GOLDWING RC

68in SLICK540 20CC & 90E

Instruction Manual

Two version to choice: 90 Electric or 20CC

Dear Customer,

Thanks for purchasing this newly designed aerobatic RC airplane. Goldwing RC proudly presents **68in SLICK540 20CC & 90E**, Extreme Series, which is a premium product line of electric & gas RC airplanes designed for unlimited 3D performance. The new **68in SLICK** adopts cutting edge aerodynamic features, such as streamlined canopy, aileron counterbalance, removable side force generators (SFGs) .The **68in SLICK** is also loaded with high-end accessories including CF landing gear, tail wheel assembly and control horns. KUZA brand CNC Alloy Backplate Hollowed-out Spinner is included as bonus (limited quantities) for 90E version. And KUZA new fuel Tank Assembly is included for 20CC version.

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, proper 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".

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

ARF MODELS WARRANTY AND RETURN POLICY

We guarantee that the plane is in perfect condition at purchase. The warranty will be voided after modifications and usages. If you have any questions or find any issues, please contact the distributors in your area.

SPECIFICATIONS

WING SPAN:68"(1730mm)
LENGTH:66"(1675mm)
WING AREA:908sq in(58.6sq dm)
FLYING WEIGHT: 7.7-8.2lbs(3500-3700g)

Gas Power:15-26cc gas DLE20
Electric Power：
Scorpion 4025 KV440 with 6S 3700-4400mAh 17x8-18x10 prop
Scorpion 4025 KV330 with 8S 3300-3700mAh 17x8-18x10 prop
Hacker A50-16S with 6S 3700-4400mAh 17x8 or 18x8 prop
Or other 1500-1800Watt electric motor
ESC：80-100A

RADIO:4CH/4-5S

Items Required to Complete This Model:

- 1500-1800Watt electric Motor or 20-26CC Gas
- Appropriate propeller for your Motor
- All required engine and exhaust mounting hardware
- Ignition battery and switch
- One quality throttle servo and appropriate servo arm
- 5-6Pcs high quality metal gear servos or better for the ailerons and elevators
- Appropriate servo arms for the above
- Servo wire extensions. recommends KUZA Twisted 22 AWG Servo Extensions(two 12” , two 24”)
- Two 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

Shop Supplies/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
-

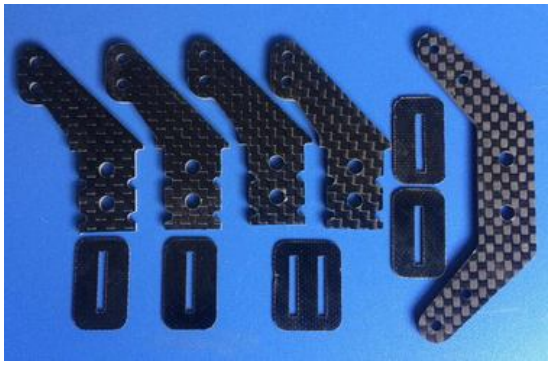
Note: **As with all kits, it's a good idea to read all the instructions and study the parts before you begin construction. Handle the parts of this kit with care so you do not damage any of the structure or covering. Inspect all the parts for any shipping damage and report any issues to as soon as you 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

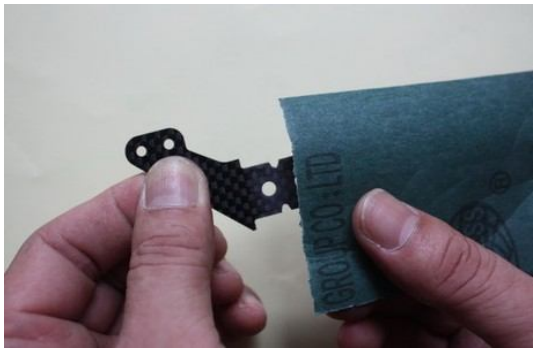
1. With all ARFs, varying temperatures and storage delays can cause covering material to loosen over time and transportation. recommends lightly going over all the covering with a covering iron set at medium temperatures. Be sure to use a soft cover over your iron so you do not scratch the covering surface. 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. 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 assemble:

Servo horns: 2 single horns for ailerons. 2 single horns for elevator. 1 dual horn for rudder.



