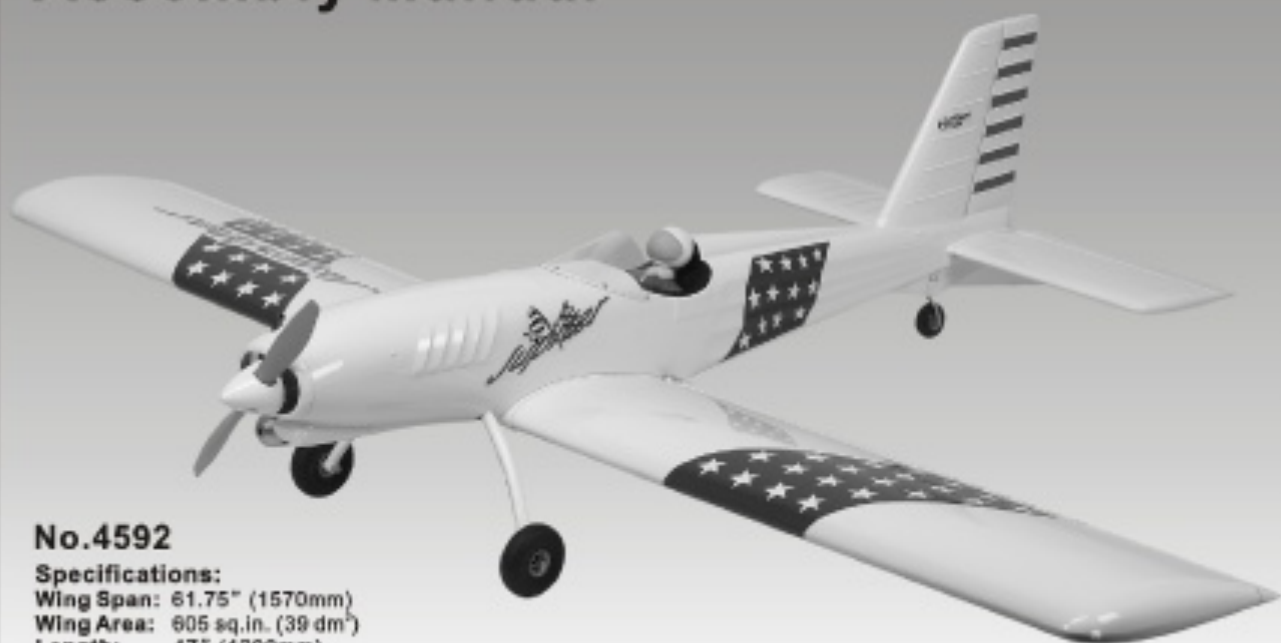




Assembly Manual



No.4592

Specifications:

Wing Span: 61.75" (1570mm)
Wing Area: 605 sq.in. (39 dm²)
Length: 47" (1200mm)
Weight: 5-6.30 lbs. (2800g)
Engine: PRO-46 Req'd
Motor: OBL36/09-46A
Radio: 4-6 CH Req'd

Warranty

This kit is guaranteed to be free from defects in material and workmanship at the date of purchase. It does not cover any damage caused by use or modification. The warranty does not extend beyond the product itself and is limited only to the original cost of the kit. By the act of building this user-assembled kit, the user accepts all resulting in liability for damage caused by the final product. If the buyer is not prepared to accept this liability, it can be returned new and unused to the place of purchase for a refund.



Introduction

Thanks for purchasing the ABS (ABS is a “polymerized alloy” of the three materials **A**crylonitrile, **B**utadiene and **S**tyrene) series airplane from Thunder Tiger, this kind of airplane is far different from the traditional wood made airplane covered with covering. The plane is all plastic includes the fuselage, wing and tail feathers which are impact and water resistance that we ensure you will have longer enjoyable time with this product.

This is not a toy. Assembly and running this product requires adult supervision. To gain the most from this airplane kit, it is important that you read the instructions thoroughly and then follow them exactly. This instruction manual has been written with a novice modelers in mind, but includes many hints and modeling tips that even experienced modeler can benefit from. We strongly suggest that you read through the construction sequence and eliminate many questions you might have if you did not read the manual prior to starting the actual construction.

The first thing you should do before beginning assembly is to check the contents of your kit against the parts list on pages 5 and 6. If any parts are missing, contact your dealer or authorised Thunder Tiger Distributors immediately for replacement. Browse www.thundertiger.com for more information or customer service if you encounter any problems.

TABLE OF CONTENTS

INTRODUCTION.....	2
ITEMS NEEDED.....	3
POWER UNIT REQUIRED.....	4
PARTS DRAWING.....	5-6
PRE-ASSEMBLE NOTES.....	7
WING.....	7-8
FUSELAGE.....	9-10
TAIL.....	11-12
FUELTANK.....	13
ENGINE.....	14-15
RADIO.....	16
MOTOR.....	17
BALANCE.....	18
REPAIR.....	19
PAINTING.....	20

ITEMS REQUIRED FOR ASSEMBLY

A checklist is also provided on the next page which will make shopping for these items easier.



Radio - A 4-channel radio with 4 standard servos is required. Most lower priced 4-channel radios only come with three standard servos so you may need to purchase the fourth servo separately.



Tools-Model assembly can be much easier if the proper tools are used. Therefore we have included in our checklist to above, a complete listing of all the tools we used to assemble our prototype models. As you will notice, many household tools can be utilized during the construction.



Adhesives- You will need two types of adhesives for the Jupiter- Epoxy and Instant (cyanoacrylate) adhesives. We recommend that you purchase both 5-minute and 30-minute epoxy to cut down on assembly time, but you can get by with only 30-minute epoxy if time is no important. You will also need a small bottle of both "Thick" and "Thin" instant adhesive.



No.1263-65

Carry Master-Thunder Tiger offers a complete organizer of field equipment. All you need is included.

Comprehensive Items Needed Check List

- 4-Channel Radio with 4 Standard Servos
- 5-Minute Epoxy (4 ounces or so)
- 30-Minute Epoxy (4 ounces or so)
- "Thin" Instant Adhesive (1/2 ounce)
- "Thick" Instant Adhesive (1/2 ounce)
- Hobby Knife and Blades
- Epoxy Mixing Sticks and/or Brushes
- Sandpaper (150 grit)
- Masking Tape
- Rubbing Alcohol
- Paper Towels
- Ruler
- 90 Degree Triangle
- Fine-Point, Felt-Tip Pen
- Misc. Household Tools
- Drill and Bits (1.5mm, 2.6mm, 3mm, 4mm, 5mm, 7.5mm (1/16", 7/64", 1/8", 5/32", 13/64", 19/64")



POWER UNIT REQUIRED



Power Unit Required

Nitro power

No.9141



Engine-Thunder Tiger PRO-46 is an ideal engine for this airplane. This quiet running engine is easy to start, requires no special break in periods, is very easy to maintain and will last for years.



Flight Equipment- There are several "support" items that you will need to purchase in order to get your engine running and your plane in the air. These are listed at the bottom.

Nitro Flight Equipment Needed Check List

- Foam Rubber Padding for the radio
- Stick on Lead Strip for balancing the plane
- 3 or 4 Props (see engine instructions)
- 10%-15% Glow Fuel
- Fuel Pump or Bulb
- Electric Starter or "Chicken Stick"
- Glow starter
- Extra Glow Plug(s)
- Silicon Tubing

Electric Power



Brushless Motor: If you would use electric motor instead of a Nitro Engine then the OBL36/08-46A (No.2366) is a perfect choice to install on Jupiter.



Controller: ACE BLC-60A (No.8077) is a perfect controller that controlling OBL motor efficiently.



