

# Skylark 70 ARF



## INSTRUCTIONS

Designed as a first low-wing trainer over 26 years ago it is still a terrific everyday sport plane, the Skylark 70 ARF combines docile flight characteristics with the aptitude for super-smooth, exciting aerobatics. This ARF has been designed to keep building time to a minimum; it's 90% pre-built, with premium covering. So read through these instructions, follow them carefully, and you'll soon be flying a terrific plane. The better you get the more fun it gives you!

### WARNING

A radio-controlled model is not a toy and is not intended for persons under 16 years old. Keep this kit out of the reach of younger children, as it contains parts that could be dangerous. A radio-controlled model is capable of causing serious bodily injury and property damage. It is the buyer's responsibility to assemble this aircraft correctly and to properly install the motor, radio, and all other equipment. Test and fly the finished model only in the presence and with the assistance of another experienced R/C flyer. The model must always be operated and flown using great care and common sense, as well as in accordance with the Safety Code of the Academy of Model Aeronautics ([www.modelaircraft.org](http://www.modelaircraft.org)). We suggest you join the AMA and become properly insured prior to flying this model. Also, consult with the AMA or your local hobby dealer to find an experienced instructor in your area. Per the Federal Communications Commission, you are required to use only those radio frequencies specified "for Model Aircraft."

### LIMITED WARRANTY

Carl Goldberg Products has inspected and certified the components of this aircraft. The company urges the buyer to perform his own inspection, prior to assembly, and to immediately request a replacement of any parts he believes to be defective for their intended use. The company warrants replacement of any such components, provided the buyer requests such replacement within a period of 90 days from the date of purchase and provided the defective part is returned, if so requested by the company.

No other warranty, expressed or implied, is made by the company with respect to this kit. The buyer acknowledges and understands that it is his responsibility to carefully assemble the finished flying model airplane and to fly it safely. The buyer hereby assumes full responsibility for the risk and all liability for personal or property damage or injury arising out of the buyer's use of the components of this kit.

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# CARL GOLDBERG PRODUCTS, LTD. <sup>TM</sup>

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P.O. Box 818 Oakwood GA 30566 Phone #678-450-0085 Fax # 770-53-63 [www.carlgoldbergproducts.com](http://www.carlgoldbergproducts.com)

## ITEMS NEEDED TO COMPLETE THIS AIRCRAFT

- 1 RADIO GUIDANCE SYSTEM (4 CHANNEL MINIMUM REQUIRED, 5 STANDARD SERVO S)
- 2 6" EXTENSIONS
- 1 Y-HARNESS
- 1 ENGINE .61 2-CYCLE
- 1 ULTRA SET CA ACCELERATOR
- 1 ULTRA SET 2 OZ. BOTTLE MEDIUM CA GLUE
- 1 ULTRA SET 1/2 OZ. BOTTLE THIN CA GLUE
- 1 ULTRA SET 20 MIN EPOXY
- 1 1/2" FOAM RUBBER
- 1 SWITCH MOUNT
- 1 3" SPINNER

**NOTE: The Skylark 70 ARF colors match Midnight Blue(885), True Red(866) and White (#870) UltraCote®.**

## TOOLS AND SUPPLIES FOR ASSEMBLY.

- MODELING OR UTILITY KNIFE
- WORK SURFACE (24" X70")
- ELECTRIC DRILL
- 1/16", 3/32", 1/8", 5/32", 1/4" DRILL BITS
- SMALL STANDARD & PHILLIPS SCREW-DRIVERS
- MASKING TAPE
- NEEDLE NOSE PLIERS
- 36" RULER OR TAPE MEASURE
- FLEXIBLE STRAIGHT-EDGE
- T-SQUARE
- 30-60-90° x 6" TRIANGLE
- SOFT PENCIL
- A FEW STRAIGHT OR "T" PINS
- ADJUSTABLE WRENCH
- WIRE CUTTER
- OPTIONAL HEAT GUN/COVERING IRON
- ACID BRUSH

### Notice:

**Before starting be sure all parts have not been damaged during shipping. Once assembly has been started, all warranty on parts are void.**

## USING THIS INSTRUCTION MANUAL

Before you begin assembling your **Skylark 70 ARF**, take some time to read through this entire instruction book. It is designed to take you step-by-step through the process and to give you added information on engine and radio selection and set-up, balancing your aircraft, and flying your model. The time you spend will speed the assembly process and help you avoid problems.

