GoldWing RC

PIPER J3 50CC
Giant Scale Aircraft

Specifications

Wing Span:	119"(3030mm)
Length:	79-1/4"(2015mm)
Wing Area:	2055sq in(132.6sq dm)
Flying Weight:	18.7-22lbs(8.5-10kg)
Gas:	50CC-70CC Gas DLE55, DLE61, DA50, DA60, GP61
Electric Power:	Hacker Q80-8M with 12S 5000mah 24x10 prop Or other 4000Watt electric mot
ESC:	160A
Radio:	4+ Channels
Servos:	5-6 servos required 180 oz to 330 oz (11-20kg/cm) JR 8911, Savox 1256

Version 4.0, Sep 2015

Dear Customer,

Thank you for purchasing the new Goldwing RC giant scale aircraft. This manual covers the PIPER J3 50CC aircraft. The PIPER is designed for the popular 50-70 cc engines and weighs approximately 8.5 kg to 10 kg. Covered in genuine Ultracote, this ARF comes with premium hardware, Piper CUB scale landing gear, Carbon fiber wing tube, stainless steel Axle kits， **carbon fiber horns** and pre-hinged ailerons. **Also the new Carbon fibre tail wheel assembly with CNC machined metal parts, including the aluminium tail wheel hub.** And including new KUZA Fuel Tank Assembly with aluminum tank cap.

We hope you will enjoy your new giant scale aircraft as much as we have.

A QUICK WORD ABOUT SAFETY AND RADIO CONTROL FLYING MODELS

With radio control aircraft, like any hobby or sport, there are certain risks. The operator of these models is responsible for these risks. If misused or abused, you may cause serious bodily injury and/or damage to property. With this in mind, you will want to be certain that

you build your model carefully and correctly. If you are not an experienced flier, have your work checked and ask for help in learning to fly safely. **This model aircraft is not a toy** and must be operated and flown in a safe manner at all times. Always perform a pre-flight check of the model including all control surfaces, correct function of the radio gear, structure, radio range, and any other area relating to the safe operation of this aircraft.

Models are not insurable but operators are. You can obtain coverage through membership in the Academy of Model Aeronautics (AMA). For an AMA information package call 1-800-435-9262, ext. 292 or visit the AMA website at "www.modelaircraft.org". Or if you are in any other country please contact the appropriate body.

By the act of using the final assembled model, the purchaser/operator accepts all resulting liability.

Goldwing RC WARRANTY AND RETURN POLICY

GoldWing RC guarantees this product to be free from defects in both material and workmanship at the date of purchase. This does not cover any parts damaged by use, misuse or modification. In no case shall liability exceed the original cost of this kit. Because Goldwing RC has no control over the final assembly or equipment/components used in the final assembly, no liability shall be assumed for any damage resulting from the use of this model by the user. By the act of using the final assembled model, the user accepts all resulting liability. If you should find any missing or damaged parts, or have any questions about this product, please contact within 30 days of the purchase in order to be covered by our warranty. You may contact us at **service@goldwingrc.com**.

Included Features:

- **Pre-hinged control surfaces**
- **Carbon fiber wing tube**

- **Adjustable pushrods for easy fine tuning(Includes wrench)**

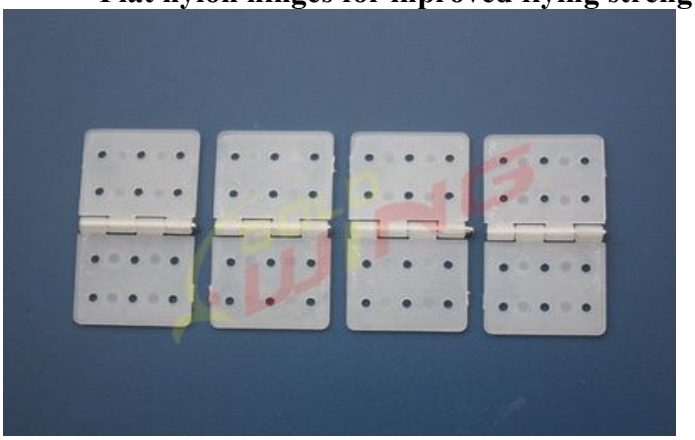
- **High quality ball link assemblies**

- **5in Aluminium hub rubber wheels**

- **Servo lead safety clips**

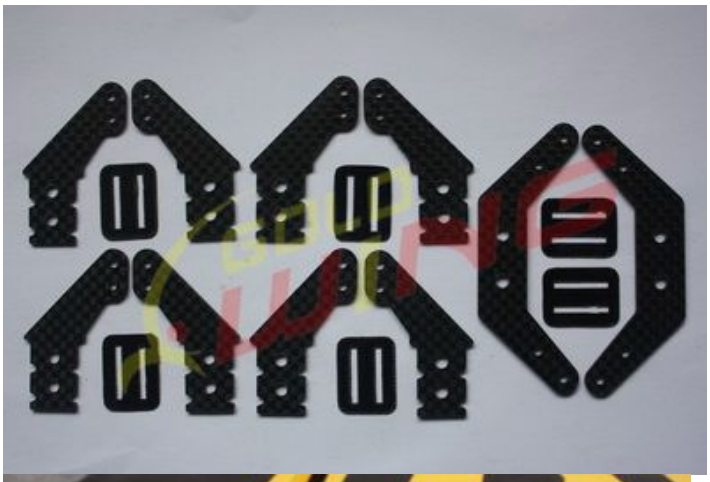
- **High performance cap head bolts**

- **Flat nylon hinges for inproved flying strength**



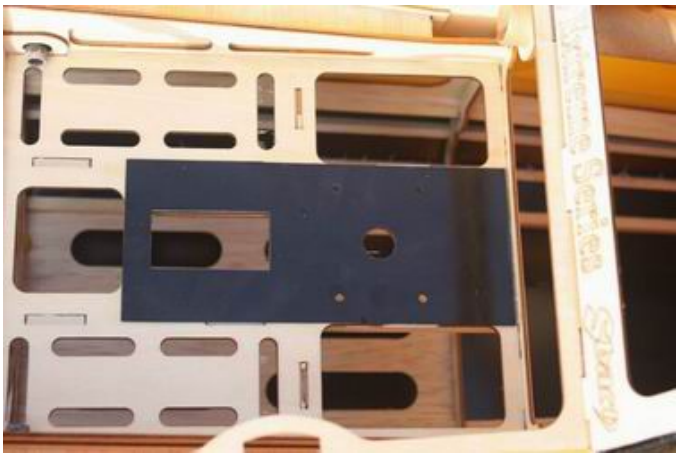
- **Extra covering provided for small repairs, genuine Ultracote / Oracover**

- **Extra strength carbon fiber control horns**

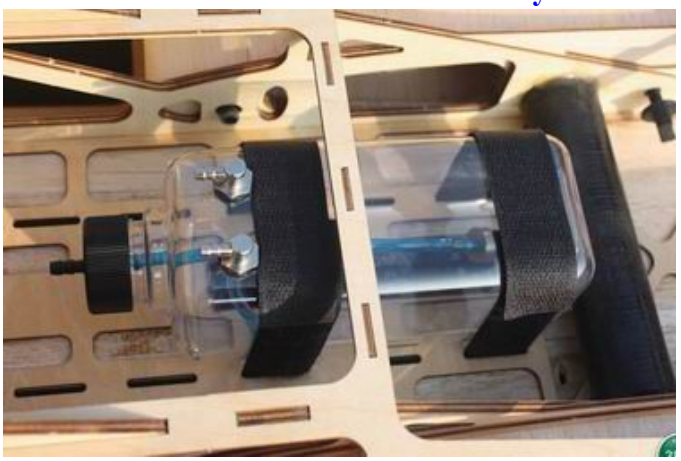


- **Carbon fiber tail wheel assembly with CNC machined metal parts, including the aluminium tail wheel hub.**

