

# **PIPER CUB J-3**

## **GP/EP**



### SPECIFICATIONS

Wing Span: 1720mm

Wing Area: 42 dm<sup>2</sup>

Length: 1095mm

Total Weight: 2400g (with battery 2600mAh)

Radio: 4 ~ 6(if use flap) channels

Motor: 850KV brushless

Thrust: 3 KGS and up

Battery: Li-Po 4-cell 2600mAh and up

ESC: 60A

Engine: 10cc 2-stroke(Gas)

.46 2-stroke

.60 4-stroke

Propeller for EP: 12 x 8"

Propeller for GP: 12 x 6" (Gas)

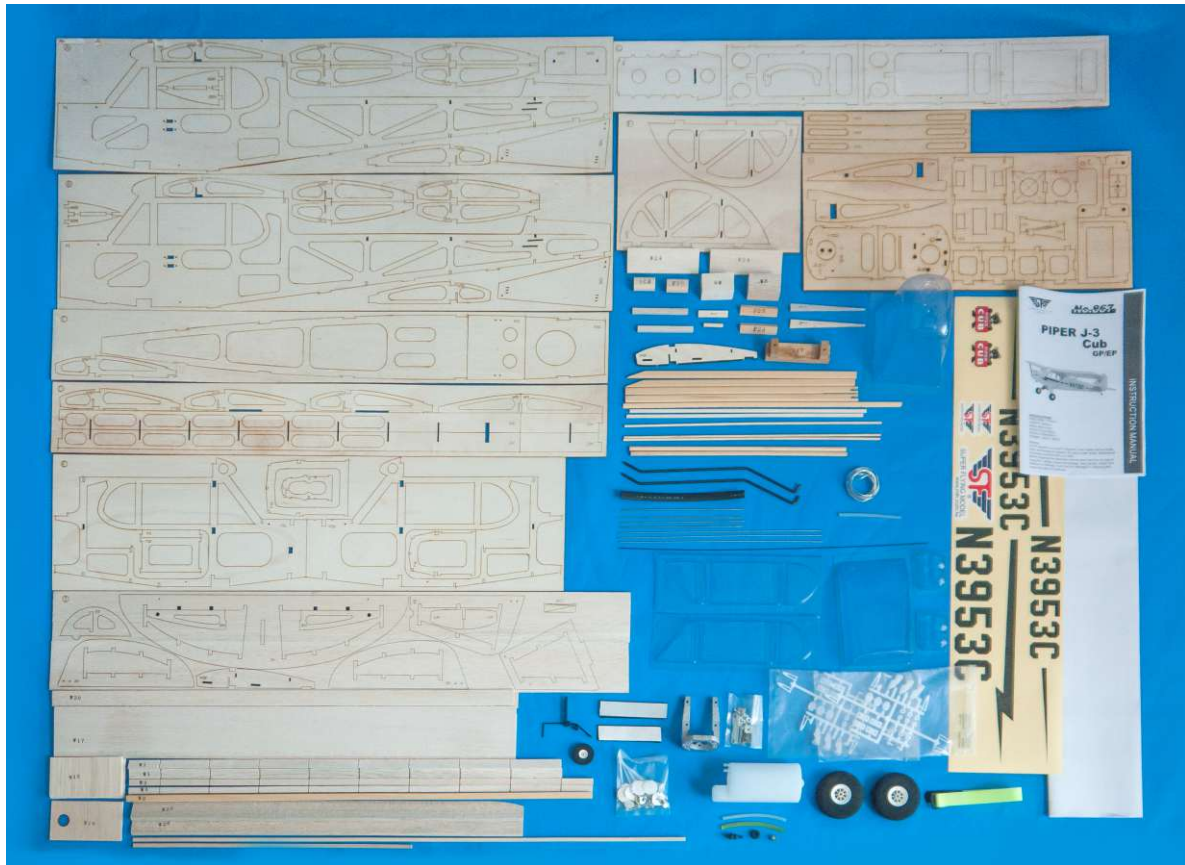
Propeller for GP: 11 x 6"

#### Warning

An RC aircraft is not a toy! If misused, it can cause serious bodily harm and damage to property. Fly only in open areas, following all instructions included with your radio.

Before beginning the assembly, remove each part from its bag for inspection. Closely inspect the fuselage, wing panels, rudder and stabilizer for damage. If you find any damaged or missing parts, contact the place of purchase.





Contents of Kit / Parts Layout

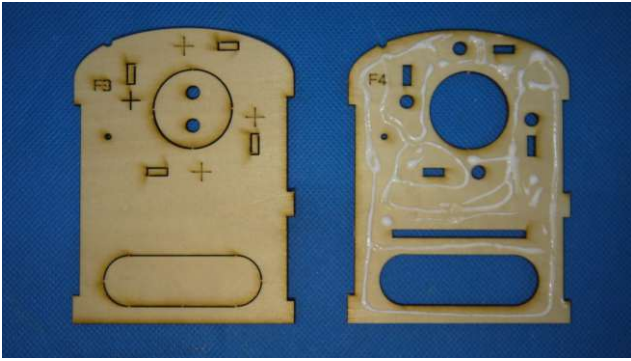
**Recommended radio and equipment (Not included in kit):**

- 4-6 or up channel radio
- Receiver
- Servos (45g) x 2 pieces + Servos (25g) x 4pieces
- 70Amp or up Brushless ESC x 1 piece
- 11x6 – 12x8 propeller x 1 piece
- Aluminum nut x 1 piece
- Y-harness x 2 piece
- 600mm extension x 4 pieces

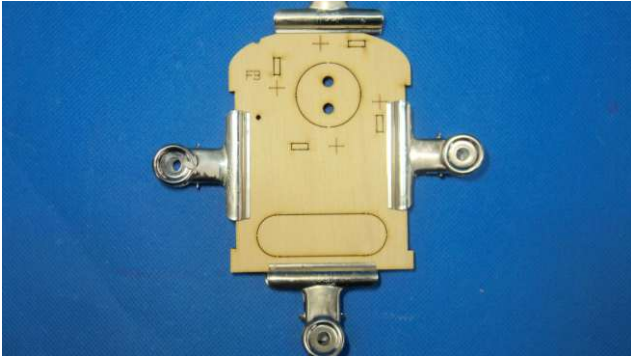
**Tools and suppliers needed (not included in kit):**

- 1200mm x 400mm x 10mm flat surface planking, Triangle ruler, Straight aluminum ruler
- 1000mm Clips, Heavy object around 1 KG, Tissue, Double-side adhesive tape, Vernier scale, 10-12mm thickness planking, Sanding paper #150 & #200, Planer tool, 2mm hand driller, Iron, Phillips screws driver #0 & #1, Curved scissors, Hobby knife, Instant glue, UHU glue , Epoxy 5-10 minutes, Marker, white glue, Driller 1.5mm/2.6mm/4.2mm, Transparent tape, Masking tape, Brush, Painting , Z-bender pliers, Side-cut pliers, 1.5mm hex wrench, Solder iron, Pin, Rubber band, Sharp-nose pliers, Super glue, Cross wrench

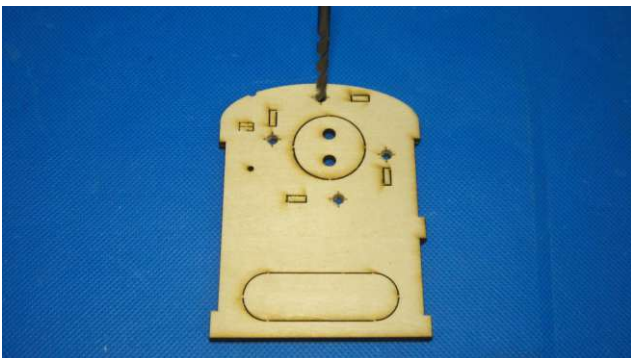




Attach F3 to F4 with white glue. Make sure to line up the edges.



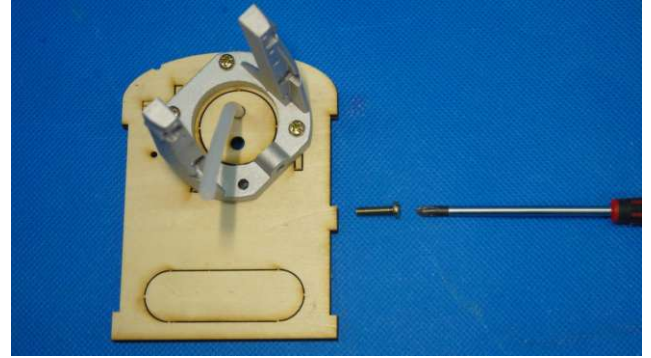
Secure with clips.



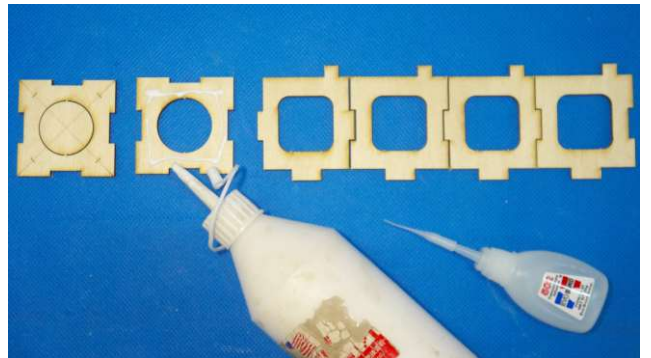
GP ONLY According to F3's "+" mark, drill 5mm holes.



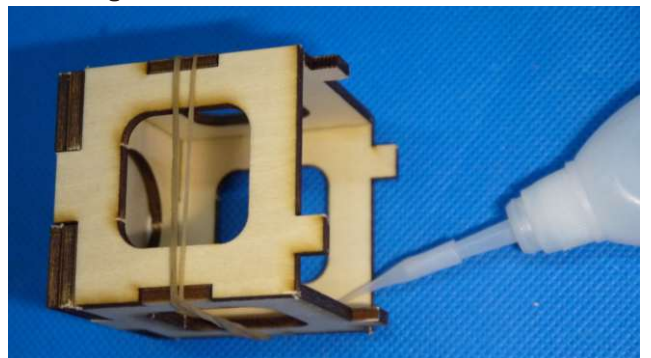
Take four clutch nails and a hammer to place the clutch nails into these holes.



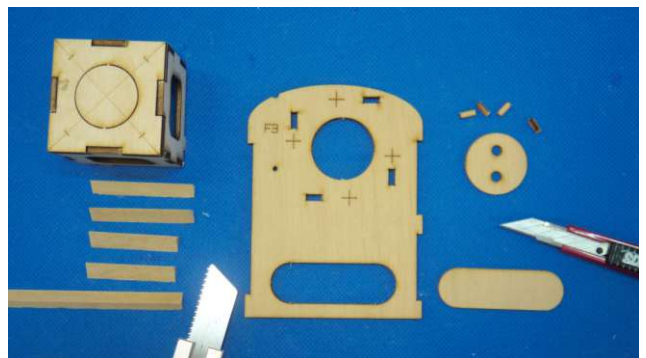
Secure engine mount with M4x15 screws, and oil tube must go through the middle of F3's hole.



Attach C25 with instant glue. Note: Be EP ONLY According to the picture, attach with white glue.

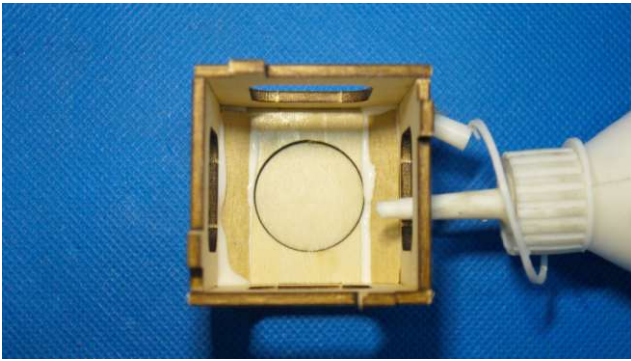


According to the picture, secure with rubber bands and glue with instant glue.

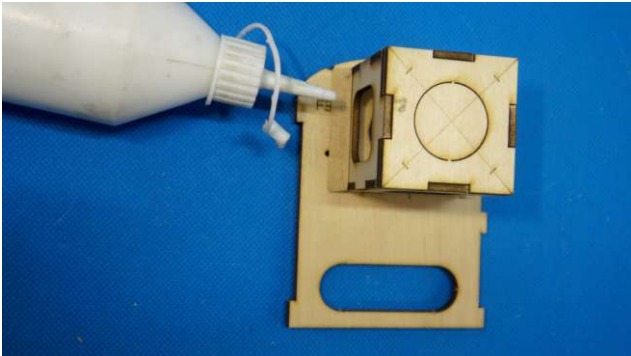


According 1:1 map to cut triangular strips.

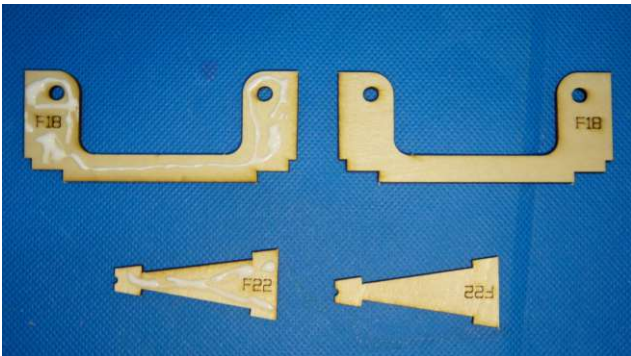




Attach triangular strips with white glue.



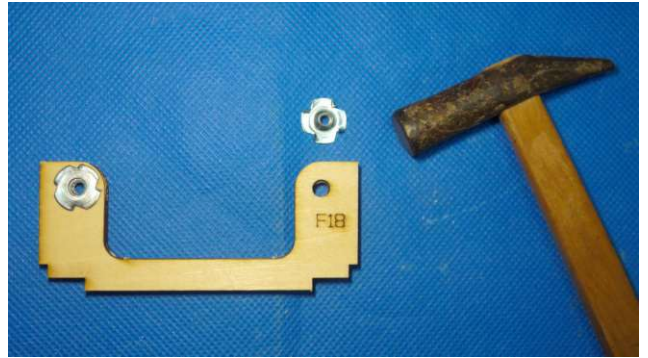
Attach with white glue so it looks like the picture.