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

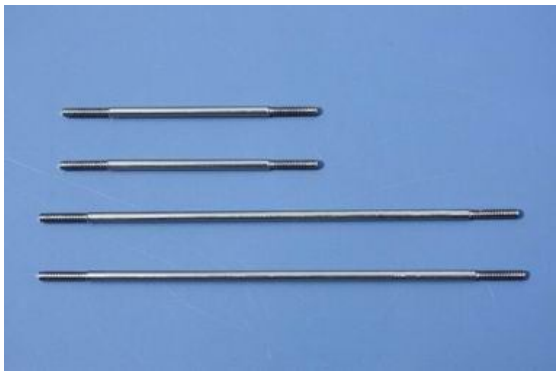


KUZA RTF clear Fuel Tank with Alloy cap for 20CC **version**

Including KUZA anodized alloy fuel dot & fuel vent line plug for 20CC **version**.

KUZA 75mm(3in) Alloy Backplate Hollowed-out Electric Spinner for 90E version

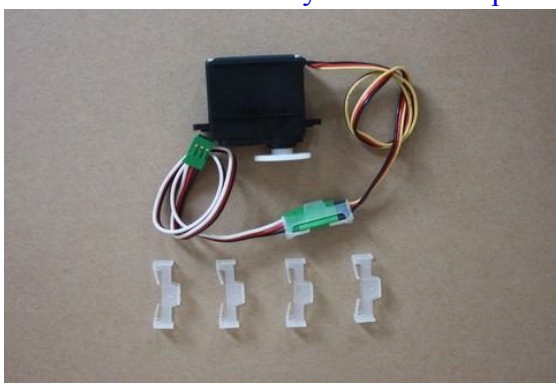
Pushrods: Two 2.5x60mm for aileron. Two 2.5x130mm for elevator & rudder
（Pull-push style）



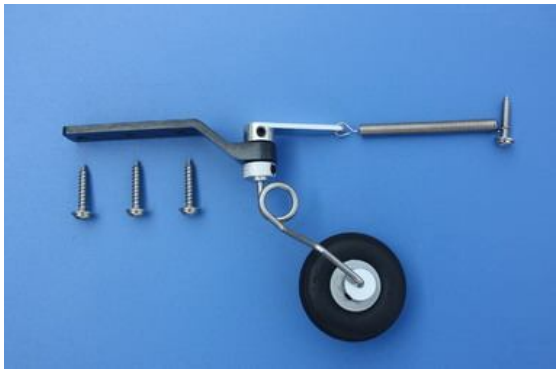
Ball links: 8 for aileron and elevator.

Pull-pull setup for the rudder.

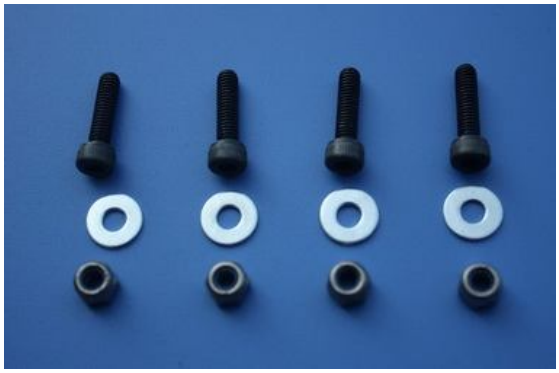
5 Servo extension safety connector clips



New Carbon fiber tail wheel assembly

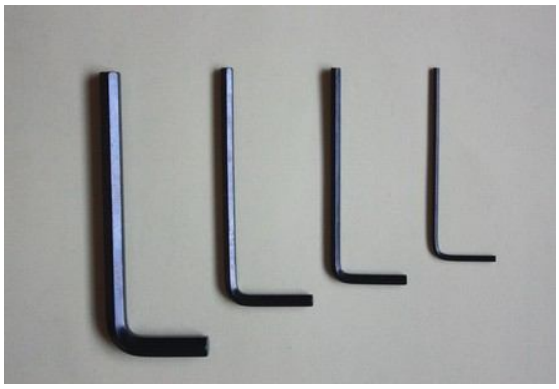


Screews for landing gear: 4(4x20mm) Hexagon bolts & 4mm stainless steel Self-locking nuts & washers



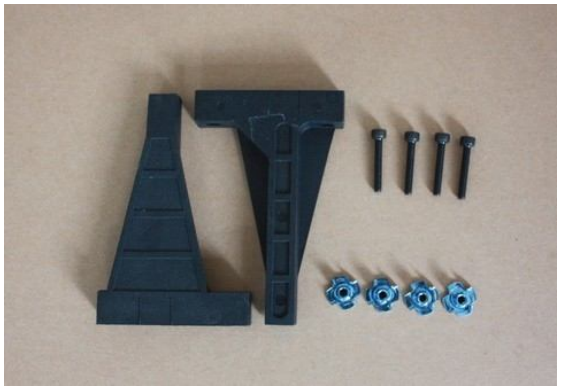
Screews & Washers for cowl: 4(2.5x12mm) Hexagon socket screws & 4 PTFE Washers

4 Hexagon socket screw wrenches



Motor mounting hardware set

Engine mount for nitro and gas engine



Wing Assembly

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

1. It is much easier to install the CF horns before installing the wing. Locate the CF aileron control horns, ball links, and associated bolts and nylon-insert lock nuts. Use some fine sandpaper to roughen up the center areas of the control horn so that the glue adheres better. Using a sharp hobby knife cut the covering away from the slots in the rudder and trial fit the control horn.