- **The PIPER is designed to directly accommodate KUZA® rudder servo tray**




- **New KUZA Fuel Tank Assembly with aluminum tank cap**



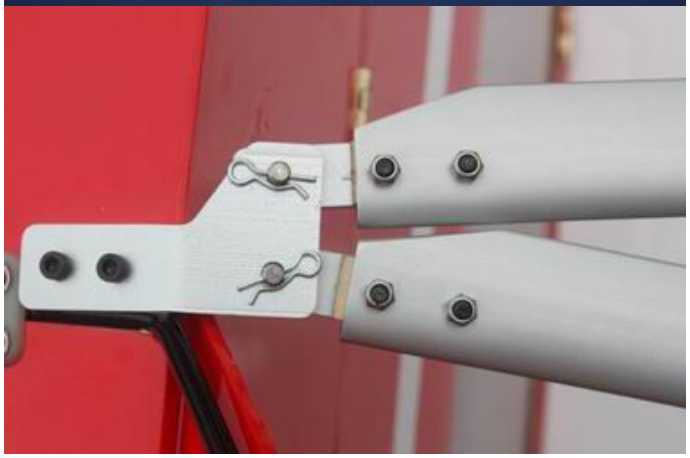


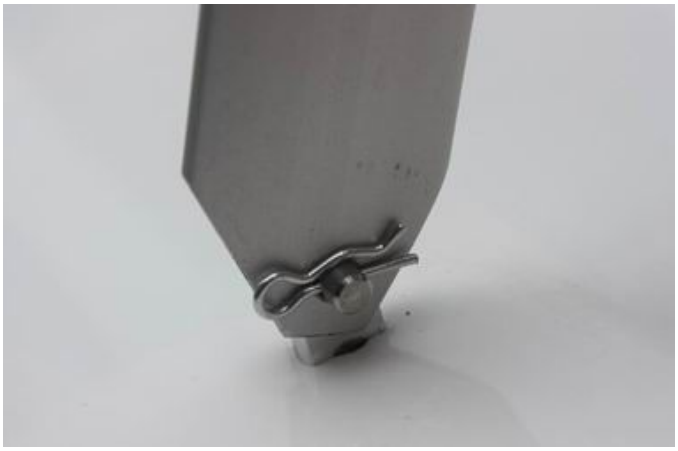


- **Airfoiled wing bracing struts （anodized 6061 aluminum）**


- **High quality CNC Alloy hardwards**





Scheme A Yollow/ black

Scheme B Red/black

Items required to complete this Model:

- 50-70 cc gas engine with stock or aftermarket exhaust systems
- Appropriate propeller for your engine
- All the required engine and exhaust mounting hardware
- Ignition battery and switch
- One quality throttle servo and appropriate servo arm
- Four high quality metal gear servos of 180 in-oz or better for the ailerons and elevators
- One high quality rudder servo of 240 in-oz or better
- Appropriate servo arms for the above
- Heavy duty servo wire extensions. Recommends four 36", one 12" extensions. Your installation though may vary.
- Two heavy duty switches with charging jacks for the Rx
- Two high quality Rx batteries of significant capacity to power your choice of servos.
- One receiver of your choice

Required Tools

- Covering Iron and heat gun
- Assortment normal hobby tools such as screwdrivers, hobby knife, drill and drill bits, pliers, etc.
- Thick and thin CA adhesives
- 30 minute epoxy
- Isopropyl alcohol
- Ruler or tape measure
- Blue thread-lock or equivalent

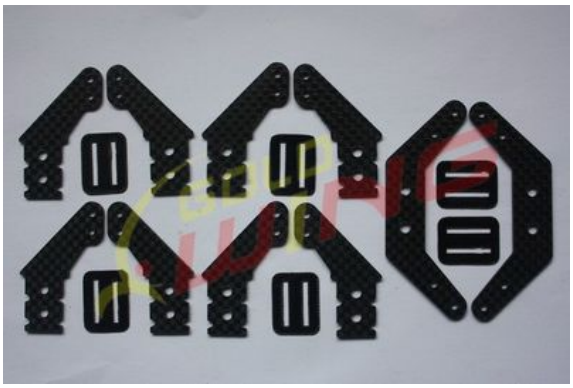
Note: As with all kits, it's a good idea to read all the instructions and study the parts before you begin construction. Handle the parts of this kit with care so you do not damage any of the structure or covering. Inspect all the parts for any shipping damage and report any issues to as soon as you can. Make sure you have a flat and sturdy workbench and follow all safety advice for the tools and adhesives you plan to use.

AIRCRAFT COVERING

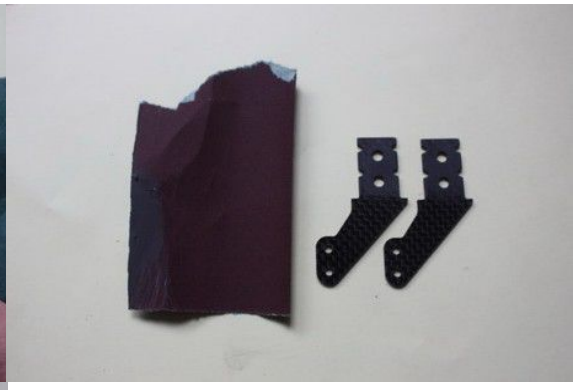
1. With all ARFs, varying temperatures and storage delays can cause covering material to loosen over time and transportation. We recommend lightly going over all the covering with a covering iron set at medium temperatures. Be sure to use a soft cover over your iron so you do not scratch the covering surface. Be sure you go over all seams and edges of the covering to assure it is secure to the airframe and other covering. Be careful not to apply too much heat or you may cause bubbles or damage to the covering. A heat gun may also be used along with a soft cotton cloth to shrink and adhere the covering. Again, be extremely careful when using a heat gun.
2. Be sure to seal any exposed wood with a thin coating of epoxy to prevent engine oil from soaking in. This is especially important around the engine compartment and servo openings with exposed areas.
3. Some modelers prefer to seal the hinge gaps using strips of appropriate covering or clear trim tape. We have found this to be helpful with models intended for higher speed flight or models with unusually large hinge gaps. Our aircraft utilize a very tight double beveled hinge line and do not normally require this step. Sealing the hinge gaps is therefore left as an option for the modeler.

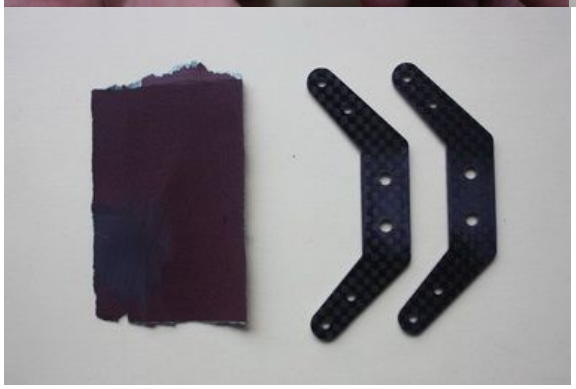
Please verify the accessories before commencing assembly:

- Carbon Fiber control Horns (Bag No. KA06CA) : 8 single horns for ailerons and elevator. 2 dual horns for rudder.



Sand the area of the horn that will be glued to help adhesion.





- Adjustable pushrods kits: Four 3x126mm pushrods for ailerons.

- Pull-pull assembly kits for the rudder. (Bag No. KA05CD)

- Ball link assembly (Bag No. KAG00131): 8 for ailerons and elevators.

- Servo lead safety clips：6 pcs (Bag No. KAG0021)

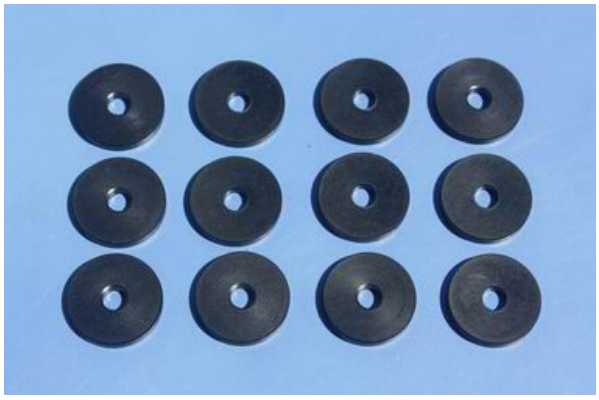
- 5” Alu main wheels：2pcs

- Carbon fibre tail wheel assembly with CNC machined metal parts, including the aluminium tail wheel hub. (Bag No. KAGC104)

- Extra covering provided for small repairs

- Screws for cowl: 4(3x12mm) stainless steel tapping screws

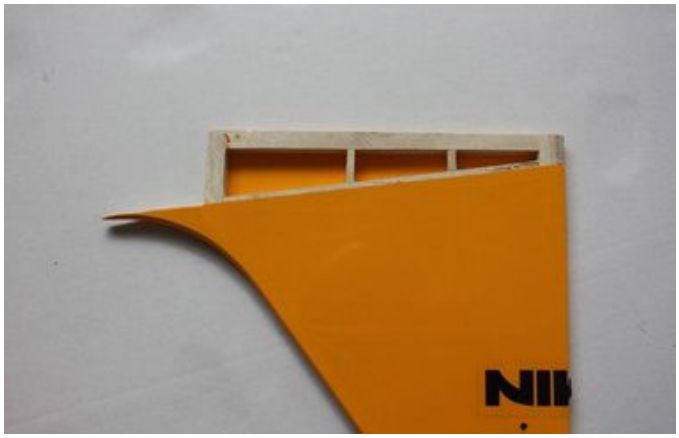
- Washers for gas engine: 12(20mm) POM washers



RUDDER ASSEMBLY

NOTE: There are pictures of different planes in this manual, however, this plane's rudder is assembled the same way.