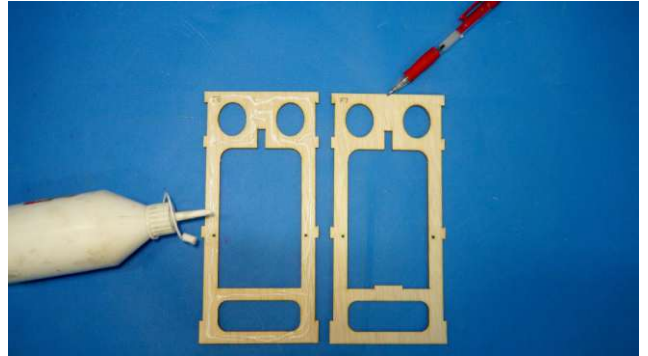
Attach two pieces F18 and two pieces F22 with white glue.



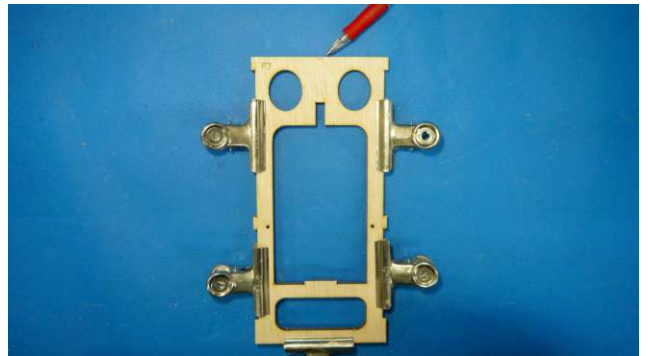
Secure with clips.



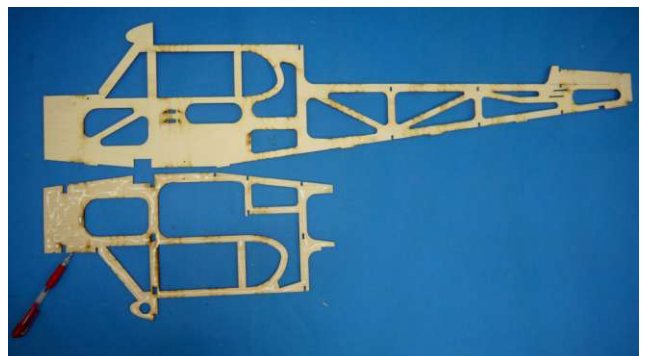
Take two clutch nails and a hammer to place the clutch nails into these holes.



Attach F6 to F7 with white glue. Make sure to line up the lower edge.

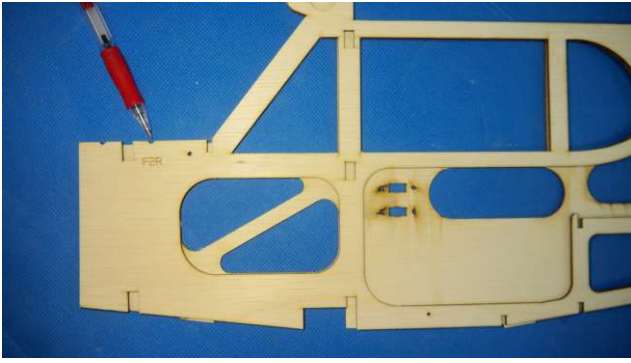


Secure with white glue and clip.

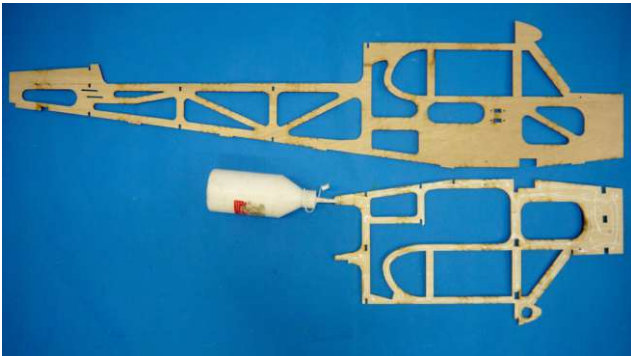


Attach F2R to F1 with white glue. Note: Be careful of the mark.

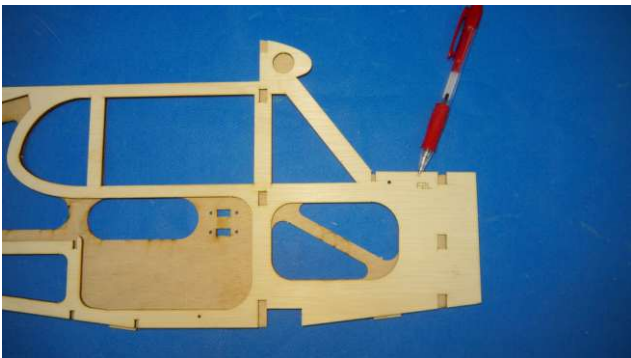




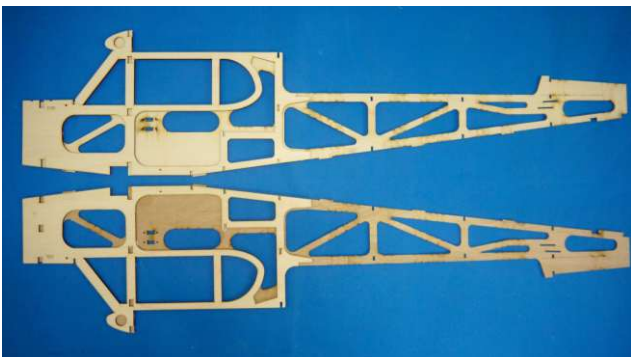
After attaching F2R to F1, notice the mark on the upper edge.



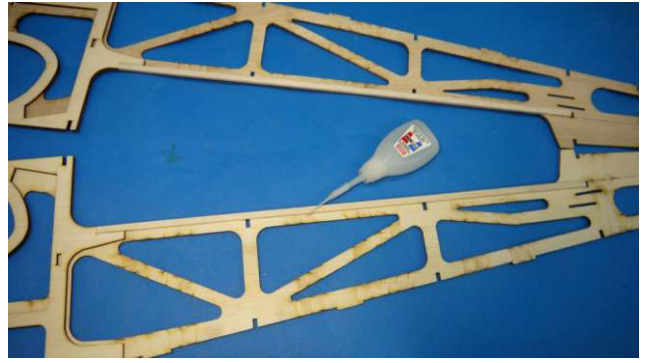
Attach F2L to F1 with white glue.



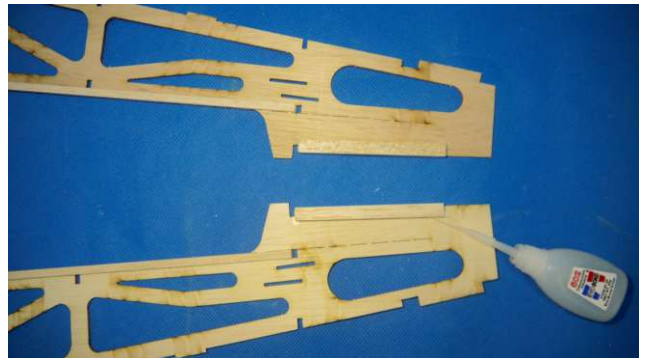
Left side doesn't have mark.



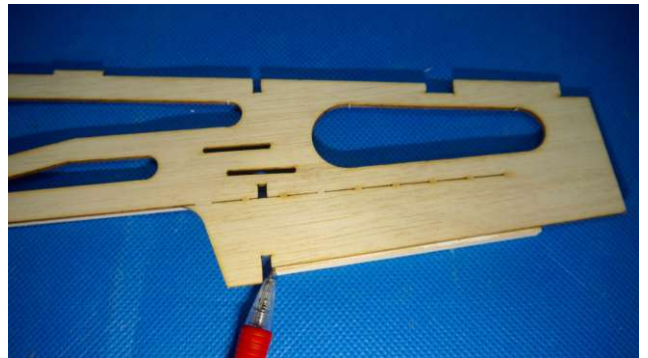
When finished it should look like this picture.



Attach 3x5x383mm balsa wood strips to upper edge with instant glue.



Attach 6x8x90mm balsa wood strips to upper edge.



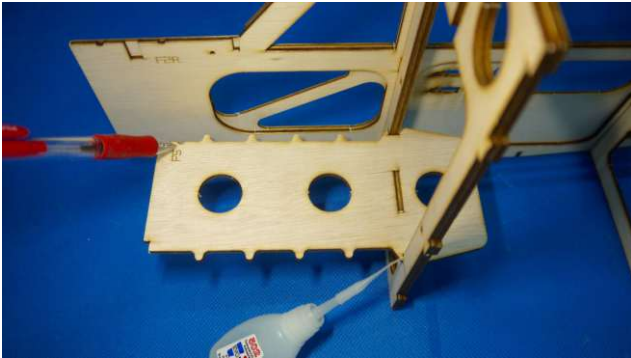
Wood strips must be attached 1 mm from the hole and 1 mm higher than the upper edge.



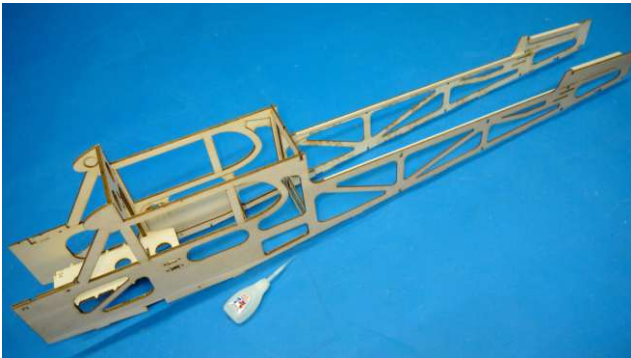
Attach F7, F10, F12 to F2R with instant glue.



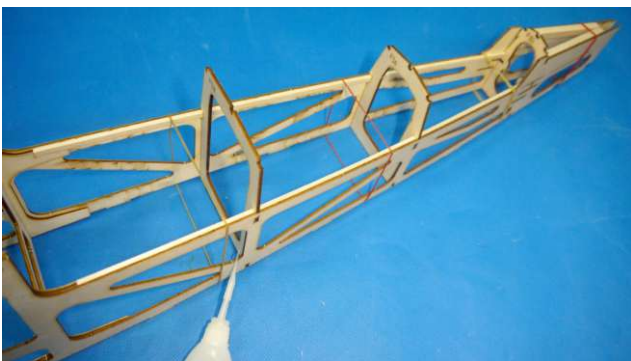
F7's mark should be facing toward the nose of the plane.



Attach F5 with instant glue. Note: F5's mark must be on the right side.



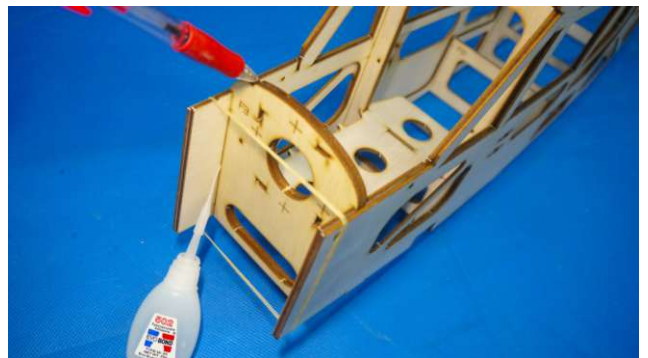
Attach F2L with instant glue.



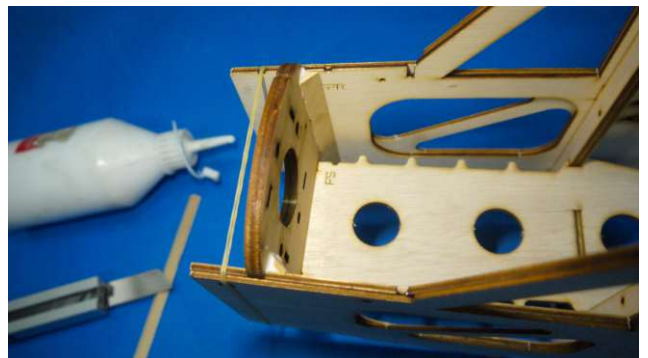
Join F13, F14, F15 and secure with rubber bands, then attach with instant glue.



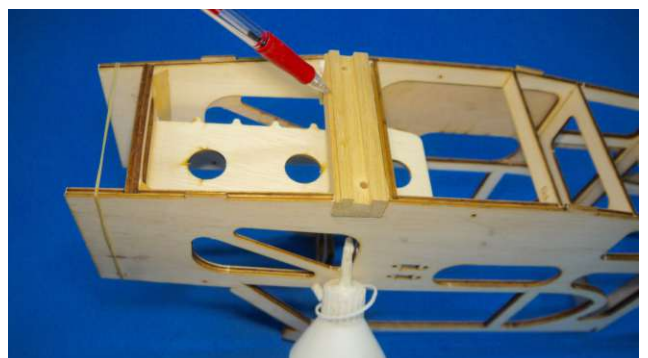
Attach F9 with instant glue.



Join F3 and secure with rubber bands, then attach with instant glue. Note: F3's mark must be on the right side.

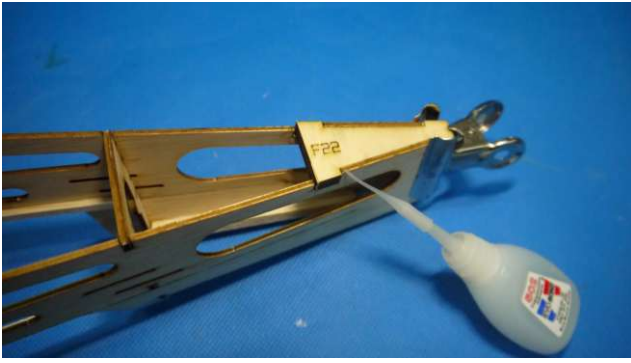


Cut two pieces 95mm triangular strips and attach to F4 with white glue.

