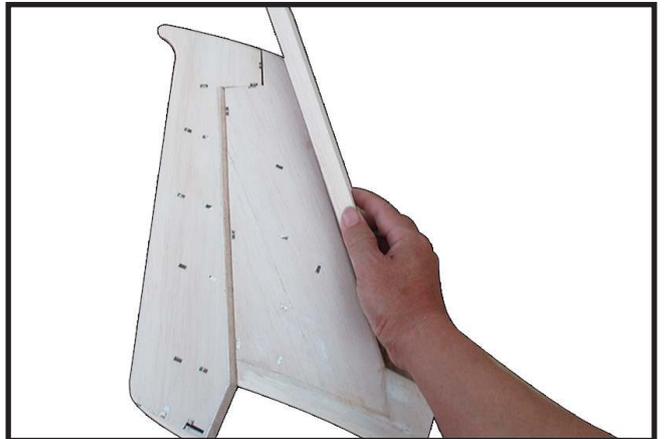
Take the mark for hinge's position of rudder and sawn the slot of hinge. Note: cut off the slot fit so that avoid so wide cause CA hinge will fall out. First, assemble 3 paper hinges to fin. Then, link to rudder. (Photo 18).

18.



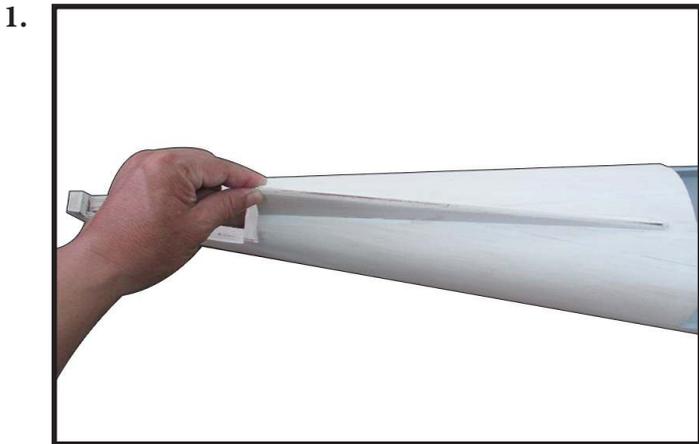
Sanding rounded leading edge area of fin until the shape seamless as (photo 19).

19.

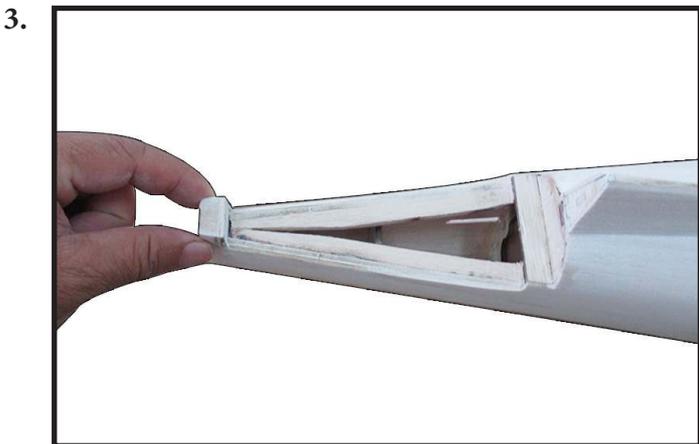
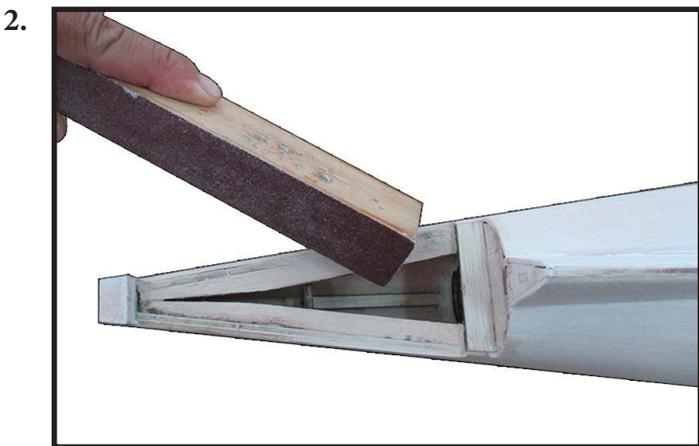


SET UP THE FIN AND THE STABILIZER TO THE FUSELAGE

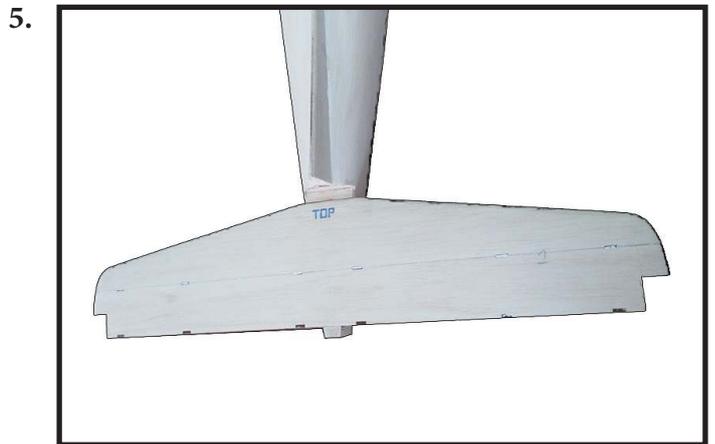
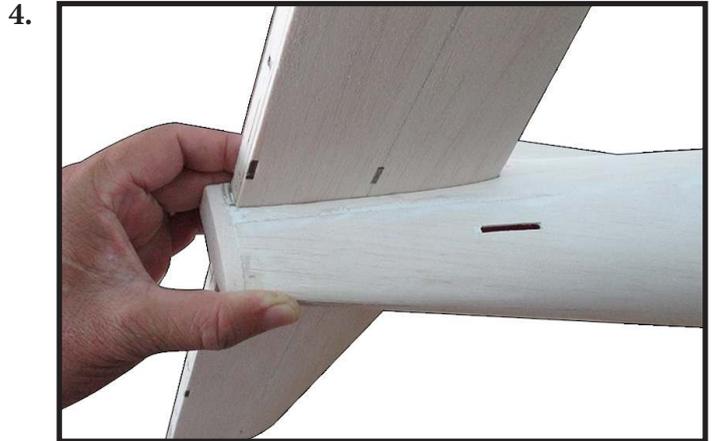
Locate and assemble the tap of fin to the fuselage at center and straight (not devited center line) as (photo 1).



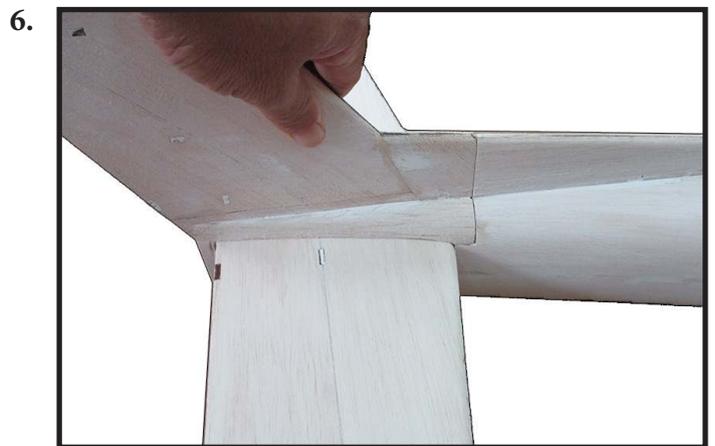
Sanding clear the stain smoke at intersect place of stabilizer. (Photo 2,3).



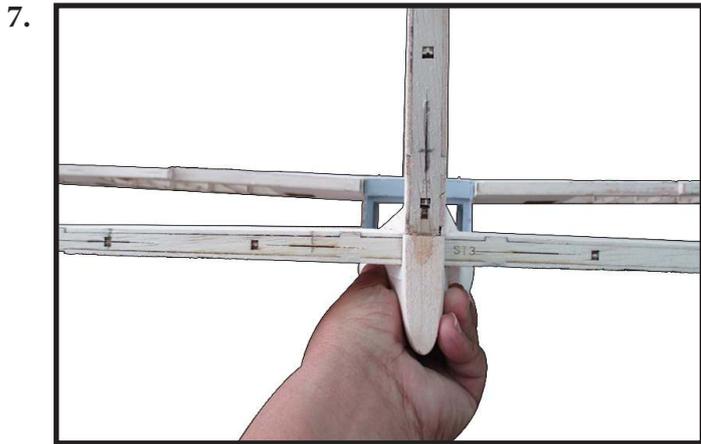
Put the stabilizer on the fuselage and go on sanding at intersection area until the stabilizer fit to the fuselage as (photo 4,5).



Put the fin on the stabilizer and go on sanding at intersection area of fin until the fin fit to the stabilizer as (photo 6).



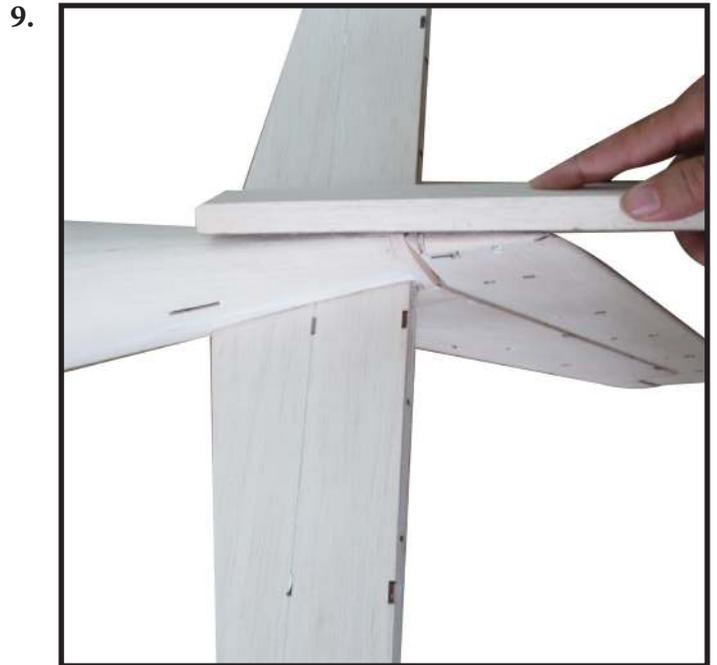
Note: In set up, require adjust so that the stabilizer has to parallel with the wing and It also has to perpendicular with the fin. (Photo 7).



Attach rudder to fin as (photo 8).

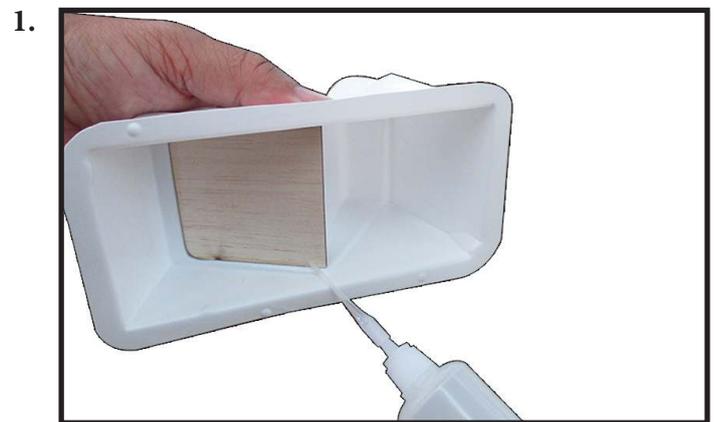


Sanding rounded bottom of rudder so that it look like seamless with fuselage.



ASSEMBLE THE PLASTIC SCALE PART TO THE FUSELAGE

Locate and assemble sheet F36A, F36B to the plastic seat by CA glue. (Photo 1,2,3).

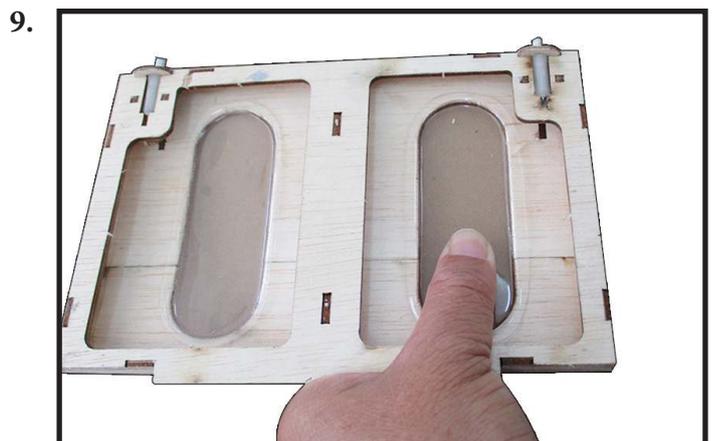
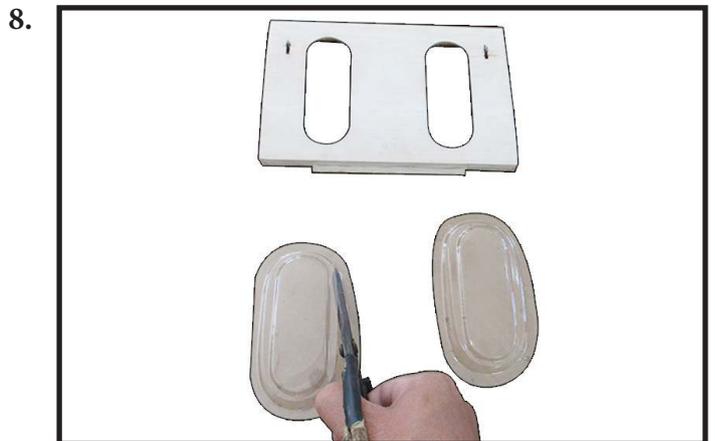




Cut off excess plastic part at two sides as (photo 4).



Assemble the windshield for window (left and right) and top hatch. Step by step as instruction of (photo 5,6,7,8,9,10). **Note: Please do this step after the model was finished decorate by color Oracover coat.**



10.



FINAL ASSEMBLY.