2. Mix up some 30 minute epoxy and coat the inside of the slots and the center of the control horn. Hint: a scrap piece of 1/16" ply, tooth pick, or old hobby blade can be used to coat the inside of the aileron 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.

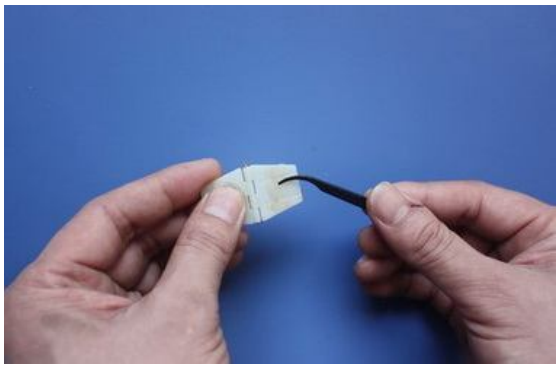
3. The slots for the supplied hinges are pre cut. Locate the hinges and dry fit the hinges and aileron into place and test the operation. The hinges should seat fully into the slots so that the hinge line gap is minimal while still allowing full aileron deflection.

4. Before gluing the hinges in you must first clean the hinges of any mold release agent using isopropyl alcohol. also recommends scuffing up the plastic with light sandpaper for maximum glue adhesion.

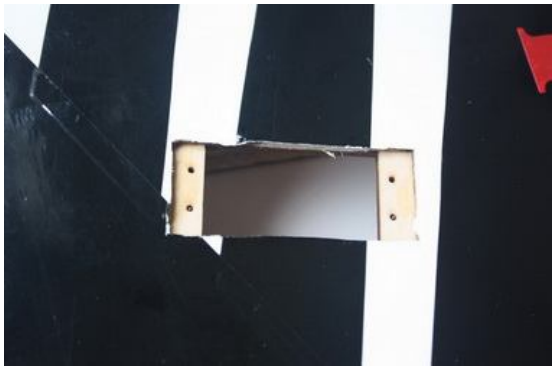
5. Mix up some 30 minute epoxy and using a toothpick or small wooden dowel coat the inside of each hinge slot with epoxy. Also put a thin layer of epoxy on one side of the hinges. Install this end into the slots of the rudder and make sure each hinge is properly aligned at exactly 90 degrees to the hinge line.

6. Now coat the other end of the hinges with epoxy and install the aileron into the trailing edge of the wing. Again, make sure the hinges remain in proper alignment. Using paper towels and some isopropyl alcohol clean off any excess epoxy from the hinges and surrounding areas.

7.Make sure the aileron is fully seated so that the hinge gap is minimal while still allowing full deflection of the aileron. When satisfied, use some masking tape to hold the aileron in place along the bottom and counterbalance. After the epoxy has cured, remove the masking tape and check for proper operation. If the hinges are dry some light oil carefully placed on each hinge will help greatly.



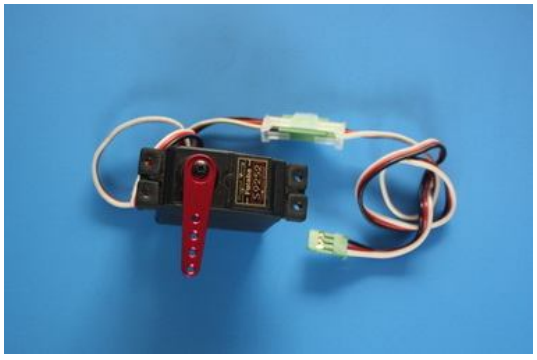
8. Cut the covering from the aileron servo slots from corner to corner and iron down inside the openings. Connect servo wire extensions to your servos and secure the connections with the supplied clips. Feed the servo wires into the wing and out the root. The screw holes for servo mounting are laser pre-drilled, it is advisable to apply some thin CA to strengthen them, Install the servos and screw firmly in place.