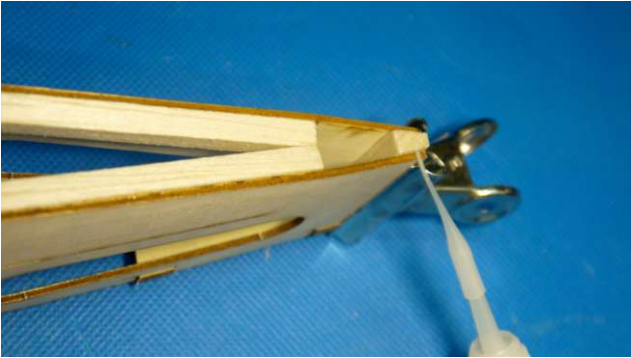


Attach landing gear mount with white glue. Note: Slot should be facing toward the nose of the plane.





Attach F22 with instant glue and secure with a clip.



Attach F16 with instant glue and secure with a clip.



Sand and cut off extra pieces of balsa wood.



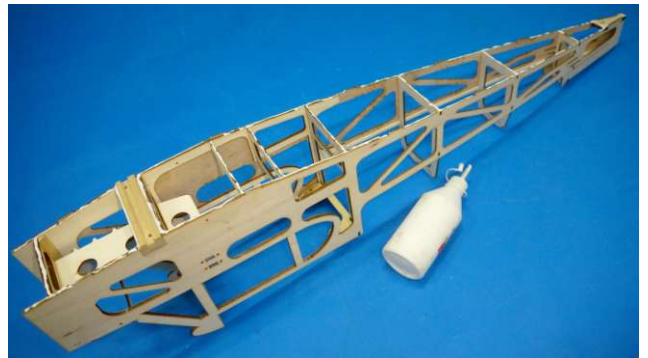
Rear view of the fuselage. Make sure it has bilateral symmetry.



Attach F18 with instant glue and white glue.



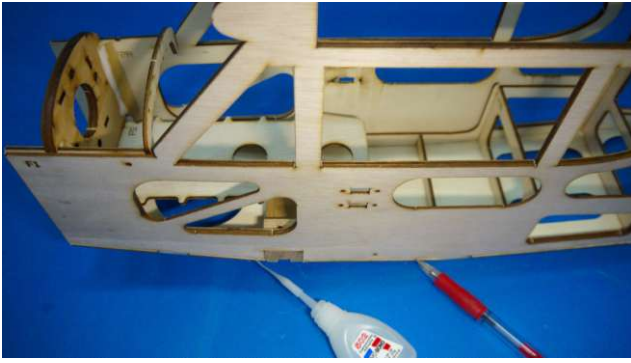
Attach F6 with instant glue.



Use white glue as in above image.



Attach F20 and F21, and secure with clips.



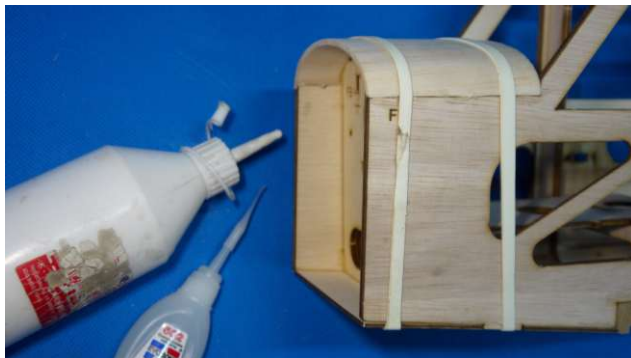
F20 and F21's extra pieces must be the same length on both left and right sides.



Make F17 wet.



Use a pipe or rounded object to make F17 rounded. Secure F17 with rubber bands to rounded object until dry.



Attach F17 with white glue and instant glue and secure with rubber bands.



Attach three pieces of 4x116mm strips with instant glue.

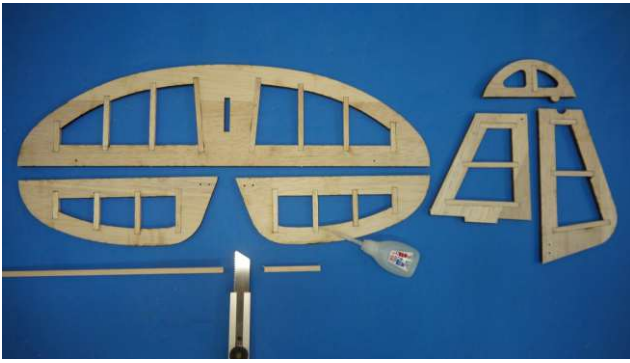


Attach F11 with instant glue.



Attach two pieces of F23 with instant glue.

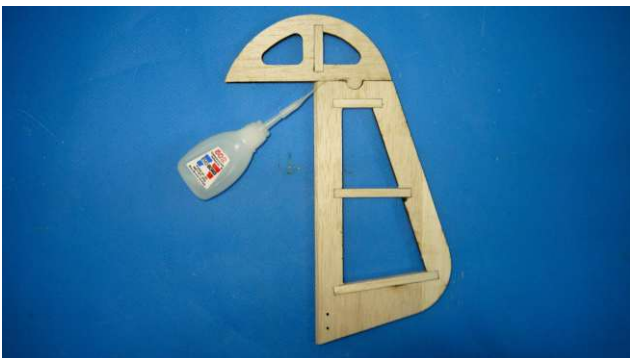




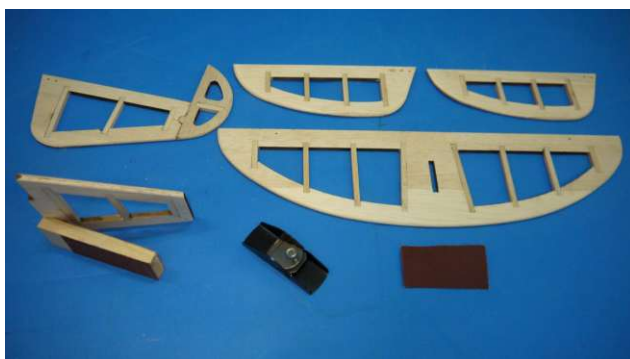
Prepare H1, H2, V1, V2, V3 and 6x6mm balsa wood strips. According to slots size cut out 6x6mm balsa wood strips and attach them with instant glue.



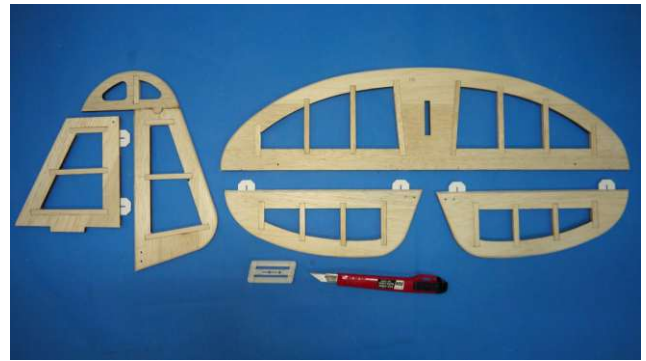
Sand and cut V2 and V3 until the front edge has an inverted "v".shape as shown.



Attach V2 to V3 with instant glue.



According to 1:1 map, make tail and horizontal and sand them until smooth. Trim the edge to a rounded shape and sand.



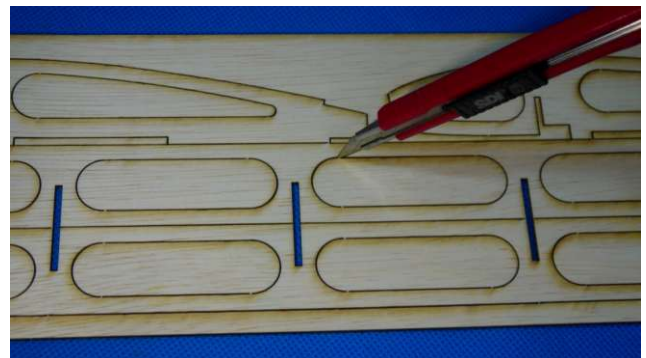
According to 1:1 map, use a hobby knife to cut hinge holes.



Check tail gear size to make a mark on the rudder.



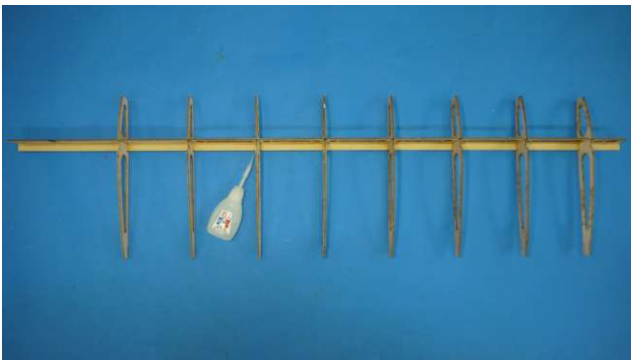
According to the mark, drill a 2mm hole and cut a slot for tail gear to be put in.



Cut off extra pieces.



Use a triangular ruler to be sure of having a 90 degree angle. When applying instant glue to secure W2 on W3, check closely after gluing. The slot part must be upward. The angle between W3 and W2 is 90 degrees.



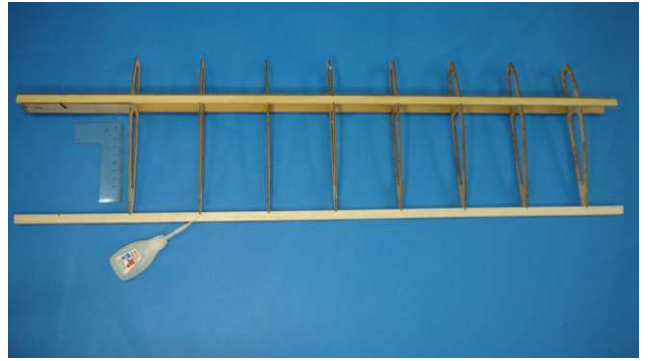
According to 1:1 map, attach ribs to W2 and be sure of having 90 degree angles.



Place W3 and line up W2. Use instant glue to glue them.



Line up W2 and W5, clip them and glue them with instant glue.



Line up ribs and W4's slots, then attach them with instant glue.



Line up ribs and W1's slots, then attach them with instant glue.

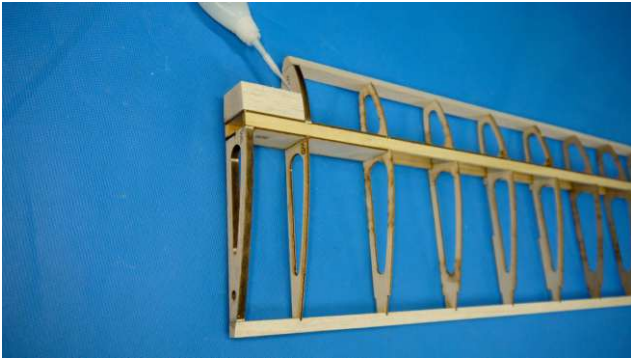


Attach W6 with instant glue.

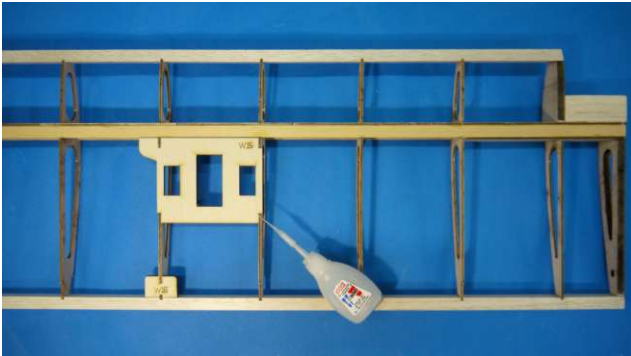


Attach W7 with instant glue, then attach W8 with white glue.





Attach W8 to W7 with instant glue.



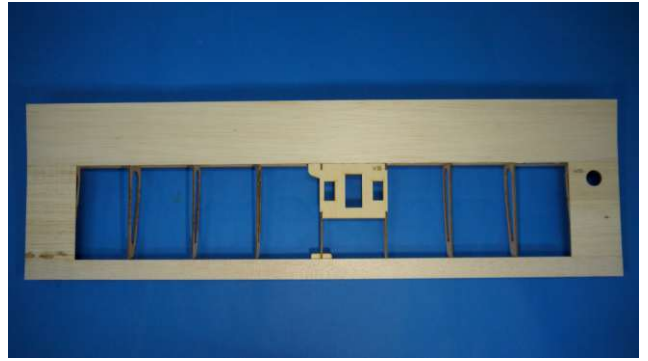
Attach W15 with instant glue.



According to picture attach them with instant glue.



Use white glue on all ribs and the four outer edges and all upper surfaces. Note: Do this on the underside of the wings.



The hole must be on the wing root side.



The hole must be on the wing root side.



Cut off extra pieces



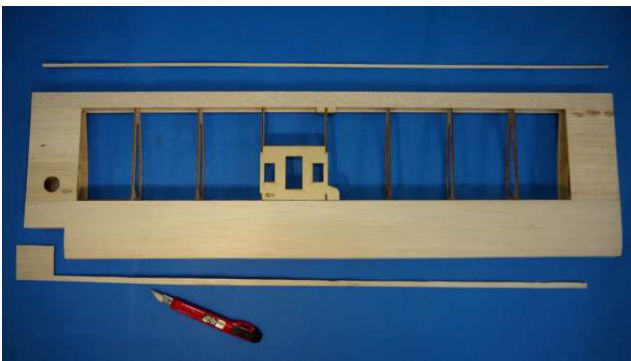
Apply white glue to all wing ribs and upper surfaces. Note: This should be done on the upper side of the wing.



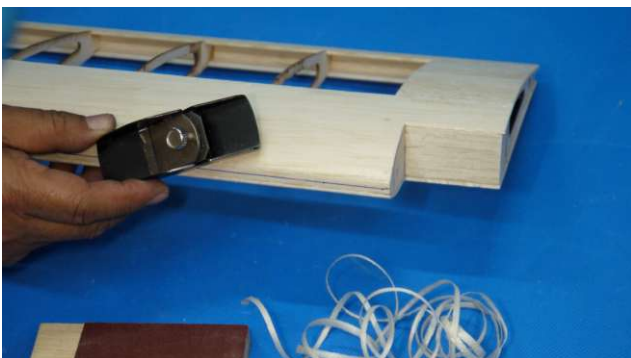
Cover with covering. Secure with clips.