NOTE: To avoid scratching your new aero plane we suggest that you cover your workbench with an old towel. Keep a couple of jars or bowls handy to hold the small parts after you open the bags. Please trial fit all parts. Make sure you have the correct parts and that they fit and are aligned properly before gluing! This will ensure proper assembly as the Master Scale Kit Edition Cessna 152 Aerobat 80", 20cc is made from natural materials and minor adjustments may have to be made. The paint and plastic parts used in this kit are fuel proof. However, they are not tolerant of many harsh chemicals including the following: paint thinner, cyanoacrylate glue accelerator, cyanoacrylate glue de-bonder and acetone. Do not let these chemicals come in contact with the colours on the covering and the plastic parts.

KIT CONTENTS



KIT CONTENTS.

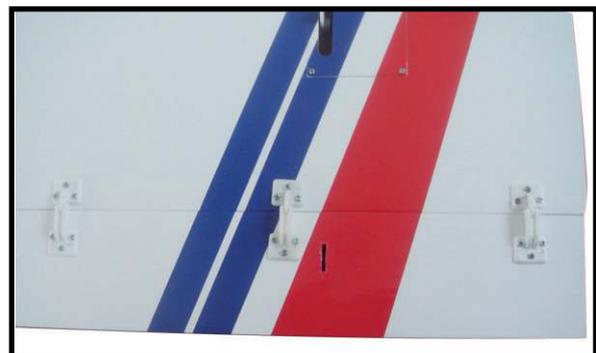
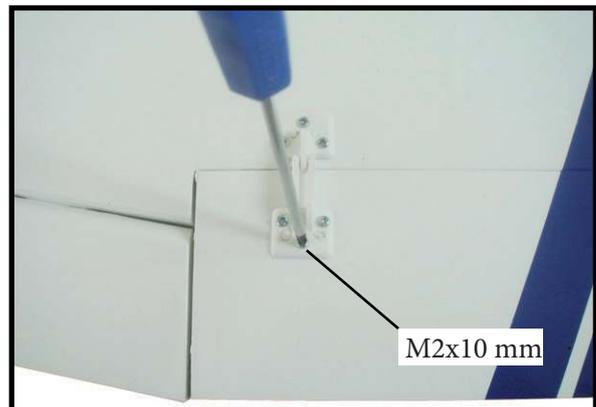
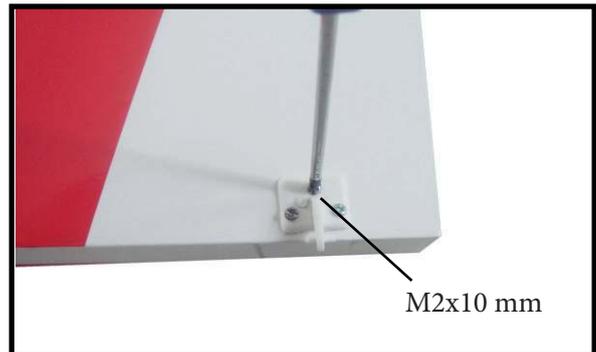
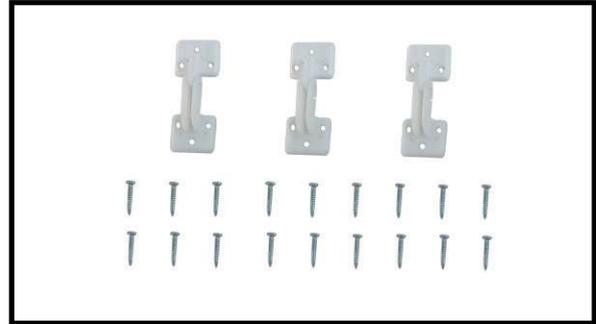
1. Fuselage
2. Wing Set
3. Tail Set
4. Fiberglass Cowling
5. Main Landing Gear
6. Nose Landing Gear
7. Windshield and Window set
8. Decal
9. Pushrod Set
10. Wing tube
11. Fiberglass Wheel Pants

ADDITIONAL ITEMS REQUIRED.

- 0.91 cu.in 2-stroke.
- 1.00-1.25 cu.in 4-stroke.
- Computer radio 5 channels with 8 servos.
- Glow plug to suit engine.
- Propeller to suit engine.
- Protective foam rubber for radio system.

TOOLS & SUPPLIES NEEDED.

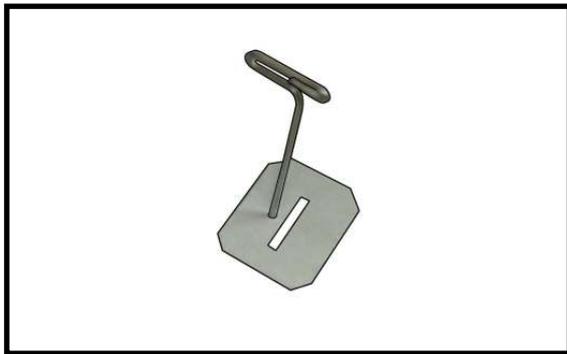
- Thick cyanoacrylate glue.
- 30 minute epoxy.
- 5 minute epoxy.
- Hand or electric drill.
- Assorted drill bits.
- Modelling knife.
- Straight edge ruler.
- 2mm ball driver.
- Phillips head screwdriver.
- 220 grit sandpaper.
- 90° square or builder's triangle.
- Wire cutters.
- Masking tape & T-pins.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

HINGING THE FLAP

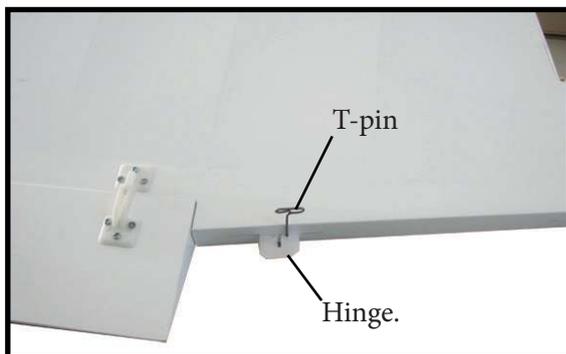
HINGING THE AILERON.

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.

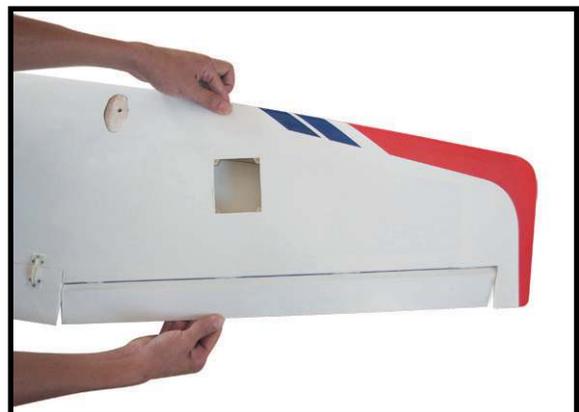
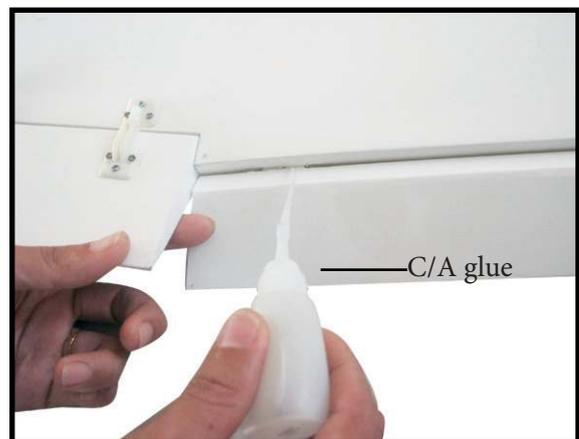


3) Slide the aileron on the wing panel until there is only a slight gap. The hinge is now centered on the wing panel and aileron. Remove the T-pins and snug the aileron against the wing panel. A gap of 1/64" or less should be maintained between the wing panel and aileron.



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

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





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

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

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

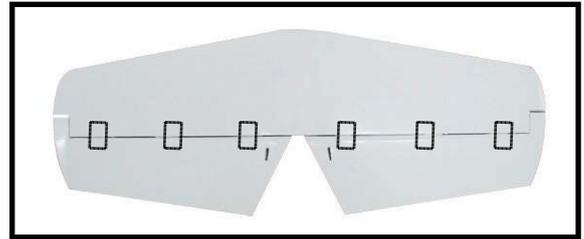
8) After both ailerons are securely hinged, firmly grasp the wing panel and aileron to make sure the hinges are securely glued and cannot be pulled out. Do this by carefully applying medium pressure, trying to separate the aileron from the wing panel. Use caution not to crush the wing structure.



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

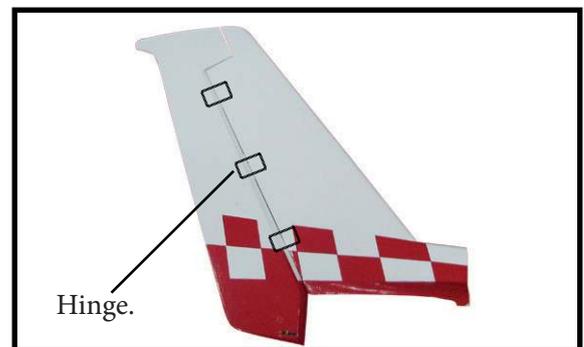
HINGING THE ELEVATOR.

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

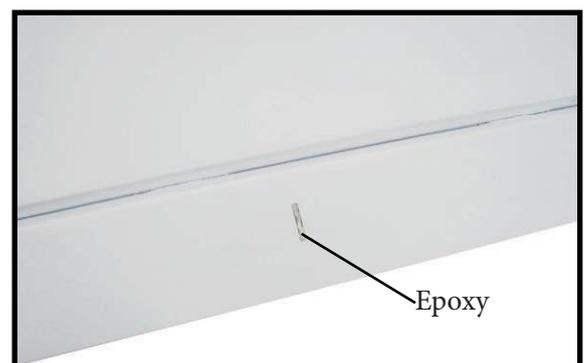
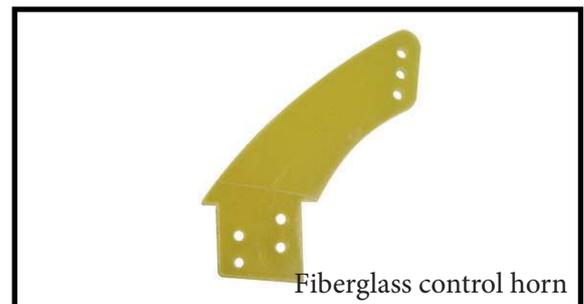


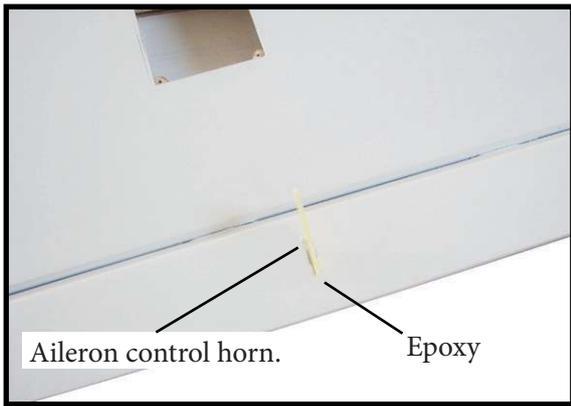
HINGING THE RUDDER.

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

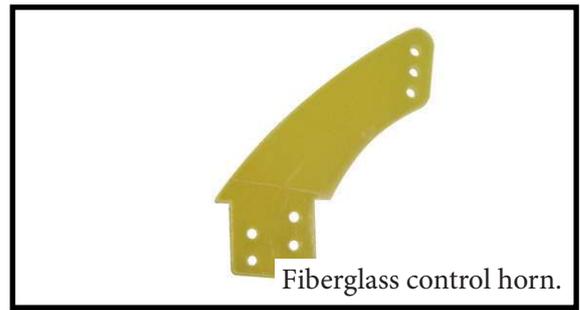


INSTALL THE AILERONS CONTROL HORN.



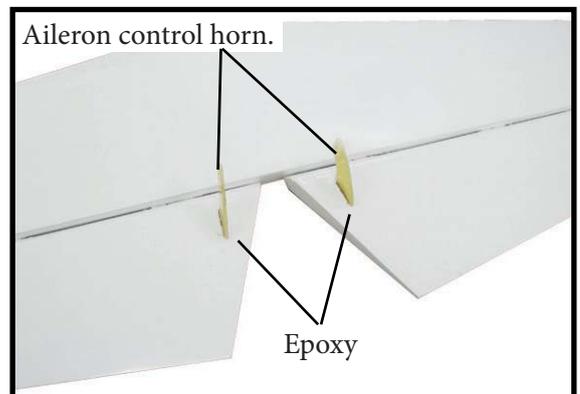
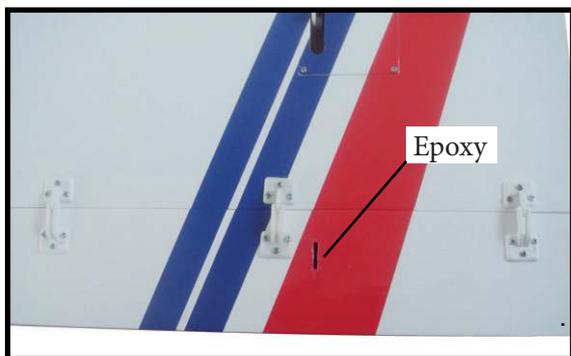
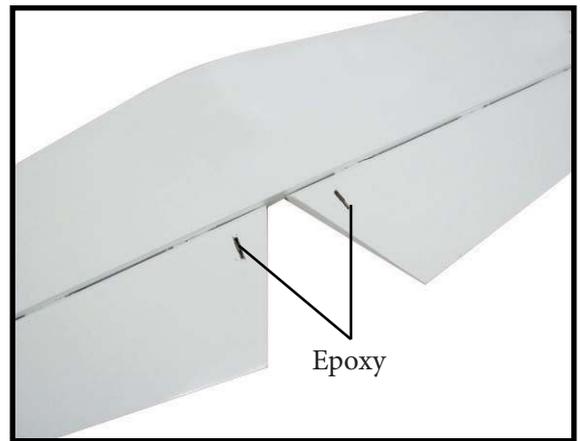
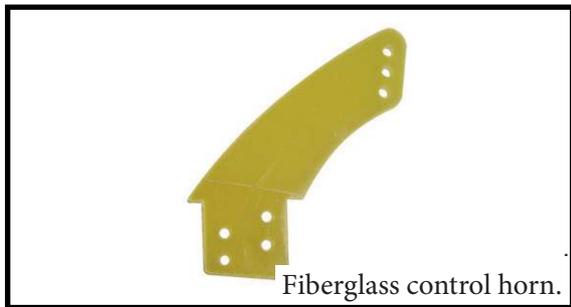


INSTALL ELEVATOR CONTROL HORN.



