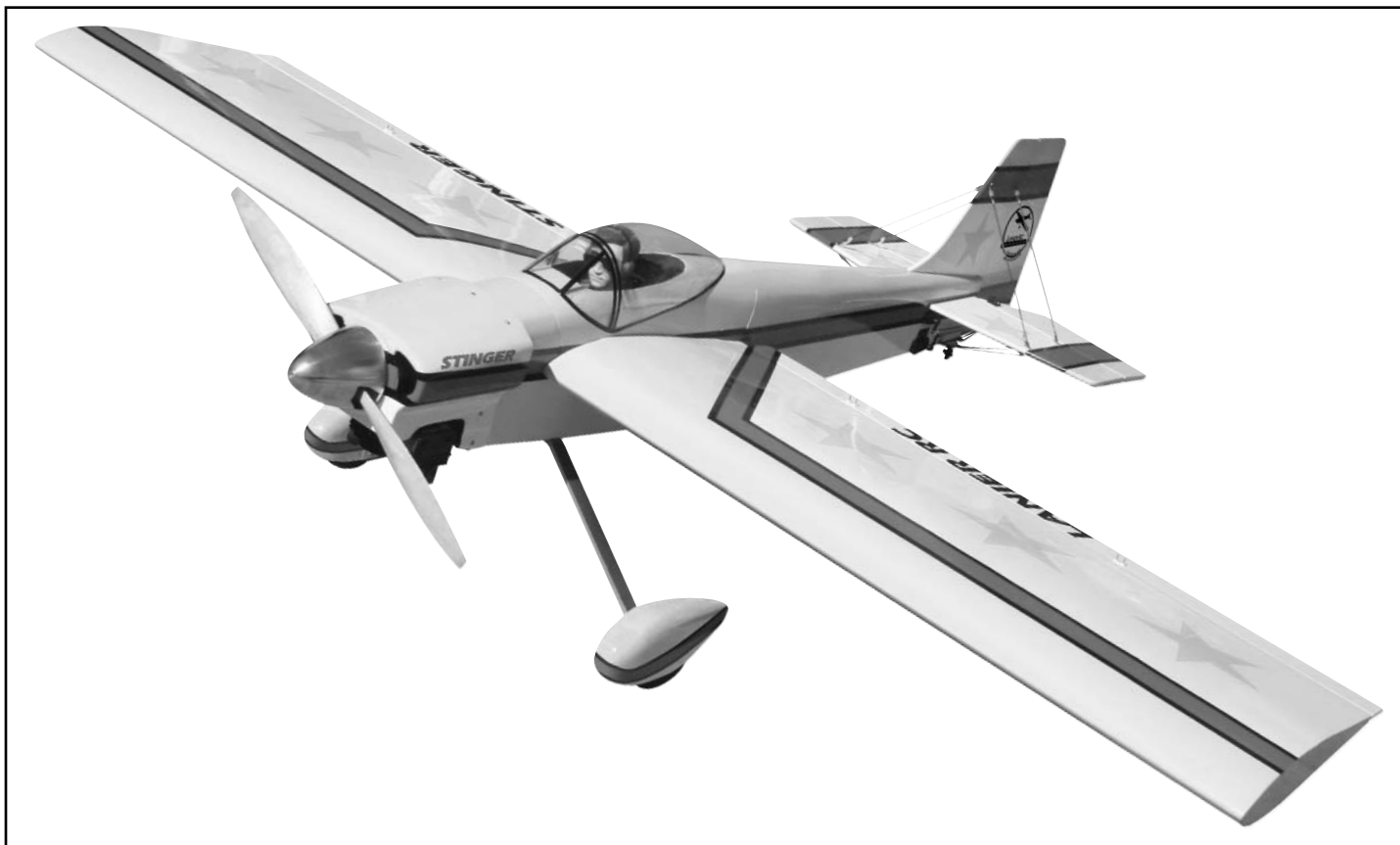


STINGER ARF

ALMOST READY TO FLY



Important Information:

Please inspect the plane before beginning to assemble to make sure you are happy with it. After assembly has begun you cannot return the kit. If you find a problem before beginning to assemble the plane you must contact us, please do not return it to the dealer. Due to temperature changes the plane may develop some wrinkles in the covering that you will need to remove with an iron. Be sure to seal the edges down first so that you do not cause the covering to shrink and leave exposed areas of wood. The model is built light to ensure good flight characteristics. With the power available from the new breed of engines, it is necessary to use throttle management in order not to overstress the airframe. You must maintain good tight control linkage with no slop, good servos with plenty of power, and good servo arms to protect against flutter. Sloppy linkage and overspeeding the plane will cause flutter which is not covered in the warranty. Lanier R/C is proud of the care and attention that goes into the manufacture of parts for its model kits. The company warrants that for a period of 30 days, it will replace, at the buyers request, any parts

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or material shown to the company's satisfaction to have been defective in workmanship or material at the time of purchase.

No other warranty of any kind, expressed or implied, is made with respect to the merchandise sold by the company. The buyer acknowledges and understands that he is purchasing only a component kit from which the buyer will himself construct a finished flying model airplane. The company is neither the manufacturer of such a flying model airplane, nor a seller of it. The buyer hereby assumes the risk and all liability for personal or property damage or injury arising out of the buyers use of the components or the finished flying model airplane, whenever any such damage or injury shall occur.