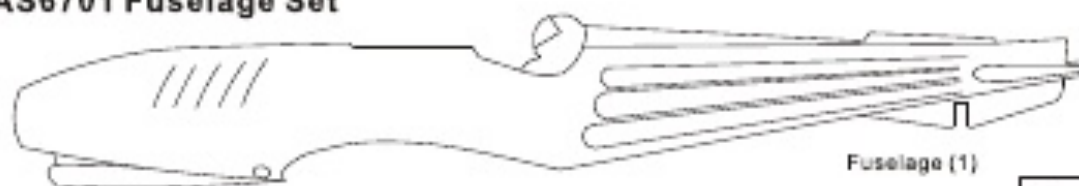
Battery: Recommend the use of 4S1P 14.8V 3700mAh battery (No. 2842)



Battery Charger- ELC4 LiPo Battery Charger(No.2532)

Electric Flight Equipment Needed Check List

- 2-3 APC 12x6-8E Propeller
- 14.8V 3700mAh LiPo Battery Packs
- 60A Speed Controller
- Quality LiPo Battery Charger

AS6701 Fuselage Set


Fuselage (1)

Pin (4)

Nut Support (1)



Firewall (1)



Undercarriage Bulkhead (1)



Centre Bulkhead (1)



Foam (1)



Pushrod Retainer (1)



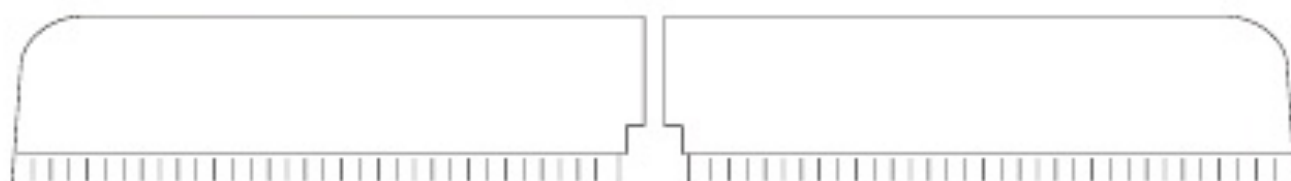
Servo Tray (1)

AS6706 Motor Mount


Motor Mount (1)

Washer (1)

3x8mm Screw (2)

AS6702 Main Wing Set


Main Wing (L/R/1)



Center Sleeve (1)



Torque Rod Cover (2)



Spacer Tube (1)



Aileron Servo Rail B (1)



Aileron Servo Rail A (1)



M7 Hex Nut (1)



Aileron End Cap (L/R/1)



Rod Support (L/R/1)



Torque Rod (L/R/1)



2.6x10mm Wood Screw (4)

AS6697 Wing Bolt (Sold in Pair)


Wing Bolt (1)

AS6670 Vertical Tail Set


Vertical Tail (1)



Rudder Control Horn (1)

AS6671 Horizontal Tail Set


Horizontal Tail (2)



Elevator Control Horn (1)



Foam Block (1)



Elevator Spar (1)

AS6672 Engine Mount Set


Engine Mount (1)



Engine Mount Back Plate (1)



Beam Hold Block (1)



M4 Hex Nut (3)

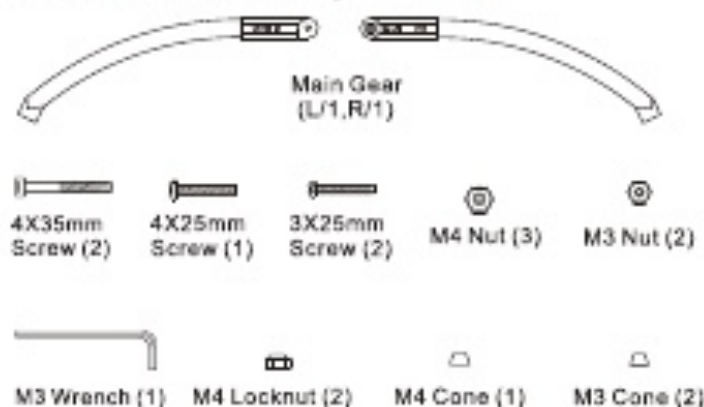


4x25mm Screw (3)

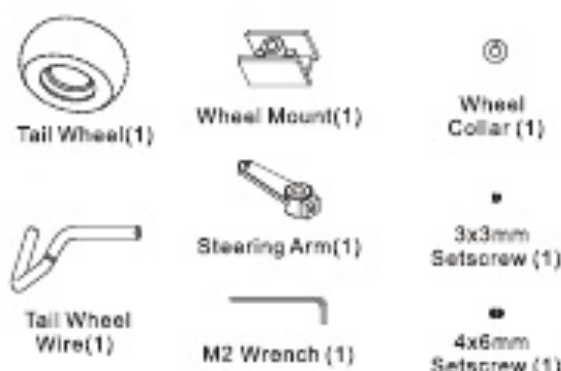


3x18mm Wood Screw (4)

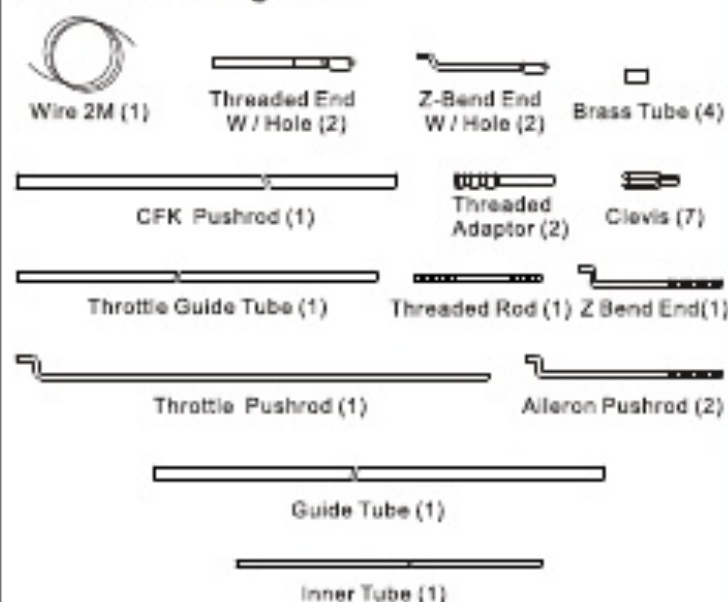
AS6703 Main Landing Gear Set



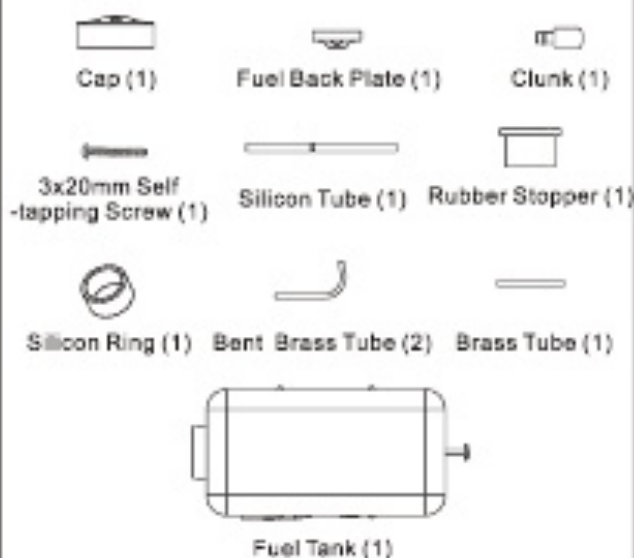
AS6695 Tail Wheel Set



AS6696 Linkage Set



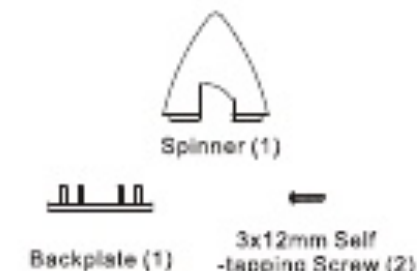
AS6678 220cc Fuel Tank



3169 EZ Connector Set



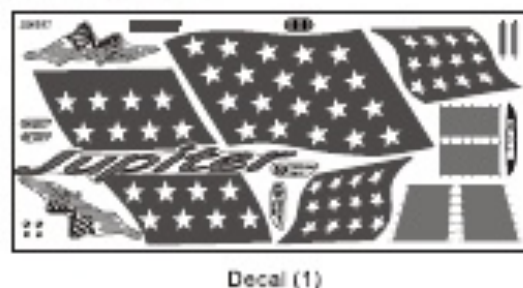
3282W Spinner



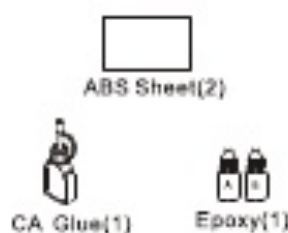
3297 Wheel



AS6704 Decal



AS6680 Repair Bag



AS6705 Wind Shield



OPTIONAL PARTS AS6707 Adaptor Set





PRE-ASSEMBLY NOTES

1. If you are not an experienced pilot, plan to have a fully competent pilot check your completed model and help you with your first flights. Even though we have tried to provide you with a very thorough instruction manual, models are rather complicated and an experienced modeler can quickly check over your model to make sure your first flights are successful.

2. Please assemble your model exactly according to these instructions. Do not attempt to modify or change the **Jupiter** in any way as doing so may adversely change its flying characteristics.