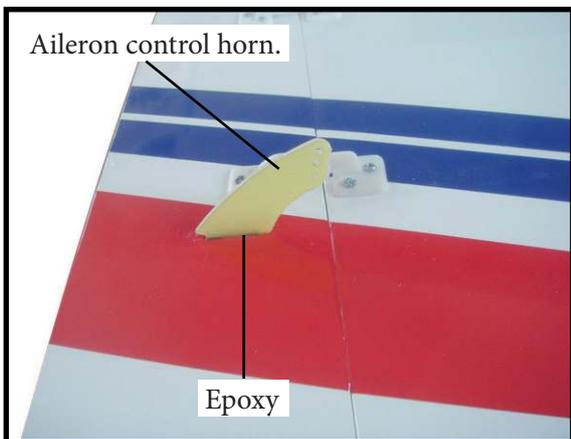
INSTALL FLAP CONTROL HORN.

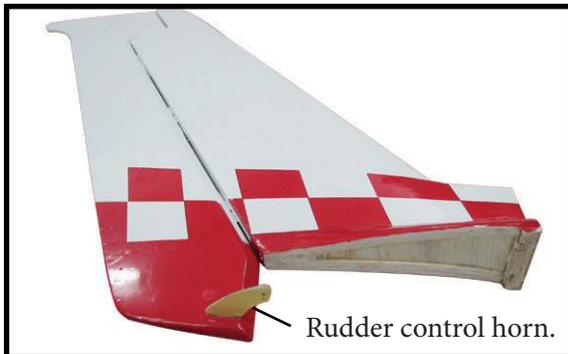
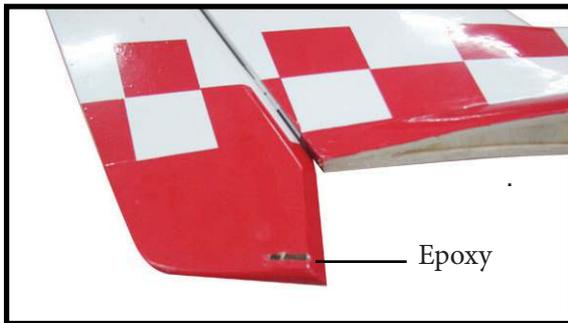
Install the flap control horn using the same method as same as the aileron control horns.



INSTALL RUDDER CONTROL HORN.

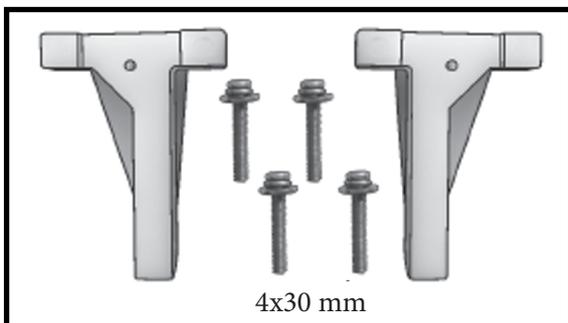
Repeat steps to install the rudder control horn as same as steps done for ailerons.



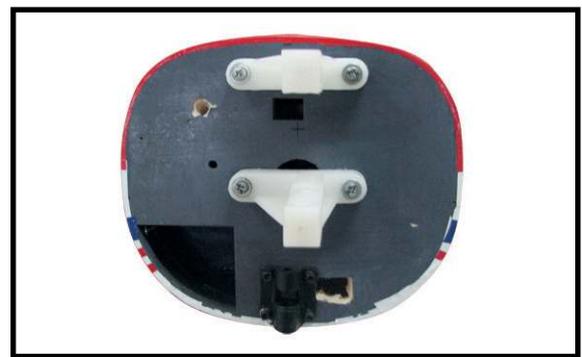


ENGINE MOUNT INSTALLATION.

1) Locate the items necessary to install the engine mount included with your model.



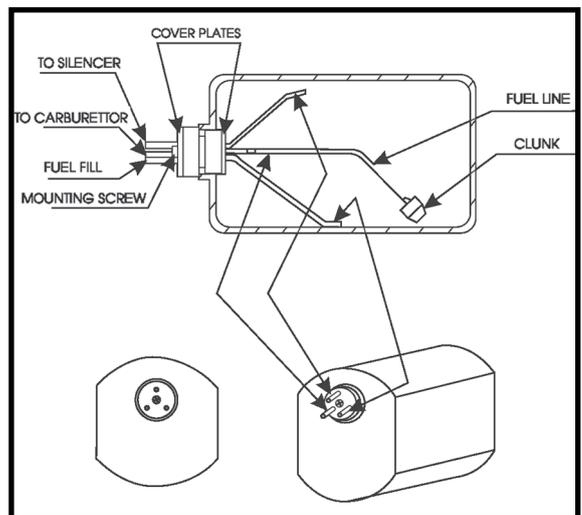
2) Use four 4x30mm head bolts and four 4mm washers to attach the engine mount rails to the firewall. Tighten the screws . Make sure to use threadlock on the screws to help prevent them from vibrating loose.

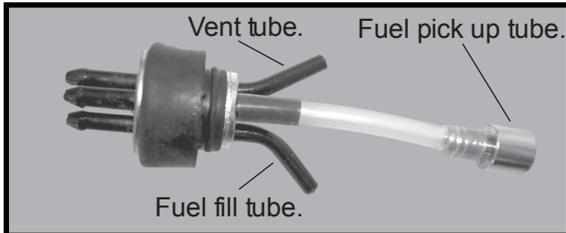
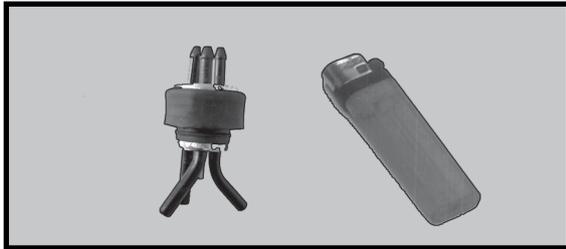


INSTALLING THE STOPPER ASSEMBLY

1) Using a modeling knife, carefully cut off the rear portion of one of the 3 nylon tubes leaving 1/2" protruding from the rear of the stopper. This will be the fuel pick up tube.

2) Using a modeling knife, cut one length of silicon fuel line. Connect one end of the line to the weighted fuel pick up and the other end to the nylon pick up tube.





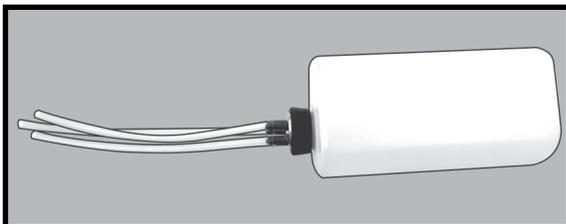
3) Carefully bend the second nylon tube up at a 45° angle. This tube is the vent tube.

4) Test fit the stopper assembly into the tank. It may be necessary to remove some of the flashing around the tank opening using a modeling knife. If flashing is present, make sure none falls into the tank.

5) With the stopper assembly in place, the weighted pick-up should rest away from the rear of the tank and move freely inside the tank. The top of the vent tube should rest just below the top of the tank. It should not touch the top of the tank.

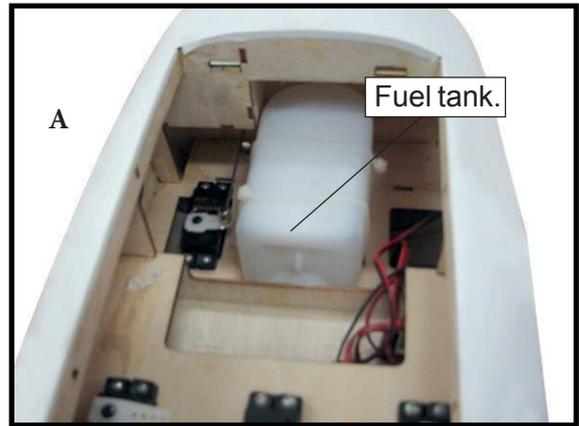
6) When satisfied with the alignment of the stopper assembly tighten the 3 x 20mm machine screw until the rubber stopper expands and seals the tank opening. Do not over-tighten the assembly as this could cause the tank to split.

FUEL TANK INSTALLATION.

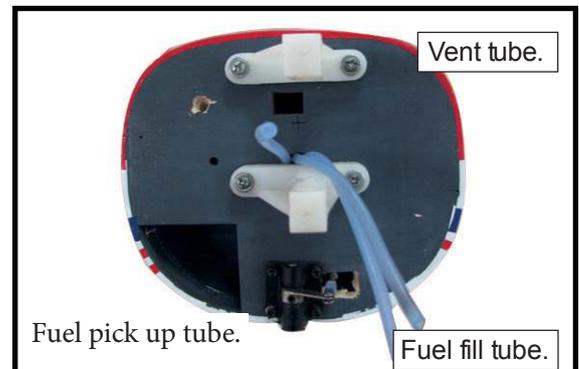
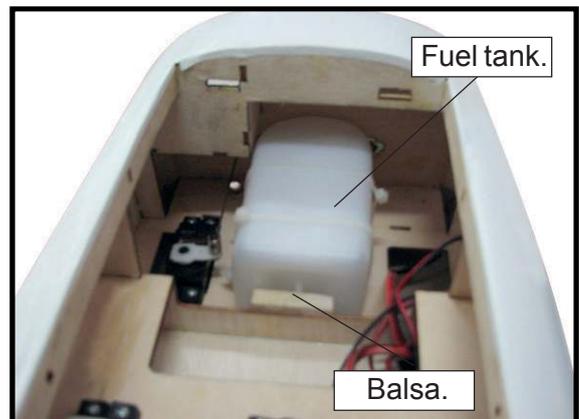


-  *You should mark which tube is the vent and which is the fuel pickup when you attach fuel tubing to the tubes in the stopper. Once the tank is installed inside the fuselage, it may be difficult to determine which is which.*

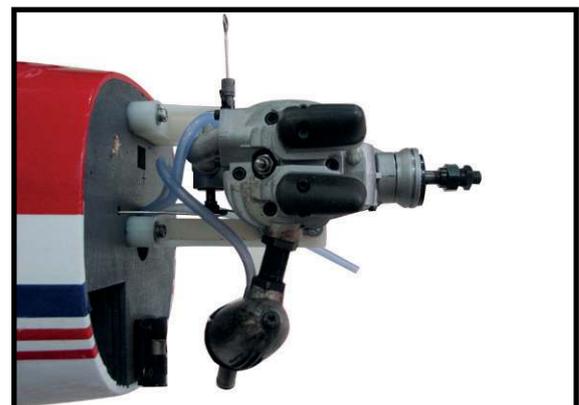
7) Slide the fuel tank into the fuselage. Guide the lines from the tank through the hole in the firewall.



8) Use balsa block to hold in place the fuel tank with C/A glue to secure the fuel tank inside the fuselage.



9) Connect the lines from the tank to the engine and muffler. The vent line will connect to the muffler and the line from the clunk to the carburetor.

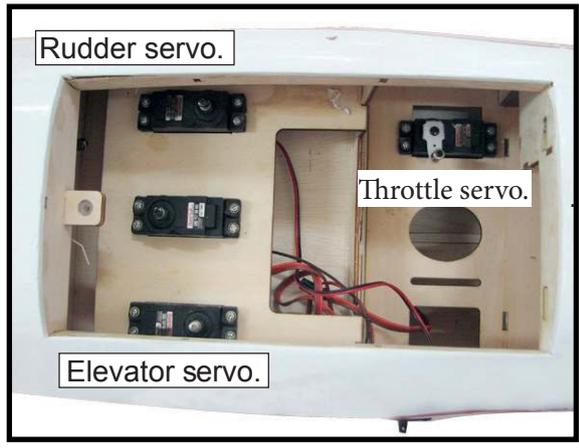


 Blow through one of the lines to ensure the fuel lines have not become kinked inside the fuel tank compartment. Air should flow through easily.

INSTALLING THE FUSELAGE SERVOS.

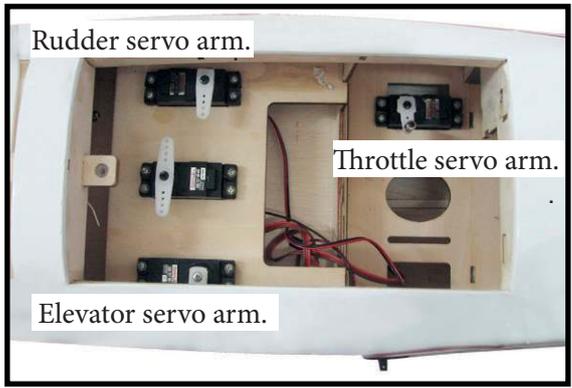
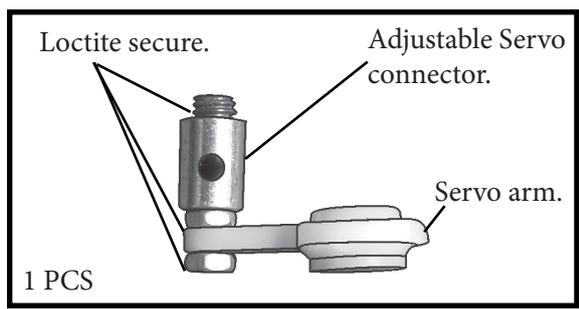
 Because the size of servos differ, you may need to adjust the size of the precut opening in the mount. The notch in the sides of the mount allow the servo lead to pass through.

- 1) Install the rubber grommets and brass collets onto the throttle servo. Test fit the servo into the aileron servo mount.
- 2) Secure the servos with the screws provided with your radio system.