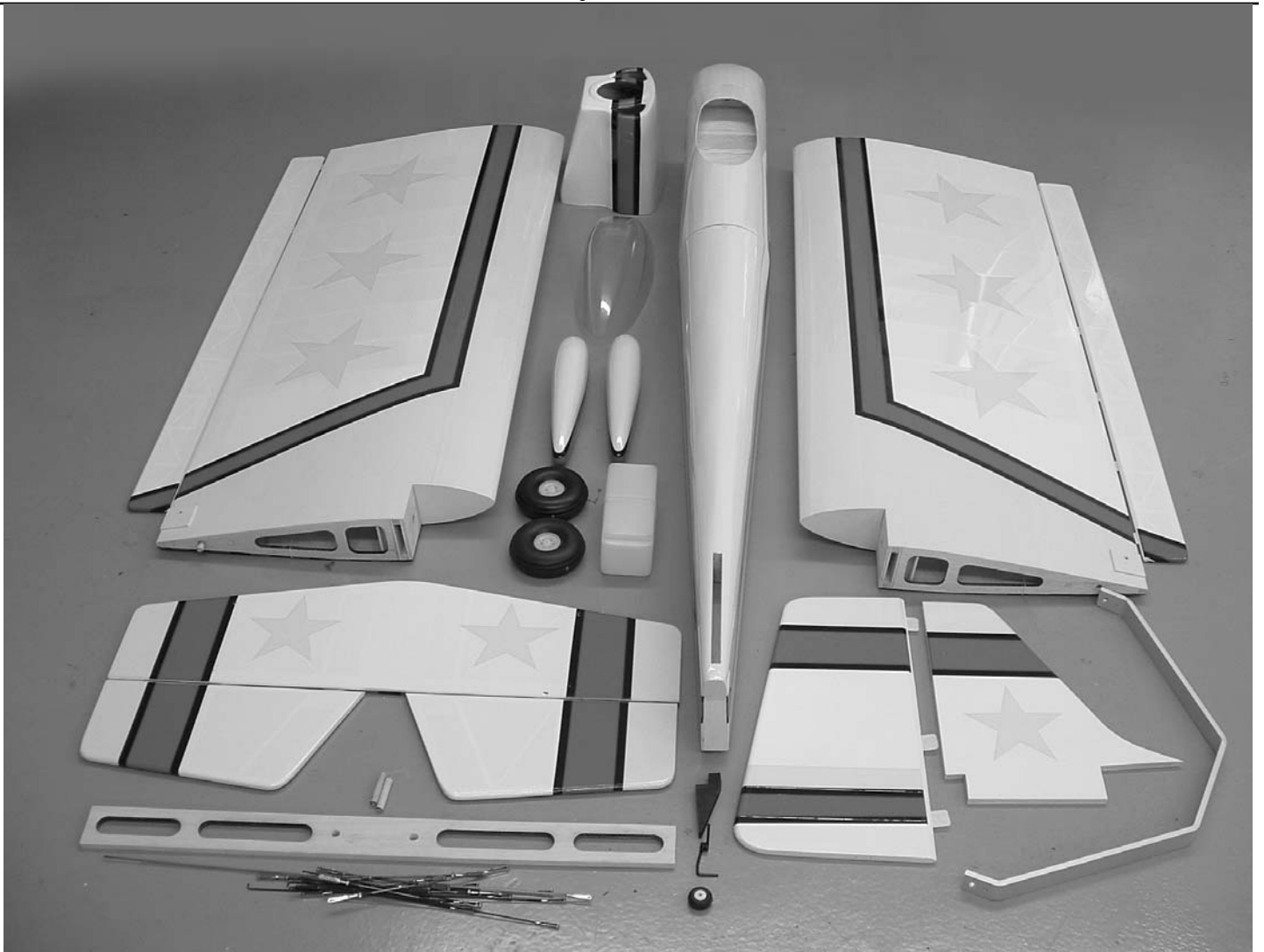
Any action brought forth against the company, based on the breach of the contract of sale to the buyer, or on any alleged warranty there under, must be brought within 1year of the date of such sale, or there after be barred. This one year limitation is imposed by agreement of the parties as permitted by the laws of the state of Georgia.

Introduction

Thank you for purchasing the Lanier R/C Giant Scale Stinger. We are sure you will be happy with the quality of the kit and just as happy with the flying characteristics of the Stinger. Because of the light weight and large wing area, the Stinger will accept a wide range of engines. With a glow engine such as the O.S. BGX1, the Stinger is as docile as a trainer. Install a 4.2 CID gas burner and it becomes an unlimited aerobatic machine.

This makes the Stinger a perfect "first time" giant scale airplane. If this is your first giant scale please pay attention to the way we recommend setting up the controls. Bigger does fly better but some of the hardware used on small plane will not be suitable for a giant scale.

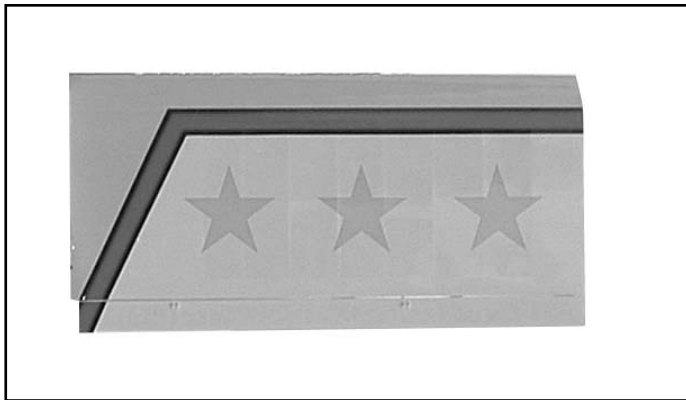
Assembly Instructions



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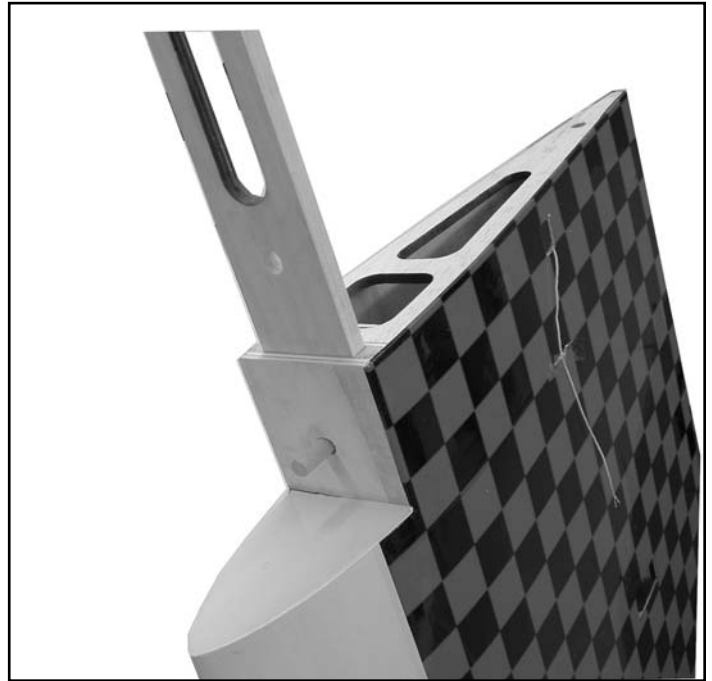
Wing Assembly

Start with one wing panel. Locate the aileron and trial fit them on the wing. You will need to determine which aileron is the left and which is the right by trial fitting. Make sure all the hinges are aligned and the aileron is flush with the wing tip. Now locate the other aileron and wing panel and fit the aileron. When you are satisfied with the fit remove the ailerons and lay them behind the wing in the correct position. The pin style hinges work best if installed in both wing and aileron at the same time. Apply a drop of oil in the hinge. Use 30 minute epoxy to glue them in. A syringe works great, if you don't have one use a 1/8" dowel or piece of 3/32" wire to get the epoxy into the holes. With glue in the holes, push the hinges in wing up to the pin. Apply glue in the holes on the aileron and slide aileron into place. Work the aileron up and down several times and the pin hinges will rotate into position. Make sure you have a tight fit between the wing trailing edge and aileron leading edge. Set aside to dry and install the other aileron.



Locate the dihedral brace. Trial fit the brace into the slot with the holes aligned with the holes in the wing. Locate the two 3/8"x 1-3/8" dowels and make a mark 1/2" in from one end. Using an exacto knife, remove the covering

from the holes in the front of the wing. Insert the dowel in the hole and through the hole in the dihedral brace.