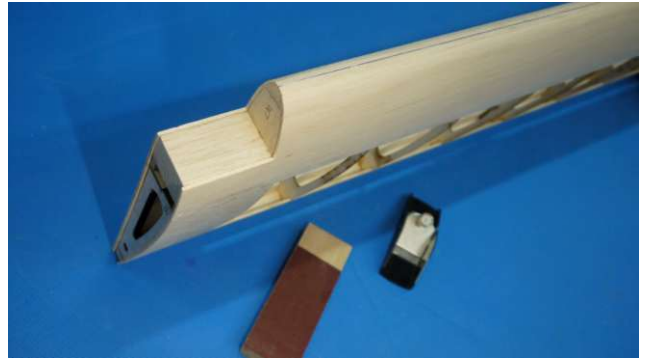
Clip to secure and immediately use weights to hold down the covering until the glue has dried.



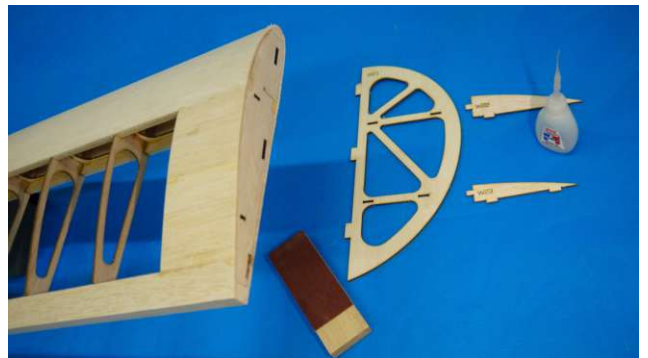
Cut off extra pieces.



Sand and cut it until smooth.



Trim the front edge to a rounded shape and sand.



Prepare W21, W22, W23. Sand wing tip until smooth.

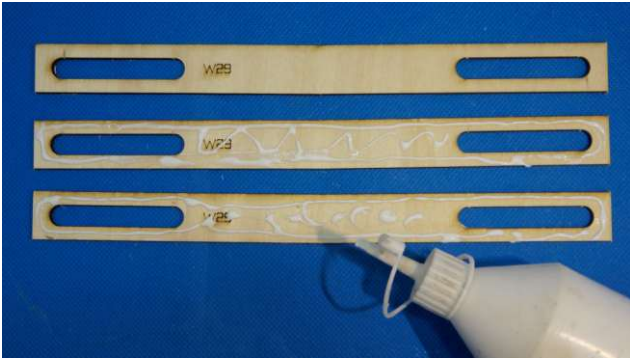


Attach W21, W22 and W23 with instant glue. Prepare two pieces of W27.



Attach W27 with instant glue and sand it until smooth.





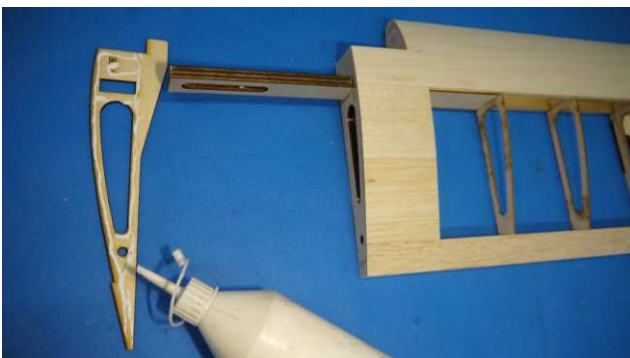
Attach three pieces W29 with white glue.



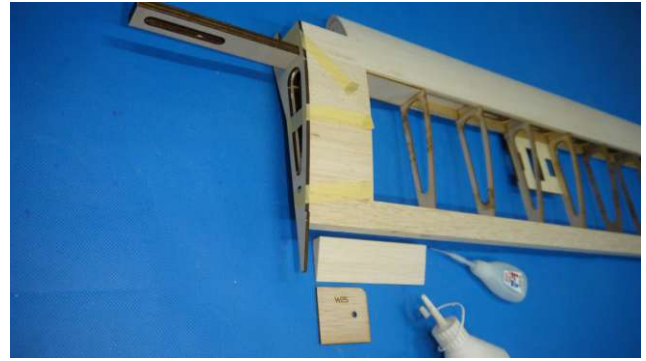
Secure with clips.



Sand wing root until smooth.



Attach W28 to wing root, and join wing with wing joiner but don't use glue.



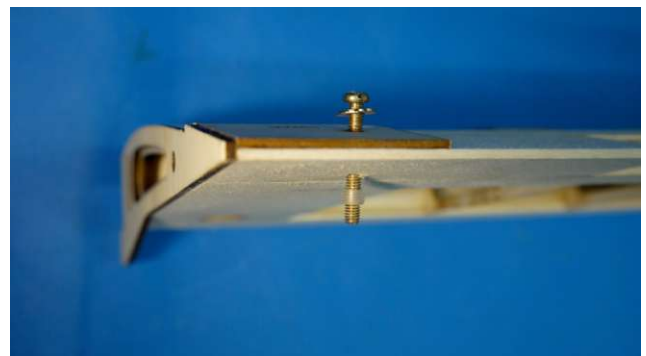
Attach W28 to wing root, and join wing with wing joiner but don't use glue.



Line up W28 and W24 and attach the back edge and side with instant glue, then attach W25 with instant glue.



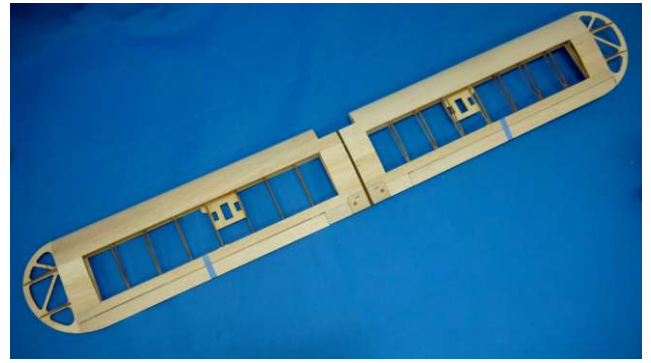
According to W25's hole, drill a 4mm hole.



Join 4mm washer and M4x30mm screws and secure with 5mm silicone tube.



According to aileron, cut hinge holes.



WING IS FINISHED!!



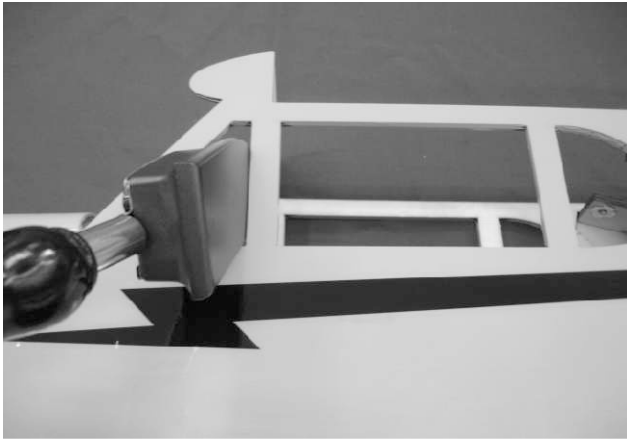
Parts Layout

**Tools and suppliers needed (not included in kit):**

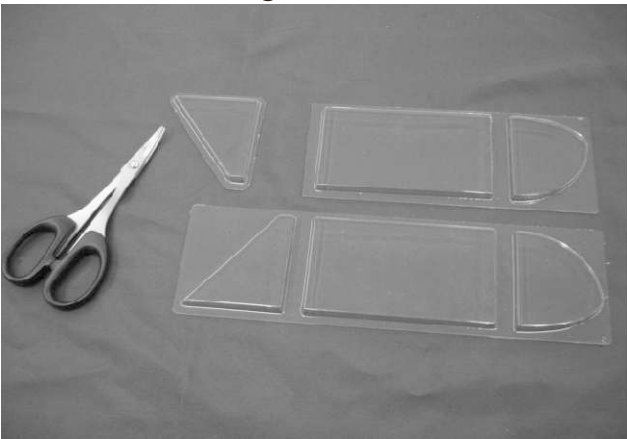
Phillips screws driver #0/#1 / Curved scissors  
 Hex wrench 1.5/2mm/2.5mm/6mm / Hobby knife / Ruler / Iron / Cross wrench  
 Pliers / Z-bender / Sanding paper / Epoxy 5-10 minutes / Marker / CA glue  
 UHU foam glue / Superglue / Cross wrench / Reamer / Solder Iron  
 Thread lock / Side Cutter / Driller 2mm/6mm / Transparent Tape / Pin  
 3M fiber tape







Use iron (140°C) to trim the edges and use hobby knife to remove the excess covering.



Place the window set on the working table and use curved scissors to remove window from the window set. Please reserve 6mm on the edges. Spread UHU glue along the edges of window set and secure on the fuselage. Apply tape on the window set for holding it in place until the glue is dry enough.



Place the yellowing covering and main gear planking on the working table. Iron on the covering onto the main gear planking.



Place the yellowing covering and main gear planking on the working table. Iron on the covering onto the main gear planking.

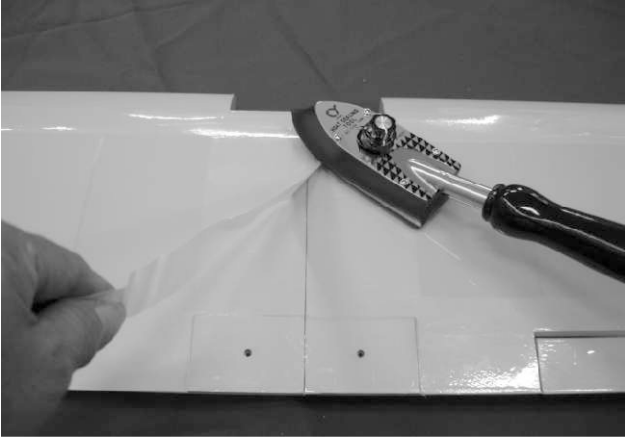


Iron on the covering onto the wing struts and the triangle reinforcing planking.

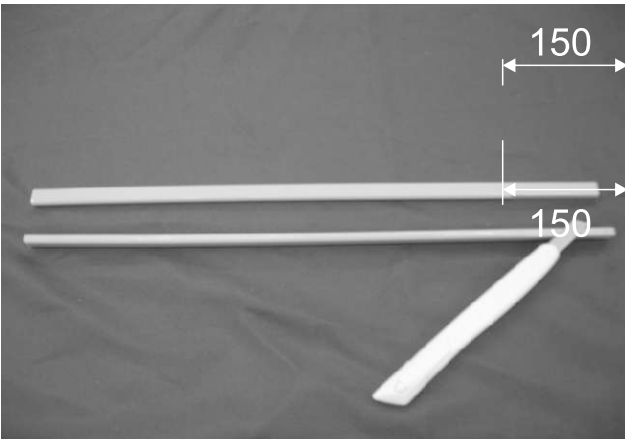


Place the black covering, decorative muffler and spring on the working table. Iron on the black covering onto the muffler and spring. Please note there is a hole on the center part of the spring. Use reamer to re-open the hole after ironing.

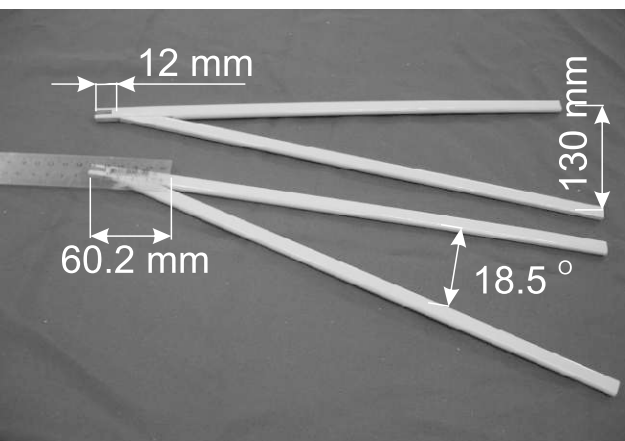




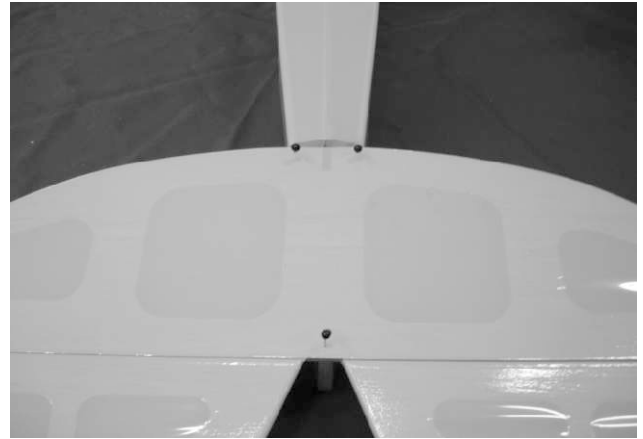
Find a long strip of yellow covering in the hardware bag. Iron on the yellowing covering onto the conjunctions.



Try to fit two struts together and use hobby to remove the covering on the conjunctions.



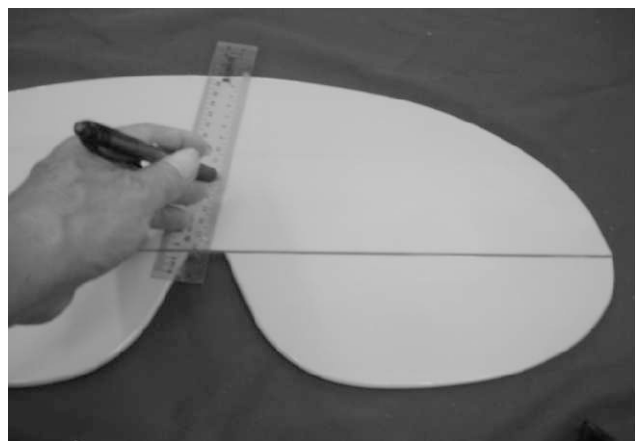
Use epoxy to glue the struts together and use tape to secure the struts temporary.