1. Locate the vertical stabilizer, use a hobby knife to remove the covering over the area that will be glued to fuselage, mix up some 30 minute epoxy and glue it to the slot on fuselage.

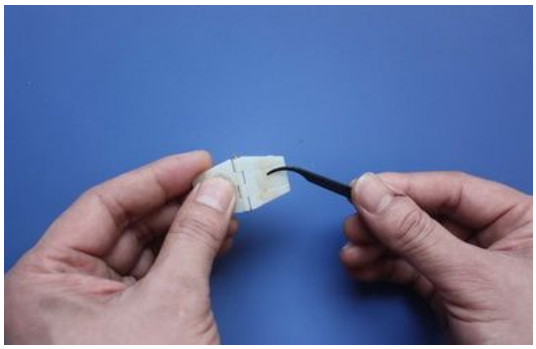


2. It is much easier to install the twin control horns before installing the rudder. Locate the Carbon Fiber rudder control horns, ball links, and associated bolts and nylon-insert lock

nuts. Use some fine sandpaper to roughen up the center areas of the two control horns so that the glue adheres better. Using a sharp hobby knife or soldering iron remove the covering away from the slots in the rudder and trial fit the two control horns.

3. Mix up some 30 minute epoxy and coat the inside of the slots and the center of the control horns. Hint: a scrap piece of 1/16" ply, tooth pick, or old hobby blade can be used to coat the inside of the rudder slots. Slide the control horns in place and make sure they are centered perfectly by using a ruler to measure between the pivot holes and the hinge line. Wipe any excess glue off with isopropyl alcohol and paper towels. Install the ball links, bolts and nuts into the holes to help assure alignment of both control horns while the glue cures. Set aside until cured. NOTE: There are pictures of different planes in this manual; however, this plane's rudder is assembled the same way.

4. Apply 30 minute epoxy to hinges, then insert them into the hinge slots on the rudder, secure the rudder with masking tapes, then allow the epoxy to dry.



5. The PIPER can use either closed loop or a rear push pull servo for the rudder. We recommend that you balance the model assembled before choosing your servo placement.

A. The PIPER is supplied with a high quality set of pull-pull cables and ball-links.

B. Install your rudder servo into the precut locations in the fuselage. Using a fine drill pre-drill the holes and drop thin CA into the holes to strengthen the wood. You will need 3 inch arms on the servo. Set up your radio accordingly and center the rudder servo.

C. The PIPER has the closed loop pre-installed and crimped at the rudder end. These can be connected with the M3 screws and nuts. The wire will be left looped inside the fuselage and will need to be connected to the servo arm.

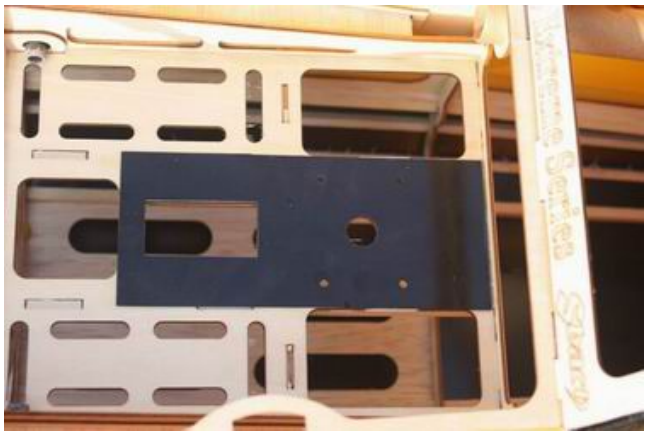
E. Use your radio system to center the rudder servo and attach either the supplied arm or an appropriate arm for your servo. Thread one of the ball links about half way onto one of the threaded couplers. Feed the loose end of one of the cables through a brass tube and then through the threaded coupler. Holding the rudder centered, adjust the cable length as

tight as possible while checking the ball link position over the servo arm. When satisfied with the position, pinch the cable around the threaded coupler and then feed the loose end back through the brass tube. Loop the cable back through the brass tube as before and crimp the brass tube three times just tight enough not to cut the brass tube but enough to securely hold the wire in place. Cut off the excess cable with wire cutters. Wick thin CA into the brass tube to help hold the cable secure. Repeat for the other cable. Hint: Once you have established the position of the threaded coupler on the cable, you can remove the ball link from the rudder horn to give you more working slack in the fuselage. Re-install the ball link prior to setting the other cable.

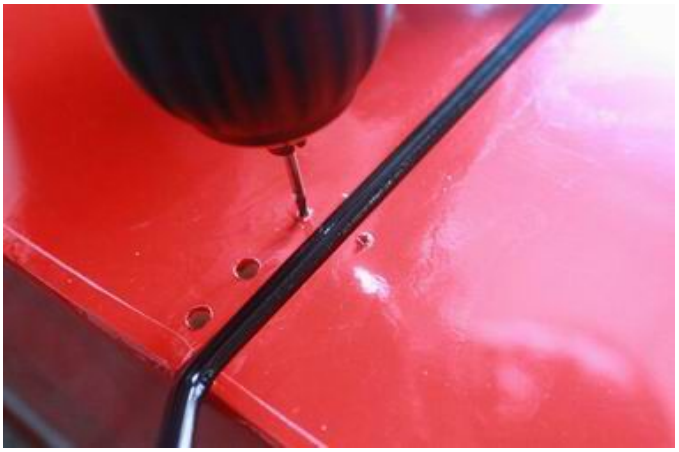
F. Check the operation of the rudder using your radio and make sure there is no binding and the cables are adjusted properly. You may have to tighten the cables after a few flights as they may stretch slightly from the initial installation.

12. We recommend using KUZA® rudder servo tray (available separately) for better rudder performance.

13. This PIPER is designed to directly accommodate KUZA® rudder servo tray, and so will be all other pending Goldwing airplanes that are 50cc or greater.



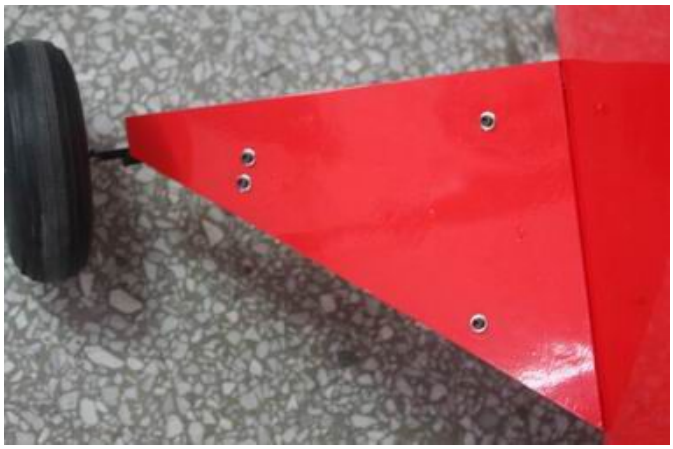
LANDING GEAR ASSEMBLY









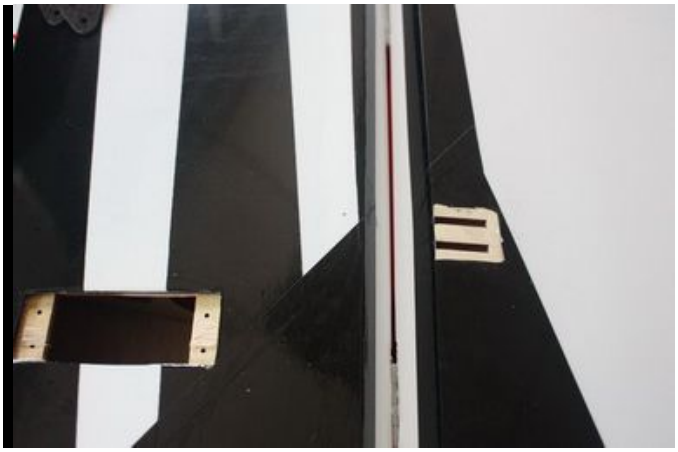



6. Use your finger to find the three holes at the bottom of the fuselage. Using a knife clear the holes and fix the tailwheel in place. Use loctite on the bolts. Then install the spring, using the self-tapping screw to attach the other end of the spring onto the rudder.