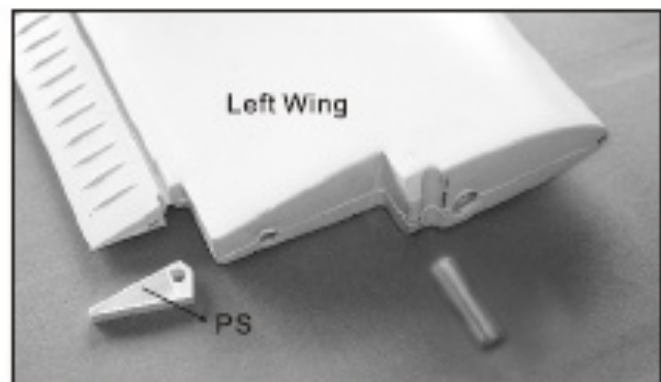
3. Before you begin, please check the entire contents of this kit against the parts drawing make sure that no parts are missing or damaged. This will also help you to become familiar with each component of your plane. If you find that any of the parts are either missing or damaged, please contact your dealer immediately for replacement.

Note: Your dealer cannot accept kits for return if construction has begun.

4. Trial fit each part before gluing it in place. Make sure you are using the correct part and that it fits well before assembling. No amount of glue can make up for a poor fitting part.



2. Cut the two small plastic half circles away as shown in the photo.



3. CA the aileron end cap in place, note the orientation. The end cap marked PS is for the left aileron and PD is for the right. Next CA the spacer tube in the leading edge of the wing end rib. Make sure it is centered accurately in the depth of the wing.

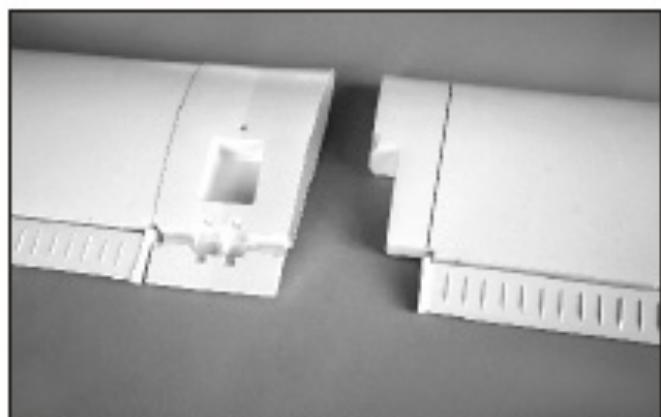


4. Push one wing into the center sleeve until the side of the servo well is against the wing end rib and the leading edge of the wing end rib is just in the middle of the small hole. Using a pencil to draw a line around the wing exactly where the center sleeve ends, this will help you when gluing. Slip off the left wing from the center sleeve; sand the wing area defined between the pencil line and the wing end rib with 150 grit sandpaper; also sand the whole inside area of the center sleeve. Cover sanded area and the corresponding inside part of the center sleeve with a layer of epoxy.

WING ASSEMBLY



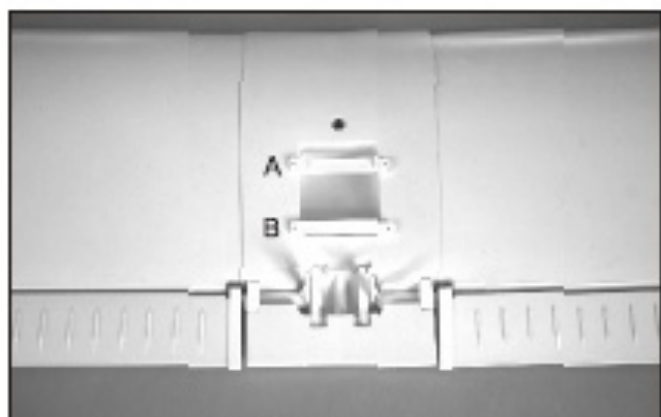
1. Make a hole 7.5mm (19/64") on the marks of the center sleeve to allow the passage of the wing bolt.



5. Push the center sleeve onto the wing, paying attention that the pencil line should go back into the right position. You can use a masking tape to keep everything in place until the epoxy dries. Let the epoxy cure and repeat the same procedure for the right wing also spreading a layer of the epoxy on the end rib. Pay attention to clear off any epoxy from the wing that may have been squeezed out.



6. Locate the torque rod, rod support, torque rod cover and aileron servo rails (A and B) as shown in the photo.



7. Use aileron servo that you are going to use as the guide to decide the rail position, then secure the aileron servo rails (A and B) with 2.6x10mm wood screws. Install the torque rod, rod support and torque rod cover by CA as shown in the photo.



8. Join the ailerons to the servo using two pushrods and two clevises as shown.

Note: Skip Step 9-14, Step 40-53 and proceed the Motor Assembly in page 17, if the user prefer the electric power.



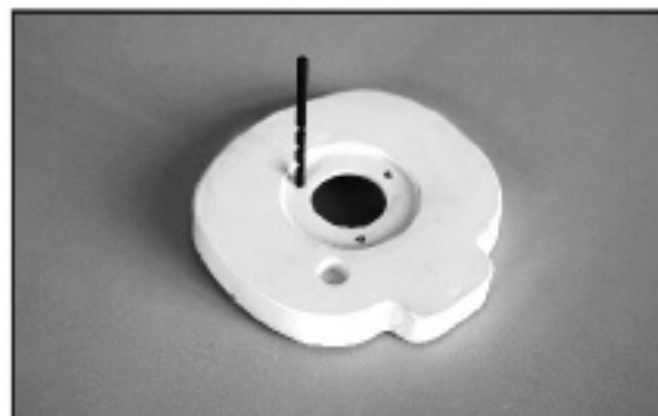
9. Drill four 3mm (1/8") holes for the firewall pins in the front of the fuselage and insert the four pins, then glue them in place with cyano.



10. Cut the two 5.5mm (7/32") holes to allow the passage for the main gear on the fuselage.



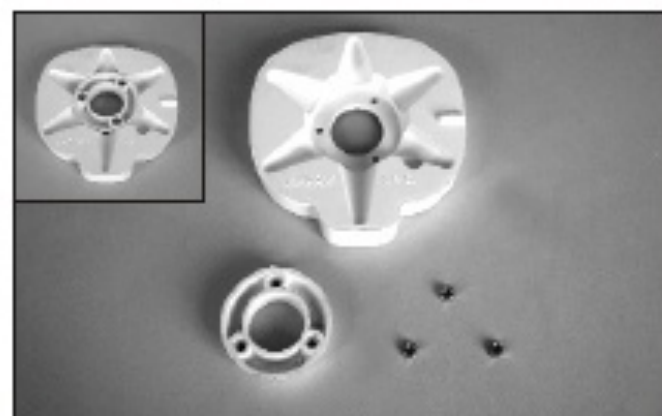
FUSELAGE



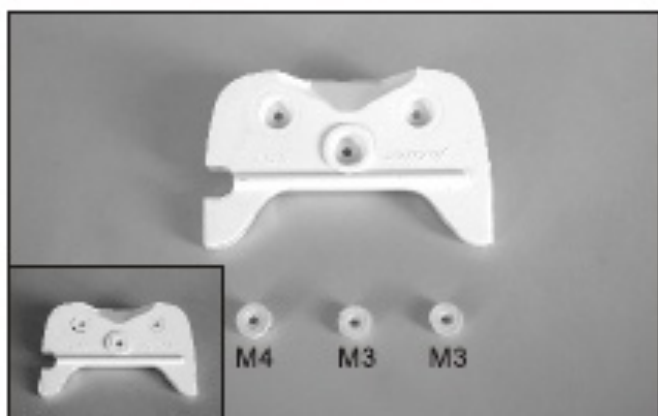
11. Drill three 4mm(5/32") holes on the firewall for the installation of the engine mount.



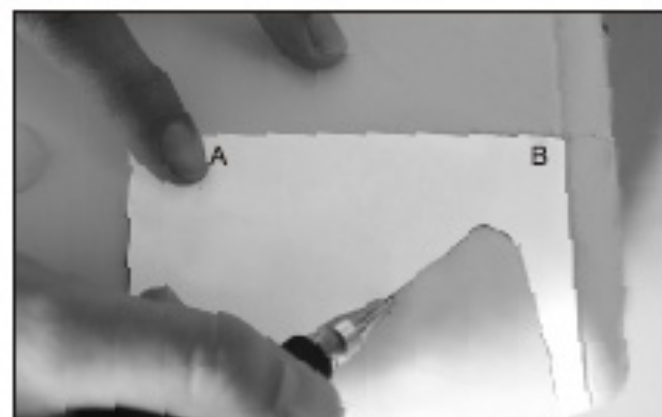
14. Install the firewall (complete with engine mount back plate), and insert it into the fuselage as shown in the photo and push it forward until it seats against the pins. Glue it all along the perimeter with cyano or epoxy.