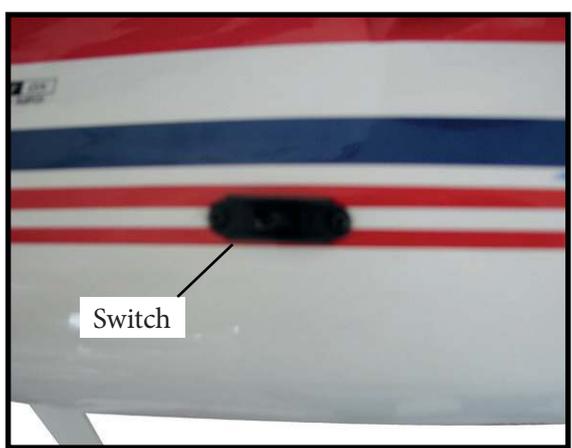
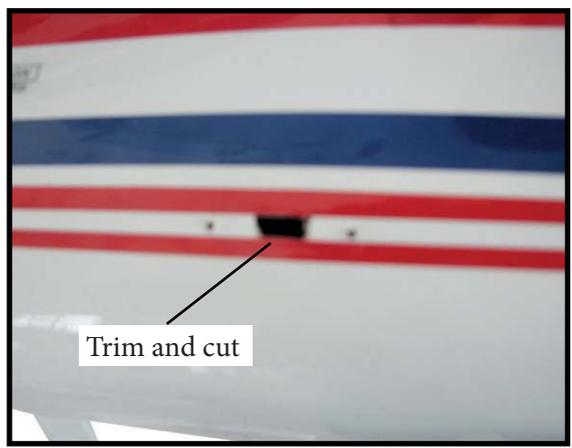
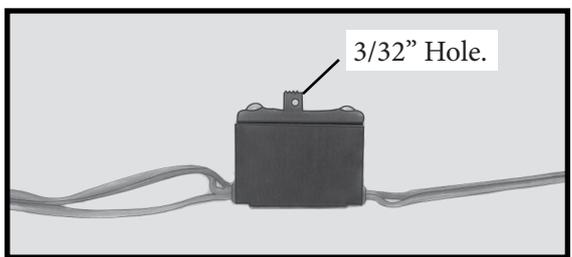
THROTTLE SERVO ARM INSTALLATION.

Install adjustable servo connector in the servo arm as same as picture below:



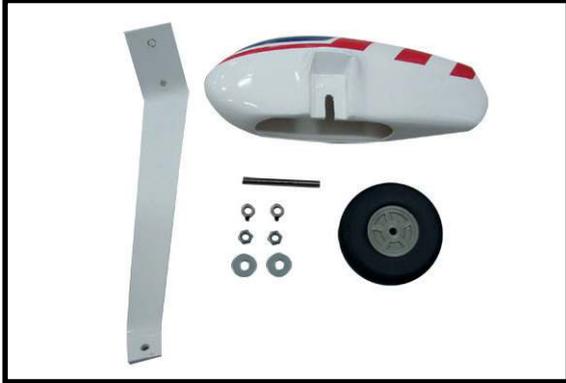
INSTALLING THE SWITCH.

Install the switch into the precut hole in the side, in the fuselage.

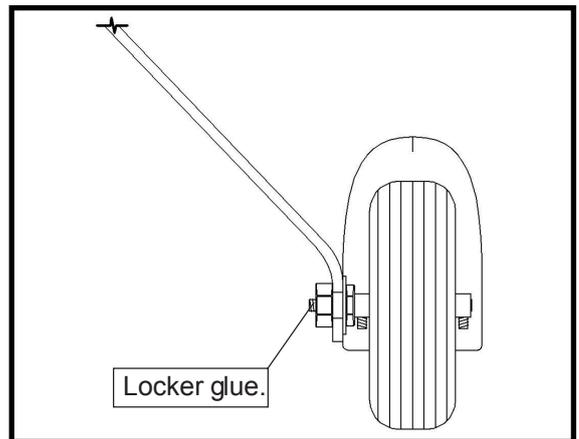
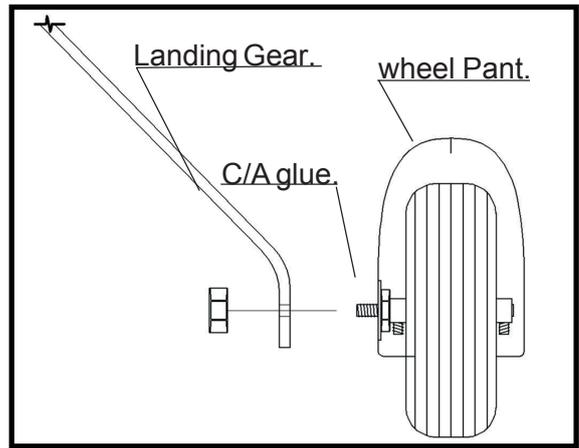
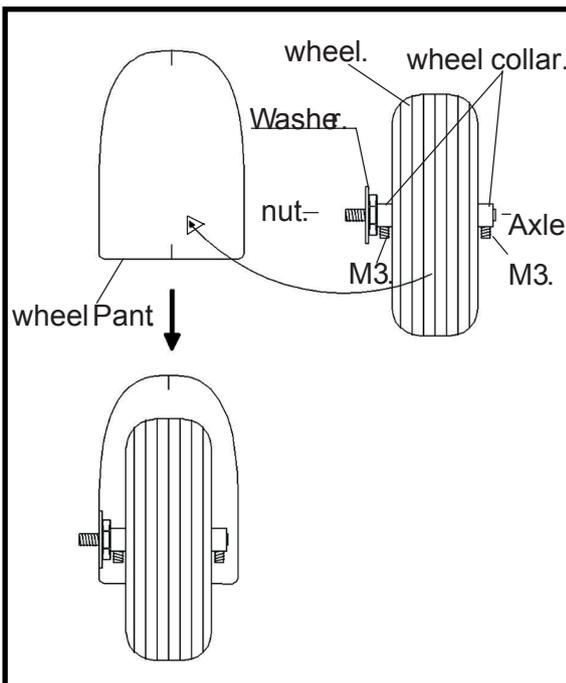
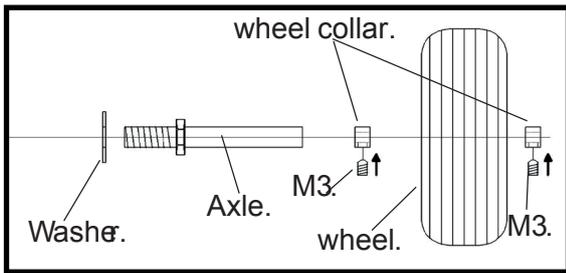


WHEELS AND WHEEL PANTS.

1) Assemble and mounting the landing gear, wheels to the wheel pants as shown in the following pictures.



2) Follow diagram below for wheel pant installation:



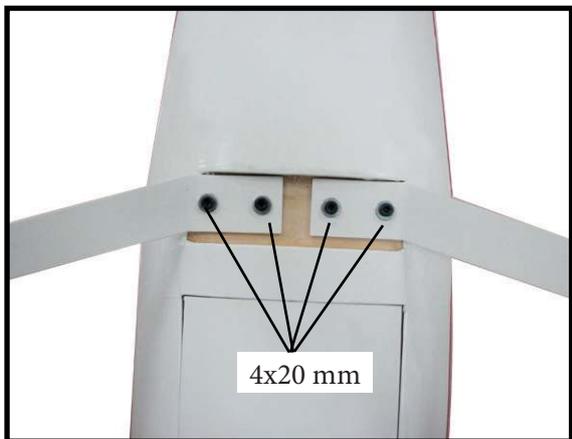
3) A drop of C/A glue on the wheel collar screws will help keep them from coming loose during operation.

Repeat the process for the other wheel.



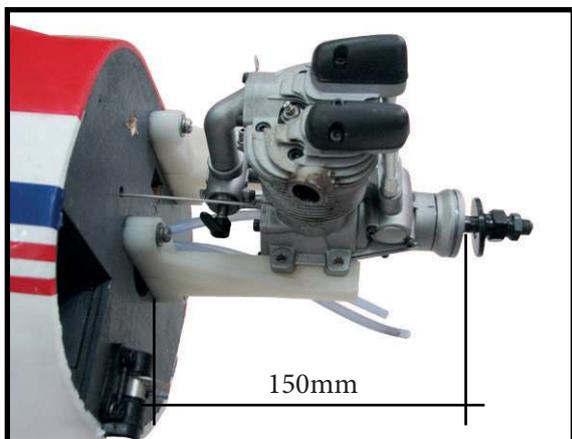
INSTALLING THE MAIN LANDING GEAR.

- 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.

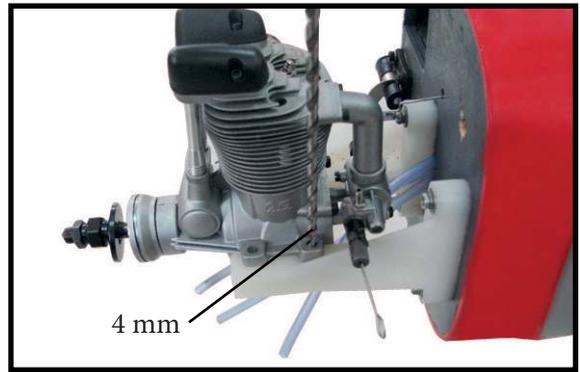


MOUNTING THE ENGINE.

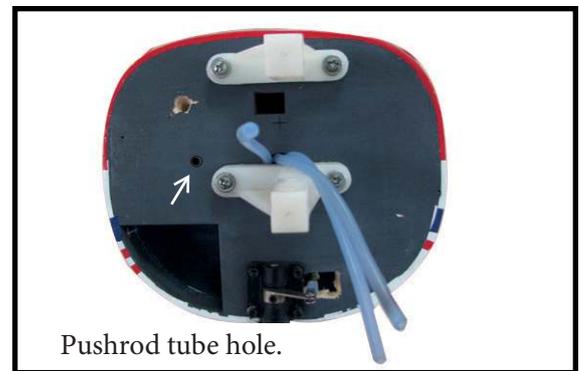
- 1) Position the engine with the drive washer (150mm) forward of the firewall as shown.



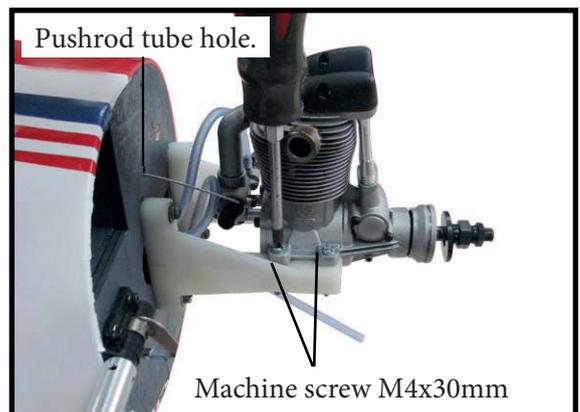
- 2) Use a pin drill and 4mm drill bit to drill a small indentation in the mount for the engine mounting screw.



- 3) Use a drill to drill the four holes in the engine mount rails.
- 4) On the fire wall has the location for the throttle pushrod tube (pre-drill).



- 5) Slide the pushrod tube in the firewall and guide it through the fuel tank mount. Use medium C/A to glue the tube to the firewall and the fuel tank mount.
- 6) Connect the Z-bend in the 600mm throttle pushrod to the outer hole of the carburetor arm.
- 7) Slide the throttle pushrod wire into the tube. Position the engine between the mounts. Use four M4x30mm machine screws to secure the engine to the mount as shown.





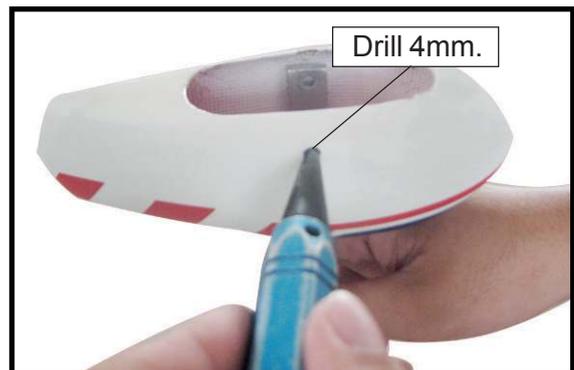
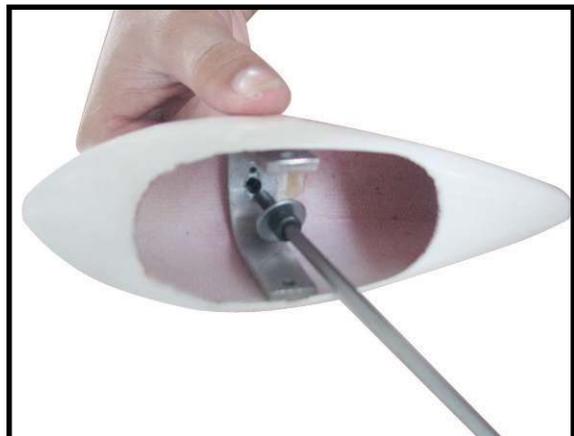
8) Move the throttle stick to the closed position and move the carburetor to closed. Use a 2.5mm hex wrench to tighten the screw that secures the throttle pushrod wire. Make sure to use threadlock on the screw so it does not vibrate loose.

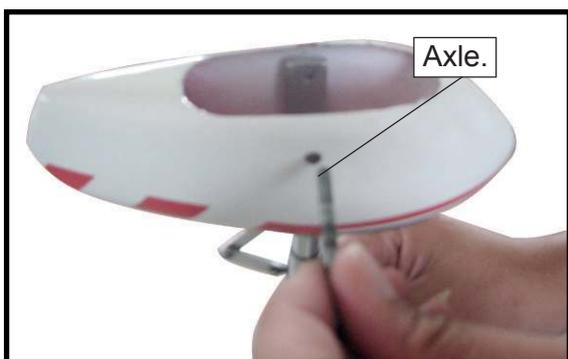
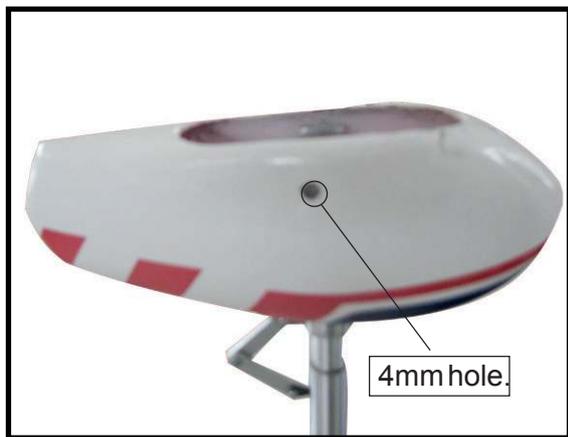


LANDING GEAR INSTALLATION.