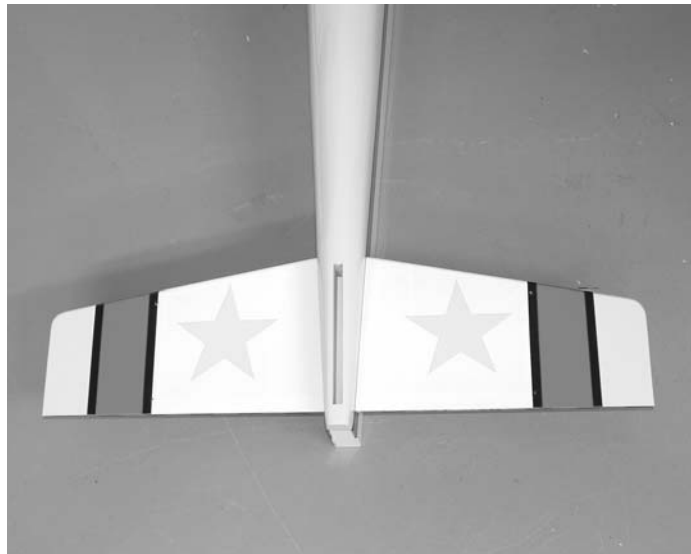
Now slide the other wing panel on the dihedral braces and insert dowel in hole.



Both dowels should go completely through the dihedral brace and leave 1/2" exposed.

Assembly Instructions

When satisfied with fit and alignment, take the wings apart. Mix 3 ozs. of 30 minute epoxy and apply a liberal amount to the root of both wings, both sides and the edges of the dihedral brace, and into the slots of both wings. Use a scrape piece of wood to work the epoxy down into the slots in the wings. Slide the dihedral brace into place and apply epoxy in the holes for the 3/8" dowels and install dowel. Slide the other wing in place and install dowel. Use masking tape to hold the wing together till the epoxy cures. Check the trailing edge of the wing and use a pin to make sure it stays in perfect alignment. Lay the wing down on a flat surface till the epoxy cures, don't stand it on one tip. This will cause the epoxy to run to one end.



Use a yard stick to measure from the rear corner of the stab to the front edge of the turtle deck. Move stab until this measurement is the same on both sides. Sight the stab, fin, wing alignment from the rear of the plane. The alignment can be changed slightly by pushing up or down on the stab tip. This is all that should be needed, but if more is needed you can sand the stab saddle till the alignment is perfect.



Tail Assembly

With the wing mounted on the fuselage, slide the stab into the slot in rear of fuselage. Slide the fin into place in the slot on the top of fuselage.



Do the same with the fin. When happy with the alignment, use a marking pen and mark a line on the stab, top and bottom and on both sides of the fuselage. Do the same to both sides of the fin.

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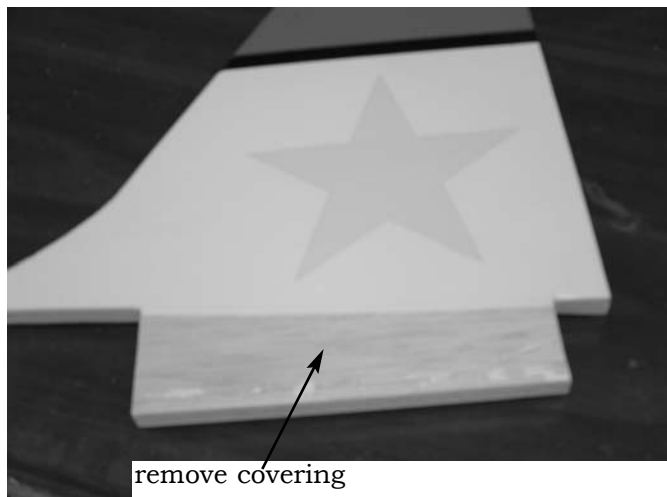
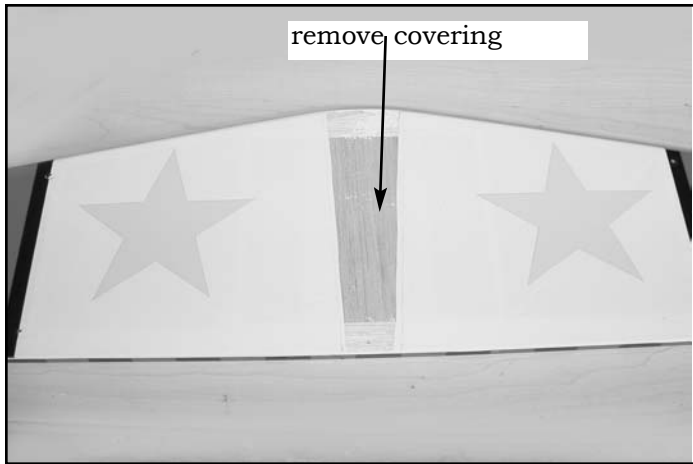
Assembly Instructions



Using 30 minute epoxy, glue the stab and fin in place using the marks made earlier to align. Use masking tape to hold in place if necessary. Check alignment and allow epoxy to cure.

Trial fit the elevators and rudder in place. Apply glue in the hinge holes and insert the hinges up to the pin as you did on the wing. Work the surfaces back and forth several time to make sure there are no binds and check gap to make sure it is tight.

Remove stab and fin from fuselage and using a razor blade, remove the covering between the lines you just marked. Cut about 1/8" inside your mark so bare wood will not be exposed when glued in place. Cut carefully and cut only the covering, don't cut the balsa underneath as this would weaken the stab and fin.

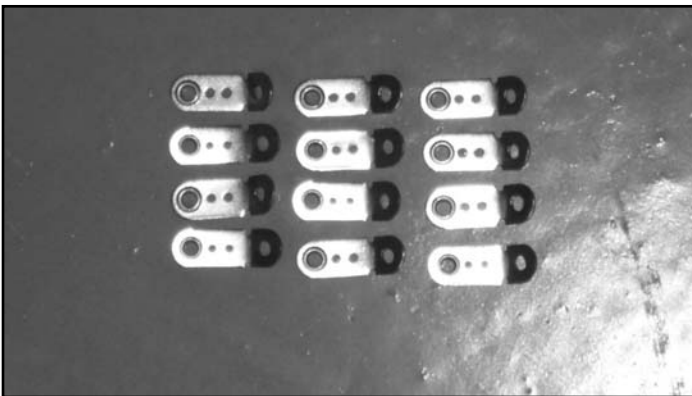


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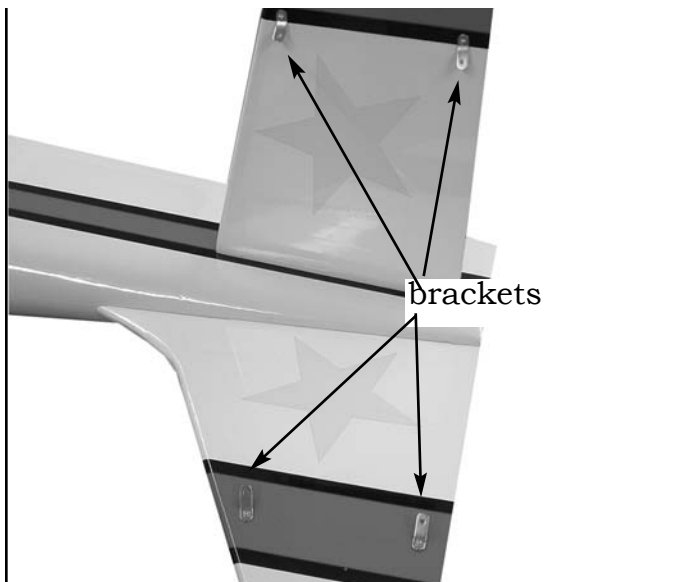
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Flying Wires