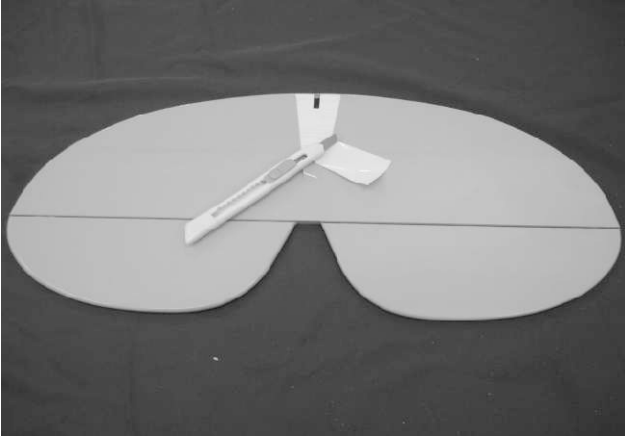
Place the horizontal stabilizer on the working table. Use ruler to mark the center line on the stabilizer. Place the fuselage on the stabilizer. The center line of the fuselage must meet the center line on the stabilizer. Use 3 pieces of needle to fix the stabilizer on the fuselage.



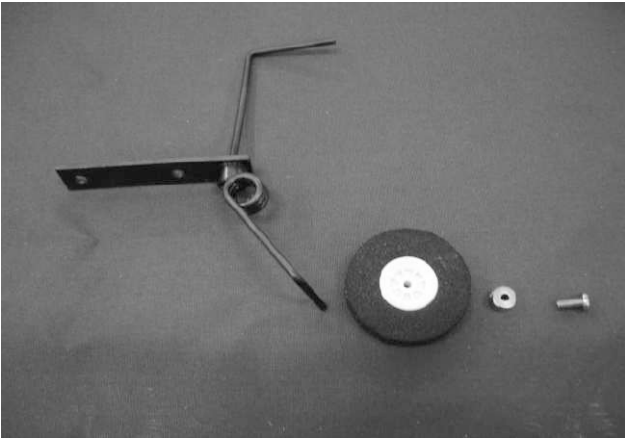
Use a pencil to carefully trace around the bottom and the top of the stabilizer where it meets the fuselage. Remove the fuselage.



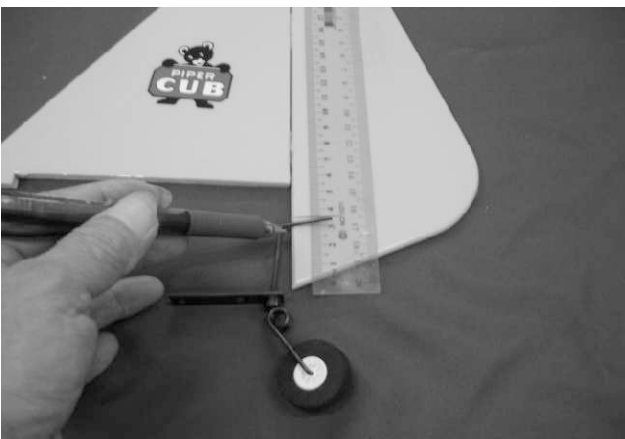
Use a straight ruler to mark the area inside the line.



Using a hobby knife carefully cut away the covering inside the lines marked above. Be carefully not to cut into the wood as doing so will weaken the structure.



Place the tail wheel and 2mm collar onto the tail gear and secure with 3x5mm screw.



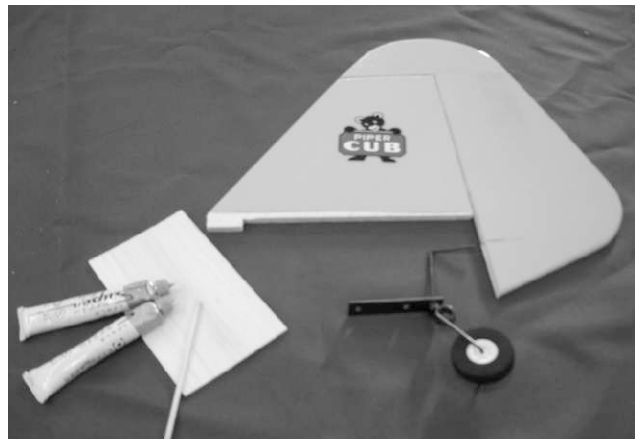
Use ruler to mark a position on the rudder. It is 35 mm from the bottom.



Use a sharp hobby knife to open a V slot (depth: 2mm) on the marked position.



Use 2mm driller to drill a hole on the marked location for accepting the tail wheel guide wire.

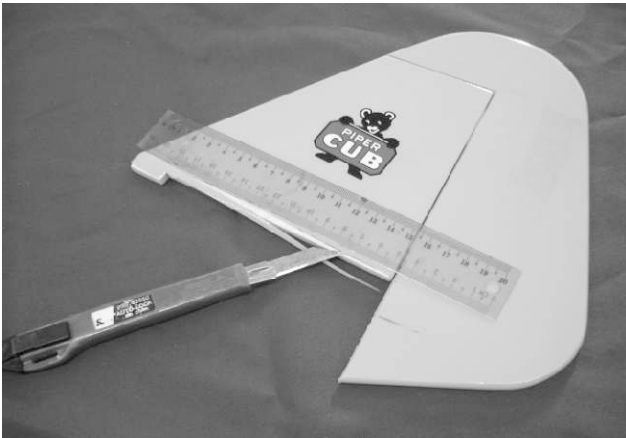


Spread some epoxy into the hole for securing the tail wheel guide wire inside the rudder.





There is a gap between vertical and horizontal on both sides. Try to fit the triangle reinforcement into the gap. Please note it must fit perfect. If not, use sand paper to trim the edges of the reinforcement. When satisfy the location, use pencil to mark the outline on the vertical and horizontal.

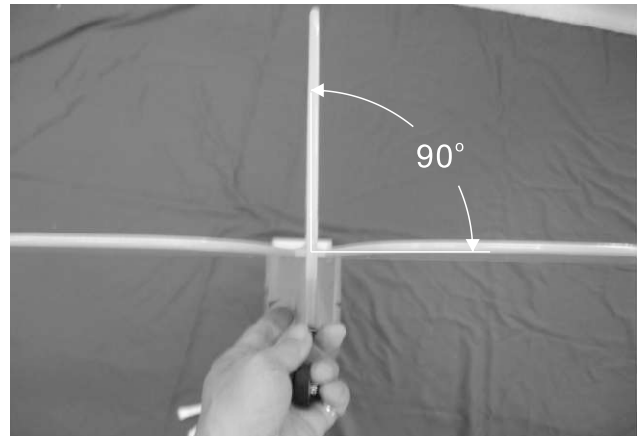


Use hobby knife to remove the covering on the bottom of the vertical.

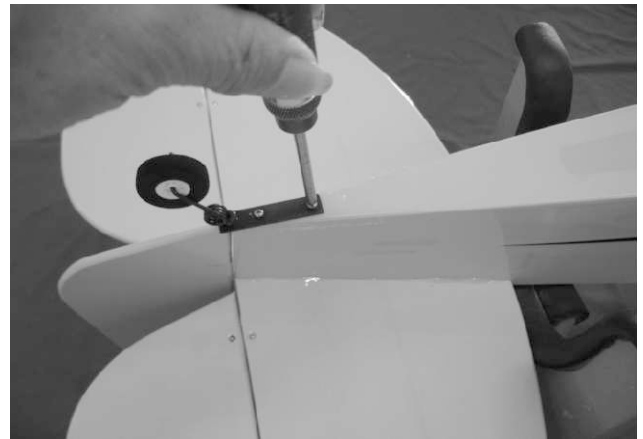


Apply some epoxy the vertical and horizontal where they come in contact with the fuselage. Assemble the vertical and horizontal on the

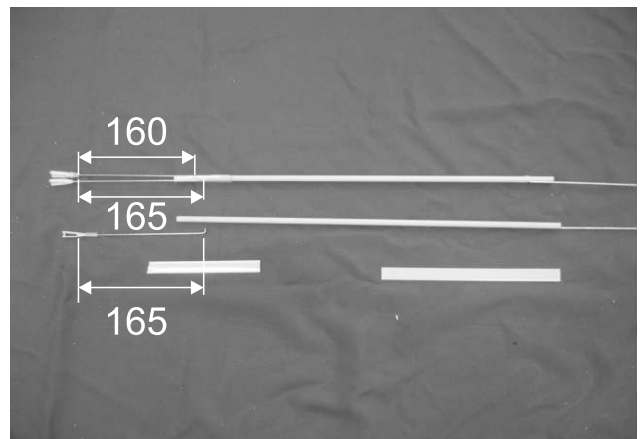
fuselage. Use needle or tape to hold the vertical in place until it's completely dry.



Using a 90 degree triangle, make sure that fin is perpendicular to the horizontal stabilizer.



Use 2.6x 10mm tapping screw to secure the tail wheel assembly in location.

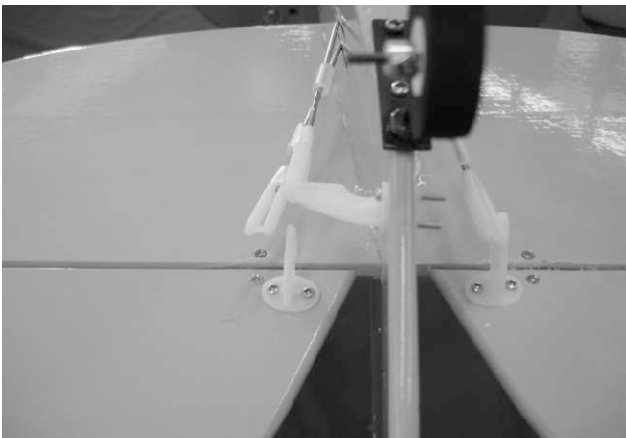


Take dowels, clevis and heat shrink tubing out of the hardware bag. Take a rod of 5mm. Use plier to make a 90 degree bend on no threaded end. Insert the 90 degree bend into the

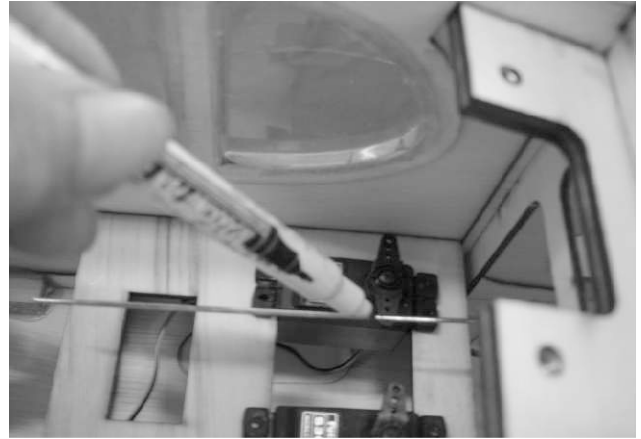
Hole of the wood dowel. Slide a piece of heat shrink tubing over each end of the wood dowel and shrink it in place using a heat gun.



Carefully cut away the covering on the top left side of the fuselage next to the vertical fin for the rudder and the right side for the elevator this is where the pushrods will exit. Position the assembled pushrods through the fuselage to the exit. Slide a piece of fuel tubing and screw the clevis on the end of the pushrod.



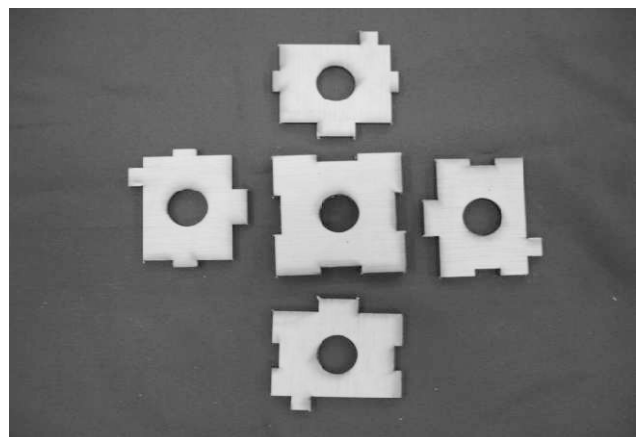
Install the control horns on the elevator and rudder. When installing the control horns, it is important that the holes in the control horns, where the pushrod attaches are directly in-line with the control surface hinge line. Use 2mm drill hole. Secure the control horns and plate in place with 2 x 15mm screws.



Install the servos on the servo tray and secure with the screws which are included with the servo. Secure the servo tray with epoxy. Center the servo. Using marker to mark the rod where it passes the respective servo arm.



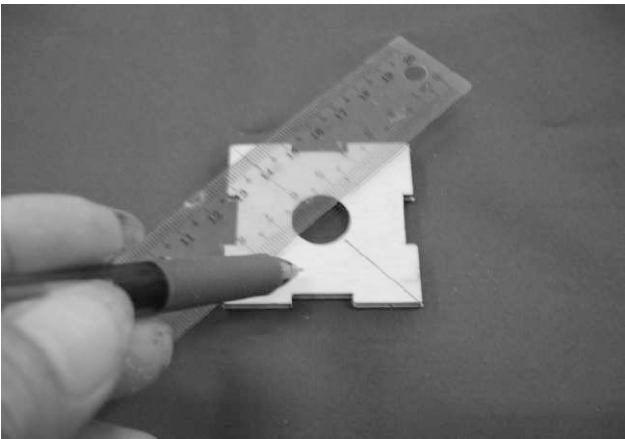
Using Z-bend pliers, make a Z-bend at the marked spot on the rod. Use 2mm drill to open a hole on the servo arm. Insert Z-bend into servo arm and secure with screw. Slide the fuel tubing to the clevis.