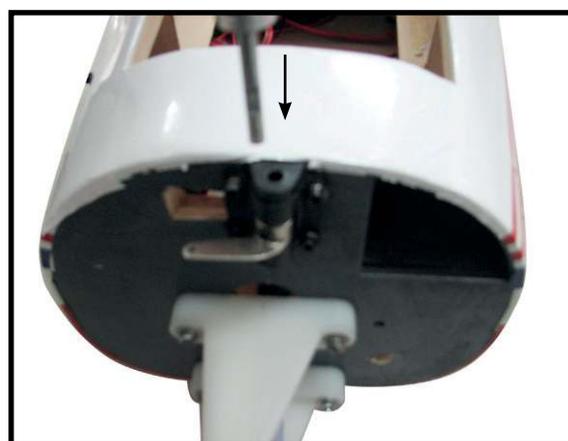
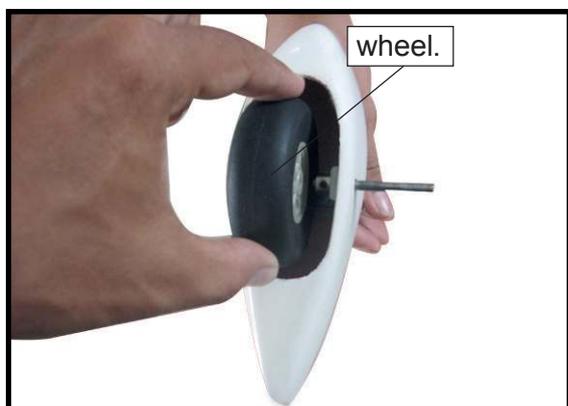
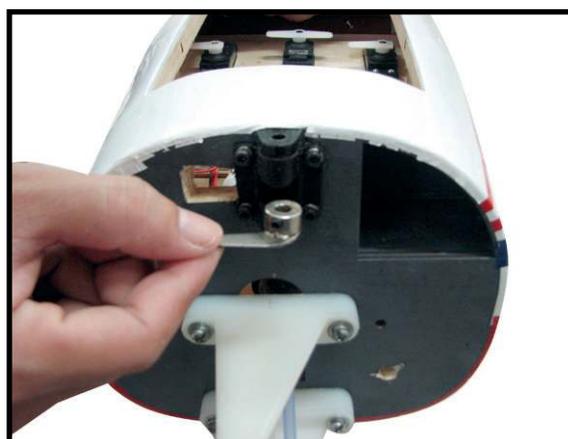
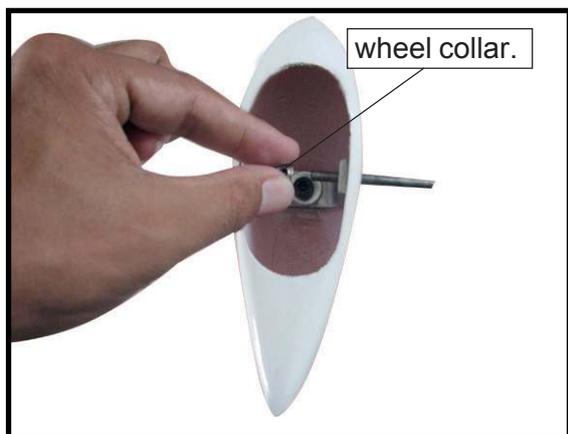
A. NOSE GEAR:

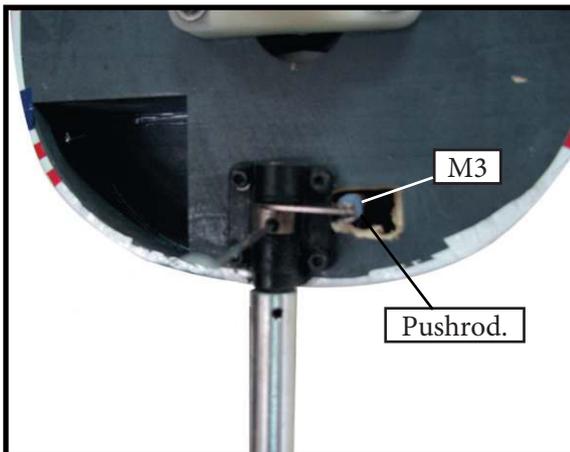
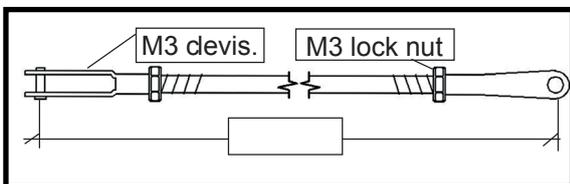
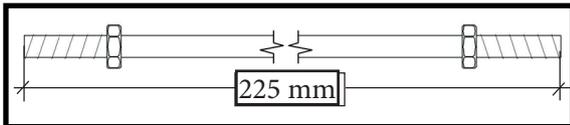
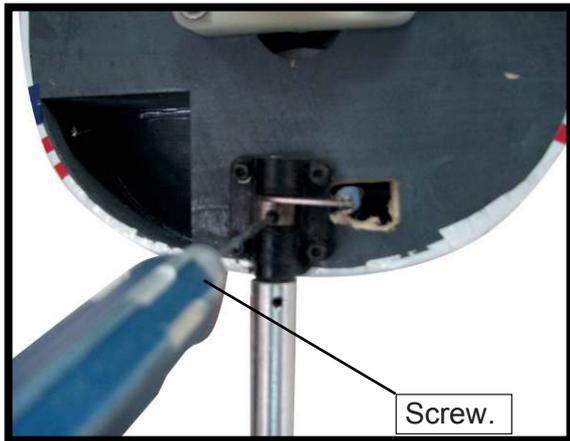
1) Locate the items necessary to attach the nose landing gear that are included with your model.





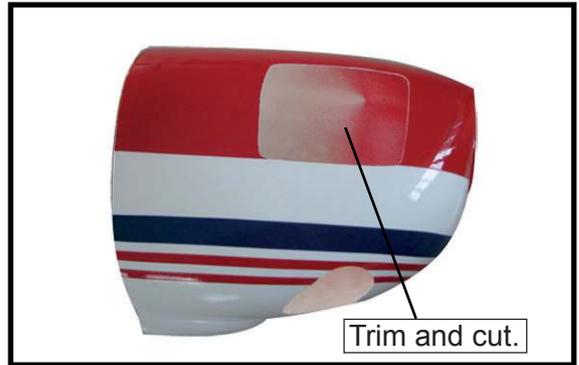
2) Install landing gear at the top Fuselage.





COWLING

1) Please see below pictures then trim and cut as shown.



Install lights at the top Cowling

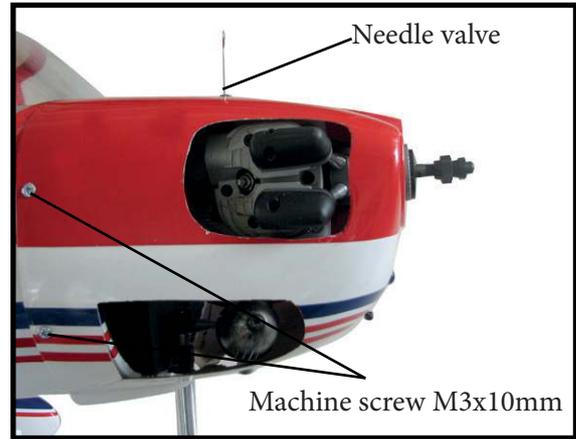




Because of the size of the cowl, it may be necessary to use a needle valve extension for the high speed needle valve. Make this out of sufficient length 1.5mm wire and install it into the end of the needle valve. Secure the wire in place by tightening the set screw in the side of the needle valve.



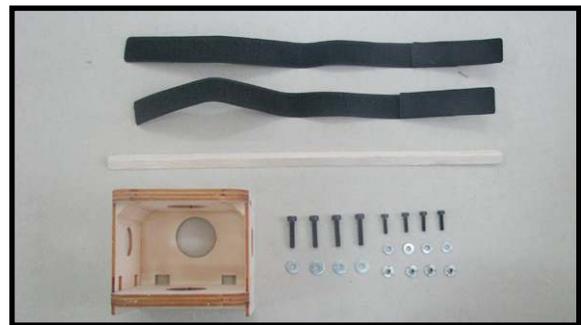
2) While keeping the back edge of the cowl flush with the marks, align the front of the cowl with the crankshaft of the engine. The front of the cowl should be positioned so the crankshaft is in **nearly** the middle of the cowl opening. Use the spinner backplate as a guide. Hold the cowl firmly in place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



3) 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. Secure the cowl to fuselage using the M3x10mm screws.

ELECTRIC POWER CONVERSION.

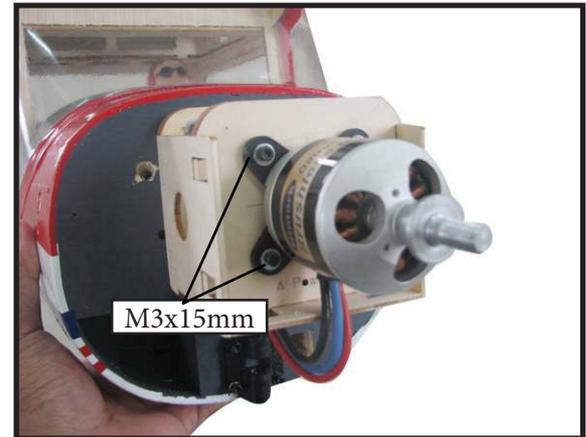
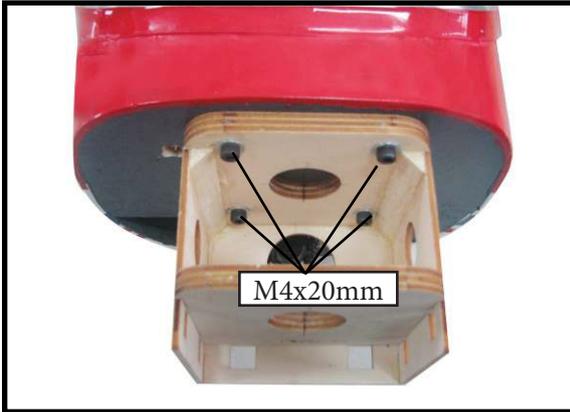
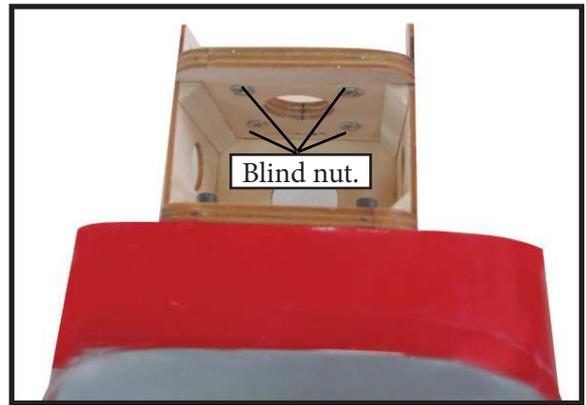
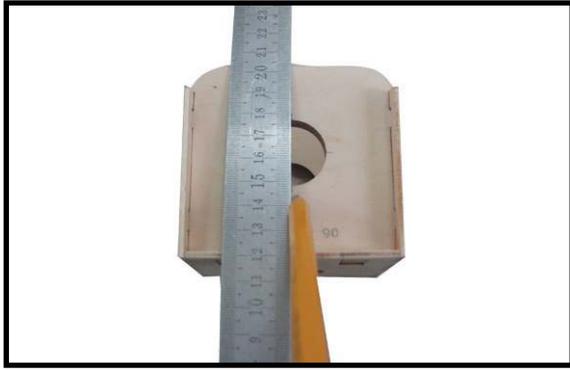
1) Locate the items necessary to install the electric power conversion included with your model.



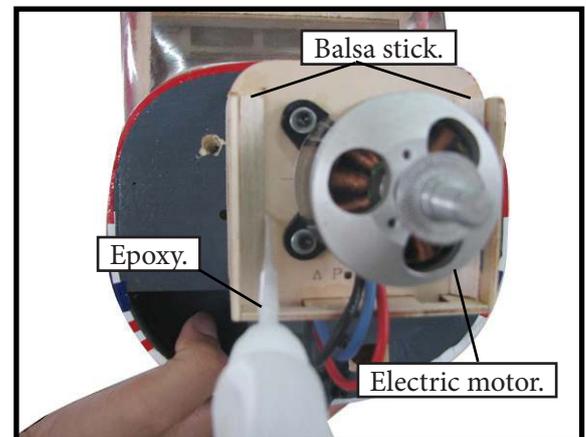
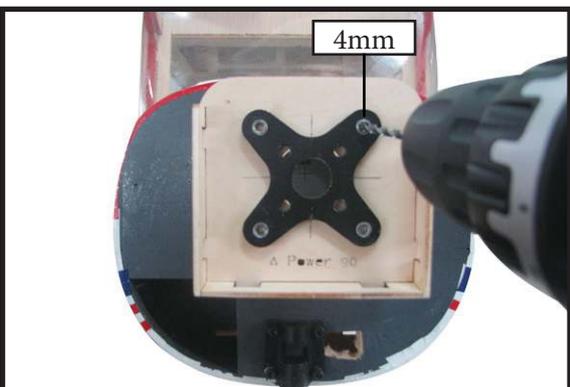
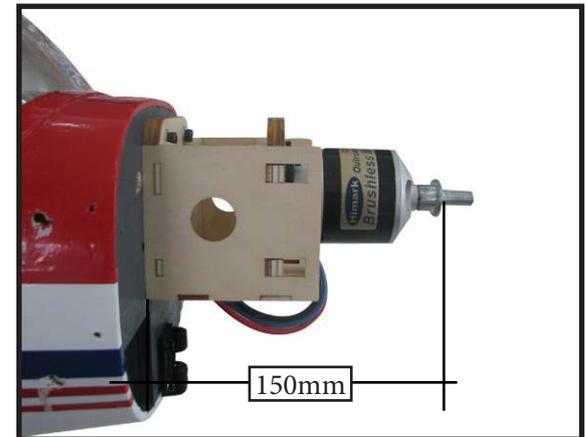
2) Recommendation EP parts as shown (not included with your model).