9. Use your radio to set the centers of each servo and then assemble and adjust the length of each control rod. The servo arm should be as close to perpendicular to the control rod as possible while the aileron is at neutral. Double check all screws, bolts and nuts to assure proper installation and operation without binding.Once satisfied, permanently attach the ball link to the servo arm with the supplied screw and nut.

10.Check the final radio operation of the ailerons and make sure there is no binding or servo fighting of each other. Also check to make sure all linkage bolts and nuts are secure.

(Below long ALU arm is not included)

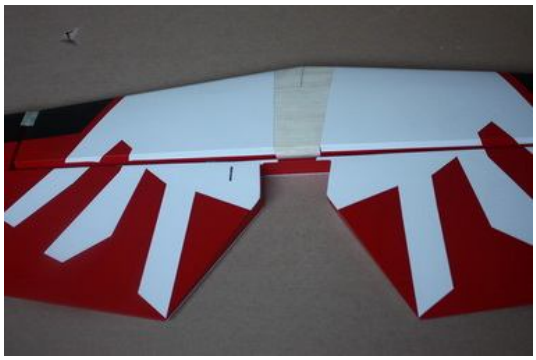


Elevator Assembly

NOTE: The SLICK is two singe horns for elevator.

1. Find the control horn slots on bottom side the elevator, use the method described in 1.2-1.4 to install control horns for elevator.
2. Elevator horn slot is located on the left side of elevator. Remove covering over the hole for horizontal stabilizer on fuselage. Removing covering on the central part of horizontal stabilizer is recommended for better glue bonding. Insert the horizontal stabilizer into fuselage, make sure it's centered. Apply thin and gap-filling medium CA to glue it in place.

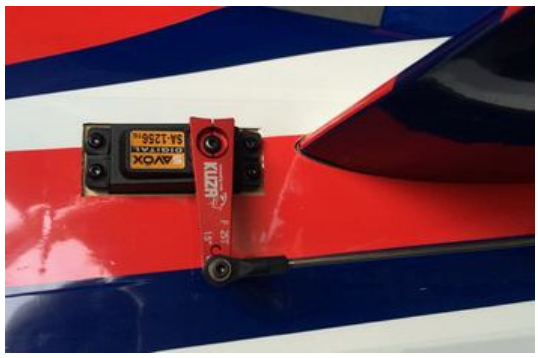
3. Glue the hinges for the elevator with CA glue.



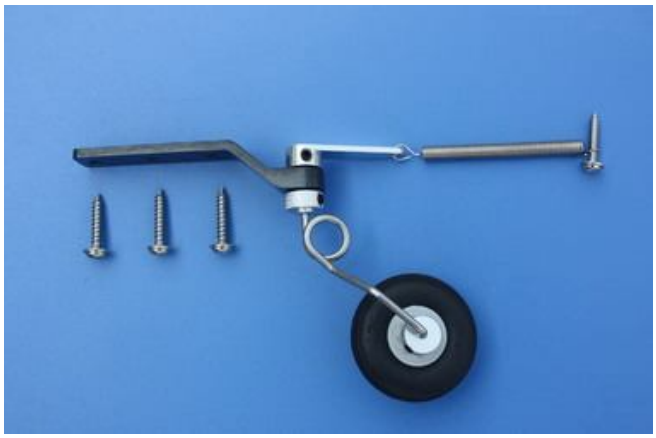
4. After installing the elevator, use supplied balsa pieces to fill gap behind the elevator as shown below

5.Locate the slots for elevator servo, remove covering. Connect wire extension to your servos before feeding the wire into fuselage. Install servo with screws supplied by servo manufacturer.

6.Use your radio to set the servo center position and install the large control horn onto the servo. Assemble the control rod and ball links and adjust the control linkage for proper geometry. When satisfied, screw the ball link to the servo arm and control horn. KUZA 1.5" aluminium CNC servo arm is recommended for elevator control, the servo arm should be as close to perpendicular to the control rod as possible while the elevator is at neutral. Double check all screws, bolts and nuts to assure proper installation and operation without binding.



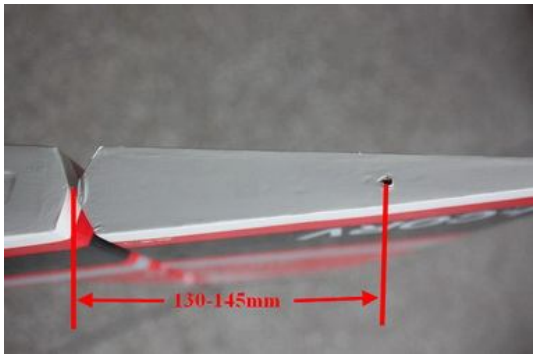
Tail Wheel Installation



1. Start tail wheel assembly installation.For safety, please remove all screws and then re-assemble with thread locker.

2. Drill 2 mm holes on the bottom rear of the fuselage, secure the tailwheel bracket with the provided screws. For best results, the pivot point of the assembly should be over the hinge line of the rudder.