WINGS ASSEMBLY

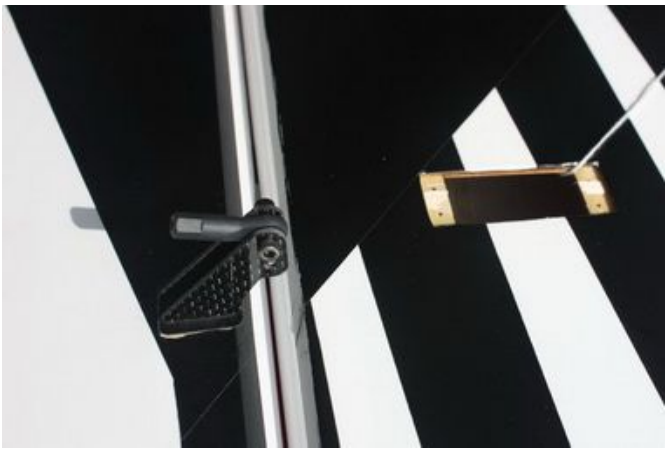
NOTE: There are pictures of different planes in this manual, however, this plane's wings is assembled the same way.

1. Locate the slots for the aileron control horn and remove the covering with a sharp knife. Place the horns into position and the cover over the top to work out the area needing to be removed.



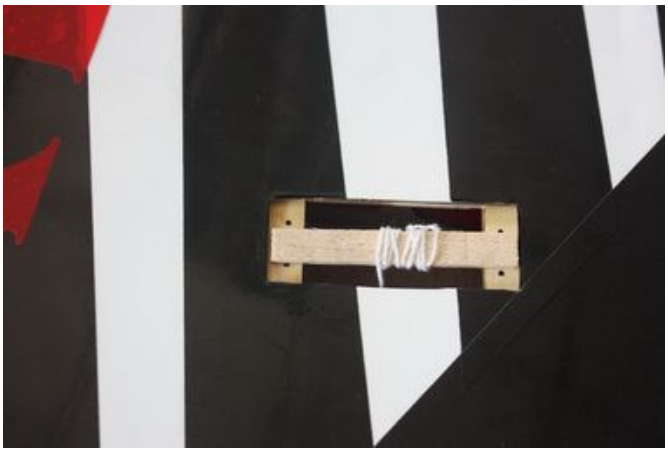
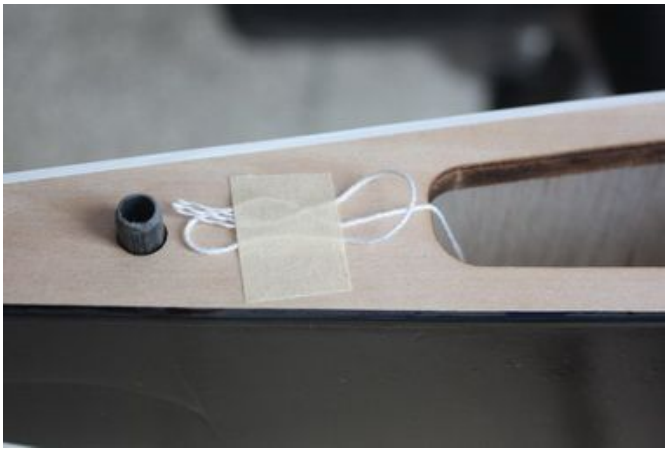
2. Rough the area of the horn that will be glued in place.

3. Using 30 minute epoxy glue the horn and plate into the aileron.

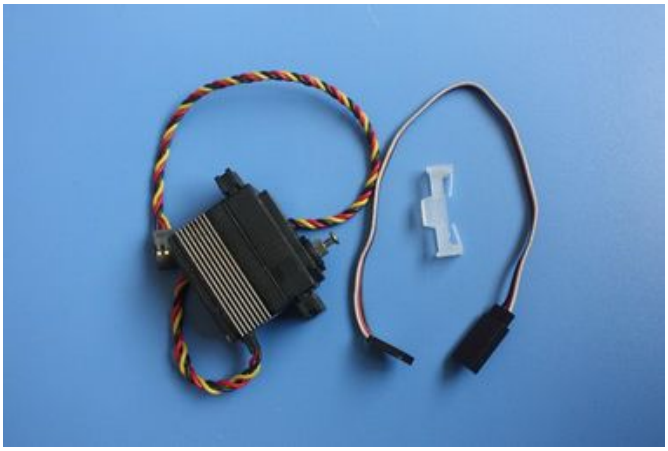
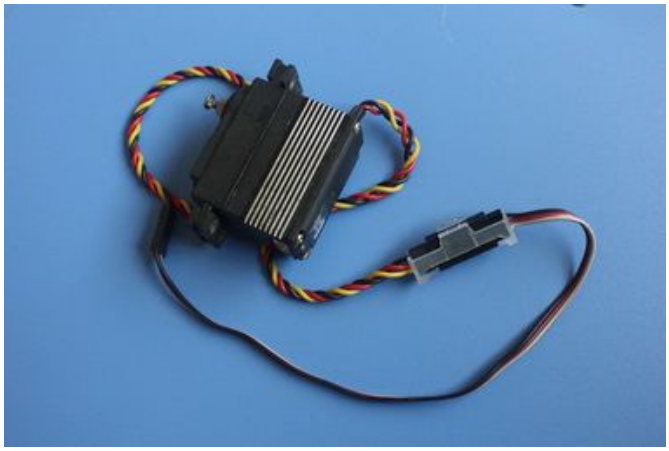


REPEAT FOR THE OTHER SIDE

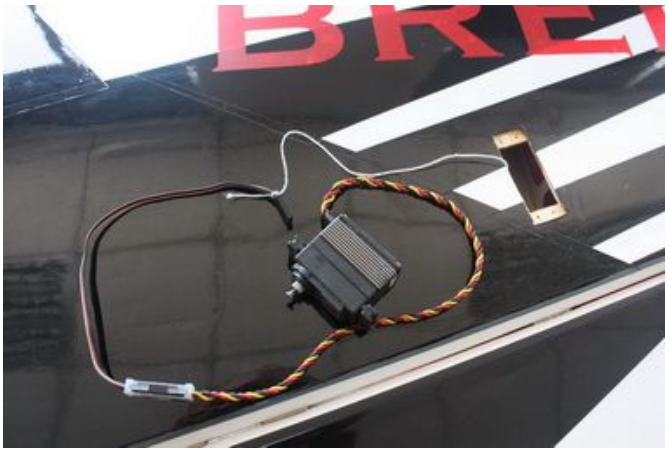
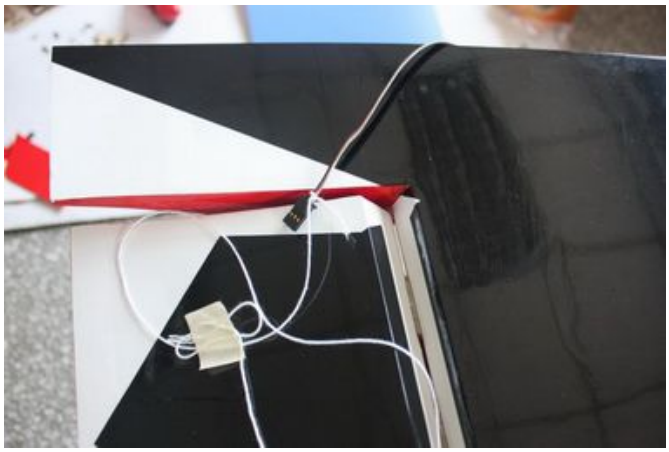
4. A string is pre-placed in the wing to facilitate the installation of aileron servo wire.

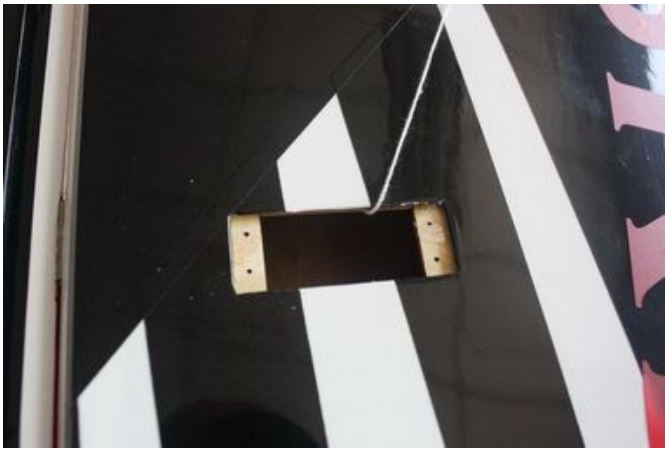
5. Connect extension servo wire, secure with safe clips.