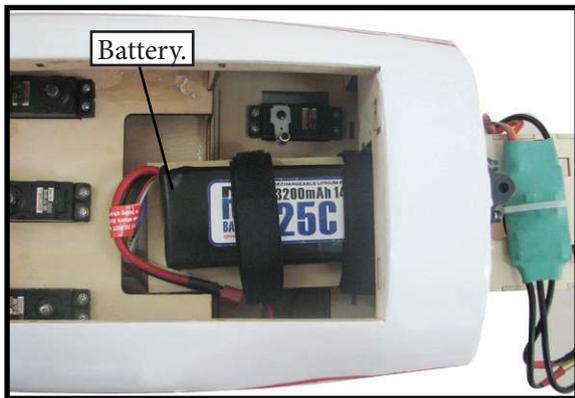
- **Model size: .60 size models**
- **Motor: 50mm 400 rev per volt**
- **Propeller: 14x10 ~ 15x10**
- **ESC: 60A**
- **Lipo Batteries: 6 cell 5000mA**

3) Attach the electric motor box to the firewall suitable with the cross lines drawn on the electric motor box and firewall. Using epoxy and balsa stick to secure the motor box to the firewall. Please see pictures below.

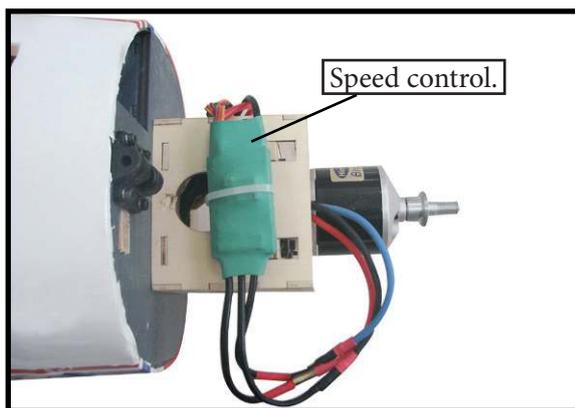


4) Attach the motor to the front of the electric motor box using four 4mm blind nut, four M3x15mm hex head bolts to secure the motor. Please see picture shown.





5) Attach the speed control to the side of the motor box using two-sided tape and tie wraps. Connect the appropriate leads from the speed control to the motor. Make sure the leads will not interfere with the operation of the motor.



INSTALLING THE SPINNER.

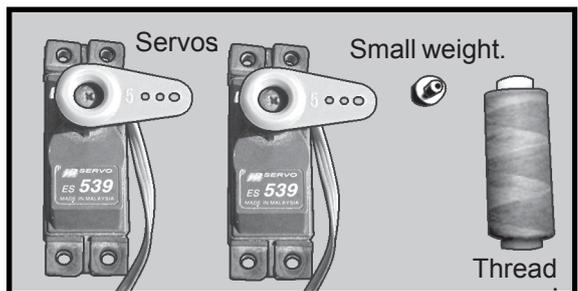
Install the spinner backplate, propeller and spinner cone.



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



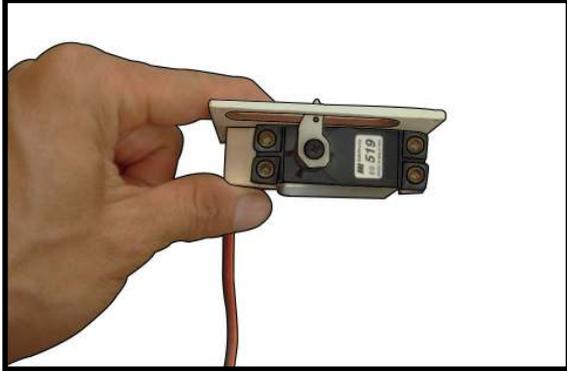
INSTALLING THE AILERON - FLAP SERVOS.



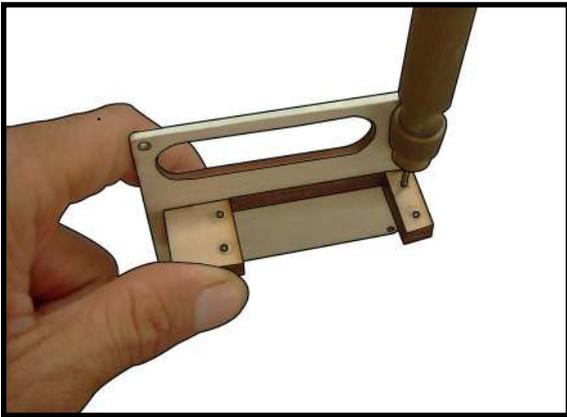
! Because the size of servos differ, you may need to adjust the size of the precut opening in the mount. The notch in the sides of the mount allow the servo lead to pass through.

1) Using a small weight (Weighted fuel pick-up works well) and string, feed the string through the wing as indicated.

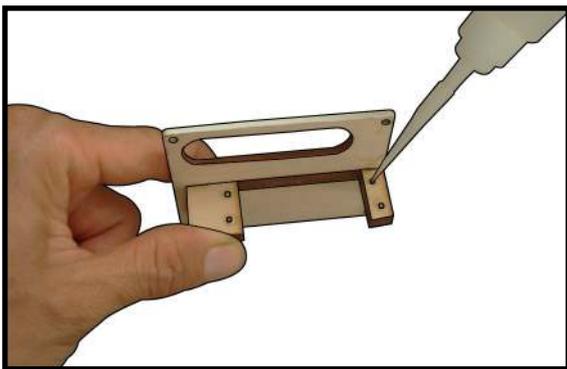
2) Place the servo between the mounting blocks and space it from the hatch. Use a pencil to mark the mounting hole locations on the blocks.



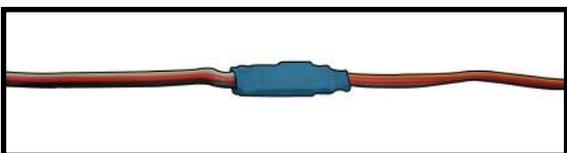
3) Use drill bit in a pin vise to drill the mounting holes in the blocks.



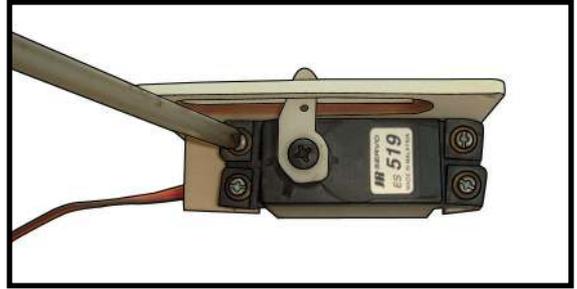
4) Apply 2-3 drops of thin C/A to each of the mounting holes. Allow the C/A to cure without using accelerator.



5) Use dental floss to secure the connection so they cannot become unplugged.



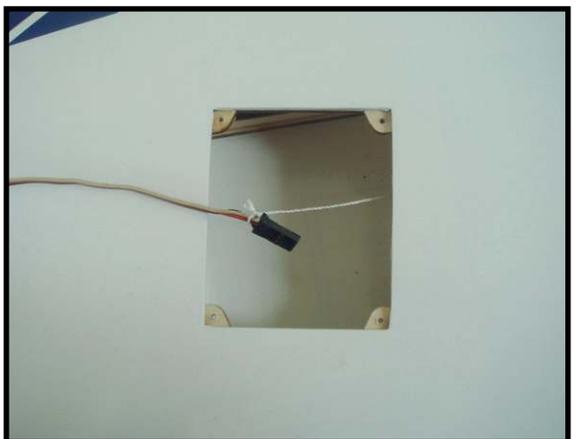
6) Secure the servo to the aileron hatch using Phillips screwdriver and the screws provided with the servo.

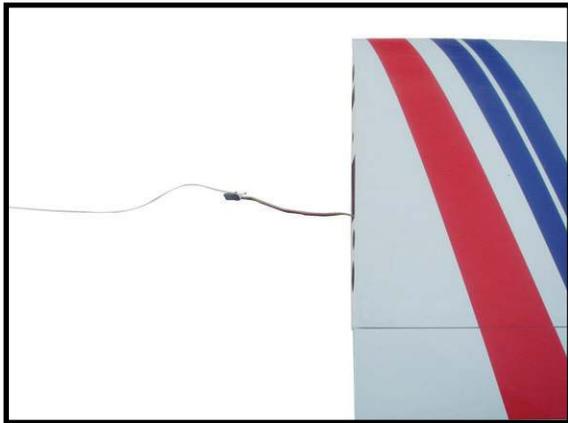
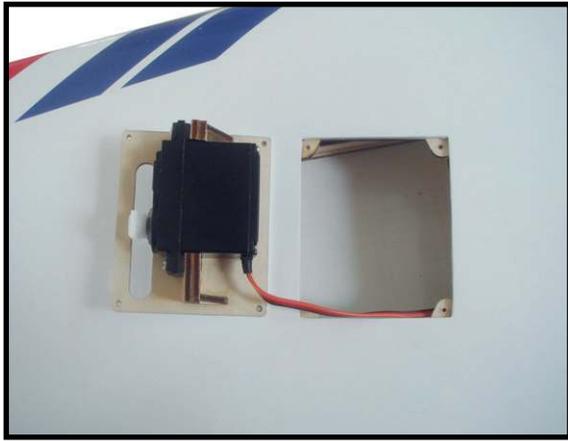


7) Apply 1-2 drops of thin C/A to each of the mounting tabs. Allow the C/A to cure without using accelerator.



8) A string has been provided in the wing to pull the aileron lead through to the wing root. Remove the string from the wing at the servo location and use the tape to attach it to the servo extension lead. Pull the lead through the wing and remove the string.

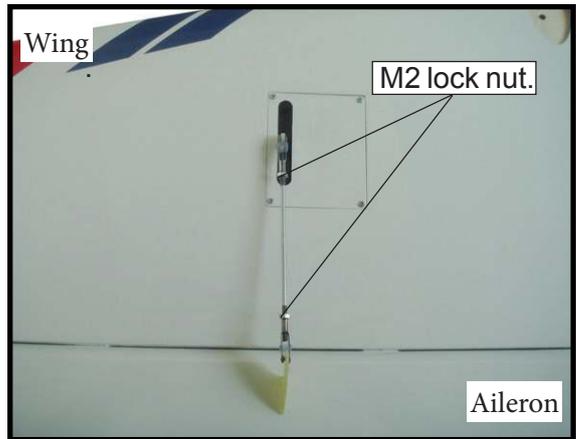
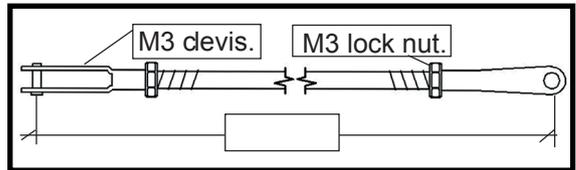
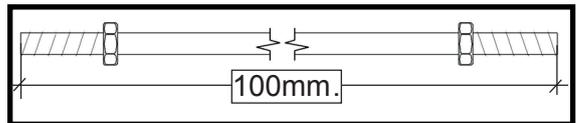




9) Set the aileron hatch in place and use a Phillips screw driver to install it with four wood screws.

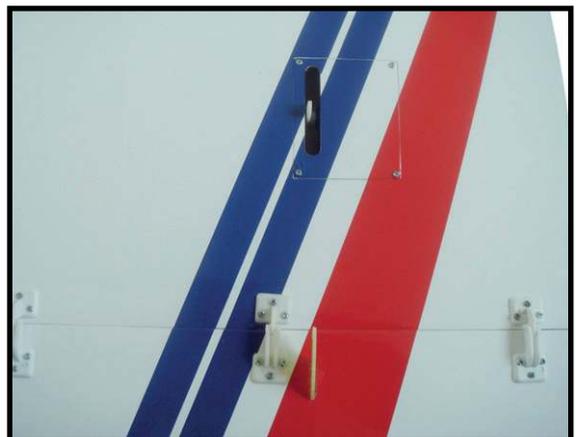


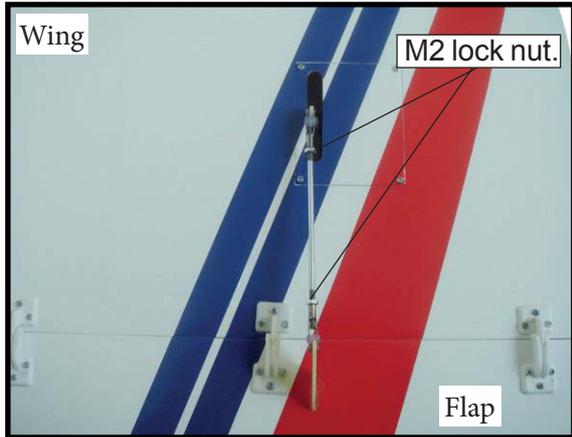
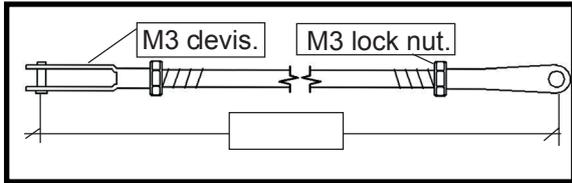
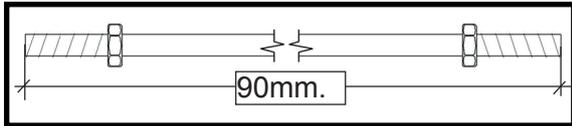
AILERON PUSHROD HORN INSTALLATION.



INSTALLING THE FLAP SERVO.

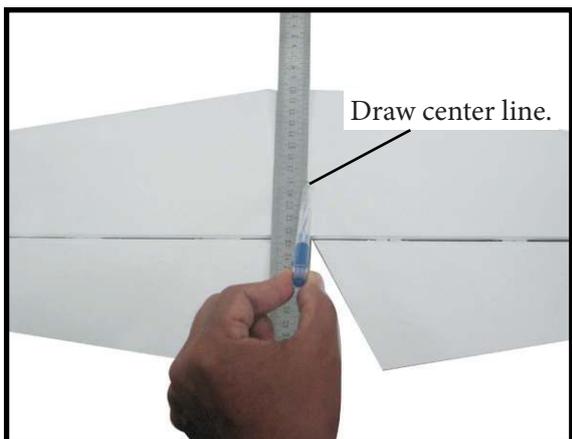
Repeat the procedure for the aileron servo.



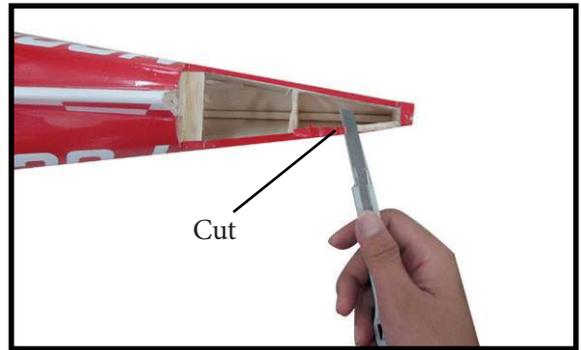


INSTALLING THE HORIZONTAL STABILIZER.