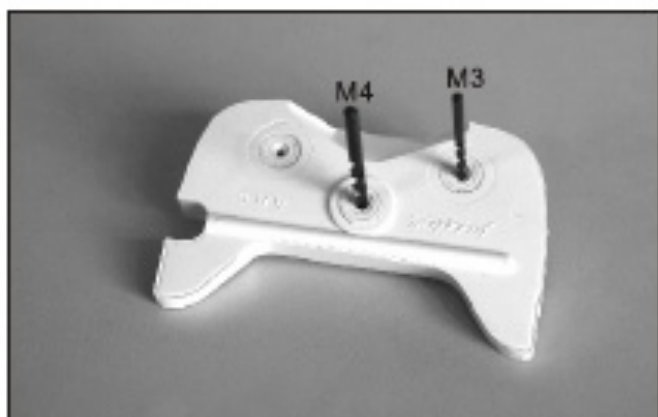
12. Place the three M4 nuts in the shaped holes of the engine mount back plate. Spread a layer of epoxy on the firewall. Temporarily install the engine mount using the three 4x25mm screws to make sure the back plate is secured firmly.



15. Place the two cones with 3mm(1/8") hole in the high position of the undercarriage bulkhead and glue with cyano; place the cone with 4mm(5/32") hole in the lower position of the undercarriage bulkhead and glue it in place with cyano.



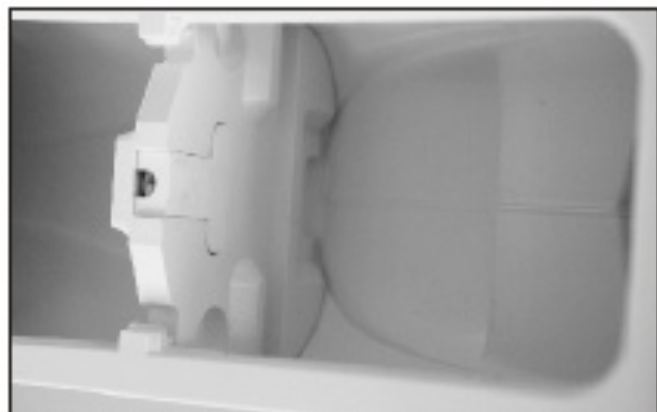
13. Clip the template (turn to page 19), then carefully trim away the gray part. Next apply the template on the cowl as shown (the edge marked AB should be aligned with the molded line of the coat). Make marks along the opening of the template on the cowl. The fuselage is hard, you may wisely drill holes in the opening area, carefully trim the cowl along with the line.



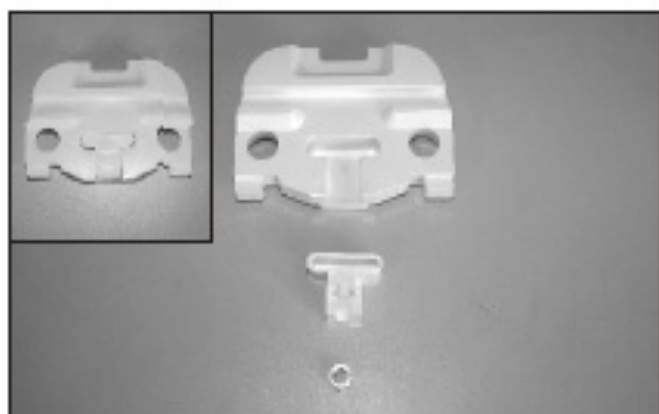
16. Drill 3mm(1/8") and 4mm(5/32") holes through the bulkhead as needed.



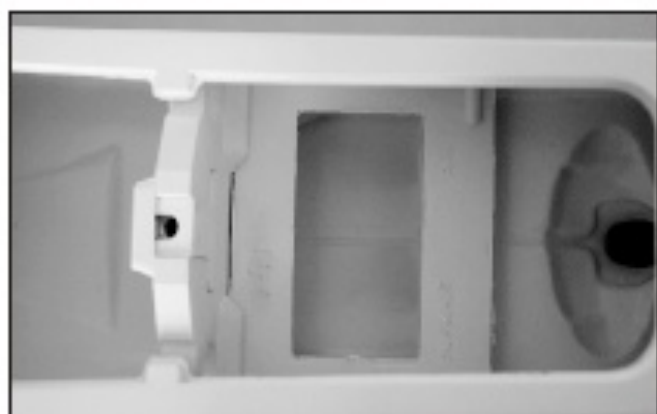
17. Trial fit the undercarriage bulkhead into the position. Next remove the bulkhead and sand the glue area, finally glue it in place with cyano or epoxy.



20. Make sure the center bulkhead is in the position as shown, align it with the beginning of the wind screen notch, then glue it with epoxy.



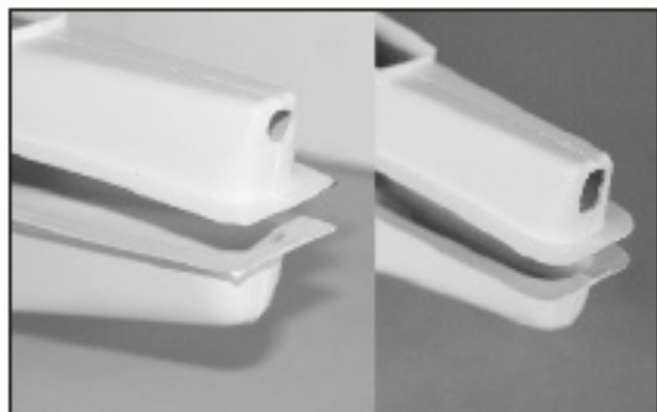
18. Place the M7 hex nut into the nut support, then insert the nut support into its seat in the center bulkhead. Glue with epoxy to make sure it is in the position as shown in the photo.



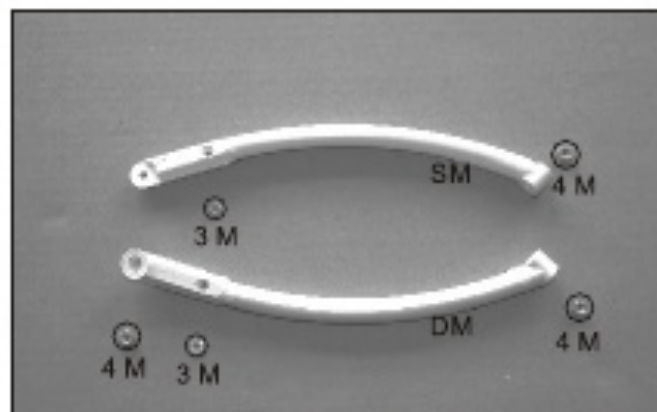
21. Insert the servo tray and glue it in place with epoxy.



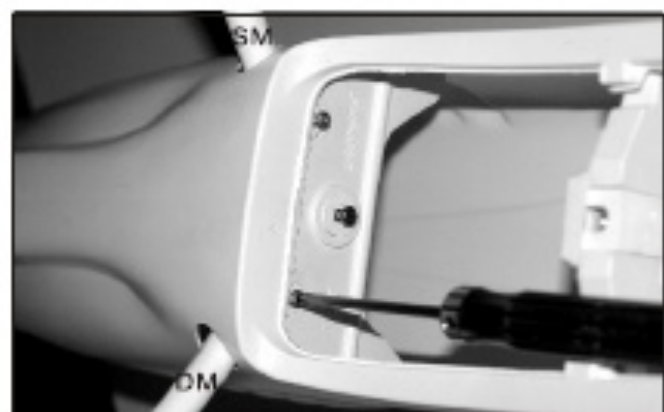
19. Insert the completed center bulkhead in the fuselage.



22. Use a round file to enlarge the elevator pushrod exit hole so the clevis will not contact the fuselage. Also trim the flange of the tail.



23. Locate the main gear and mounting screws as shown.



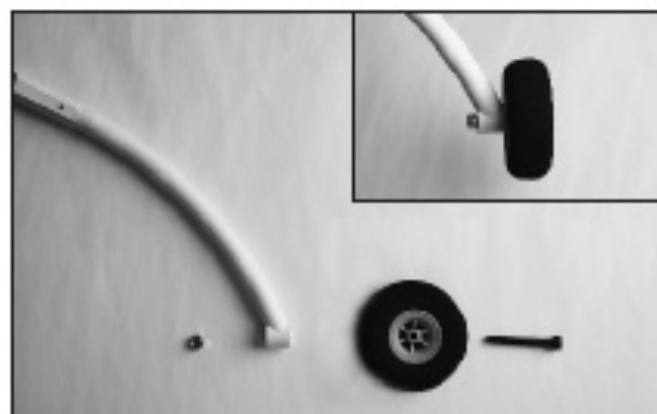
26. Insert the legs through the ready made holes. Please note that there are a left and a right legs (The mark SM is for the left side and DM for the right side), and screw these in the position firmly with two 3x25mm screws and 4x25mm screw.