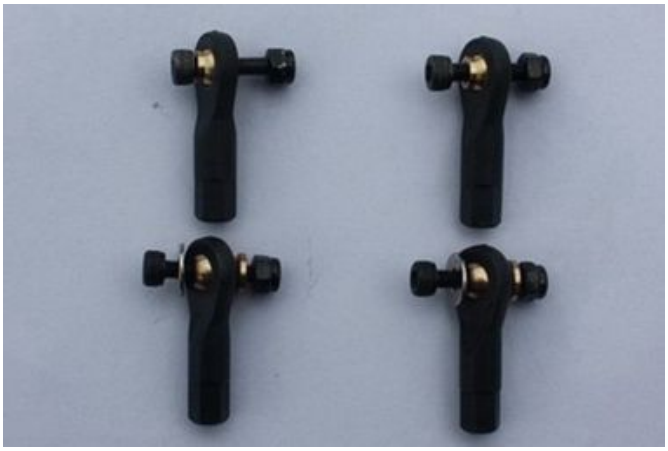
6. Tie up servo extension with the string, and then pull it through the wing.

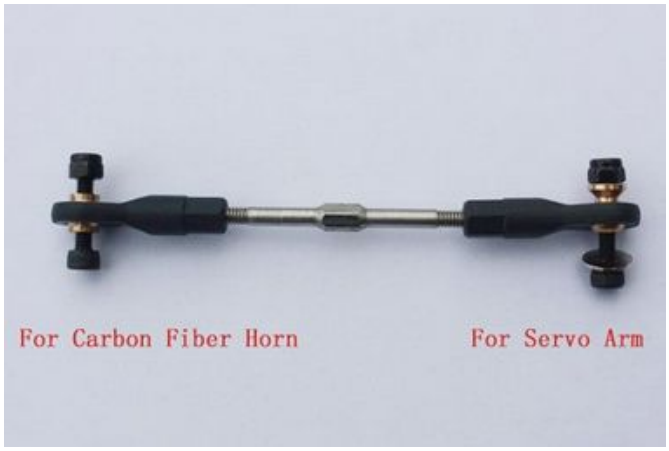



7. Screw holes for servo mounting are pre-drilled by laser in factory, install servo with 4 self threading screws.



8. Using the pushrods connect the servo arm to the horn. Remember that on the pushrod one end is reverse threaded.





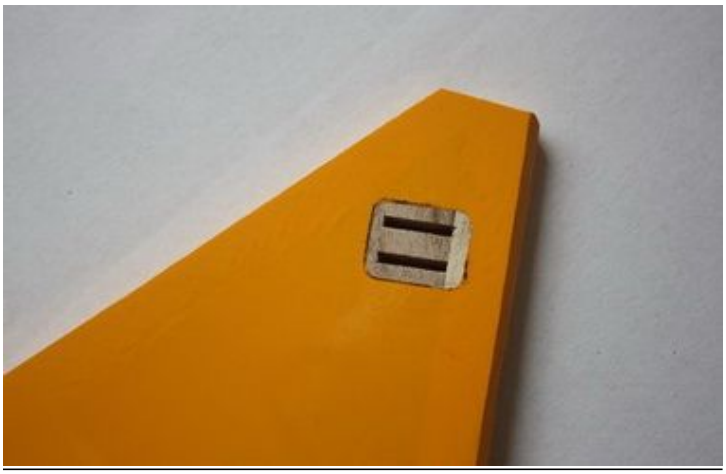
Use M3 bolts and nuts to connect the pushrod. Set it so the aileron is level when the arm is at 90 degrees.

REPEAT FOR THE OTHER SIDE

ELEVATOR ASSEMBLY

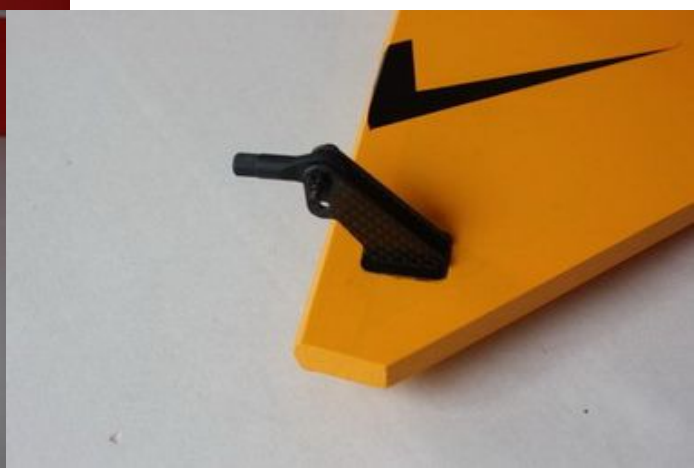
NOTE: There are pictures of different planes in this manual, however, this plane's elevator is assembled the same way.

1. Find the slots for the control arms in the elevators and remove the covering where the horns are inserted and the area for the plate.



2. Sand the area on the horn that will be glued inside the elevator.

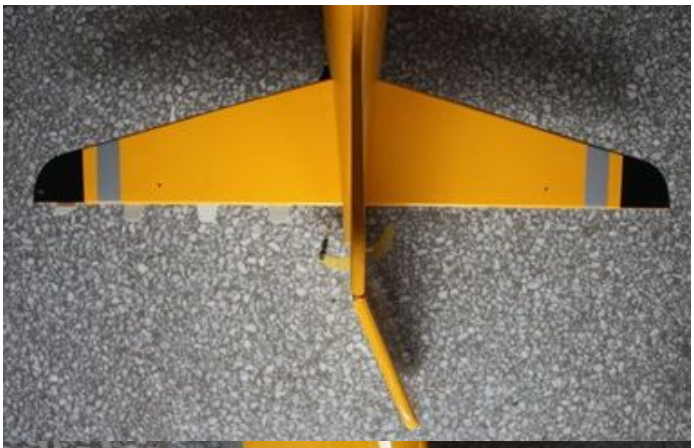
3. Using plenty of 30 minute epoxy fit the horn and plate into place. Use a ball joint and bolt to hold the horn in place while drying.



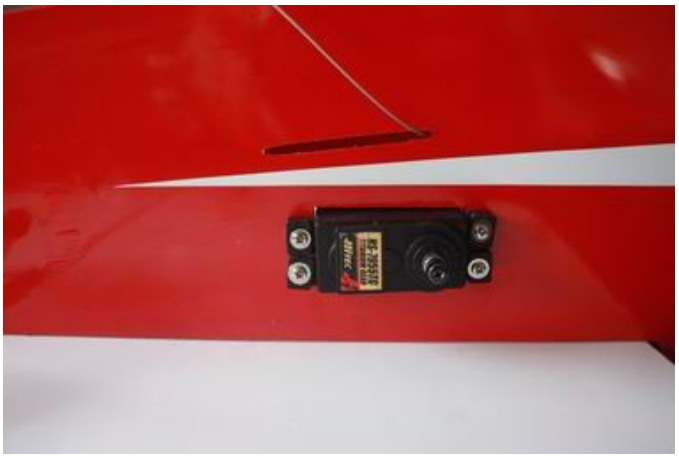
REPEAT FOR THE OTHER SIDE

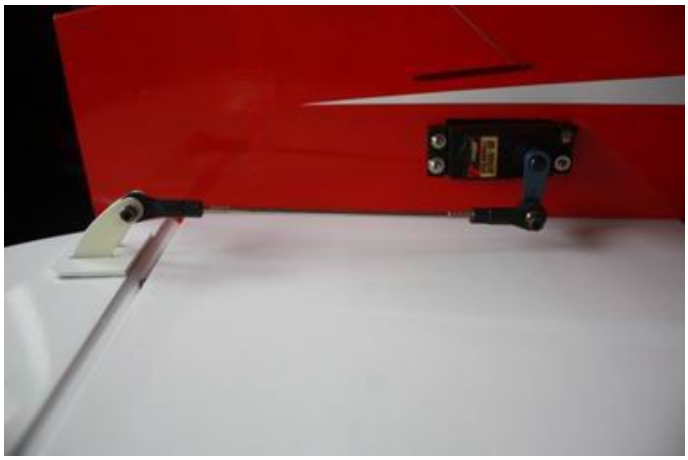
4. Place long arms onto the servo's you are planning to use for the elevators.

5. Locate the horizontal stabilizer, use a hobby knife to remove the covering over the area that will be glued to fuselage, then glue it to the slot with 30 minute epoxy, allow to dry.