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.



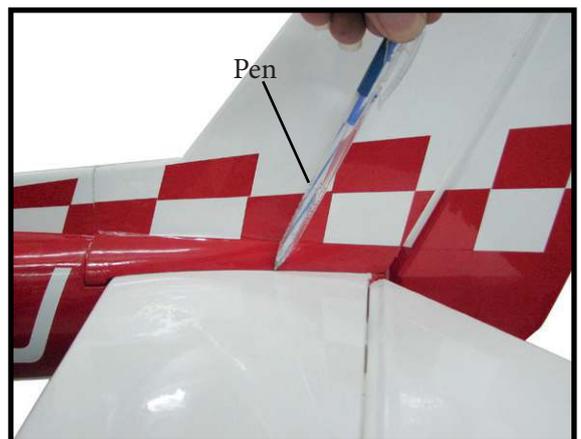
2) Using a modeling knife, carefully remove the covering at mounting slot of horizontal stabilizer (both side of fuselage).



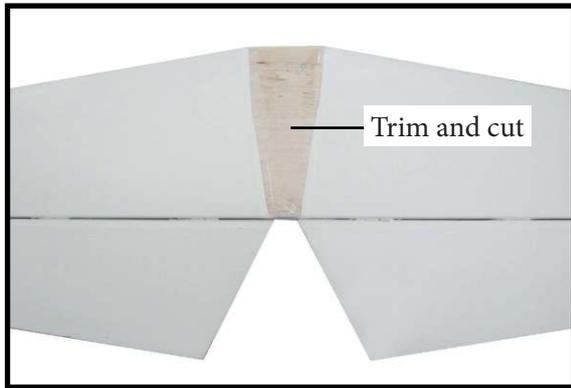
3) Slide the stabilizer into place in the precut slot in the rear of the fuselage. The stabilizer should be pushed firmly against the front of the slot.



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.

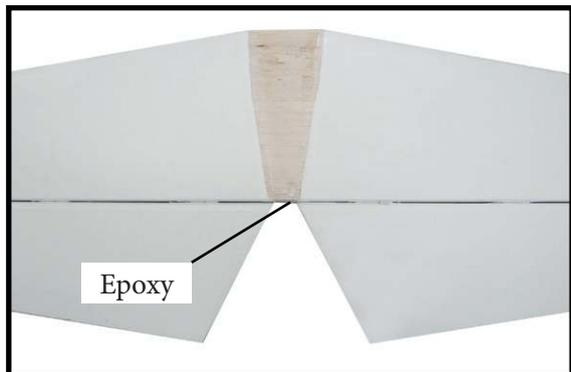


5) Remove the stabilizer. Using the lines you just drew as a guide, carefully remove the covering from between them using a modeling knife.

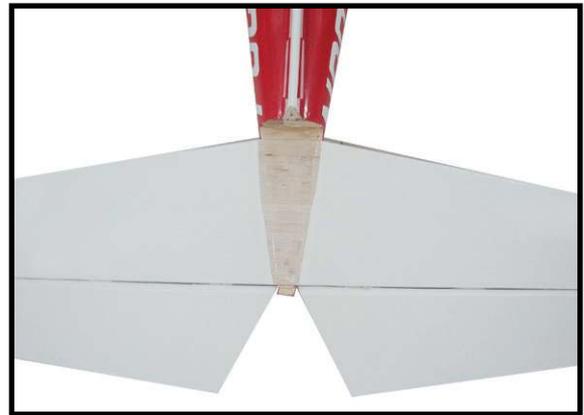


! When cutting through the covering to remove it, cut with only enough pressure to only cut through the covering itself. Cutting into the balsa structure may weaken it.

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



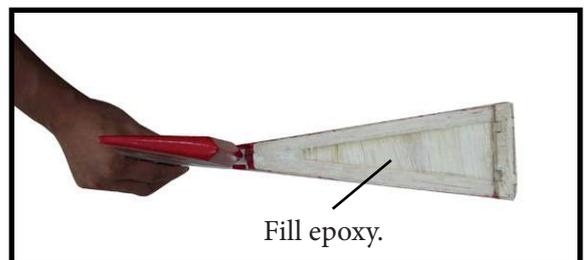
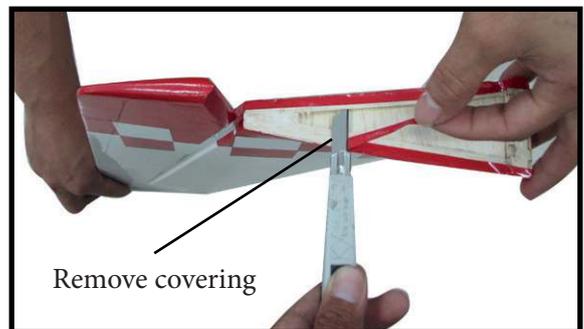
7) When you are sure that everything is aligned correctly, mix up a generous amount of 30 Minute Epoxy. Apply a thin layer to the top and bottom of the stabilizer mounting area and to the stabilizer mounting platform sides in the fuselage. Slide the stabilizer in place and realign. Double check all of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



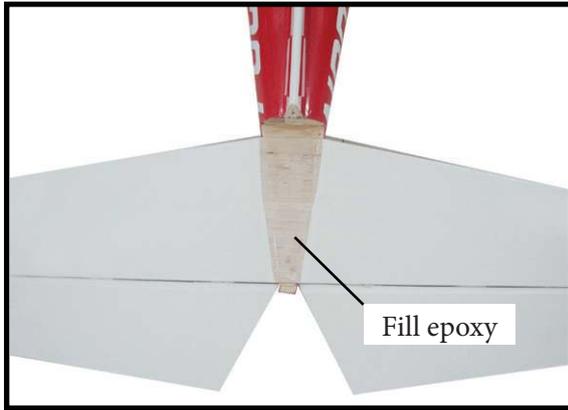
INSTALLING VERTICAL FIN.



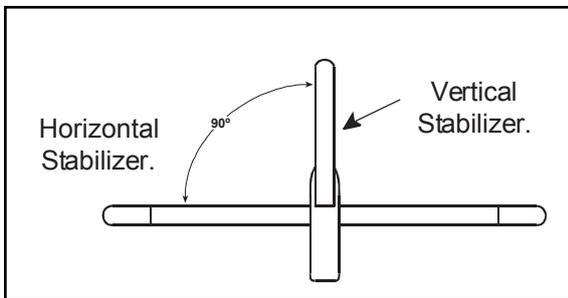
1) Using a modeling knife, remove the covering from over the precut hinge slot cut into the lower rear portion of the fuselage.



2) 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.



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.

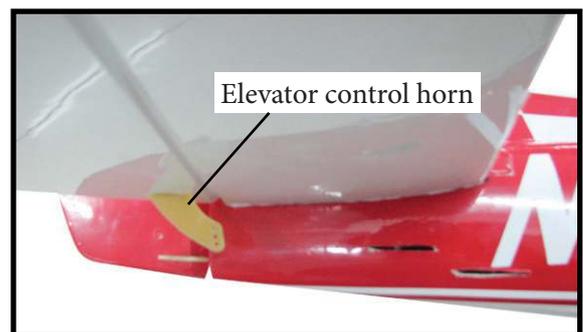
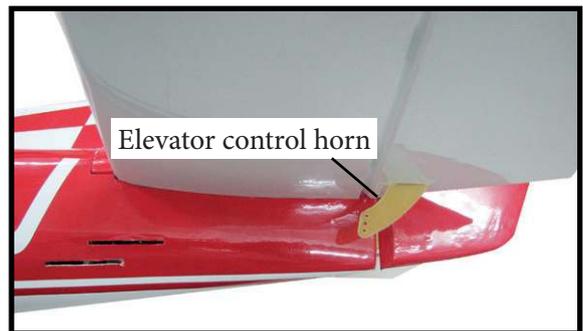


4) When you are sure that everything is aligned correctly, mix up a generous amount of Flash 30 Minute Epoxy. Apply a thin layer to the mounting slot and to bottom of the vertical stabilizer mounting area. Apply epoxy to the bottom and top edges of the filler block and to the lower hinge also. Set the stabilizer in place and realign. Double check all of your measurements once more before the epoxy cures. Hold the stabilizer in place with T-pins or masking tape and remove any excess epoxy using a paper towel and rubbing alcohol. Allow the epoxy to fully cure before proceeding.

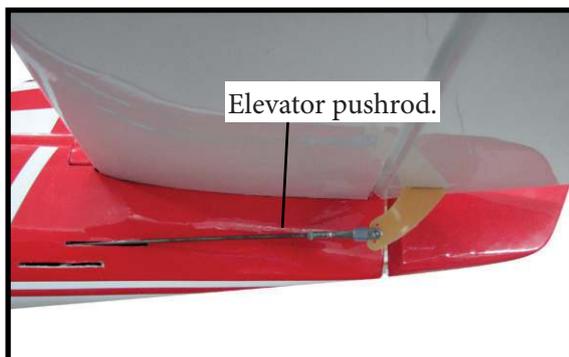
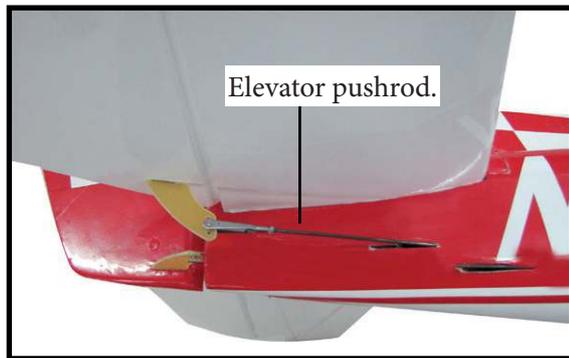
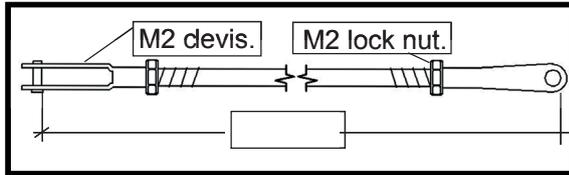
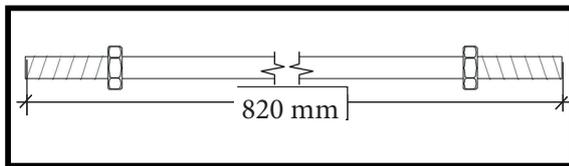


ELEVATOR PUSHROD INSTALLATION.

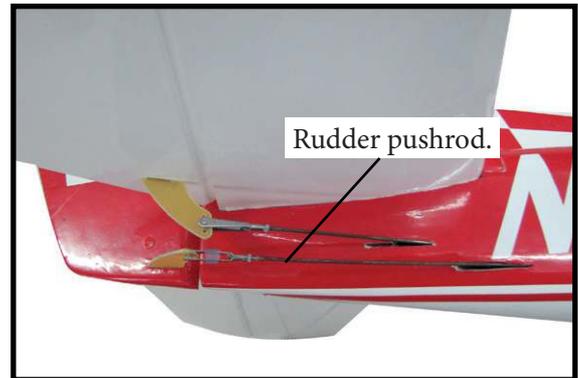
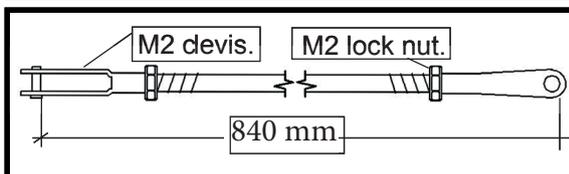
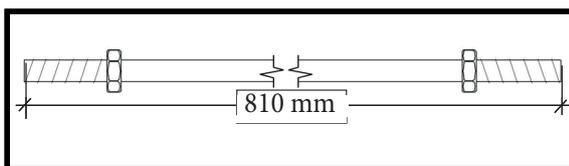
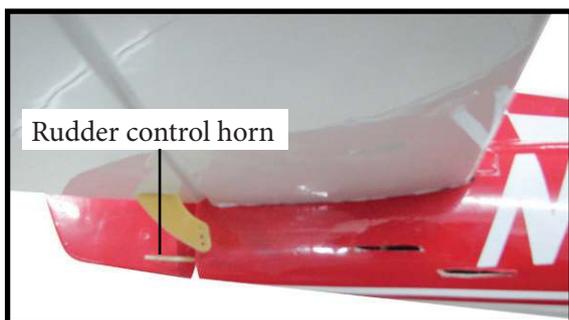
- 1) Install the elevator control horn using the same method as with the aileron control horns.
- 2) Position the elevator control horn on the both side of elevator.



- 3) Thread one clevis and M2 lock nut on to each elevator control rod. Thread the horns on until they are flush with the ends of the control rods.
- 4) Elevator and rudder pushrods assembly as pictures below.



RUDDER PUSHROD INSTALLATION.



INSTALLATION PILOT AND CANOPY.

1) Locate items necessary to install pilot and canopy.

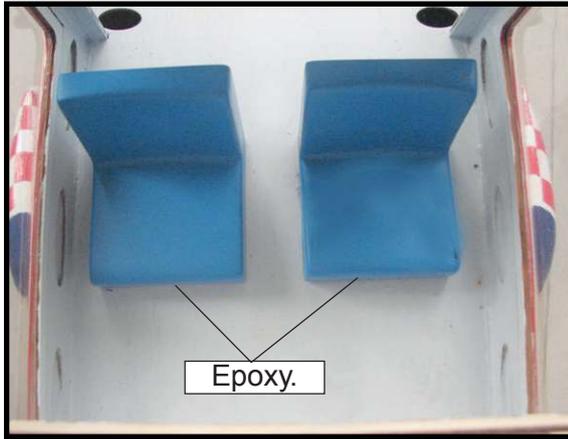


2) A scale pilot is included with this ARF. The Seagull Pilot included fitting well to the cockpit. (or you can order others scale pilot figures made by SG Models. They are available at SG Models distributors.)