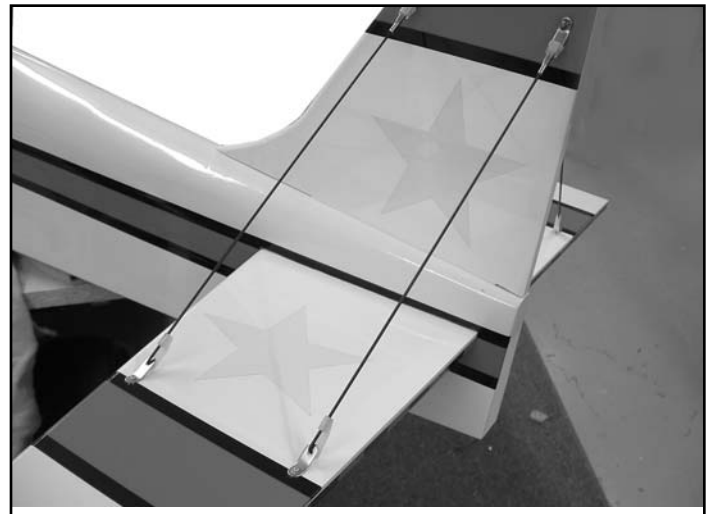
The flying wires are functional on the Stinger and must not be omitted. Locate the 12 flying wire brackets and bend a 45 degree angle on the end even with the notch. (hardware may vary from what is shown in the pictures).



Attach the brackets to the stab and fin with six 2mm x 20mm screws and nuts. Locate the pre-drilled holes in the stab and fin by measuring down approximately 3-1/4" from the top of the fin and approximately 1/2" in from the leading edge and trailing edge. Press down the covering and with a pin you should be able to locate the hole. Remove the covering using a knife. On the stab measure in approximately 5" from the tip and approximately 1/2" in from the leading and trailing edge.

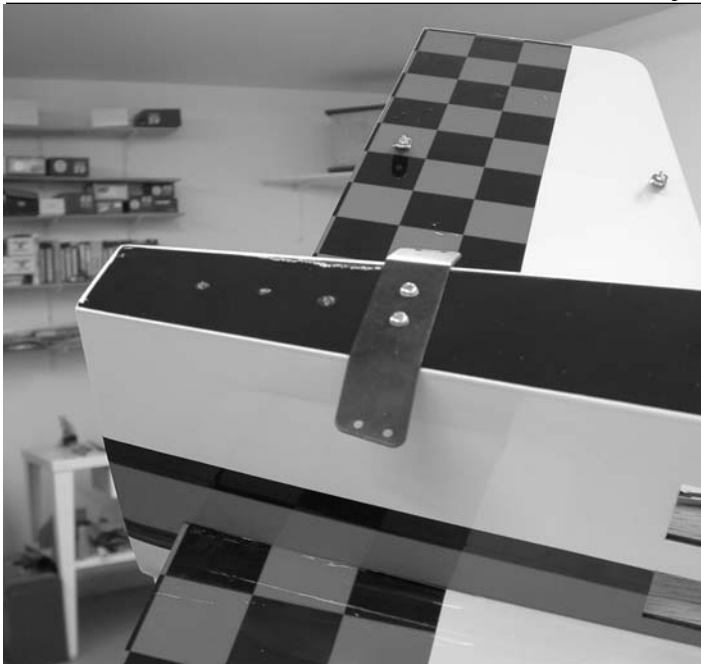


Attach brackets to both top and bottom of stab, and both sides of fin. Locate the eight 2-mm rods, 2mm clevises, nylon swing in keepers, and clevis retainer silicone tubing. Screw the clevis approximately half way on the threads of the rod and attach to the bracket on the fin.

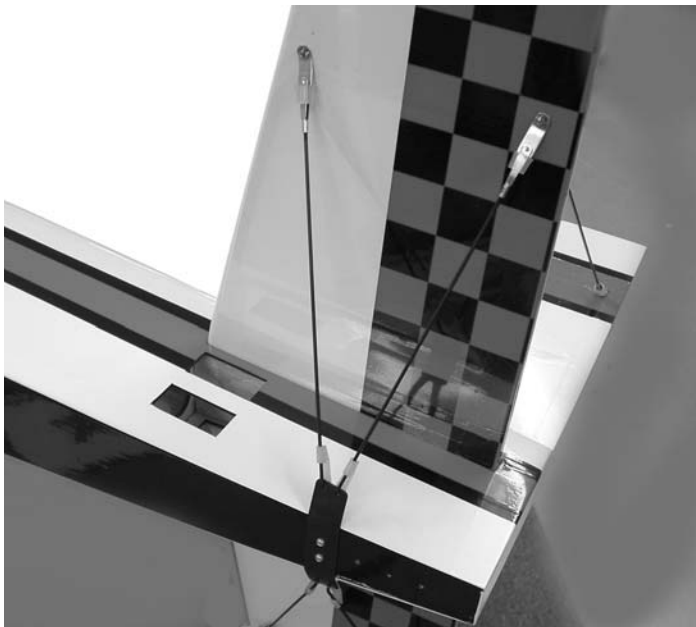


. Insert the 90 degree bend into the bracket and attach the swing in keeper.

Install the other 3 wires on top in the same manner. Be careful not to put pressure on any of the surfaces, after all the wires are installed we will adjust the tension.



Install the bottom flying wire bracket to the bottom of the fuselage with two 2mm screws.

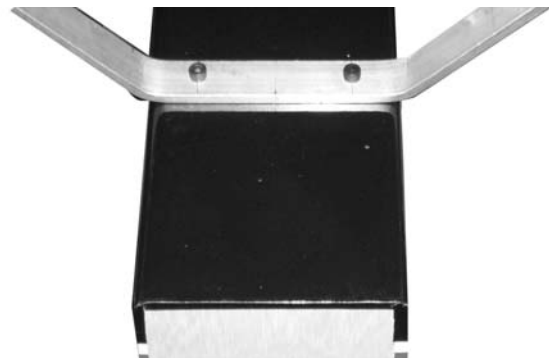


Install the bottom flying wires in the brackets using the nylon swing in keepers. When all wires are installed adjust each one so there is no play in the rod. Don't over tighten the clevis so as not to twist or bend the stab and fin.

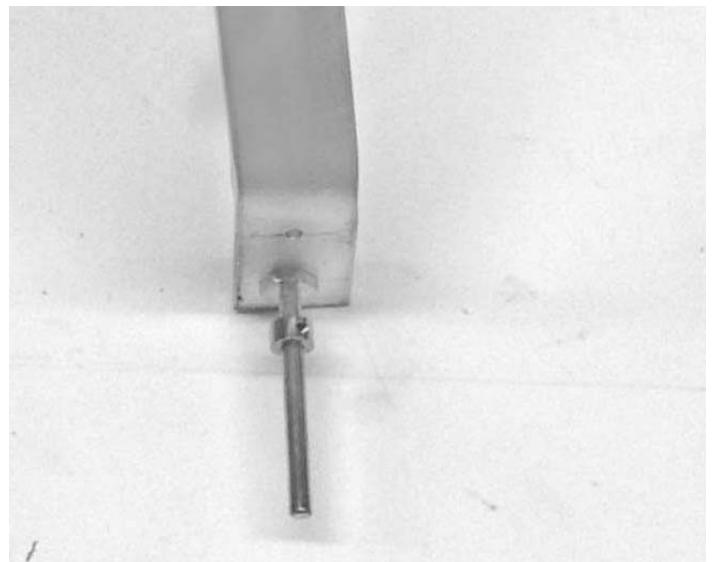
Landing gear



The landing gear holes are predrilled approximately 5-1/2" behind the front of the fuselage. Press down the covering to find the holes and remove the covering with a knife.