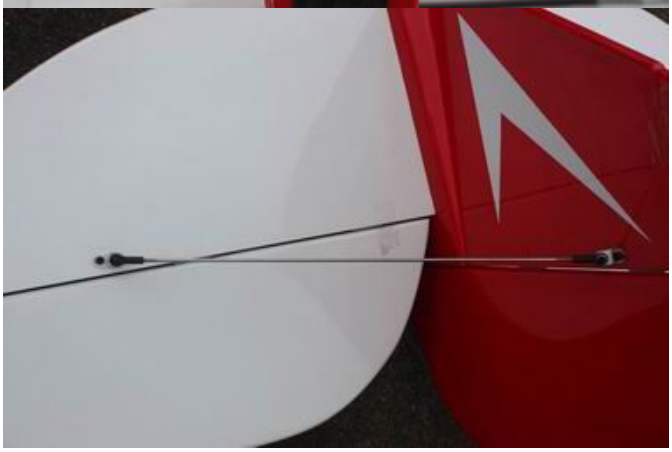


6. Fit the pushrod in place remembering one end is reverse threaded. Set it so the arm is centered and the elevator is flat. Choose the holes depending on how much deflection you require.



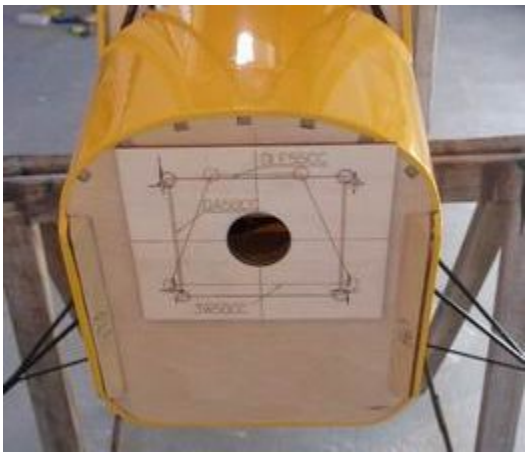


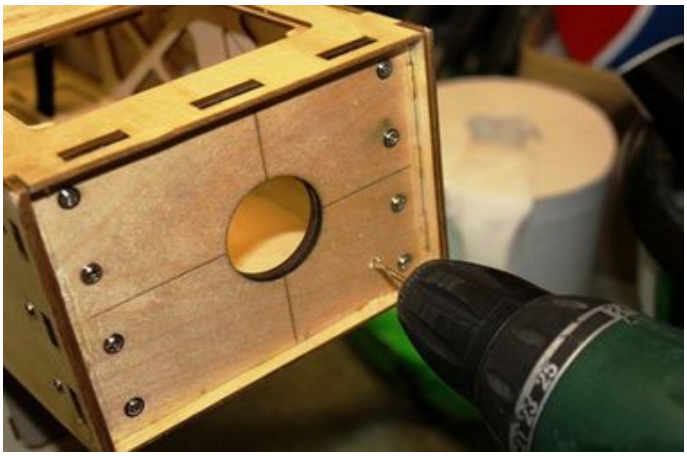
8. Since the tail feathers are not airfoiled , they need to be reinforced with steel rods for better strength in flight.



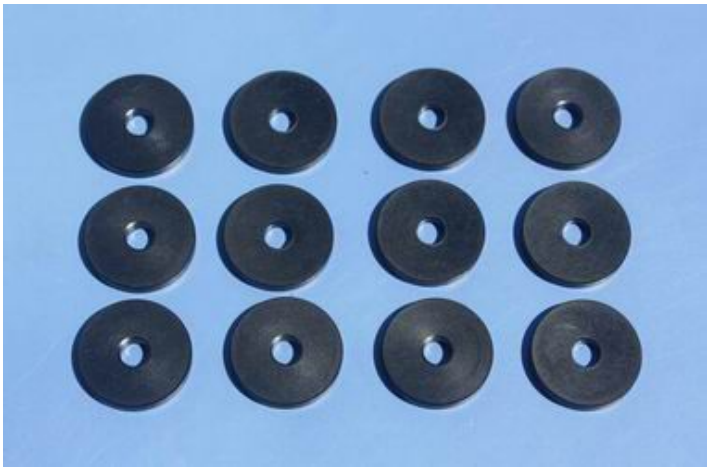
ENGINE, EXHAUST, & FUEL SYSTEM INSTALLATION

1. Templates are provided in the kit for both DA 50 and 60 along with the 3W 50 cc. Select the correct guide for your engine and mark and drill the mounting holes and cut out the center as indicated. Notice that the engine center line is offset to the left to compensate for the right thrust built into the engine box.

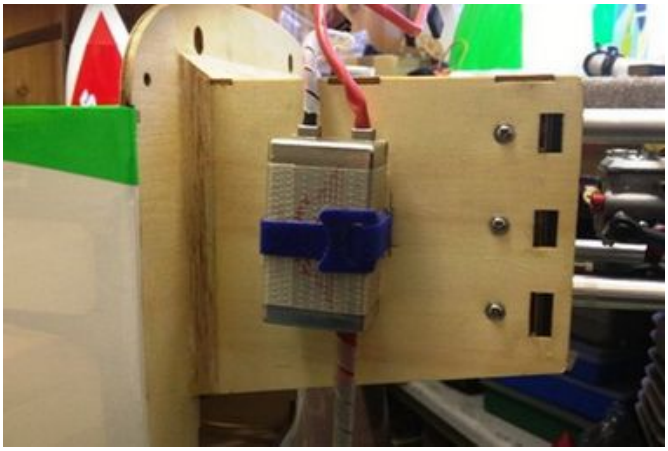




2. Fit the Cowl and measure the distance from the engine bulkhead to the front of the cowl, add approx 2-3mm for the spinner back plate and this is the length that your engine should be set Using the correct length stand offs, mount your engine securely using bolts, 20mm POM washers, and locknuts. The use of thread-lock is also highly essential for the engine bolts.



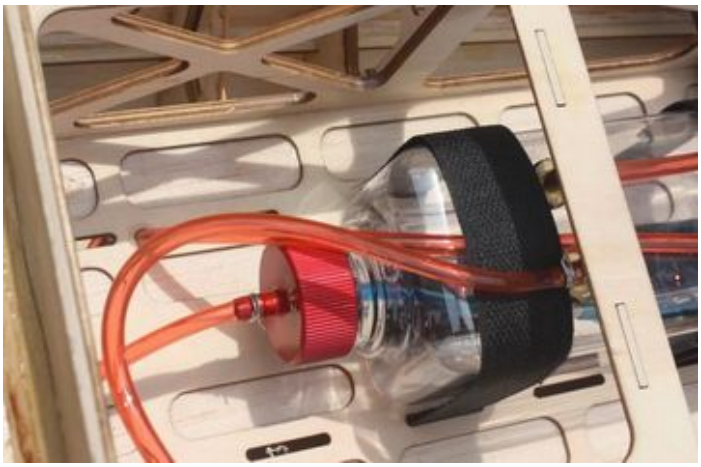
3. Mount the ignition module according to the manufacturer's instructions. The best place to mount it is on the side of the engine box. Secure the pickup lead and ignition wires with zip ties so that they do not vibrate or touch any hot part of the engine or exhaust.

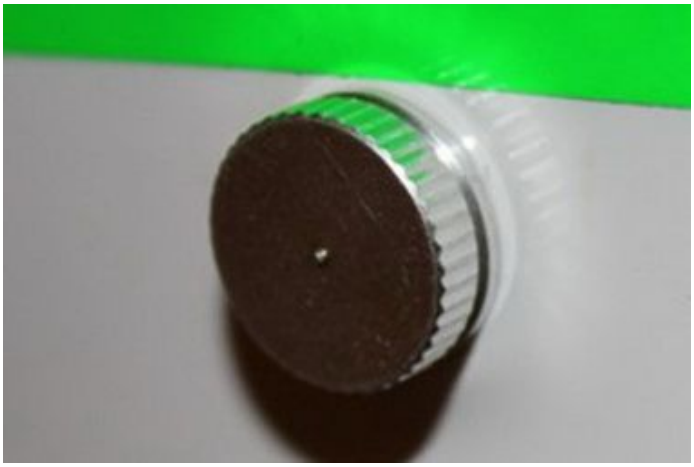


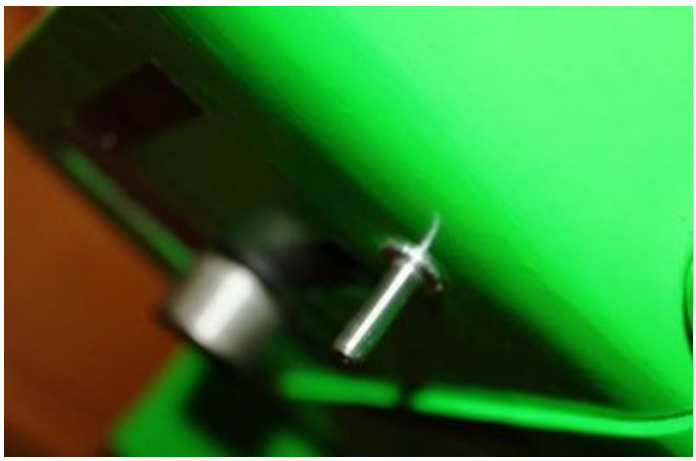
5. Assemble the throttle servo mount using the supplied laser cut parts or there is a servo cutout in the bottom of the engine box for 50cc-70cc engines. Mount your throttle servo and complete your linkage setup. A hole will need to be drilled on the firewall to allow the pushrod to connect to the throttle arm on the carb.