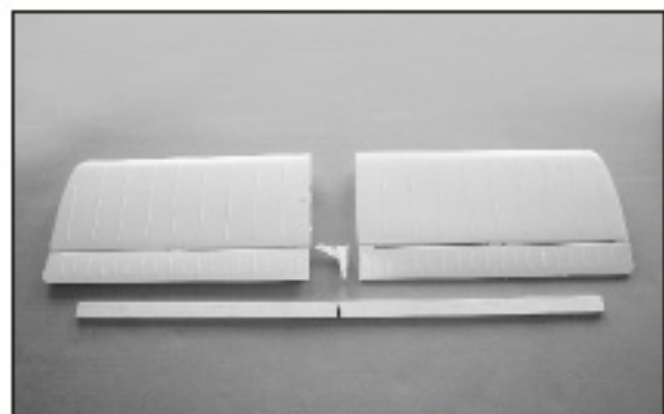
24. Insert the M3 and M4 nuts into their seats on the main gear.



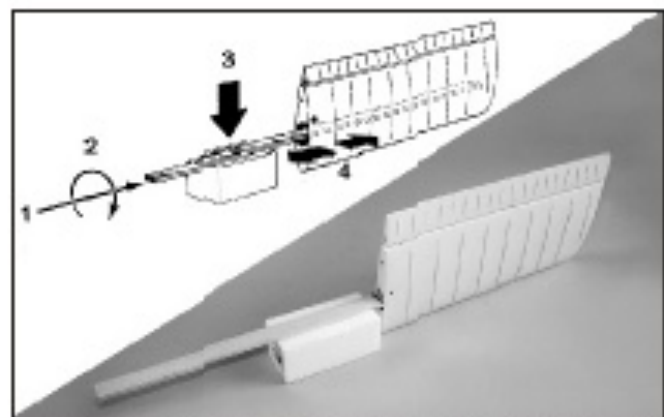
27. Locate the horizontal tail halves, then use the hobby knife carefully trim away the molded cap at the root of the tail halves to allow the passage for the tail spar.



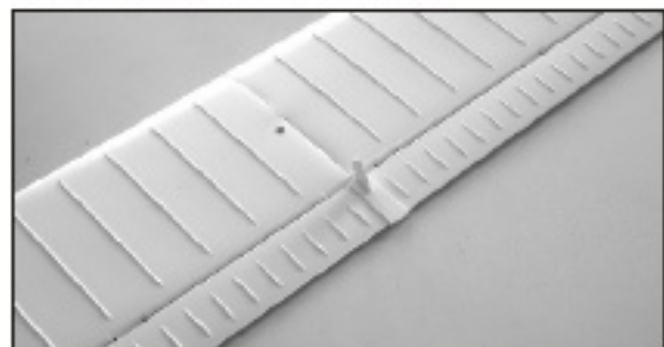
25. Install the wheel on the main gear with M4 locknut and 4x35mm socket screw. Do the same on the other side.



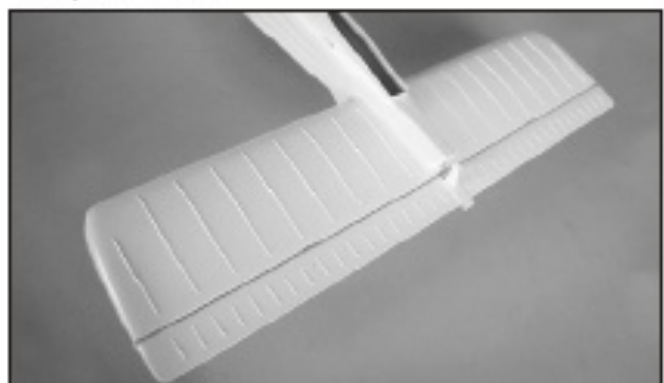
28. Make a mark at the center of the tail spar as shown.



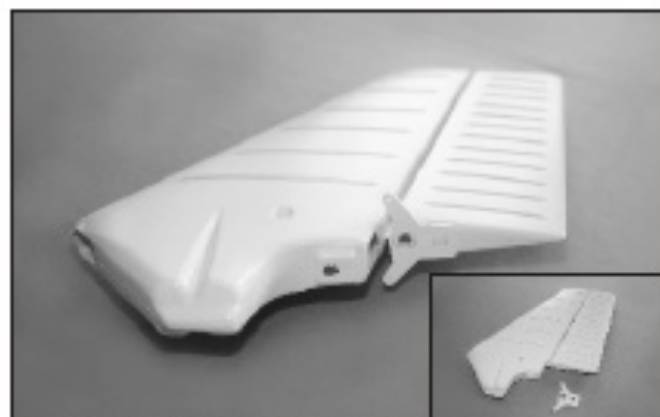
29. Apply a generous coat of epoxy to the narrow edges of the spar on one side only of the marked halfway point. Hold the spar horizontally so the epoxied edges face to the leading and trailing edges of tail, then insert it inside one of the tail up to the marked point (step 1) then carefully rotate the spar (step 2). Place the tail half leading edge down on a flat surface and support the extended part of the spar level with the foam block (step 3). Move it back and forth for about 5mm two or three times to evenly distribute the epoxy (step 4).



30. When epoxy has cured, repeat the operation with the other tail half with the addition of more epoxy on the roots of the tail to glue two halves together. Make sure two halves are aligned accurately. CA the elevator control horn in place firmly as shown.



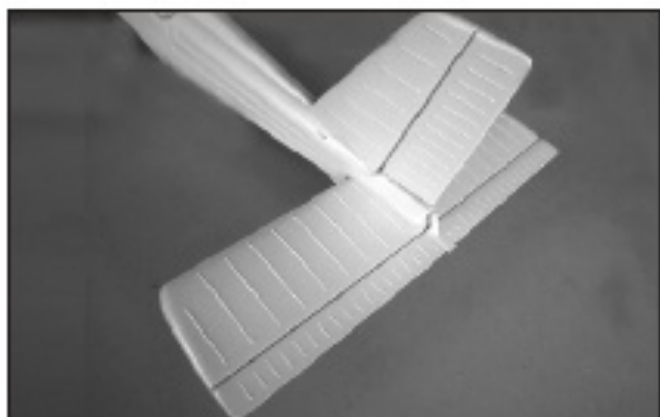
31. Temporarily attach the wing to the fuselage and secured with the wing bolt. Trail fit the tail in place and check alignment with the wing and fuselage. The tail should be parallel to the wing when looking forward from the rear and top of the model. Make a mark on the tail along with the fuselage when satisfied. Remove the tail and slightly sand the glue area, then CA the tail in place.



32. Locate the rudder control horn and remove any flashing, then CA the rudder control horn in place as shown.



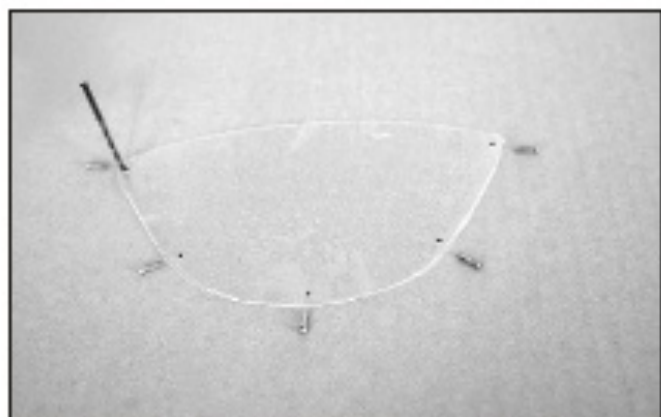
33. Install and adjust the vertical fin in the fuselage until there is a gap around 4mm (5/32") between the bottom of the rudder and the top of the fuselage.



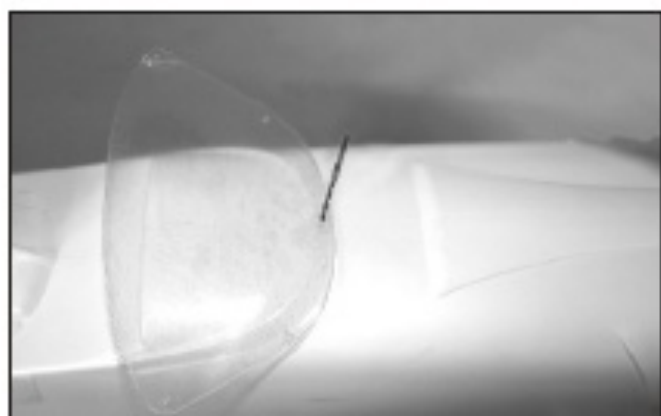
34. CA the vertical fin in place when satisfied with the position, and make sure it is perpendicular to the horizontal tail.