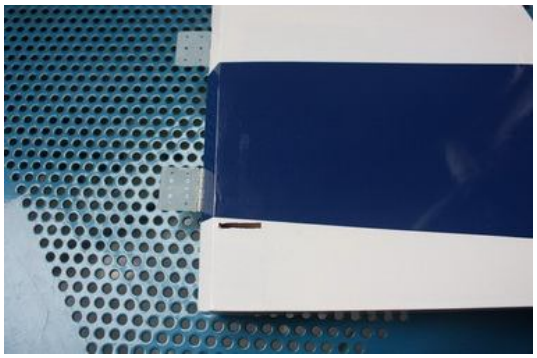
3. Drill a hole on the bottom of rudder, 130-145mm away for the hinge line. Secure the tail wheel spring with provided self-threading screw.

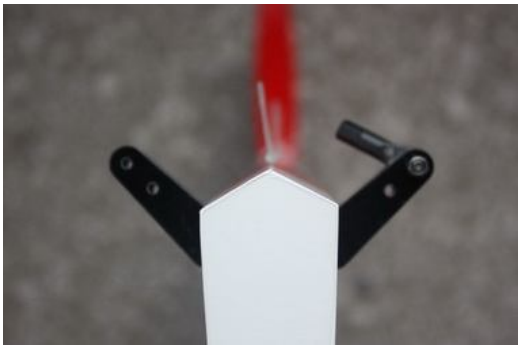


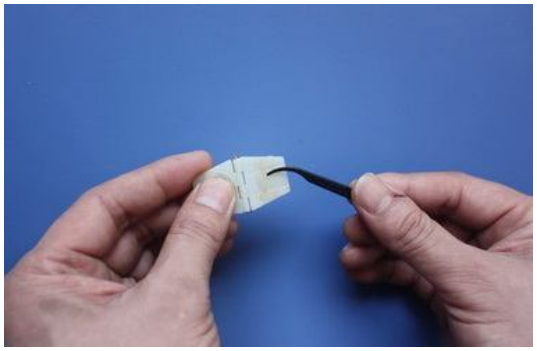
Rudder Assembly

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

1. Install the fiberglass control horns in the same way as you did the elevator horns.







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

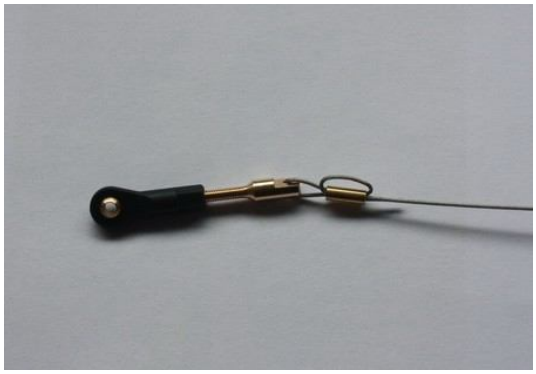
3. Locate the pull-pull cable set, threaded couplers, brass swaging tubes, and ball-links. If the cable is one long piece, cut it into two equal length pieces. Thread one end of the one cable through a brass tube and then through one of the threaded couplers. Run the cable back through the brass tube and then loop it back through a second time. Using a set of crimping pliers, place three crimps 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.

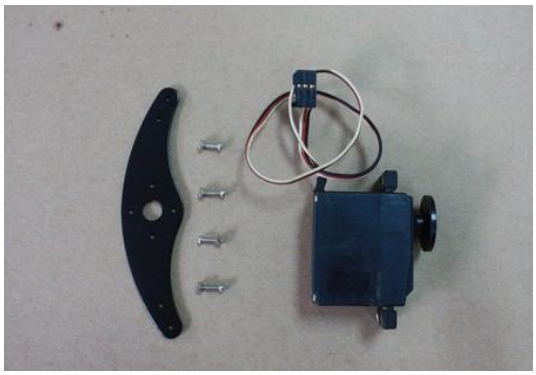
4. Thread the couplers about half way into the ball links of the rudder. Hint: remove the ball links from the rudder horn first to make this step easier and then re-install once the couplers are threaded on. Feed the loose end of each cable into the cable slots at the rear of the fuselage and feed them forward towards the servo mount location. A coat hanger with a hook on the end can be useful here if you can't reach the cable.