6. An extra servo can be fitted for choke or a mechanical linkage can be used.

7. The new KUZA 500cc Fuel Tank with aluminum tank cap is preassembled. Complete the installation in the fuselage using zip ties or velcro straps to hold the tank in position. Connect a fuel line between the tank and carb, a fuel line between the tank vent and the bottom of the fuselage, and a fill line to a fueling port which can be mounted on the fuselage side opposite your ignition switch. Make sure your vent line does not come close to any hot exhaust part such as the muffler or canister. GW recommends the use of small zip ties or fuel line clamps to secure the lines to the tank.







A barb on the bottom of the fuselage can be fitted for the vent.

Installation of KUZA Fuel Dot and Fuel Vent Line Plug （Not included）

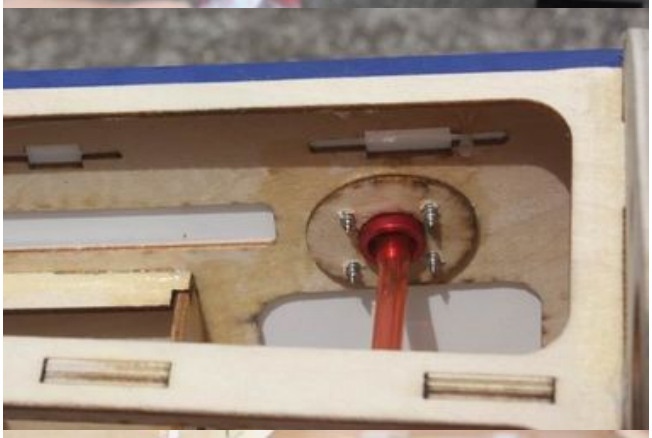
1. From June 2015 and on, all Goldwing gas airplanes are made ready for KUZA fuel dot and vent line plug. Available in three colors: black, red and blue.

2. Installation of KUZA CNC Aluminum Fuel Dot

Sites for KUZA fuel dot installation are pre-cut on both sides of the fuselage, you may install it on either side. Use shape knife to remove the covering.

Secure the housing of fuel dot with supplied 2.5 mm self-tapping screws, then plug and install the fuel line to complete the setup of fuel dot.



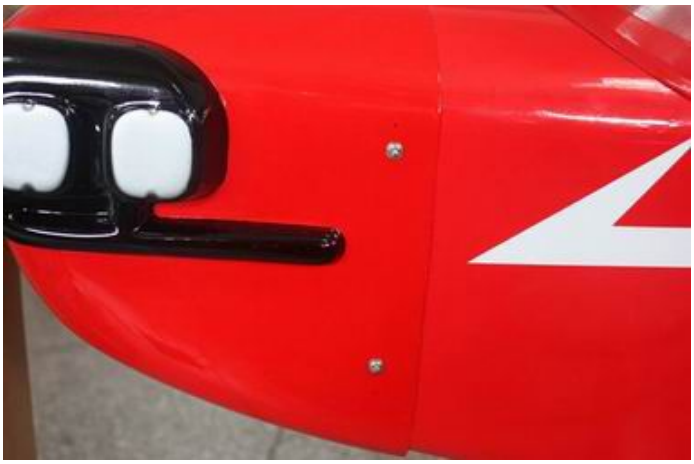



3. Installation of KUZA CNC Aluminum Fuel Vent Line Plug

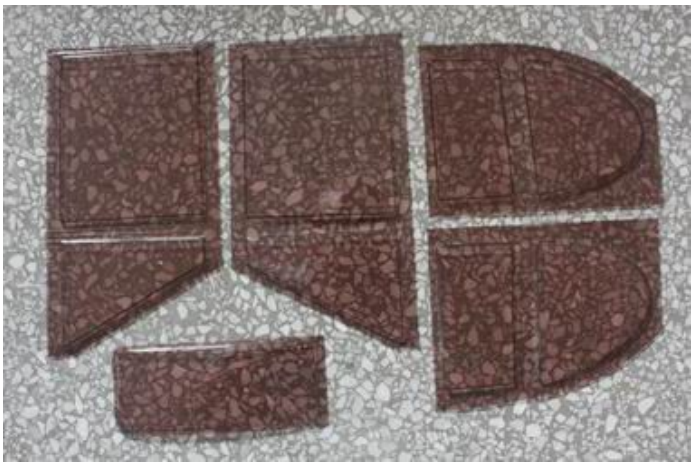
Similarly, two sites for vent line plug installation are available at the bottom of the fuselage. Secure KUZA vent line plug with four 2.5 mm self-tapping screws as shown below.