Place the gear over the holes with the "rake" in the gear going to the rear. Secure in place with the two 4mm x 20mm bolts into the pre-installed blind nuts. Use lock-tite on the bolts to make sure they don't vibrate loose.



Canopy



Bolt the wing in place on the fuselage using the 4mm bolts and flat washers, the blind nuts are already installed. Fit the wing cover in place with the dowel in the hole in the F2 bulkhead. Use a pencil and make a mark on the wing approximately 2-1/2" in front of the leading edge at the edge of the wing cover.



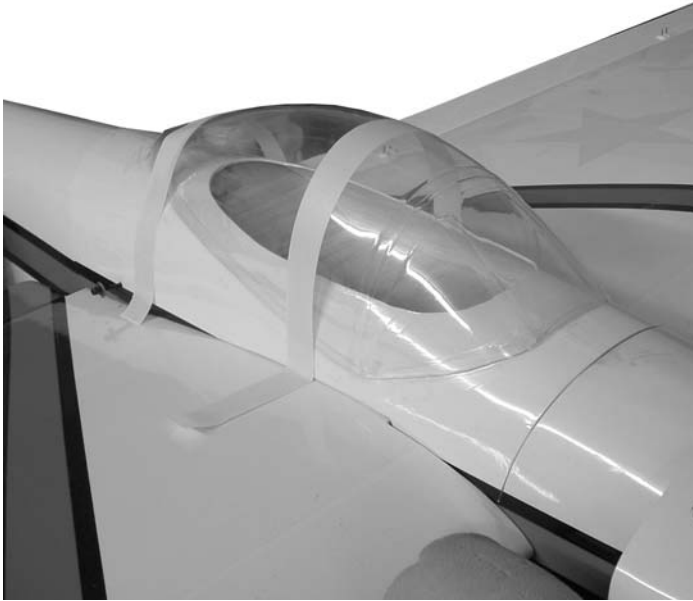
Remove the wing cover and measure over from the line you drew 3/16". This should be at the outside edge of the wing bolt reinforcement plate at the trailing edge of the wing. Take the two 3/8" x 1-3/8" x 7/8" wooden blocks and place on this line at the front of the wing bolt reinforcement plate.

Mark around block on both sides and remove the covering on the wing under the marks. Epoxy the blocks in place.



Make a mark on the wing at the center of the block. Reinstall the wing cover and measure up 1/2" from the surface of the wing on the wing cover at the mark you made. Drill a 9/64" hole through the wing cover and into the block. Repeat for the other side. Remove the wing cover and enlarge the hole in the block to accept the 4mm blind nut (7/32"). Seat the blind nut by installing the screw in the block without the wing cover in place and screwing the bolt into the blind nut pulling it into the wood. Very carefully glue the blind nut in place on the back side making sure not to get glue into the threads. Remove the bolts and reinstall the wing cover with the bolts in place.

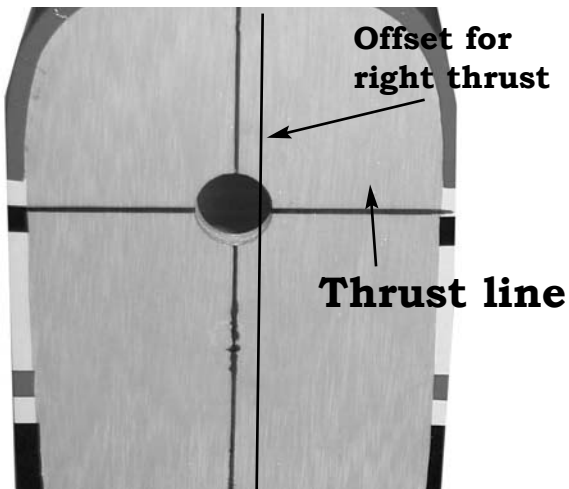
Assembly Instructions



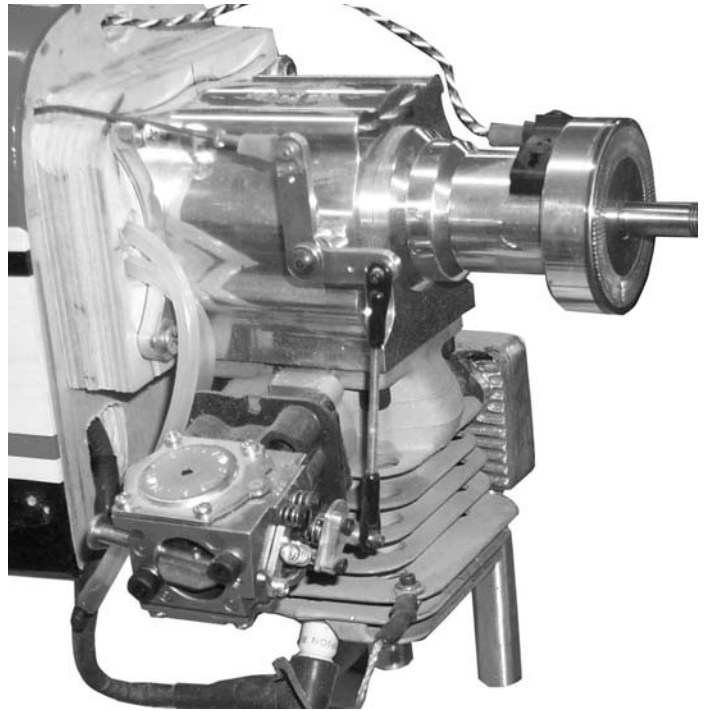
Trim the clear canopy to the scribe line and trial fit. This should be done with the wing bolted in place and the wing cover bolted in place.

If you are using a pilot or cockpit detail, now is the time to install it. When satisfied with the fit, glue in place with a bead of Zap Formula 560 canopy glue. This glue is white going on but will dry clear. Put about a 1/4" wide bead around the base on the inside and hold in place with masking tape until dry. Depending on heat and humidity it may take a couple of days to get completely clear, but will be dry enough to use in about 8 hours. Any smudges can be cleaned with water while the glue is still wet.

Engine Mounting



Draw a center line on the firewall from top to bottom. Draw a line across the firewall through the center of the hole, this is the thrust line. You can mount your engine centered on these marks. Depending on the engine you use, you may want to use 2 degrees right thrust. This will offset the engine 3/16" to the left side of the firewall. The length of the cowl from the firewall to the nose ring is 6-3/4". This can be adjusted about 1/4" either way but your engine should be spaced to fit at this length. Our Fox 4.2 required a 1-3/8" spacer to achieve this.