5.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.

6. 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.

(Below long ALU arm is not included)



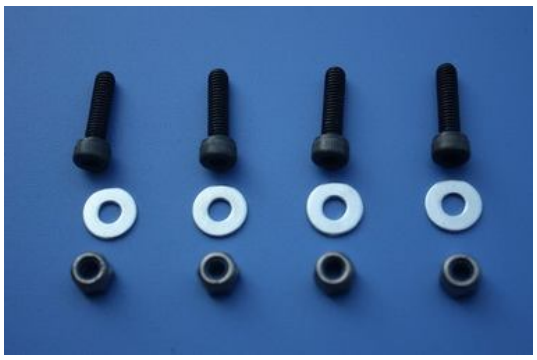


7. The SLICK also provides pull-push style for rudder. Use 2.5X130mm push rod between the servo and the rudder horn.

Main Landing Gear Installation

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

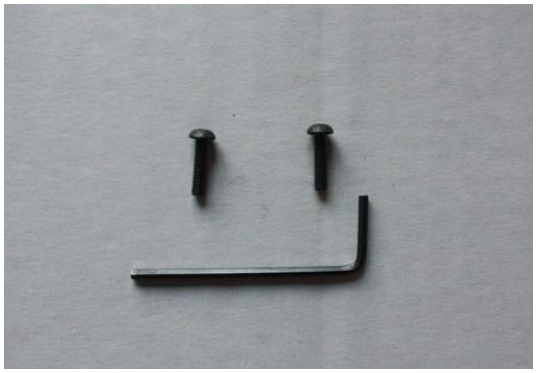
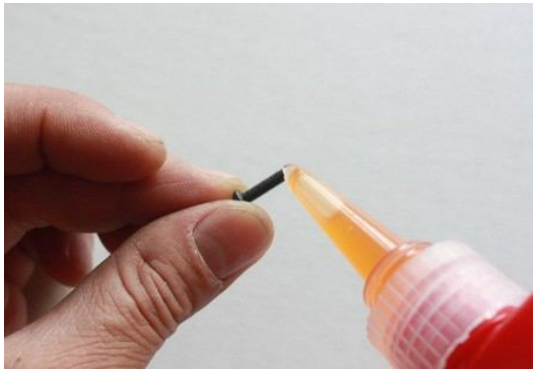
1. Bolt the main gear to the bottom of the fuselage using the supplied screws and stainless steel Self-locking nuts. Place the bolts in through the can tunnel opening with appropriate size spanner. Remember the gear will rake forward.



2.Loosen out the inner nut, then apply thread lock to the axle. Tighten the nut back in place, allow the thread locker to dry.

3.Install the wheel axles to the landing gear and tighten the nylon-insert lock nut. Install one wheel collar onto the axle. Use a second wheel collar as a guide to leave a gap on the inboard of the axle. Use a small drop of thread-lock and tighten in place. Slide the wheel onto the axle and install a second wheel collar also using thread-lock on the set screw.

4. Fit the wheel pant in place and install using the two supplied screws. Use thread-lock to secure the screws in place. Repeat the above steps for the other main gear.

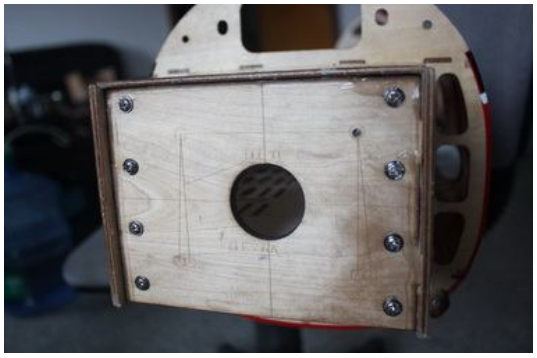



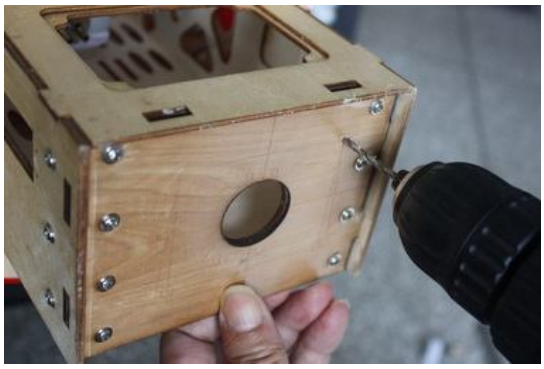
For 20CC version,Engine, Exhaust, & Fuel System Installation