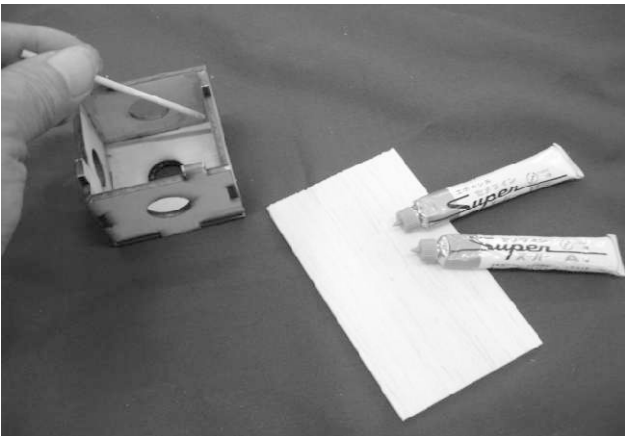
Take the motor mount planking out of



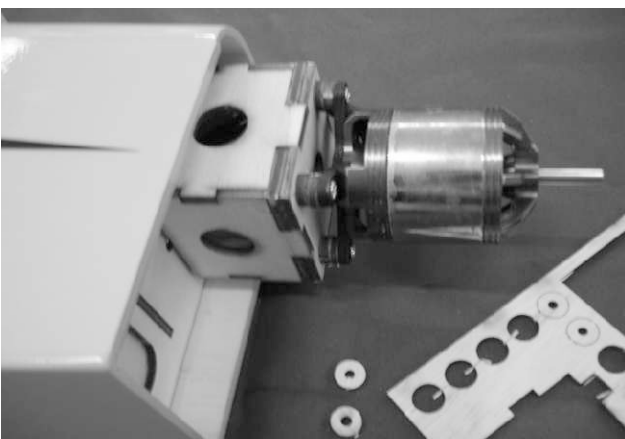
the hardware bag and place on the working table.



Find two planking that has the same shape. Use epoxy to glue them together. Use ruler to mark a cross on the planking.

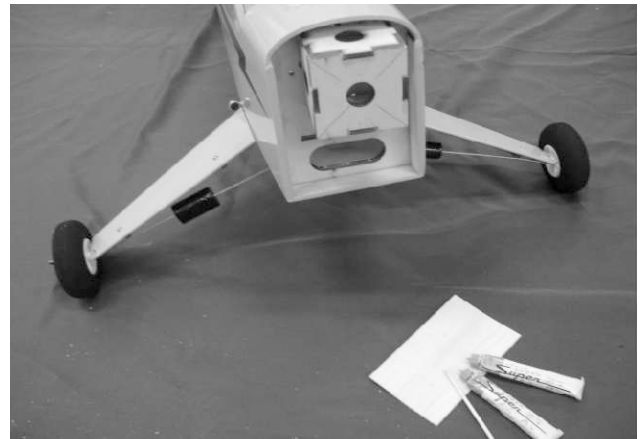


Assemble the planking into the motor mount. Use epoxy to secure the planking in place.

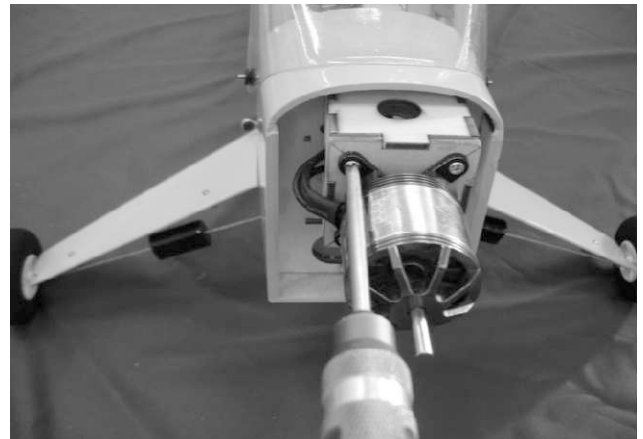


Try to fit the motor on the motor mount. Secure the motor cross plate (come with the motor) on the motor planking with the screws come with

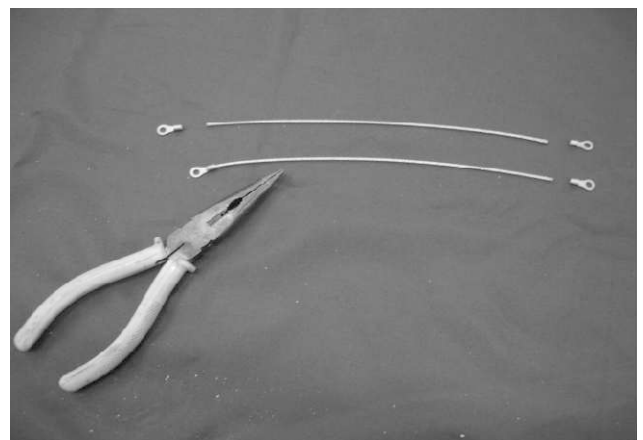
motor. The length of the motor assembly can be adjusted by increasing or decreasing the wooden spacers.



Use epoxy to secure the motor mount on the fire wall.



Secure the motor assembly on the motor mount with 3x10mm tapping screws.

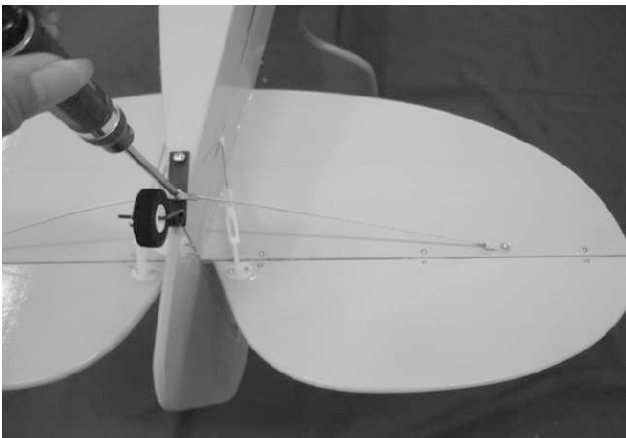


Take the eyelets and wire out of the hardware bag. Use nipple pliers to cut the following sizes of wires: 220mm x 2 pieces for installing the decorative spring on the main gear.

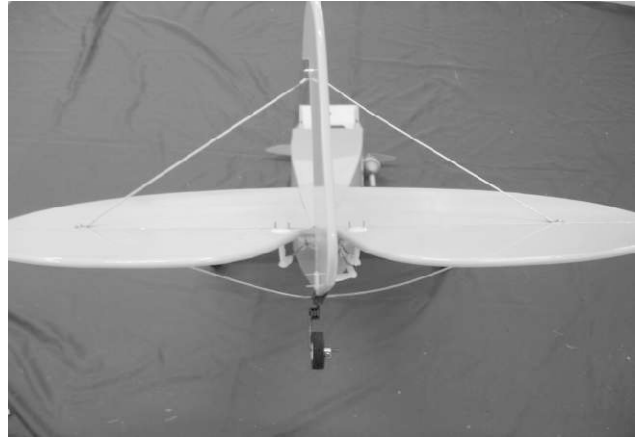
205mm x 2 pieces for installing on the top of horizontal.  
180mm x 2 pieces for installing on the bottom of horizontal.  
Insert the end of the wire into the conjunction of eyelet. Use nipple plier to clamp down the conjunction. Drop some instant glue on the conjunction.



Try to locate the wire assembly on the top of horizontal. One end is 9.5mm from the top of the vertical. The other end is 5mm from the read edge of the horizontal. Please pull the wire straight and use screw and washer to fix it in place temporarily. Don't screw too tight.



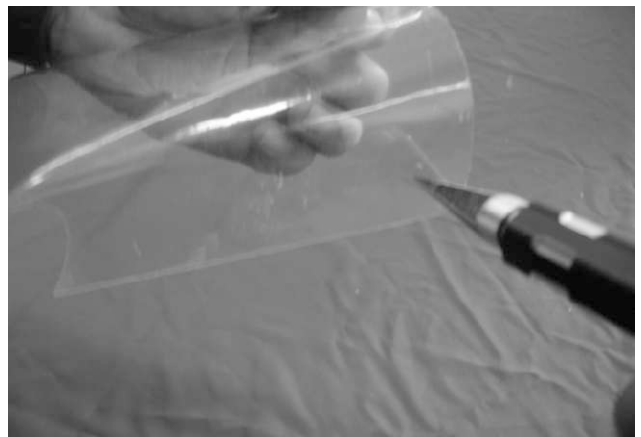
Screw one end of 180mm wire to the bottom of the horizontal and the other end to the tail gear.



Check all the wires. They must be bilateral symmetry. Screw the screws and washers tight to secure the wires in place.



Use curve scissors to trim the canopy according the molding line.



Try to fit the canopy on the fuselage. Use marker to mark the position around 7-8mm from the bottom of the canopy. Use reamer to drill a 5mm hole. Repeat the same procedure on the other side of canopy.





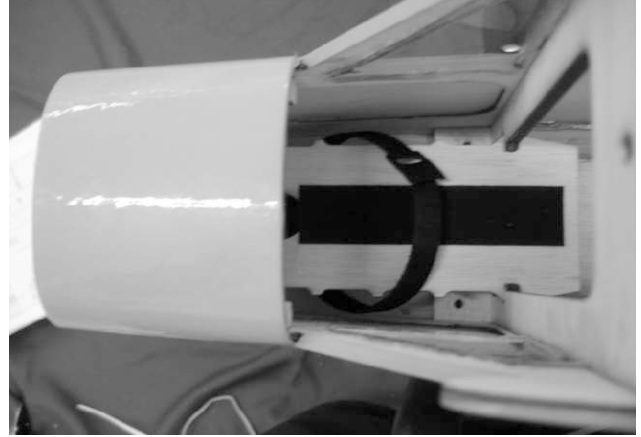
Insert the black rubber ring into the canopy. Please note the canopy must fit into the slot around the rubber ring. It will be easier if drop some water on the ring.



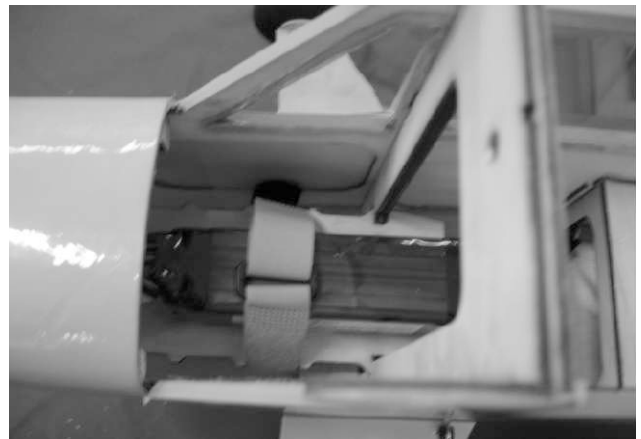
Insert the black rubber ring into the eye screw. Drop some instant screw on the conjunction.



Find a location on the side fuselage. It's 48mm from the gear slot and 8mm from the bottom of the fuselage. Use 1.5mm drill to drill a hole on this location. Screw in the eye screw.



Insert one piece of hook-and-loop strap through the battery tray. Apply one side of Velcro (peel and stick adhesive) on the battery tray.

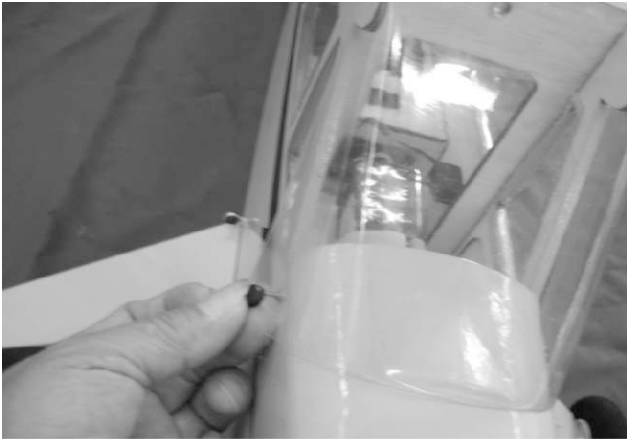


Apply another side of Velcro on the battery. Place the battery on the battery tray and secure in place with hook-and-loop strap.

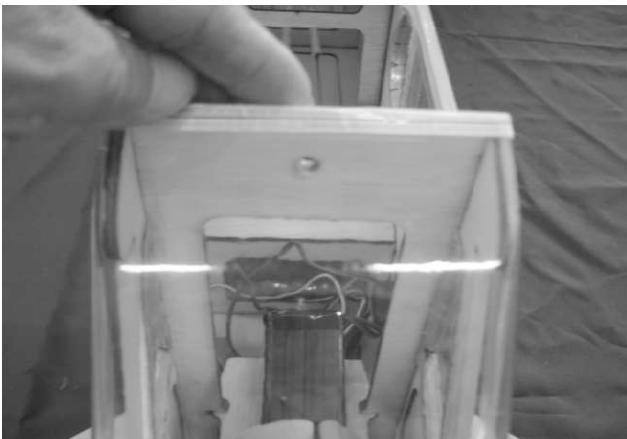


Place the canopy on the fuselage. Apply a piece of tape to fix it in place temporarily. When satisfy the location, use a marker to make a mark on the center of the rubber ring.

Remove the canopy. Use 2mm drill to drill hole on the marked position.



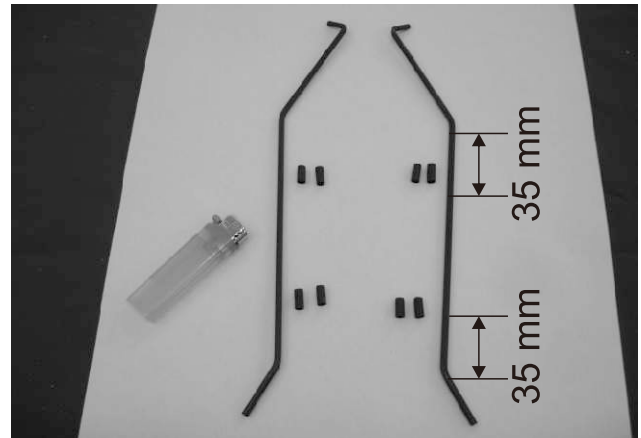
Take M2x15mm screws, washers and nuts out of the hardware bag. Insert a washer to the screw. Place the screw inside the fuselage and insert through the fuselage and canopy. Use washer and nut to secure it in place. Press the rubber ring onto the end. It's convenient for removing the canopy and changing the battery.