FUEL TANK



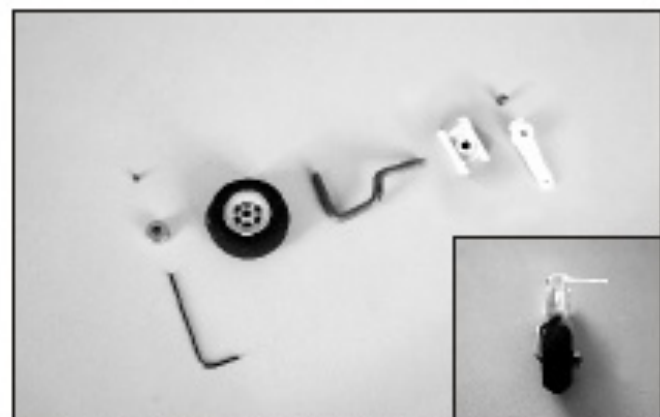
35. Drill five 1.5mm(1/16") holes near the edge about 3mm(1/8") of the windshield as shown.



36. Use 5 holes on the windshield as the guide to drill five 1.5mm(1/16") holes on the fuselage as shown.



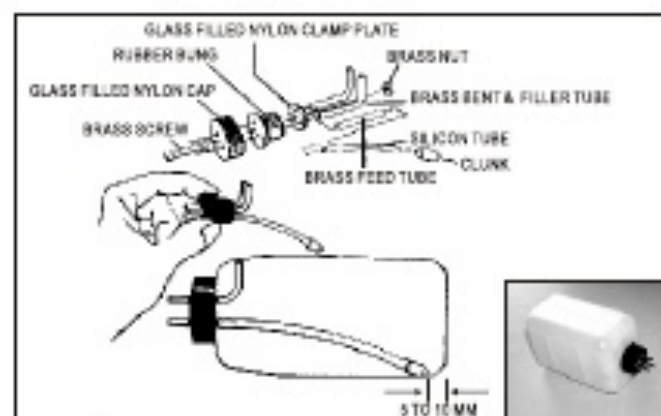
37. Use the screwdriver to install the wind shield with 2x5mm wood screws.



38. Locate the tail wheel parts as shown. Secure the wheel on the tail gear wire with a wheel collar and 3x3mm setscrew. Next insert the wire through the tail gear mount and secure the tail wheel steering arm with 4x6mm setscrew.



39. CA the tail wheel assembly in place, make sure the steering arm is at the right side and it rotates freely.



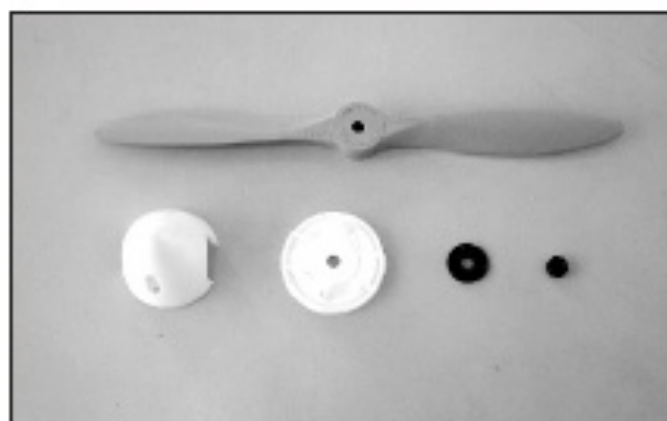
40. Assemble the tank as figure.



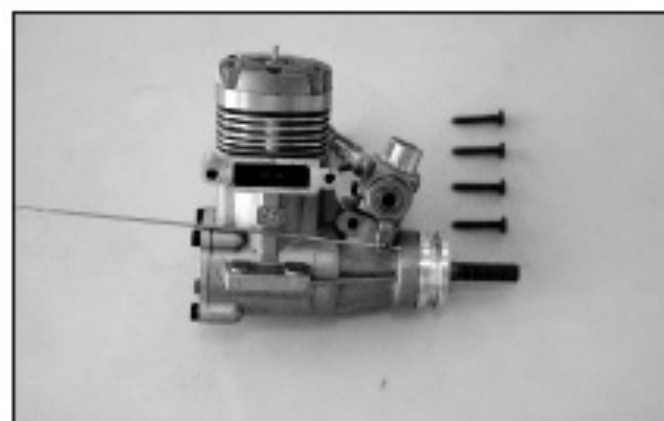
41. Install the silicon rubber ring on the tank and insert the tank in the opening of the firewall. Use foam block to fix the tank in the fuselage. Make sure it does not interfere the installation of the throttle pushrod.



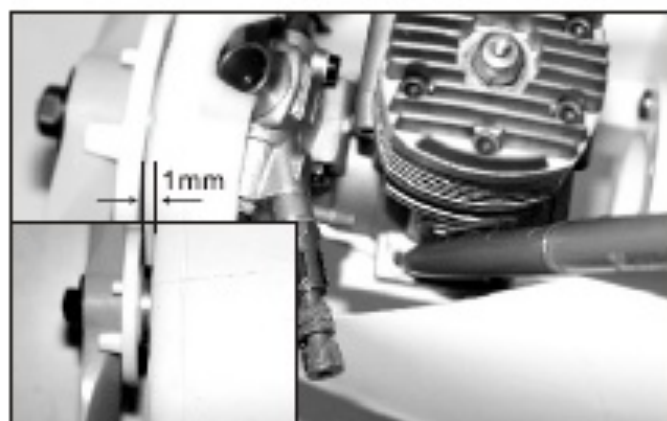
44. Remove the engine and mount from the fuselage. Drill 2.6mm (7/64") hole on the marks for 3x18mm wood screws.



42. Locate the spinner, back plate and prepare a suitable propeller for your engine.



45. Locate the throttle pushrod and engine mounting screws. Insert the Z-Bend end of the throttle pushrod to the engine throttle lever.



43. Temporarily fit the engine to the engine mount and install the propeller and the spinner being used. Slide the engine on the mount until there is about 1mm (3/64") gap between the back plate and the front of fuselage. Make marks of the engine mounting holes. It may need to trim the engine opening to fit your engine and carburetor.



46. Thread the throttle pushrod from the firewall to the centre bulkhead. Trial fit the guide tube onto the pushrod then CA the guide tube in place, please refer to the photo in step 60.



47. Next place the engine on the engine mount. Try to move the pushrod back and forth to make sure the throttle lever moves smoothly. Bend the pushrod if it is necessary.



50. Locate the muffler. Secure the muffler tightly with the muffler bolts that come with your engine.



48. Secure the engine on the engine mount firmly with four 3x18 mm wood screws.



51. Finally install the propeller and spinner, note the propeller must be secured against the pins on the spinner backplate. Always adjust the propeller at a good starting angle.



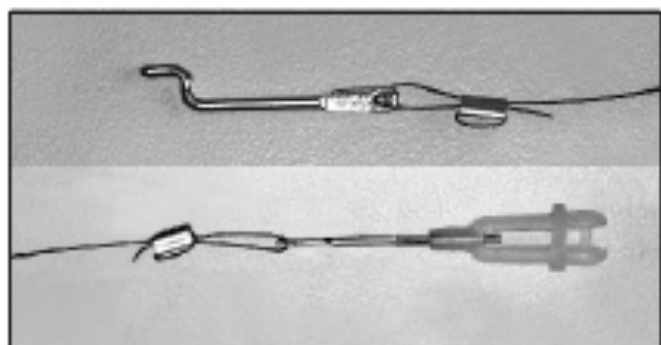
49. Use the muffer hole as the guide to drill a hole on the cowl. Enlarge the hole up to 6mm (15/64") in diameter so you can thread the muffer bolt in.



52. Secure the spinner with 3x12mm self-tapping screws.



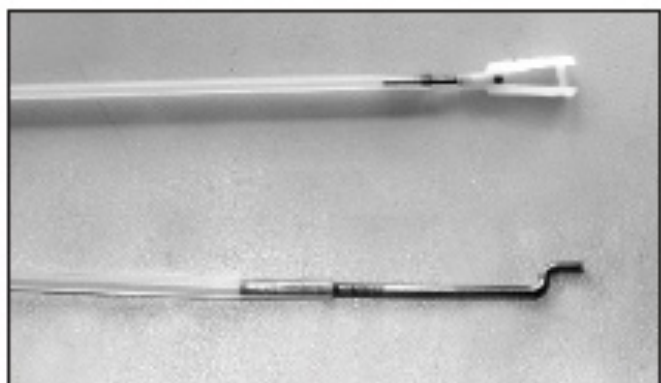
53. Connect the fuel tubes properly to the muffler and the carburetor.