Engine Installation

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

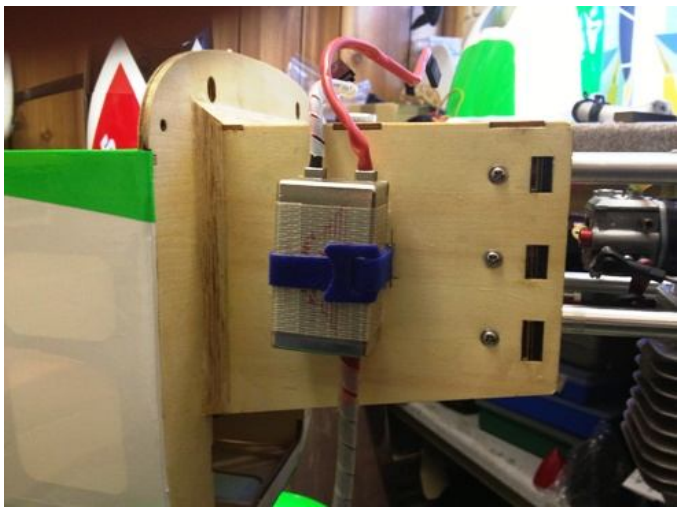
1. Select the proper guide for your engine and drill the holes and cut out the center as indicated. Notice that the engine center line is offset to the left to compensate for the right thrust built into the engine box.



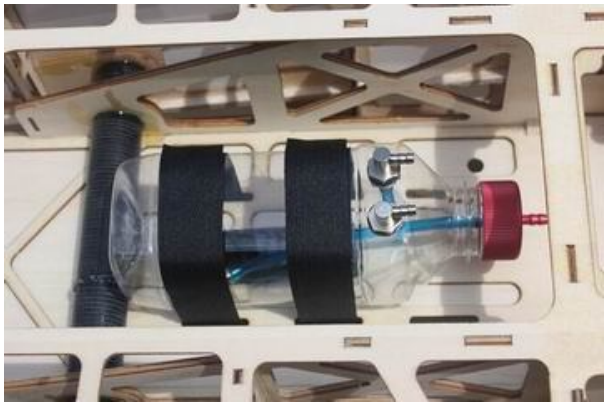


2. Fit the Cowl and measure the distance from the engine bulkhead to the front of the cowl, add approx 2-3mm for the back plate and this is the length that your engine should be set Using the correct length stand offs, mount your engine securely using bolts, washers, and locknuts. The use of thread-lock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



4. The KUZA new fuel tank 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. recommends the use of small zip ties or fuel line clamps to secure the lines to the tank.



Installation of KUZA anodized alloy fuel dot & fuel vent line plug for 20CC version.

1. KUZA anodized alloy fuel dot & fuel vent line plug are included.

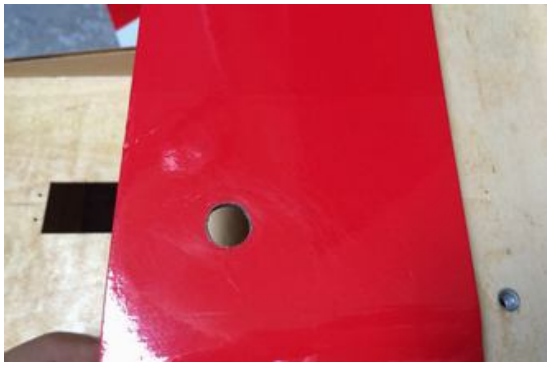
2. Installation of KUZA anodized alloy fuel dot

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. Then put the nut.

3. Installation of KUZA fuel vent line plug

Similarly, two sites for vent line plug installation are available at the

bottom of the fuselage. Use shape knife to remove the covering. Then put the nut.



90E Electric version Motor Installation

1. Find the hardware set for motor installation in the hardware package.

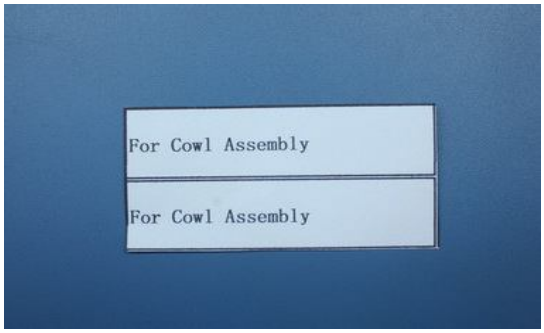
2. Blind nuts are pre-installed behind the firewall. Since the position of cowl is fixed and length of motors varies, you may need to use provided washers to position you motor properly.