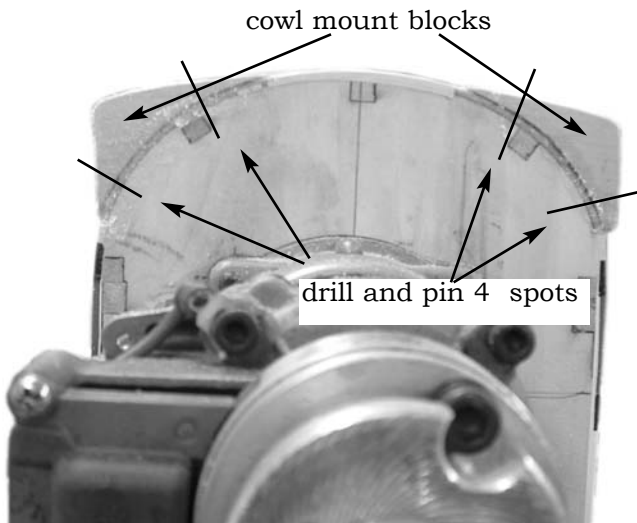


Bolt the engine in place using bolts with aircraft lock nuts on the back side (not included in kit). It is a good idea to go over the glue joints between the fuselage and firewall on the inside with epoxy to make sure the joint is glued securely.

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Cowl Mounting

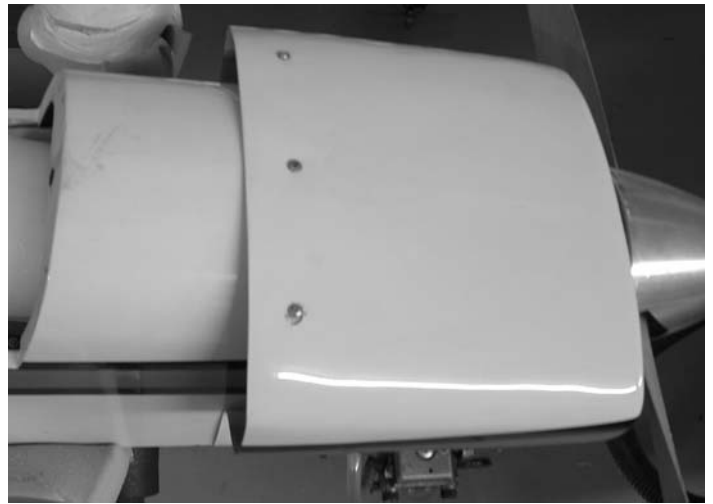


Locate the two shaped cowl mount blocks and locate them on the top of the fuselage flush with the front of the firewall.. Mark around them and remove the covering. Epoxy in place Drill four 3/32" holes and pin to firewall using round toothpicks and epoxy.

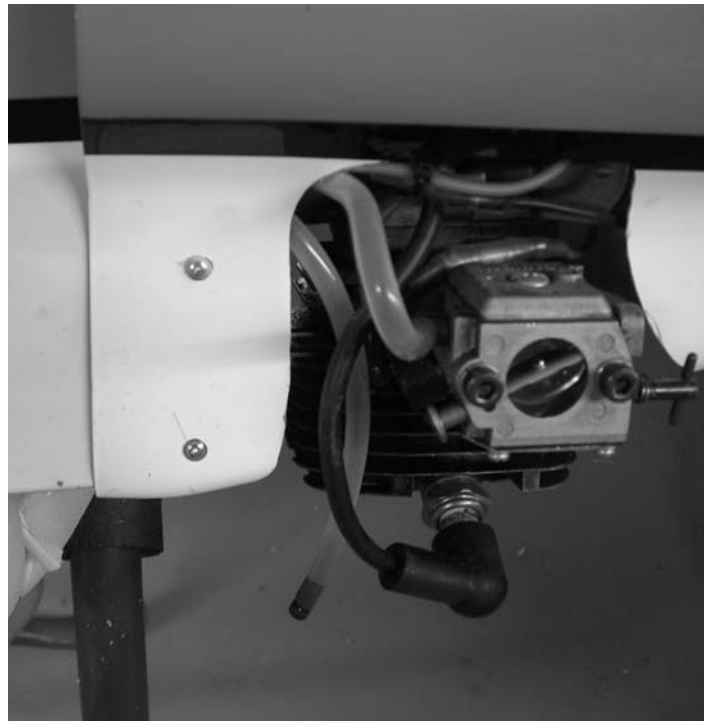
Make the necessary cutouts in the cowl to fit over the engine you have installed.



Slide the cowl in place so it overlaps the fuselage at least 3/8" top and bottom. Install the spinner back plate on your engine and leave 1/8" gap between the cowl and back plate. Tape the cowl in place and drill a 1/16" pilot hole through the cowl into the mounting blocks on each side at the top.



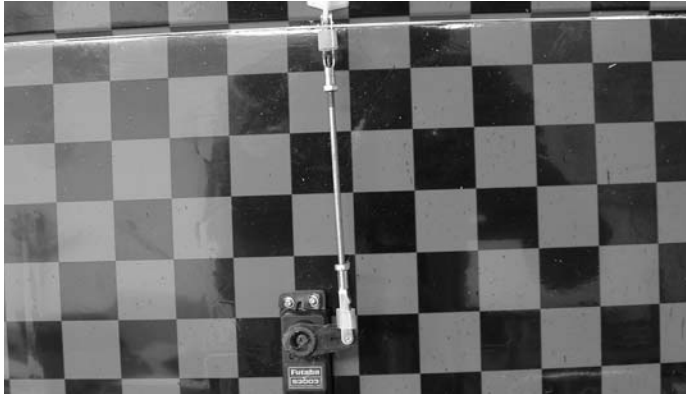
Drill one hole in the center of the cowl making sure it goes into the firewall.



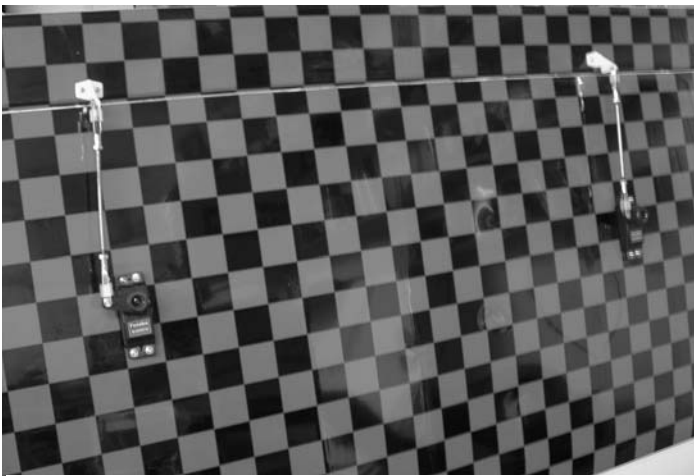
Drill two screw holes on each side of the cowl at the bottom again making sure they go into the firewall and not just the fuselage side. Secure the cowl in place using the 3mm screws.