54. Cut the cable into two pieces. Thread the cable from the hole at the tail through the fuselage to the servo tray. Use a piece of tape to fix the cable on the fuselage from loosening. Now loop the Z-Bend end first (thread the brass tube first, next thread the Z-bend , go back to the brass tube again. Adjust the distance between the Z-bend end and the tube then thread the cable through the brass tube again and make a circle as small as possible. Clamp the brass tube with pliers to lock the cable from loosening. Insert the Z-bend end to the rudder servo horn at the outmost hole. Make sure the two cables are not across each other. Refer to the photo in Step 57.



55. Locate the threaded end w/hole, thread it into the clevis at least 6mm then loop the other end of cable as you did on Z-bend end. Snap on the clevis to the rudder control horn then adjust the tension and make the circle as small as possible. Make sure both cables are equal and the brass tube will not contact the exit hole when servo works. Once satisfied, clamp the brass tube. You can adjust the tension by threading in or out of the clevis.



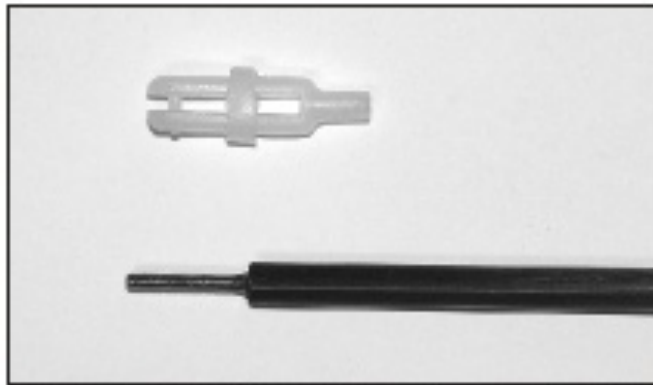
56. Locate the flexible inner tube then install the thread end and z-bend end wire at two sides. Do not thread on the clevis at this moment.



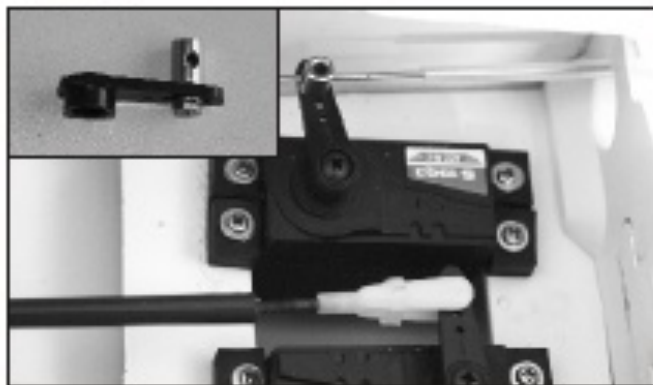
57. Enlarge the hole of the guide tube retainer with 5mm(13/64") drill bit. Install the guide tube retainer and glue the guide tube in place. Note the servo horn need to be cut if you use the long one as it may contact the elevator servo horn. The Z-bend end of tail wheel pushrod is installed at the left side and second hole of the servo horn. You may remove the servo horn from the servo for easy installation.



58. The guide tube will come out from a fairing with inner tube inside at the bottom tail where need to be drilled for a hole. Thread the clevis and snap the clevis on the steering arm while rudder servo is in neutral position. Apply a silicon ring to the clevis.



59. Trim the CFK pushrod in length of 580mm (22-3/4"), next locate the threaded adaptor, and slightly sand the glue area of the adaptor to make sure there is no oil on it. Apply enough epoxy to glue the adaptors in the CFK pushrod at two ends as shown. Thread the clevises on the adaptor after the epoxy has cured. Apply a silicon ring to the clevis.



60. Thread the CFK pushrod through the fuselage and snap on the elevator control horn. Adjust the silicon ring to keep clevis from losing. Snap the other end of pushrod to the servo horn when elevator and servo are both in neutral position. Adjust the clevis if necessary. Make sure elevator pushrod works smoothly and servo horn has enough clearance to each other. Install the pushrod retainer on the servo horn then thread the pushrod through the connector then secure the servo horn on the servo. Adjust the pushrod when they are in neutral position secure the pushrod with 3x3mm setscrew when satisfied.

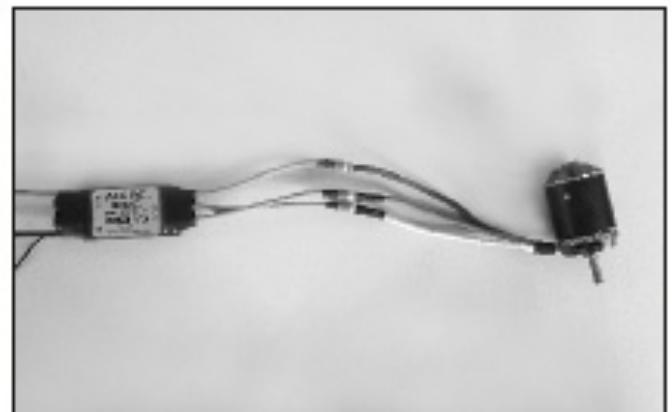


61. Properly connect all the servo wires and extension wire for the aileron, then well wrap the receiver and battery with foam pad before the centre bulkhead. User can use tie-band or Velcro to secure the battery and receiver in the compartment. Install the switch at the left side to keep away from the exhaust oil. You may drill a small hole through the fuselage then route the antenna to the tail and secure it with tape.

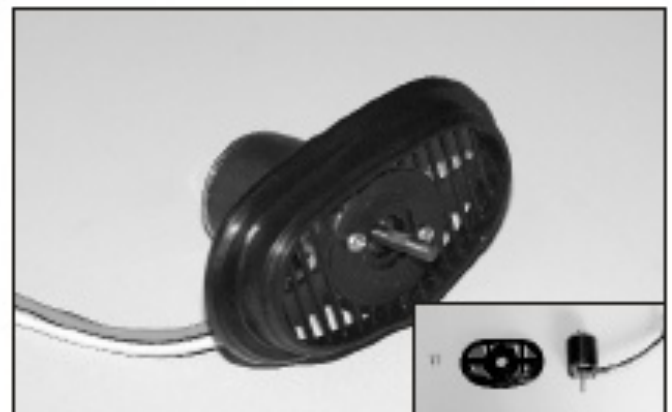
Motor Assembly



62. Locate the motor mount and the washer, insert the washer into the motor mount, then glue with epoxy or cyano.



63. Connect the motor to the controller in advance, make sure the motor rotates counter-clockwise.



64. Secure the motor firmly with two 3x8mm screws. Make sure the wire is oriented as shown.

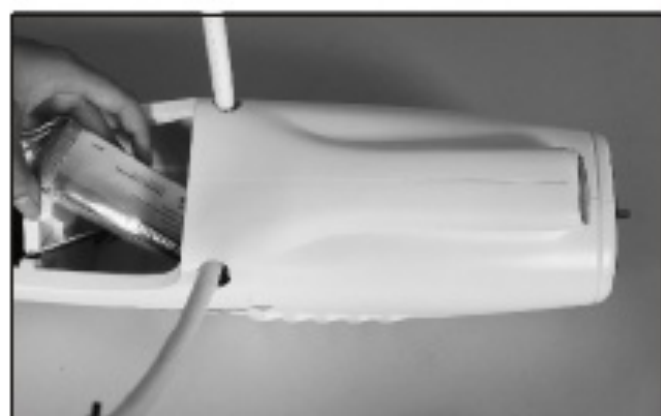


65. Sand glue area then insert the motor mount assembly into the fuselage and trial fit in place as shown. Glue it in place with CA .



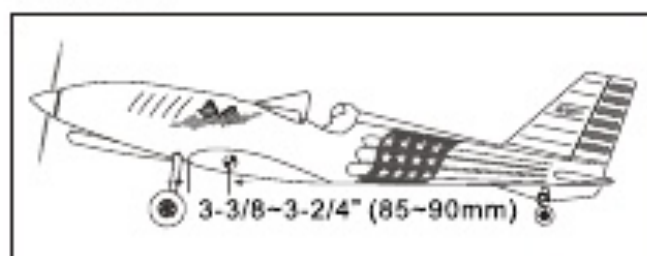
68. Install the propeller, adaptor and prop nut (available separately) as shown.

Congratulations, the Jupiter is done now you will have to be careful to do the balance and control throw check.