COWLING INSTALLATION

1. Drill 2mm holes on cowl and fuselage.Secure the cowl with 3X12mm self-threading screws.



CANOPY INSTALLATION

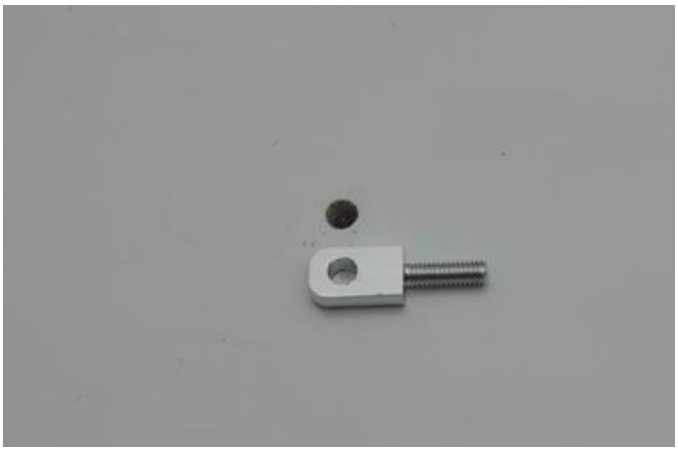


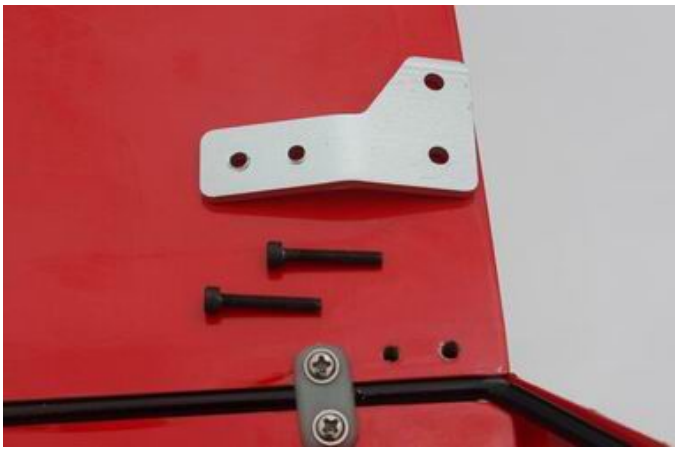


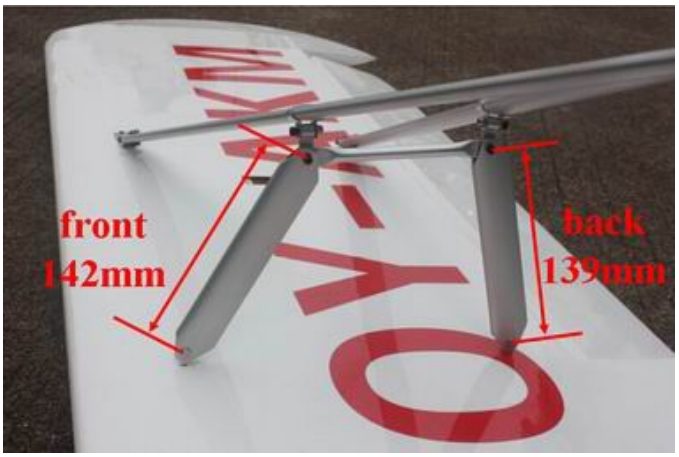


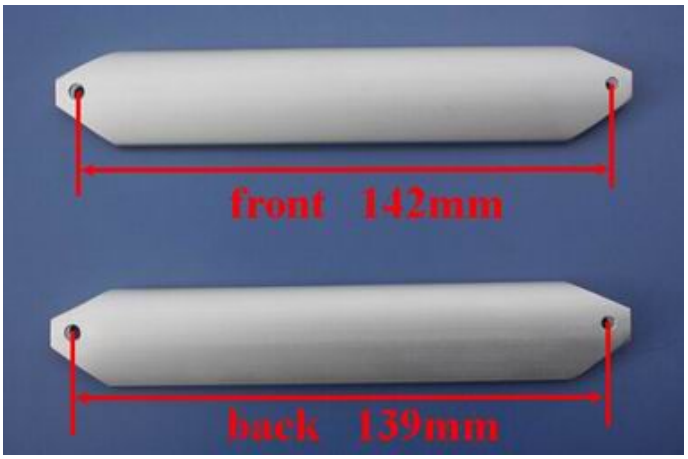

Preflight Assembly of wing bracing struts

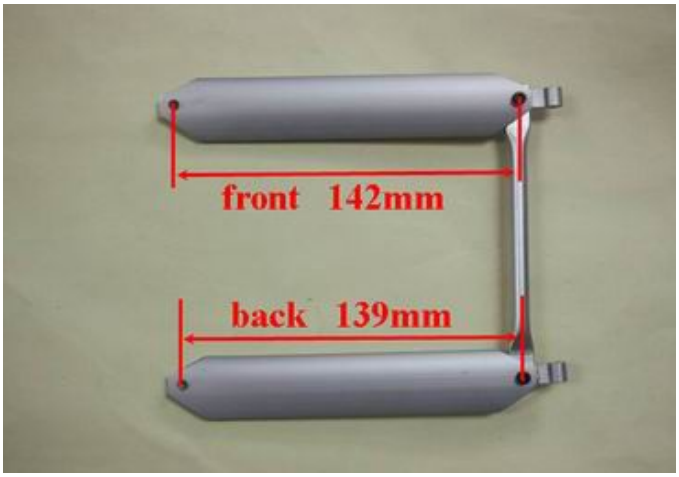
Left wing bracing strut assembly

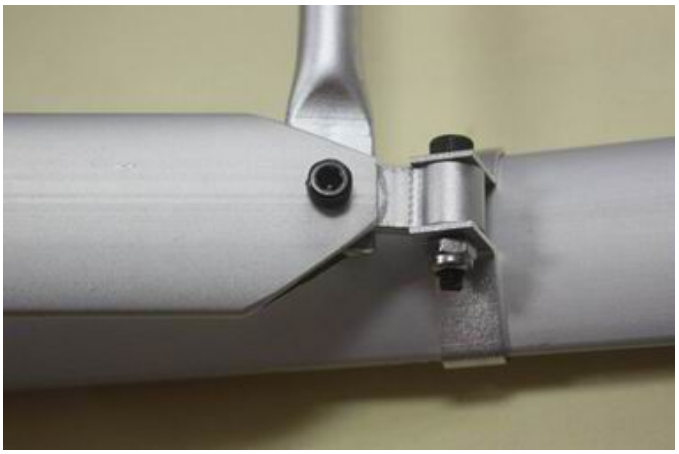


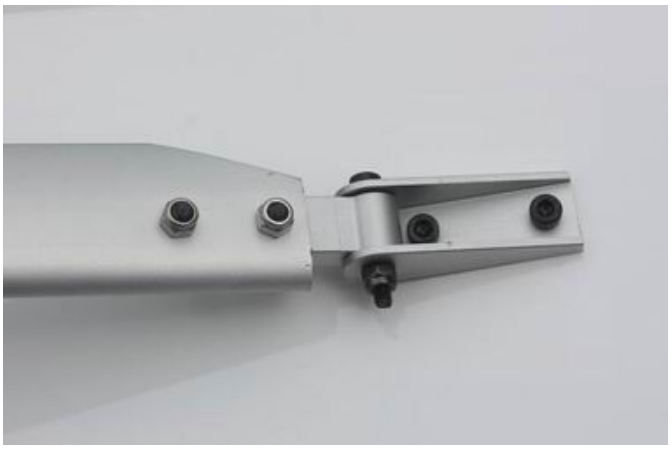


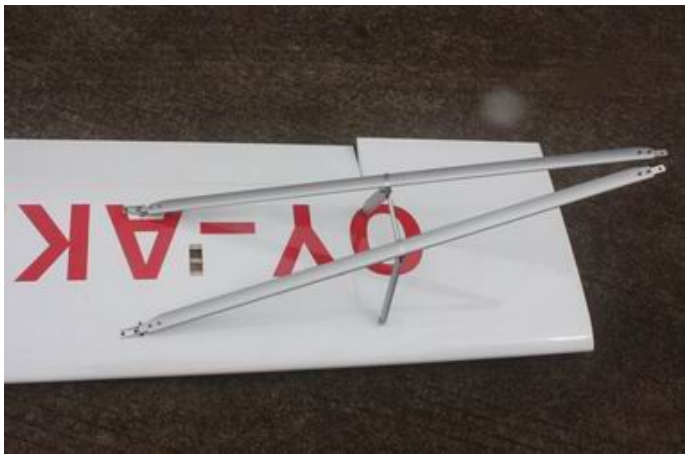












REPEAT FOR THE RIGHT wing bracing strut

FINAL RADIO SYSTEM INSTALLATION

Whether you use 72 MHz systems or the newer 2.4 GHz systems, correct radio installation and care is vital to the safe and reliable operation of your aircraft. Follow the manufacturer's instruction for installation guidance of receivers and batteries paying attention to factors such as vibration isolation, adequate cooling, and clearances.

1. Mount your receiver(s) securely in a location which provides a clean and maintenance free solution to your setup. All servo wires should be neatly routed and secured in place so they will not come loose or flop around during flight.
2. The fuselage ply sides provide space to mount your switches just below the canopy. Mount your switches according to the manufacturer's instructions and route your wires safely and securely as above.
3. Your receiver battery(s) can be mounted in a variety of locations depending on your balance needs. Regardless of where you mount your batteries it is vital that they are very secure with no possibility of coming loose. Use double sided velcro to hold the batteries from sliding around and then use zip ties or Velcro straps to secure them tightly in place.

4. Servo and battery leads are the life blood of your aircraft. Make sure all wires are top quality and connectors are tight and display no loose pins or frayed wires. Servo clips are provided in the kit for your convenience. These servo clips can even be glued to the wood structure using CA if desired.
5. Check all radio programming and control surface operations thoroughly before your initial flight. Check your radio range according to the radio manufacturer's instructions both with the engine off and running.

Balancing and Pre-Flight Checks

Most state of the art aerobatic aircraft allow for a wide margin for balancing depending on what level of precision or freestyle flying the pilot prefers. To perform properly without being too pitch sensitive, you must not go too aft on the CG. **GoldWing RC recommends an initial CG setting of 117-139mm (4.6-5.5 inches) behind the leading edge of the wing at the root.** More experienced pilots may want to set the CG further aft for more 3D capability. Varying weights of engines and radio gear will dictate how you should install each. The batteries can easily be located pretty much anywhere in the fuselage. For those using a heavy engine, servo cutouts are provided in the rear of the fuselage for the rudder servos. These options should allow you to balance the model without adding any weight.

Note: The best way to check your balance is to trim for level flight at about 1/2 to 3/4 throttle and then roll inverted. The aircraft should maintain level flight with very little to no down elevator input. If the aircraft climbs when inverted then you've probably got your CG too far aft. If the nose drops more than slightly, then you are most likely nose heavy.

Recommended control surface deflections:

	Low Rate	High Rate
Elevator	15 degrees	30-40 degrees
Rudder	25 degrees	30 - 40 degrees
Ailerons	20 degrees	30-40 degrees

Recommend Accessories（Not included）:

*** KUZA Gas Fuel line** size: 6X3.5mm 3 color to choose: red , blue, yellow
No. KAG006131R or KAG0061U or KAG0061Y

*** KUZA CNC Aluminum Fuel Dot** 3 color to choose: black, blue, red No. KAG0231B or KAG0231U or KAG0231R

*** KUZA CNC Aluminum Fuel Vent Line Plug** 3 color to choose: black, blue, red No. KAG0232B or KAG0232U or KAG0232R

*** KUZA Fuel line clips** 10PCS No. KAG02454

*** KUZA 1x servo tray No. KAG0T01**

GOLD WING
The Aerobatic Team

www.goldwingrc.com