Radio Installation

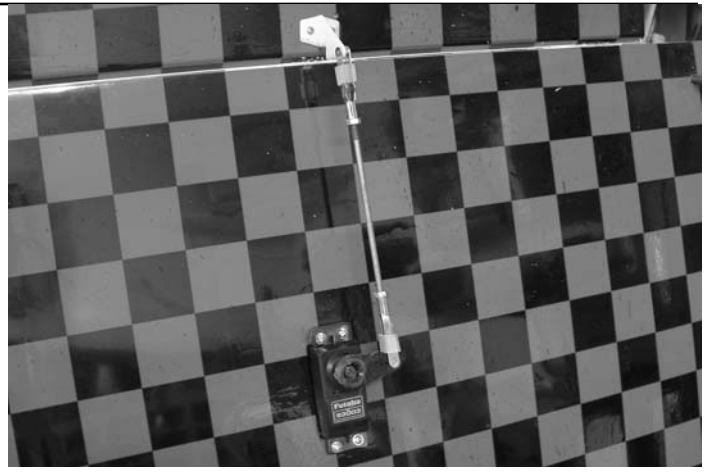
Install the aileron servos in the wing using the hardware that comes with the radio. The servo should be turned so the arm is position toward the rear of the wing and on the outboard side of the servo. Use the factory installed nylon fishing line to pull the aileron lead to the hole in the center of the wing. You will have to use a y-connector to tie the two servos together and a 12" extension to reach the center of the wing



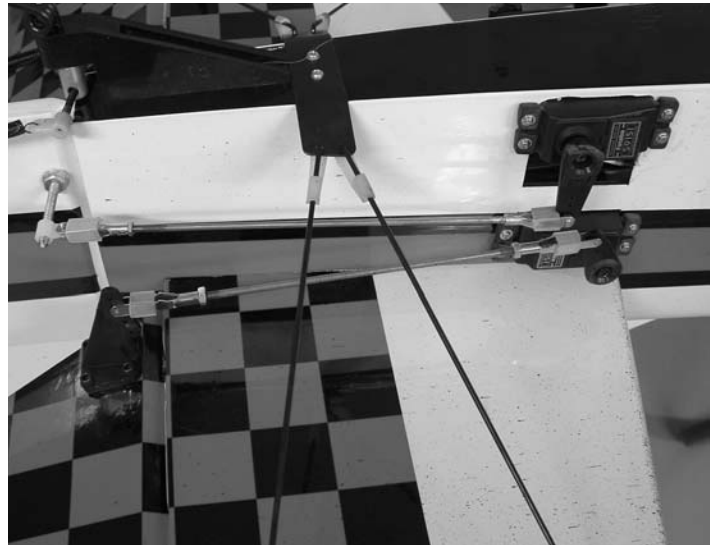
Align the control horn with the servo arm and screw in place using the #2x3/4" screws. The screws go into a plate on the top side of the aileron. The connection holes in the control horn for the pushrod should be aligned over the hinge line.



Locate the 4-40 x 4" pushrods and install a 4-40 nut on each end. Screw a 4-40 clevis on each end and connect one end to aileron horn and the other to the servo arm.



With the servo centered, adjust the linkage till the aileron is centered. Tighten the 4-40 jam nuts on each end and install the clevis keeper on each clevis. Don't forget to install the servo arm retaining screw. Put a drop of thread lock on both jam nuts.

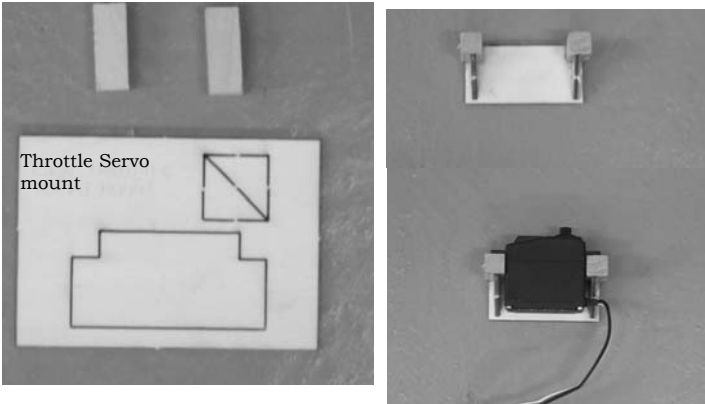


Install the elevator and rudder servos in the tail. The elevator servo goes on top with the arm turned to the front and down and the rudder servo goes on the bottom with the arm turned to the rear and up. You will need a 24" extension for each servo. Install the control horns using the #2 x3/4" screws into the plate on top for the elevators. Align the holes for the pushrod over the hinge line and mount as close to the inboard edge of the elevator as possible. The rudder is a push-pull set up so the control horn is a 6-32 x 3" threaded rod with a washer and nut on each side of the rudder. Locate the pre-drilled hole in the rudder for the threaded rod.

Assembly Instructions

Use locktite on the nuts on both sides.
Install the nylon pushrod ends.

Locate the two 4-40 x 5-1/2" and the two 4-40 x 6-1/2" pushrods and install a 4-40 nut and 4-40 clevis on each end. Install the 5-1/2" ones on each elevator and the 6-1/2" ones on the rudder, both sides. With the servos centered, adjust the linkage so the elevators and rudder are centered. Tighten the jam nuts and apply a drop of lock tite to each. Install the silicone clevis keeper and the servo arm screw.



Locate the throttle servos mount and glue the 3/8" square spruce block and the 1/8" ply angles in place. Mount the servos to the plate using the hardware supplied with the radio.



The servo mount can be glued to the side of the fuselage just in front of the F2 bulkhead (the one with the wing dowel holes). There will be room for the fuel tank below it and the ignition system can sit on top of the tank. Install the E-Z connector (supplied) to your servo arm. Take the 2-56x12" push rod and install the 2-56 jam nut and the clevis.

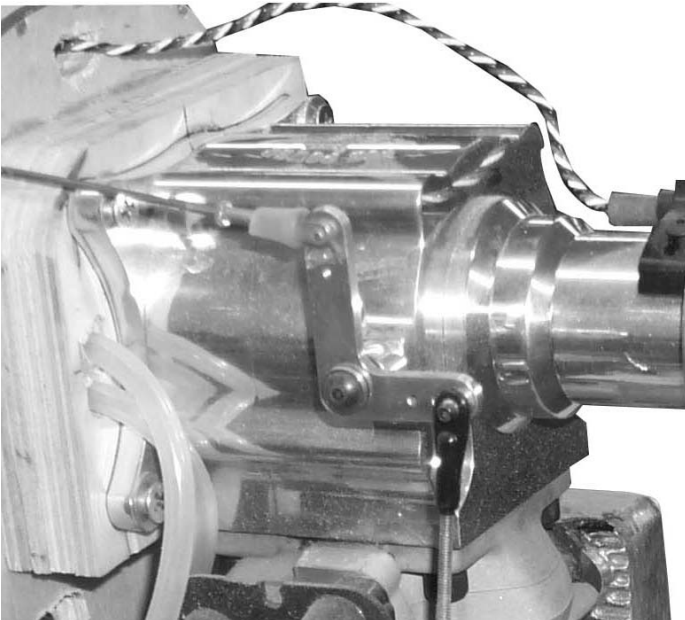


Drill a hole in the firewall to line up with the throttle arm on your engine. Install the pushrod with the clevis on the engine and the other end in the E-Z connector. This set up shows a Fox 4.2, if you are using a different engine you will have to adjust accordingly.