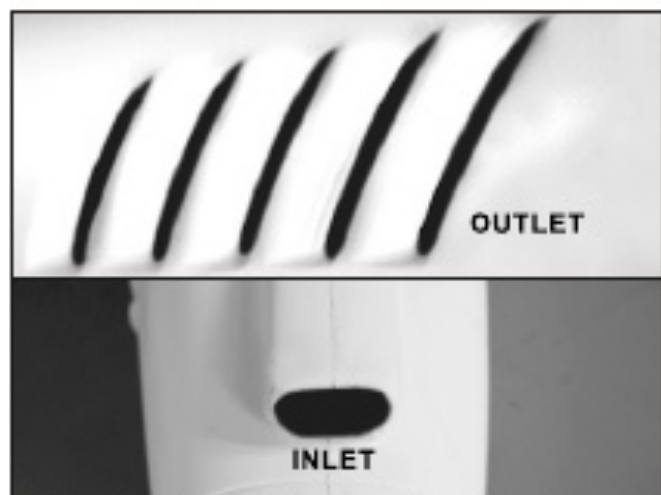
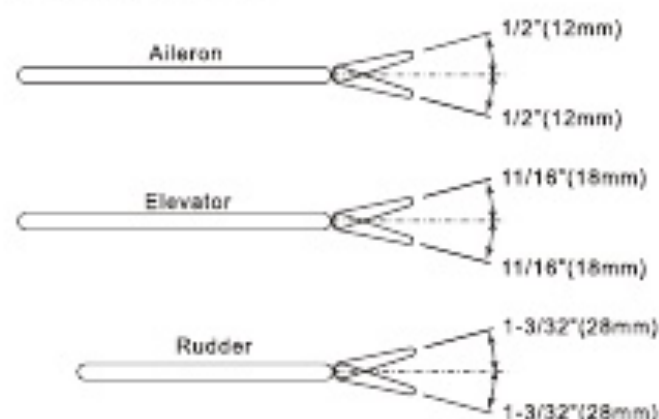
66. Insert the battery into the fuselage, and fix it in the groove of the fuselage carefully. Make sure the battery, controller and wires do not contact the motor in the compartment.

BALANCE



CONTROL THROWS

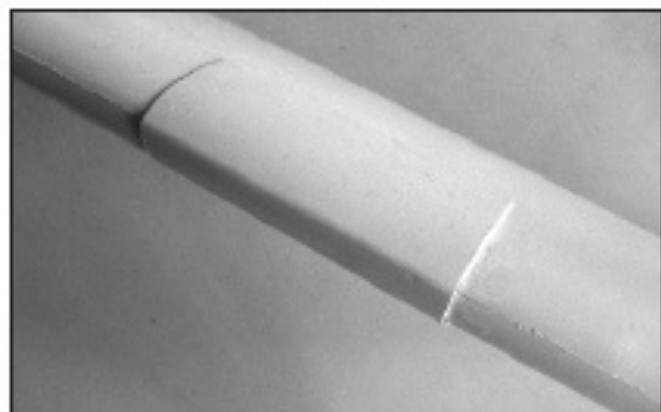
Make sure the direction of servo moves correctly. If not switch the reversing switch on the transmitter. If the control surface does not move far enough, either move the pushrod out farther on the servo horn or move the clevis in farther on the control horn. If the control surface moves too much, either move the pushrod in on the servo horn or move the clevis out farther on the control horn. Adjust the control throws as the initial setting as follows:



67. Trim air outlet and inlet for cooling the battery, motor and controller.

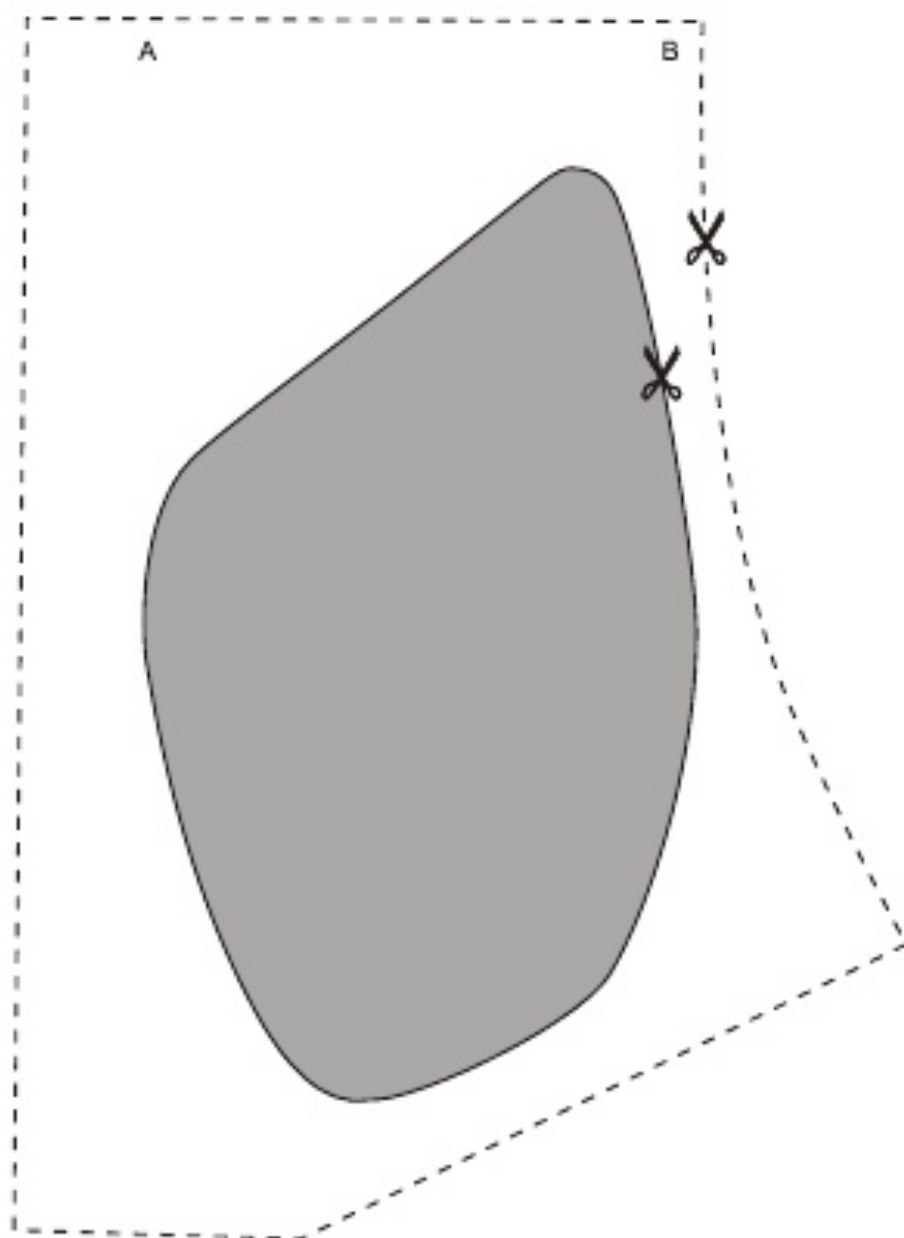


REPAIR



This kind of airplane is far different from the traditional wood made airplane covered with covering, it is all plastic includes the fuselage, wing and tail feathers. Enclosed in the kit, there is a repair bag includes a super glue, epoxy and ABS sheets. Use the furnish materials to repair your plane if there is any damaged. Cut a proper size of ABS sheet for the crack area as a patch, sand the glue area with 300-400 grit sand paper first, this will enhance the adhesion. Patch the crack area or anywhere need to be reinforced with super glue. Use epoxy instead of super glue if contacts any foam inside the wing. Check Thunder Tiger authorized distributors for customer service or tech support if any problem is encountered.

Template for Engine Opening





PAINTING

Please refer to the following points and carefully proceed the painting procedure.

- Wash all of the model with soap and water to remove any grease.
- Sand the entire surface to be painted with wet 400 grit sandpaper.
(You may avoid sanding the aileron, elevator and rudder moving part if you wash them well)
- Use any fuel resistant paint that you like, we have had good result with " Isofan" , " ABF" or two component polyurethane paint.
- Test the paint on the small ABS sheet which comes with the kit in the repair bag before you paint on the airplane.
- Make sure the paint and thinner will not melt or damage the ABS sheet.
- Apply some drops of nitro fuel on the painted ABS sheet to make sure if the paint is fuel resistant.
- Mask tape is needed for the painting job to cover the unpainted area.
- Avoid to paint the glue area as CA may damage the paint and cause bad adhesion.
- Make sure the linkage is smooth; if not ,remove the paint at the linkage area.
- Always wear mask w/filter when doing the painting job as thinner and paint are harmful to your health.

MEMO