3. Fix the battery with both Velcro and straps.

Cowling Installation

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

1. Test fit the cowl first, make sure it fits well with canopy and fuselage. Labels are provided for aligning the drill holes for the cowl. Stick then on without the cowl, mark the hole. Fit the cowl then press back down. The hole will then show the area to drill. Sere below.



2. Drill 2mm holes on cowl and fuselage.

3. Secure the cowl with 2.5X12mm self-threading screws and PTFE washers.

FINAL RADIO SYSTEM INSTALLATION

1. Whether you 72 MHz systems or the newer 2.4 GHz systems, proper 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.

2. Mount your reciever(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.

3. 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.

4. 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.

5. 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.

6. Check all radio programming and control surface operations thouroughly 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

Most state of the art aerobatic aircraft allow for a wide margin for balancing depending on what level of precision or freestyle the pilot prefers. To perform properly without being too pitch sensitive, you must not go too aft on the CG. **We recommends an initial CG setting of 4.4 – 5 inches（112-128mm） 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.

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	45-50 degrees
Rudder	25 degrees	40-45 degrees
Ailerons	25 degrees	35-40 degrees

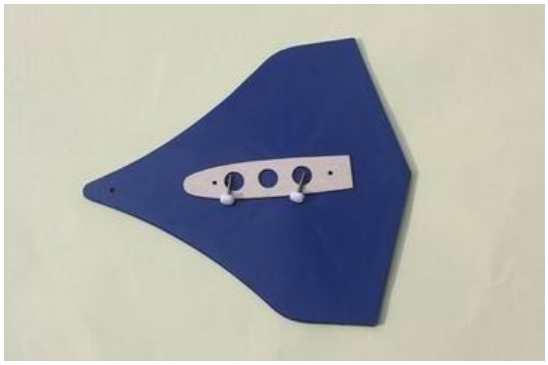
FINAL ASSEMBLY AND PRE-FLIGHT INSPECTIONS

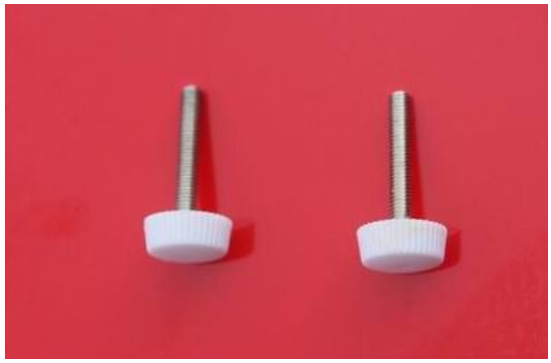
1. Before arriving at your flying field, be sure all your batteries are properly charged and all radio systems are in proper working order.

2. Install the wings onto the fuselage being careful to align the wing tube with the wings and not force it. The wing tube may be initially tight but will loosen some with use. Guide your servo wires into the fuselage openings and connect to the proper aileron channels. Servo clips are recommended. Once you have the wings fully seated in the fuselage tighten the wing bolts inside the fuselage.

3. Side force generators Assembly.

Cut the wing film needed to be install the SFG. Fixed the SFG Use M3X18 hand bolts and balsa sheets. Installation of the SFG is optional.





4. Fill your fuel tank making sure your vent line is not plugged or capped. With the canopy off, this is a good time to check for any fuel leaks.

5. Position the canopy in place and tighten the canopy screws. Be sure to use the supplied rubber washers under the screw heads.

6. If you have removed your horizontal stabilizers, install them once again and check all bolts and connections.

7. Check all control surfaces for secure hinges by performed a slight tug on the control surfaces and observing if there is any give in the hinges. Check all control rods, ball links, servo screws, etc. for proper operation and installation.

8. Check your batteries and perform a proper range check once again with the engine off and running. Be sure all surfaces are moving in the correct direction and the proper amount for your flying setup.

Recommend KUZA servo arm（Not included）：

***KUZA 2.3X15mm Self Tapping Servo Screws** No. KAG002622

***KUZA Twisted 22 AWG Servo Extensions**

Two 12”(155mm) No. KAG002522 Two 24”(610mm) No. KAG002524

*** KUZA Gas Fuel line** size: 6X3.5mm 3 color to choose: red , blue, yellow

No. KAG006131R or KAG0061U or KAG0061Y

*** KUZA Fuel line clips** 10PCS No. KAG02454A

*** KUZA 7075-T6 Alloy Servo Arm V2**

*** KUZA new Wingbag for 20CC** Two color to choose: orange/ silver, blue / silver No. KAG0092

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