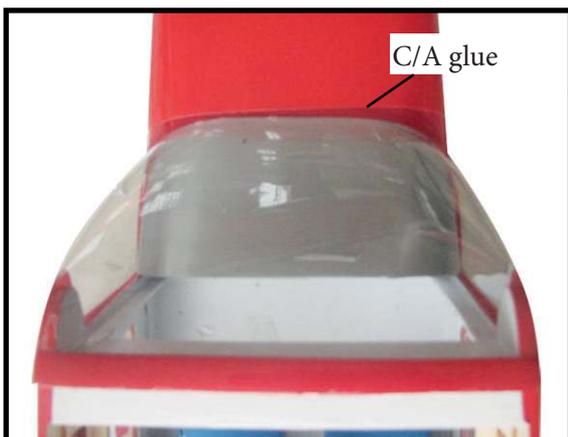
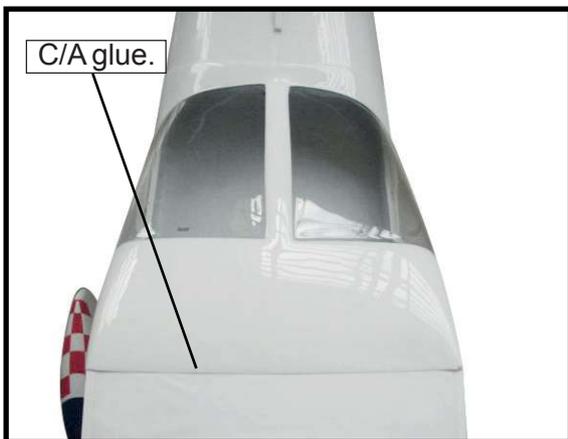
If you are going to install a pilot figure, please use a sanding bar to sand the base of the figure so that it is flat.

3) Position the pilot figure on the canopy floor as show. Locate the oval shaped on the canopy floor and remove the covering. Use epoxy to glue this into the base of the pilot figure and glue the cockpit panel in place with C/A glue, please see pictures as shown.





4) Position the canopy onto the fuselage. Trace around the canopy and onto the fuselage using a felt-tipped pen.



APPLY THE DECALS.

1) 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.

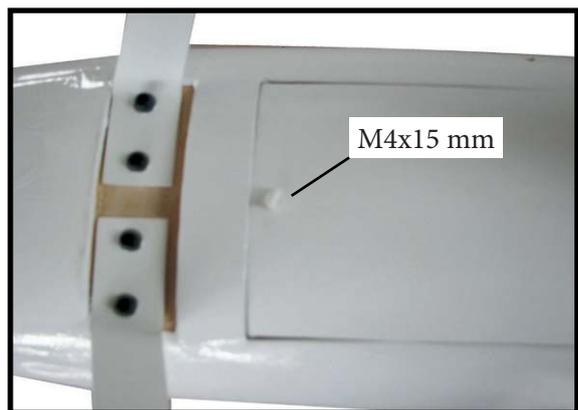
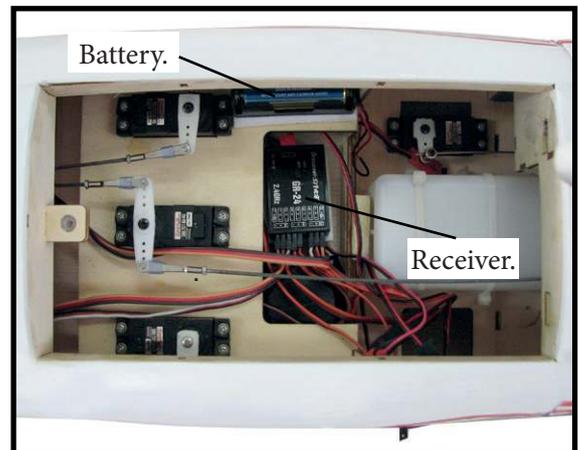
2) If all the decals are not precut, please use scissors or a sharp hobby knife to cut the decals from the sheet. Please be certain the model is clean and free from oily fingerprints and dust. Position decal on the model where desired, using the photos on the box and aid in their location.

INSTALLING THE BATTERY-RECEIVER.

1) Plug the servos leads and the switch lead into the receiver. Plug the battery pack lead into the switch also.

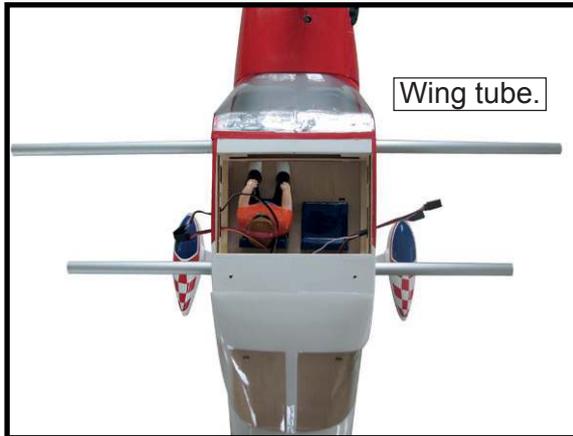
2) Wrap the receiver and battery pack in the protective foam rubber to protect them from vibration.

3) Route the antenna in the antenna tube inside the fuselage and secure it to the bottom of fuselage using a plastic tape.

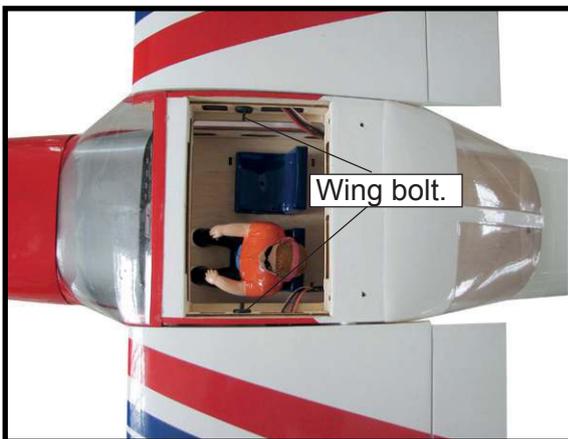


ATTACHMENT WING-FUSELAGE.

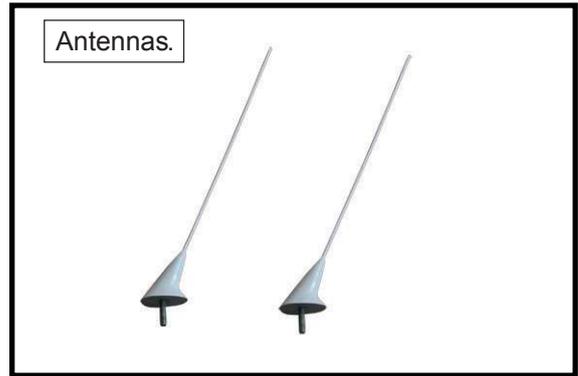
Attach the aluminium tube into fuselage.



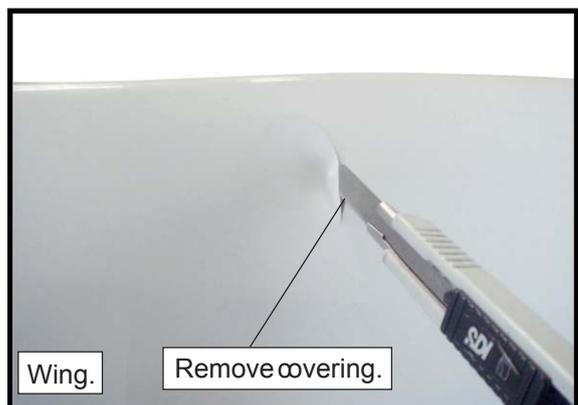
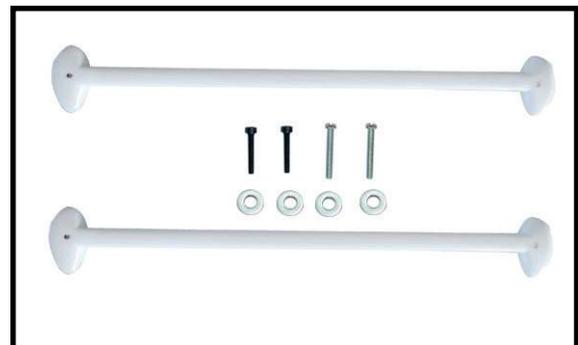
Insert two wing panels as pictures below.

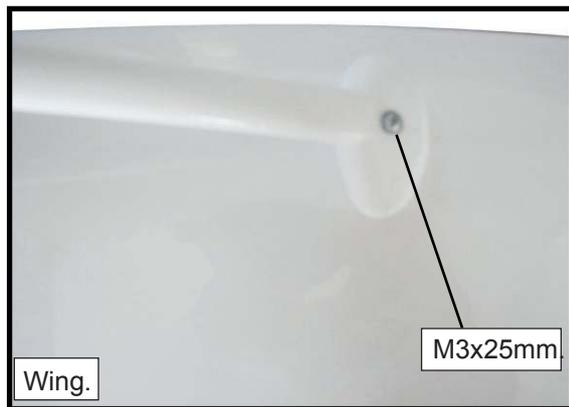
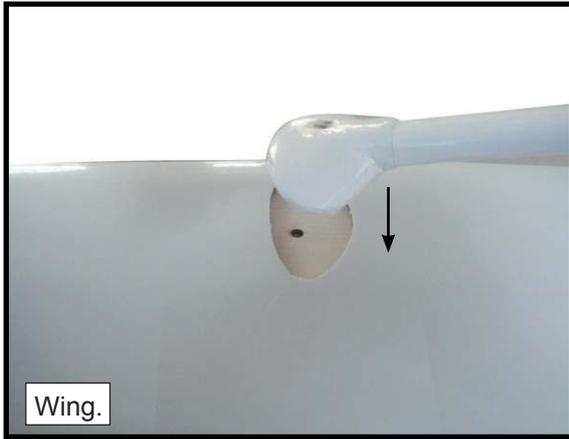


Installation Antennas.



INSTALLATION WING- FUSELAGE STRUTS.





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 **110 MM** BACK FROM THE LEADING EDGE OF THE WING AT THE WING ROOT.

2) Mount the wing to the fuselage. Using a couple of pieces of masking tape, place them on the top side of the wing **110 mm** back from the leading edge of the wing at the wing root.

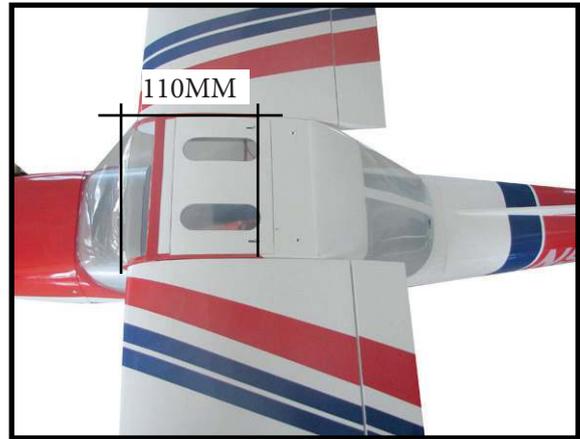
3) Turn the airplane upside down. Place your fingers on the masking tape and carefully lift the plane .

Accurately mark the balance point on the top of the wing on both sides of the fuselage. The balance point is located **110 mm** back from the leading edge of the wing at the wing root. This is the balance point at which your model should balance for your first flights. Later, you may wish to experiment by shifting the balance up to 10mm forward or back to change the flying characteristics. Moving the balance forward may improve the smoothness and arrow- like tracking, but it may then require more speed for take off and make it more difficult to slow down for landing. Moving the balance aft makes the model more agile with a lighter and snappier "feel". In any case, please start at the location we recommend .

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

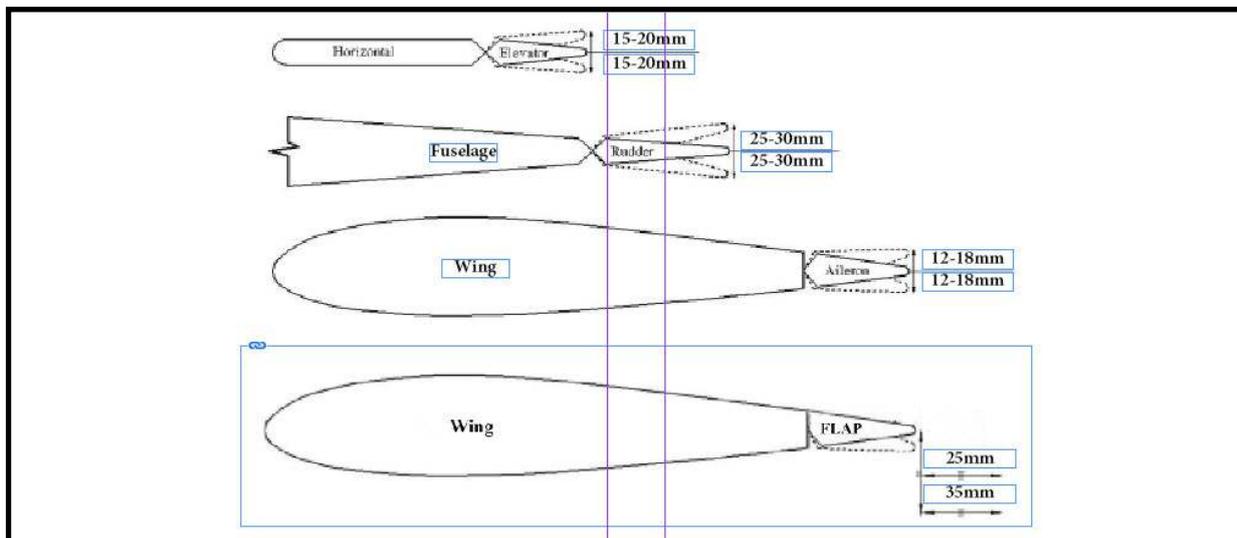
Lift the model. If the tail drops when you lift, the model is "tail heavy" and you must add weight* to the nose. If the nose drops, it is "nose heavy" and you must add weight* to the tail to balance.

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



CONTROL THROWS.

Ailerons:	Rudder:
<i>High Rate :</i>	<i>High Rate :</i>
Up : 18 mm	Right : 30 mm
Down : 18 mm	Left : 30 mm
<i>Low Rate :</i>	<i>Low Rate :</i>
Up : 12 mm	Right : 25 mm
Down : 12 mm	Left : 25 mm
Elevator:	Flap:
<i>High Rate :</i>	Mid : 25 mm
Up : 20 mm	Full : 35 mm
Down : 20 mm	
<i>Low Rate :</i>	
Up : 15 mm	
Down : 15 mm	



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 152 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 Master Scale Kit Edition Cessna 152 Aerobat 80", 20cc