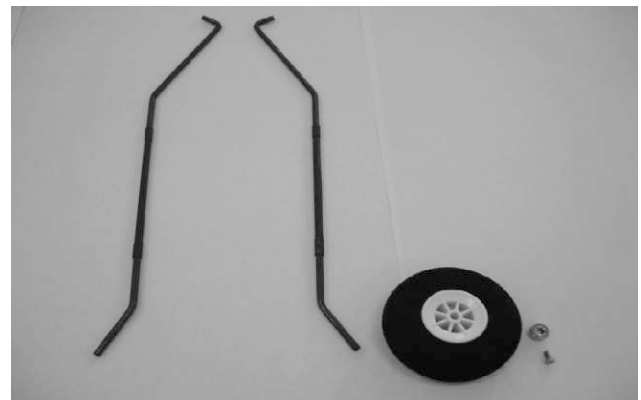
The other side of tape must be press down to fuselage.



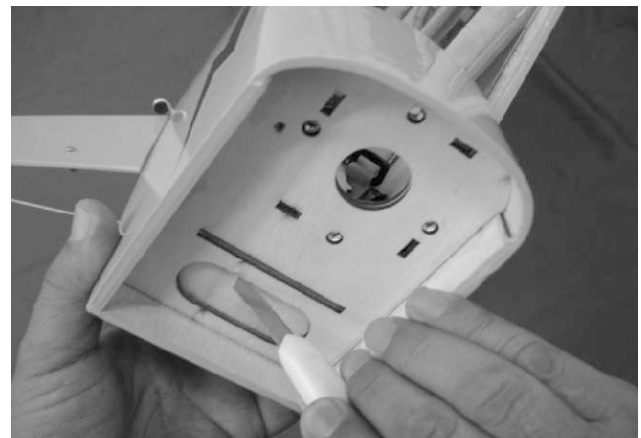
Find the pre-served gear slot on the bottom of fuselage. Use hobby knife to remove the covering on the slot.



Take one piece of heat shrink tubing out of the hardware bag. Cut the tubing into 5mm x 8 pieces. Please refer to the drawing and note the location for placing the tubing. After heating the first tubing, move the second tubing to over the first tubing and heating again. You can use lighter, heat gun to heating the shrink tube.

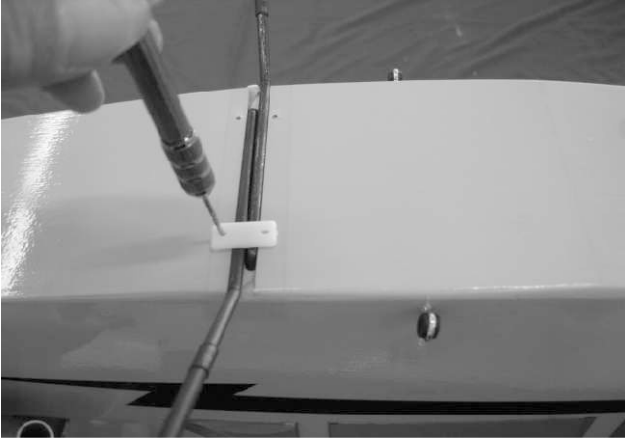


Assemble the wheels on the main gears and secure with 4mm collar and M3x5 screws.





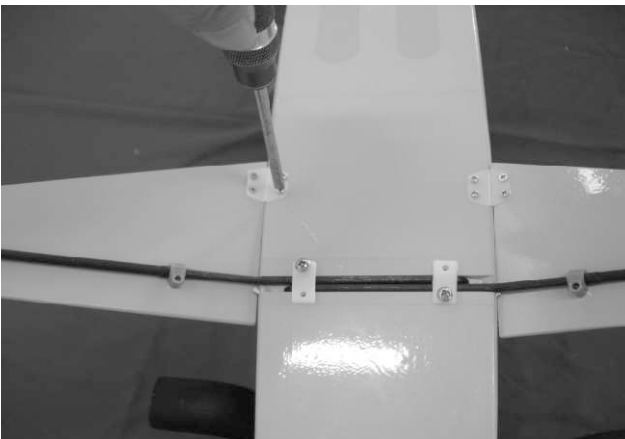
Use sharp hobby knife to remove the planking on the cooling hole.



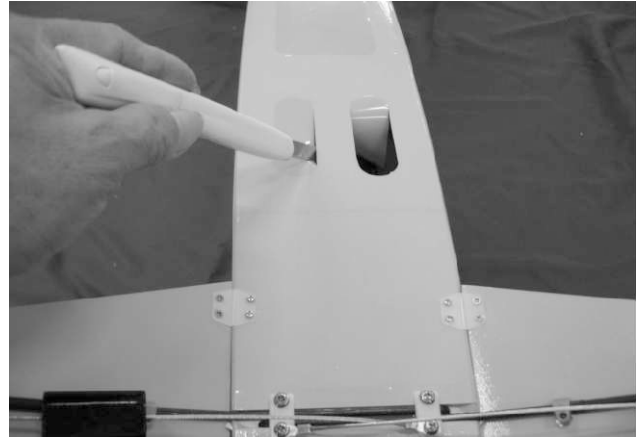
Try to fit the main gears into the gear slot and secure with gear plate and 2.6 x 10mm tapping screws.



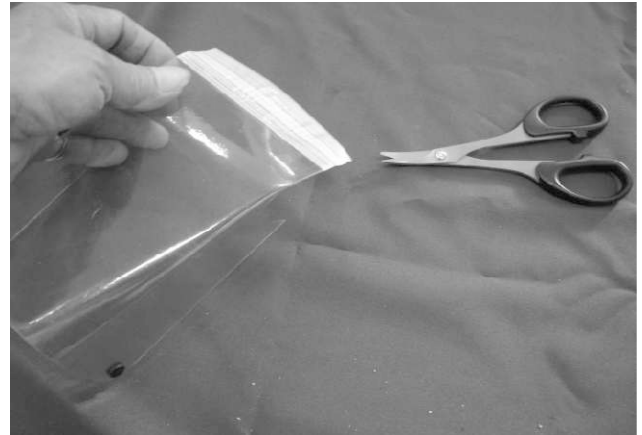
Try to fit the decorative planking on the main gear. Place a saddle cable clip on the main gear where has heat shrink tubing. Use 2.6 x 8mm tapping screw to secure the planking on the gear.



Secure two hinges on the rear edge of the gear planking with 2x5mm tapping screws.



Use hobby to remove the covering over the vent.



Apply one piece of 30mm 3M fiber tape on the front edge of canopy.

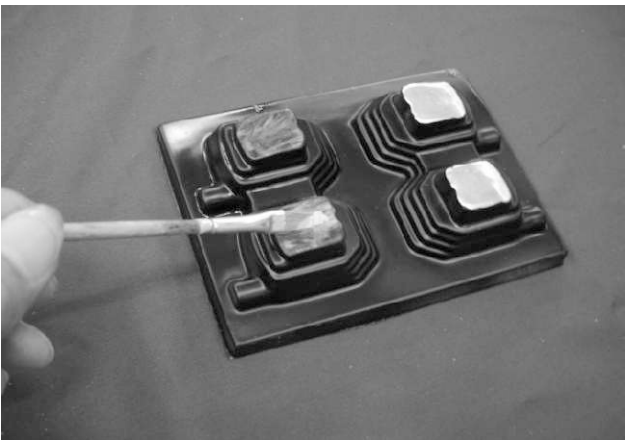


Assemble the motor with propeller and aluminum spinner. Please note there is 1.5mm space between aluminum spinner and cowling. Try to fit the cowling on the fuselage. When satisfy the location, apply a piece of tape to hold the cowling in place. Use 1.5mm drill to drill hole for fixing the cowling on fuselage. Use 2x8mm tapping screws to

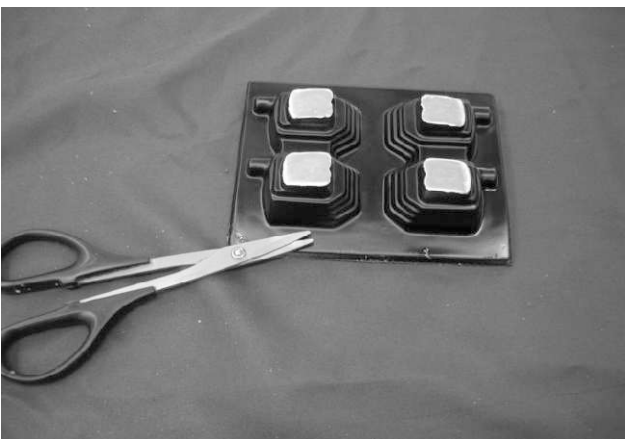
secure the cowling in place.



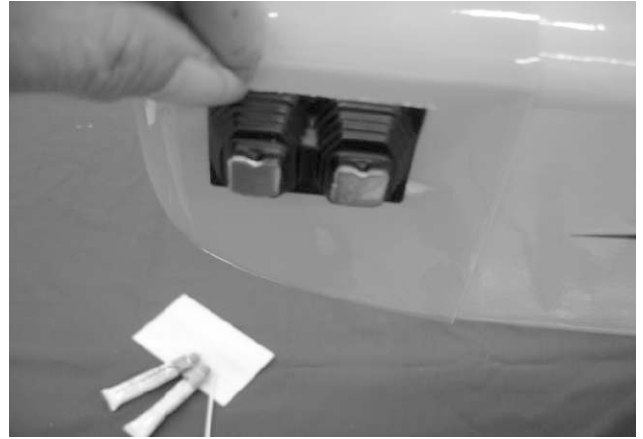
Spraying black on the decorative plastic engine.



Paint silver on the top of plastic engine.



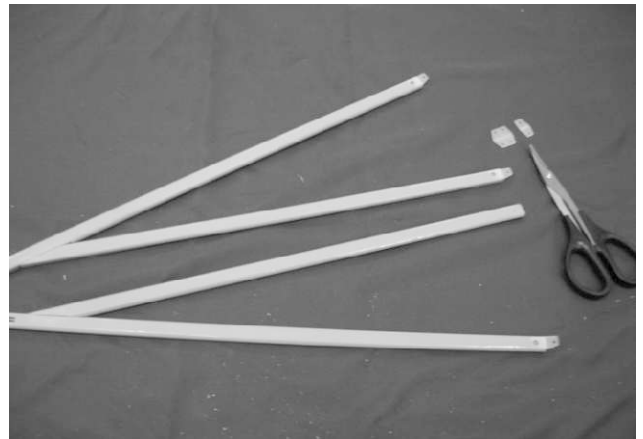
Use curve scissors to trim the edges. Sand the bottom side.



Spread epoxy to secure the plastic engine on two sides of cowling. (It's only one side for GP version.)



Place the main wing on the fuselage. Screw in the M4x40mm wing bolts.

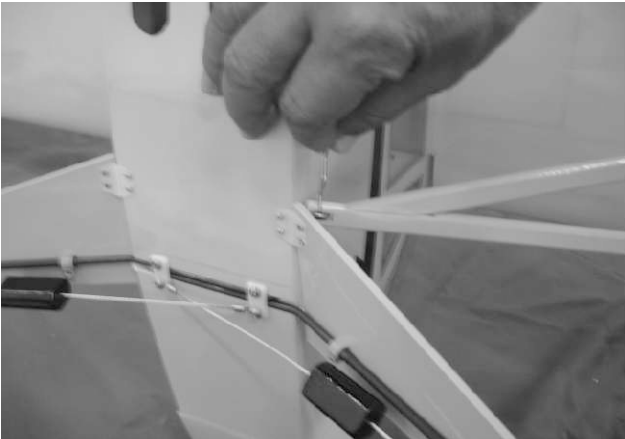


Cut the hinges into two halves. Place one half on the wing struts. Mark the position for fixing the hinges on the struts. Drill 1.5mm hole on the marked position.

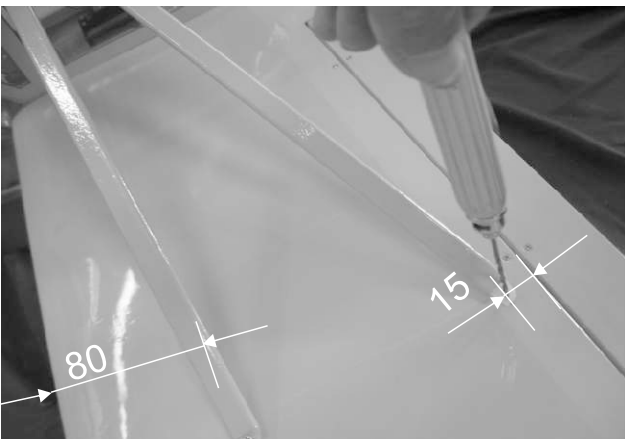




Use 2x5mm tapping screws to secure the hinges on the struts.



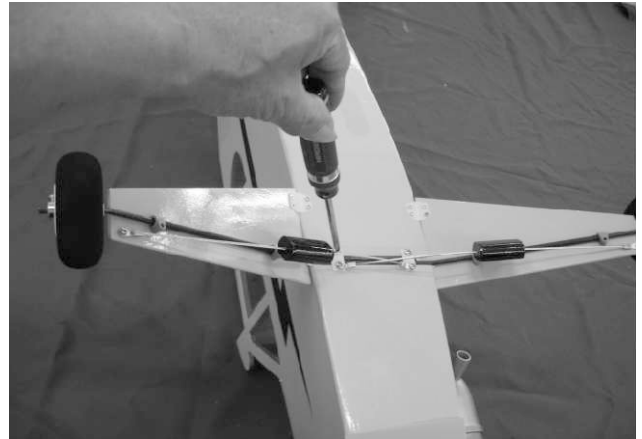
Place the wing struts to the fuselage. Please refer to the picture. The eye screw must be fitted into the slot and fixed with R pin.



Please refer to the drawing and find the blocks inside the main wing for fixing the struts. Place the struts on the main wing and mark the position for hinges. Drill 1.5mm holes on the marked positions.

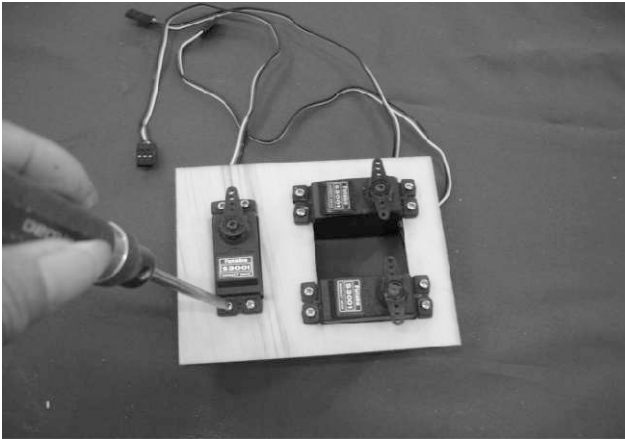


Use 2x8mm tapping screws to secure the hinges in place.