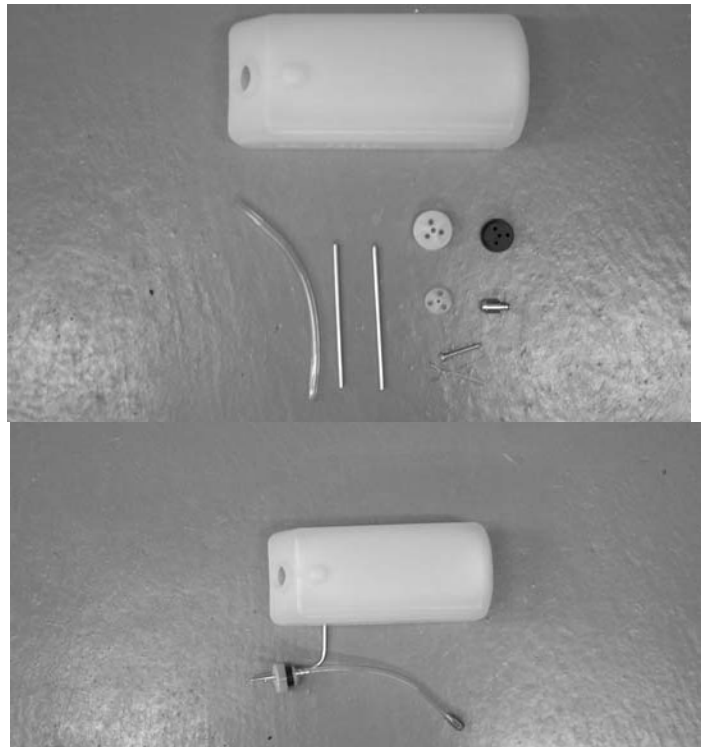
Assembly Instructions



On our Fox 4.2 installation a hole was cut in the firewall to allow the ignition wire to pass through. The module sits on top of the fuel tank and a switch is installed in the fuselage in the nose section.



A hole is drilled at the top of the firewall to allow the ignition pickup wire to pass through and the fuel line holes are drilled just above the carb.



Assemble the fuel tank so the klunk is about 1/4" off the bottom of the tank and free to flop about. If you are using glow fuel you must use silicone tubing and if you are using gasoline you must use tygon or neoprene tubing. The tank supplied has a gas stopper and neoprene tubing. If you use glow you must replace these. Install the tank in the nose section and drill the appropriate holes.

The radio receiver and switch can be mounted in the rear section of the compartment under the wing (there is lots of room). Depending on the engine used, the battery (or batteries if ignition is used) can be mounted where needed for balance. With the Fox 4.2, both batteries were mounted as far to the rear as possible.

The Stinger has a wide CG envelope. We recommend you start at 5" to 5-1/2" behind the leading edge. For all out aerobatics you can go back to 6-1/2" behind the leading edge.

Control Throws

Low Rate

Elevator 1" up and down
Aileron 3/4" up and down
Rudder 1-1/2" each way

High Rate

Elevator All you can get
Aileron All you can get
Rudder All you can get

Center of Gravity

**5 to 5-1/2" behind leading
edge**

Assembly Instructions

Parts List

Airframe components

1. Fuselage	1
2. Wings	2
3. Aileron	2
4. Stab	1
5. Fin	1
6. Rudder	1
7. Elevators	2
8. Wing cover	1
9. Clear Canopy	1
10. Landing gear	1
11. Wheel pants	2
12. Cowl	1

Wing Hardware

1. dihedral brace	
2. Pin hinges.	12
3. 3/8" x 1-3/8" dowels	2
4. Control horns	4
5. Control horn plates	4
6. Control horn screws #2x3/4"	8
7. 4-40 clevises	8
8. 4-40 nuts	8
9. clevis keepers	8
10 4-40x4-3/4" pushrod	4
11. Wing bolts 4mm x40mm	2

Flying wire hardware

1. 2-56 x rods	8
2. 2-56 golden clevises	8
3. Clevis retainers	8
4. Nylon swing in keepers	8
5. Aluminum bracket	1
6. Flying wire brackets	12
7. 2mm bolts	6
8. 2mm nuts	6
9. 2mm screws	2

8. 2mm flat washers	6
---------------------	---

Elevator, Rudder Hardware

1. Control horns	2
2. Control horn plates	2
3. Control horn screws (Elevator)	8
4. Rudder horn (6-32 x 3" threaded rod	1
6. 4-40 x 5-1/2" control rods (Elevator 2)	2
7. 4-40 x 6-1/2" control rods (Rudder 2)	2
8. 4-40 nuts 4 rudder, 4 elevator	8
9. 4-40 clevises 4 rudder 4 elevator	8
9. Clevis keepers 4 rudder 4 elevator	8

Landing Gear Hardware

1. Main gear bolts	2
2. 4" wheels	2
3. 3/16"x 2" axles with nuts	2
4. 3/16" wheel collars	4
5. 3mm bolts for wheel pants	2
6. Tail wheel assembly	1
7. 1/8" wheel collar	1

Cowl Mounting Hardware

1. 4mm screws	7
2. wooden mount blocks	

Canopy Mounting Hardware

- 1. Phillips head metric screws
3mm x 20mm 2
- 2. Flat washers 2

- Fuel tank** 24 oz.
Gas stopper and line supplied 1

- Decal Sheet** 1

- Instruction Booklet** 1

Throttle Hardware

- 1. E-Z connector 1
- 2. 12" 2-56 pushrod 1
- 3. 2-56 clevis 1
- 4. 2-56 nut 1
- 5. Lite-ply servo mount 1
- 6. 3/8" sq. x 3/4" spruce blocks 2

Tool need to complete the Stinger.

- 1. Drill and assorted bits
- 2. Hobby Knife with #11 blade
- 3. Masking Tape
- 4. T-pins or straight pins
- 5. Felt tipped pen/pencil
- 6. Rubbing alcohol
- 7. Paper towels
- 8. Phillips screwdriver
- 9. Allen wrenches
- 10. Metric tap 6mm.
- 11. Pliers (needle nose)
- 12. Mixing sticks
- 13. 36" yard stick or tape measure
- 14. Scissors
- 15. Moto tool with sanding drum.

Adhesives

- 1. Thin CA (cyanoacrylate) glue
- 2. Medium CA. Glue
- 3. CA remover/debonder
- 4. 5-Minute Zap Z-Epoxy
- 5. 30-Minute Zap Z-Epoxy
- 6. Zap Z-42 Threadlock
- 7. Zap Canopy glue.

Equipment Required

- 1. Four channel radio or better
- 2. Servos- 70in.oz. or better 9
- 3. 1200mah battery pack or larger
- 4. Y-connectors 3
- 5. 12" extensions (Aileron) 2
- 6. 24" extensions (Rudder) 2
(Elevators) 2

If you have a programmable radio that will allow you to mix two channels to control the two elevator servos you will not need a servo reverser. If not you will need 1 servo reverser, and one more Y-Connector.

- 7. Heavy duty control arms to fit your servos.
- 8. Switch harness (your radio)
- 9. Motor (gas or glow)
If gas , battery pack, and switch for ignition.
- 10. Prop and 4" Spinner for your motor.
- 11. Fuel line (for gas or glow)
- 12. Pilot figure (optional)