Secure one end of gear wire on the gear fixing plate with 2.6 x 8mm tapping screw. Secure the other end to the gear planking around 7mm from the front edge. Don't pull the wire too tight.

## FOR GP VERSION

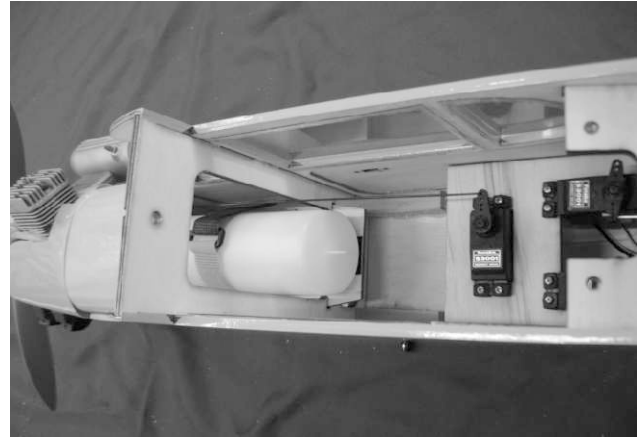


Take the servo tray out of the hardware bag. Place 3 pieces of 45g servos on it and secure with the screws come with the servos. The left servo is for throttle. The top on the right side is for elevator, the bottom is for rudder.

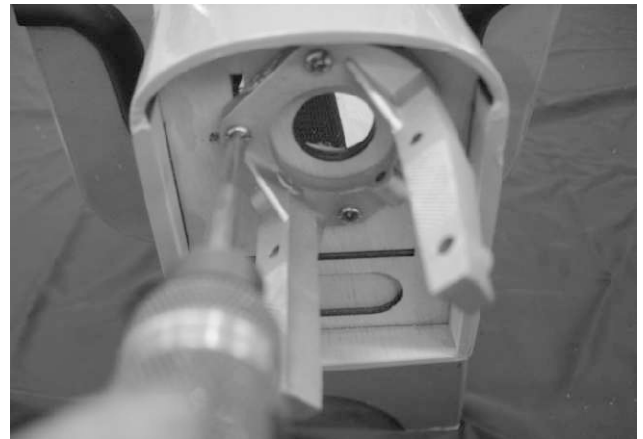


Connect the servo with receiver. Set the horizontal and vertical to neutral position and use clip to hold them in place. Pull the pushrod to the outer hole of servo arm. Using a marker to place a mark on the end of the pushrod where it passes the connection hole of servo horn. Using Z-bend pliers, make a Z-ben at the marked location on the rod. Insert the Z-bend into the servo arm. Adjust the clevis and slide the fuel tube into the rod.

PS:Use epoxy to secure the servo tray on the planking.



Apply one side of adhesive Velcro on the fuel tank and another side on the battery tray. Connect the fuel tank and pressing hole with fuel tubing. Pull the fuel tube out of the fire wall. The opening for the switch is on the left side. Secure the fuel tank on the battery tray with a hook-and-loop strap.



Set the engine mount to 45 degree and secure on the fire wall with M4 x 30mm screws.



Place the engine on the engine mount. Secure the engine in place



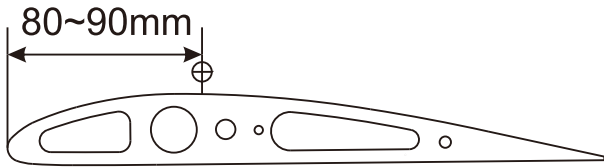
with engine mounting brackets, M4x30mm screws and nuts. Connect with throttle rod. Secure the muffler. Install the fuel tube from the fuel tank pickup line to the carburetor fuel nipple. The vent line will be installed onto the pressure nipple after the muffler is installed.



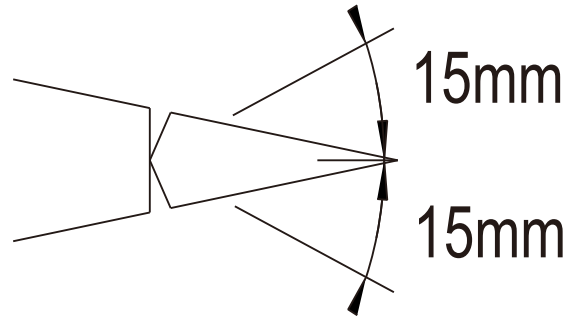
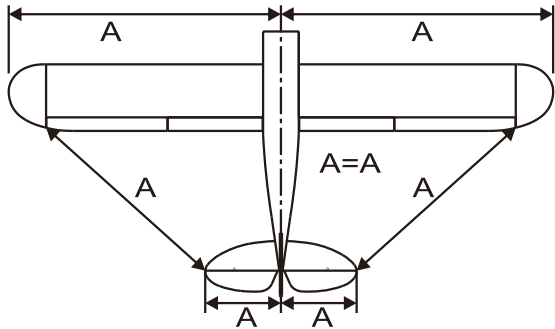
Try to fit the cowling on the fuselage. Use hobby knife to trim the opening for the engine. Please keep 1.5mm space between the cowling and engine mounting brackets. Apply tape to fix the cowling in place temporarily. Use 1.5mm drillers to drill holes on the cowling. Secure cowling in place with 2x8mm tapping screws. Remove the tape. (You may apply tape around the canopy for avoiding the oil during flying.)



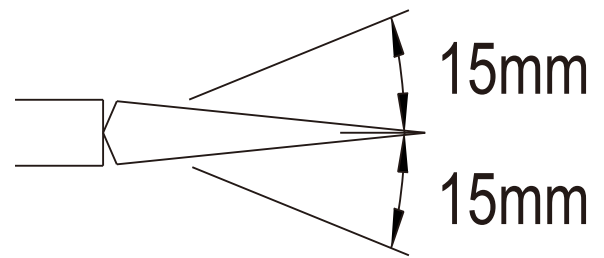
Install the propeller and secure the aluminum spinner.



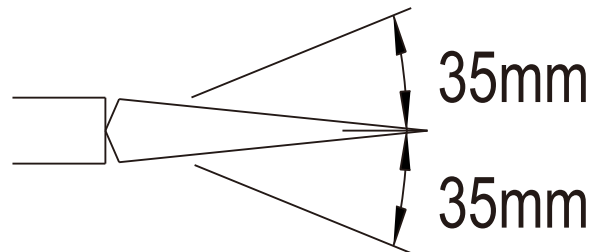
The C.G. Point is 80~90mm back from the leading edge against the fuselage.



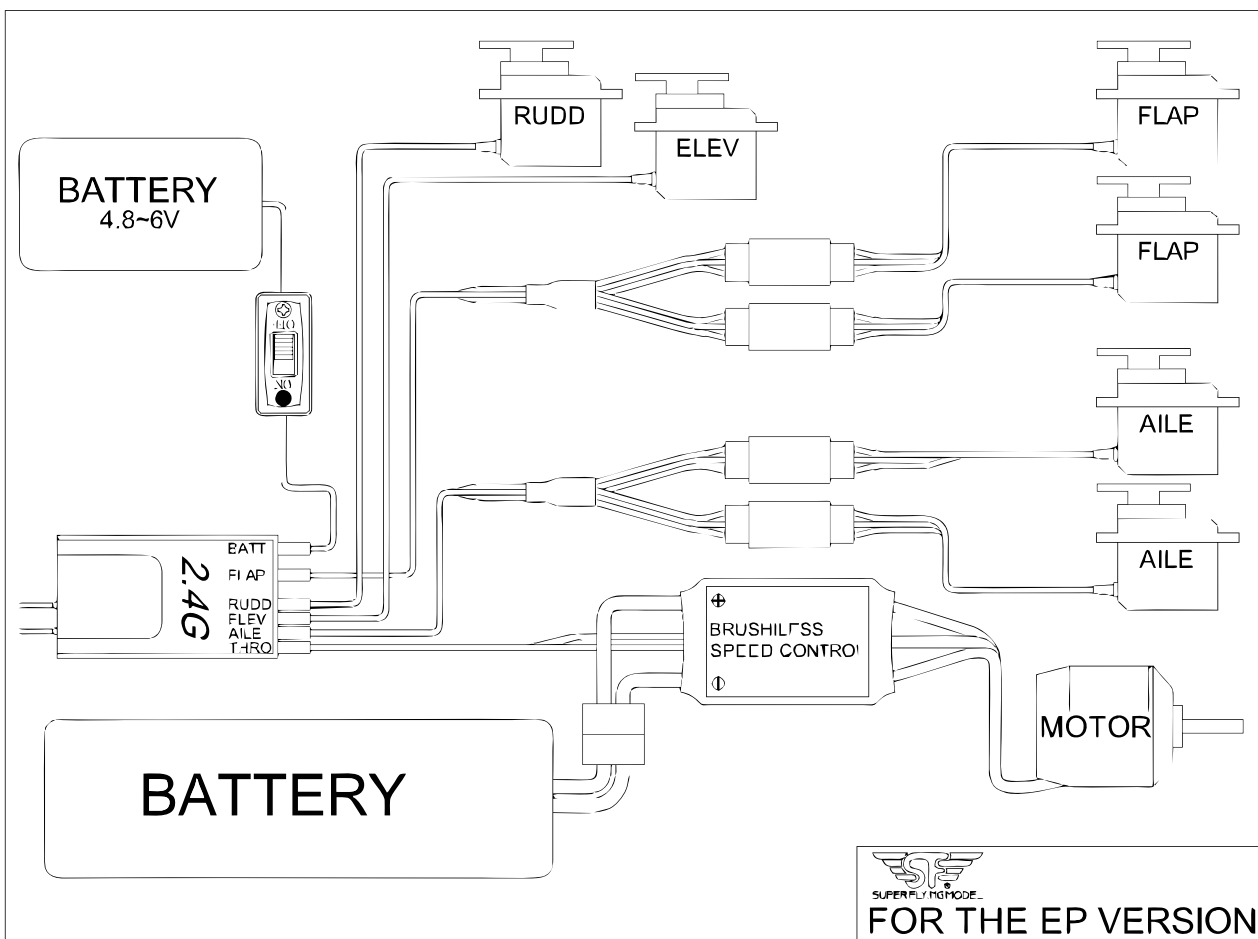
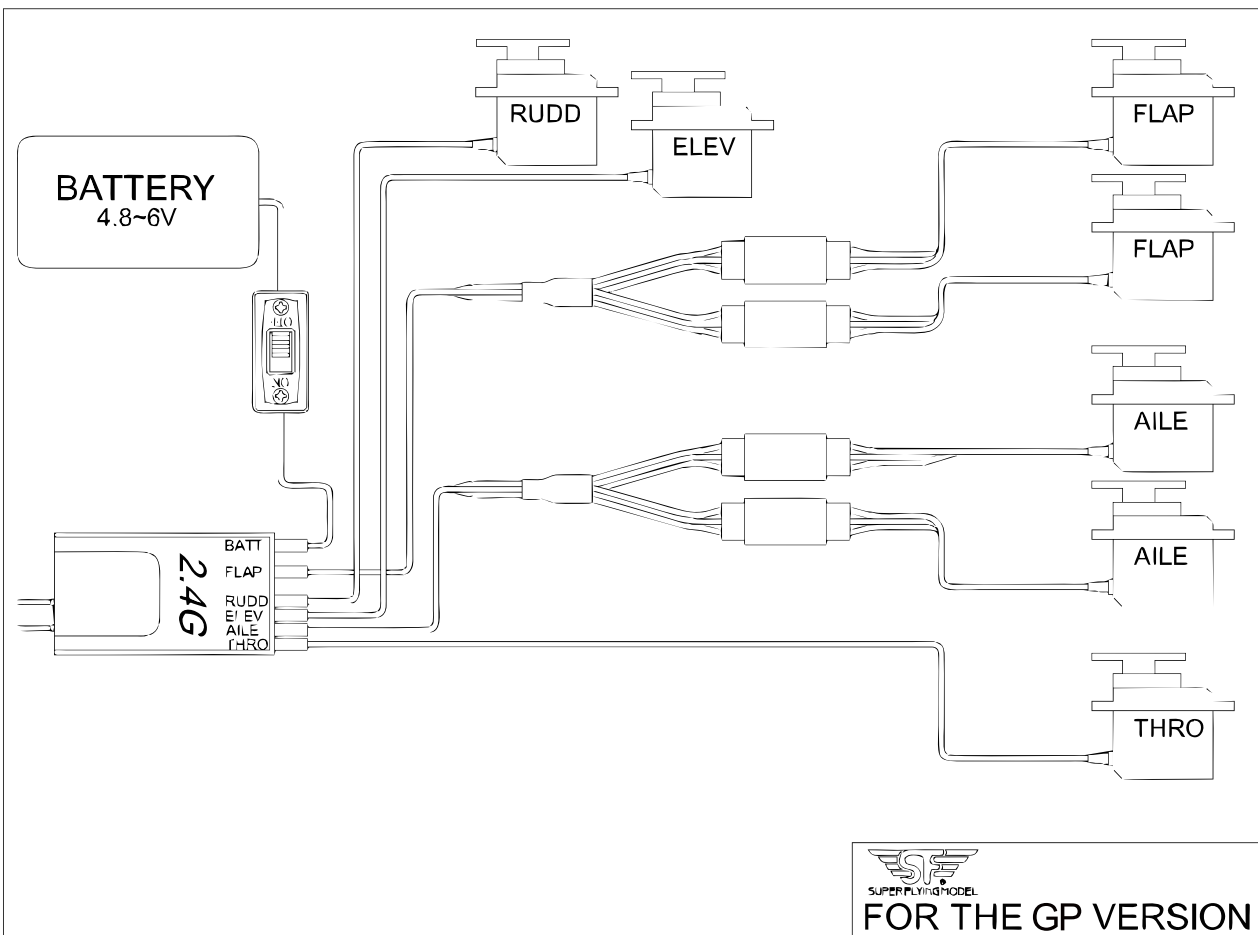
**AILERONS THROW**



**ELEVATOR THROW**



**RUDDER THROW**







SUPER FLYING MODEL  
MANUFACTURE



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