## PREPARING FOR ASSEMBLY

You will need a work area of approximately 24 x 70" which has been covered to protect it from adhesive, as well as cuts and other damage. Many people cover their work area with a sheet of dry wall (sheet rock) and/or waxed paper to prevent CA Glue and Epoxy from ruining the work surface.

## CONSTRUCTION TIPS

**IMPORTANT: ALWAYS READ A FEW STEPS AHEAD.** This will alert you to coming instructions and will help you plan accordingly.

Using the Parts Identification section, familiarize yourself with the various items included in your kit box.

As you work, CHECK OFF EACH STEP in the box provided, so that you are sure you do not forget anything.

Do not hesitate to ask questions. Your local hobby dealer and area flyers will most likely be happy to help, as they want you to have a successful flying experience. You may also receive technical assistance from Carl Goldberg Products, Ltd. via by telephone 1-678-450-0085.

## ADHESIVES & GLUING TECHNIQUES

CA adhesives are specially formulated to firmly glue the plywood, hardwood, and balsa used in your model and to withstand the vibration and stresses of high performance flight. However, there are times, such as when you are installing the stabilizer and fin on the fuselage and want more set-up time for careful alignment and positioning, then you should use epoxy. Occasionally, you also will want to use thin CA, which "wicks" into the surrounding areas. Aliphatic resin glue or similar water-based glues can also be used, but they will add to the assembly time because they dry so much more slowly than CA glue. Remember, when ever using any CA, you must be careful to read instructions thoroughly, as you will have only seconds for positioning of parts. Be sure to trial fit parts together before gluing. Also, never use watery THIN type CA glue for gluing plywood and hardwood parts. Thin CA's do not adequately bond these areas.

## CAUTION

Some people may experience an allergic reaction when exposed to fumes from CA glue or epoxy. As with paints, thinners, and solvents, it is always important to use glues only where there is adequate ventilation to carry fumes away. A fan is recommended. Also, special care must be taken when using CA, as it will bond skin as well as other surfaces. Before using any CA, carefully read all label precautions. When using CA, protective eye-wear and care in keeping the glue away from the face is highly recommended. If CA does happen to get into the eye, hold lid open and flush with water only. Seek immediate medical attention.

## COVERING

The **Skylark 70 ARF** is covered in a premium polyester film chosen by many of the world's top flyers for its beauty, toughness, and ease of application and repair. It is not uncommon for ARF's to develop a few wrinkles in transit. If this is true of your model, the situation is easily corrected. Before you begin putting the pieces together, run over outside edges of the covering with an iron. This is to make sure that the surface of the edges are sealed and will not move when heat is applied to the center of the covering. Then go over the center of each section with the iron (either specially designed for airplane use or the more cumbersome household iron) or use a modeling heat gun. Apply the heat (set at about 350° F), following along with a soft cloth and pressing down on the covering as you go around. This will more firmly set the covering adhesive into the wood and keep your aircraft covering tight and smooth in the future.

One of the great advantages of polyester film is that it can be applied over itself without causing gas bubbles. This allows you to repair your aircraft, as well as to customize it in a number of ways. If, due to a flight mishap, you get a hole or similar covering damage, simply trim away the ragged edges and then apply a patch, following the directions that come with your covering, which is available at your hobby dealer.

## RADIO EQUIPMENT & CARE

There are many fine radio systems on the market. Your local hobby dealer and club members are good sources of information on equipment and its suitability for various projects. It is recommended that you speak to them before making a final choice.

Today's RC systems are very well engineered and constructed. However, they will remain only as good as the way in which they are USED. Always follow the rules of proper usage and all manufacturer's instructions for your particular piece of equipment.

**TRANSMITTERS:** Keep your transmitter clean and free from fuel residue and dirt. Battery condition and RF output should be monitored, and the system should be aligned and tuned annually. Do not transport under vibration (such as on the floor of a car) without cushioning.

**RECEIVERS:** Receivers must be vibration free. When installing in the aircraft, wrap them in a minimum of ¼" soft foam rubber (not plastic foam). Keep well clear of all cables and batteries. Tune annually (or as recommended by the manufacturer), as indicated below under "Check-Ups."

**SERVOS:** Servos are vibration prone. Be sure to mount them with grommet shock mounts in servo trays which are also shock mounted. Also be sure to keep them clean. If the neutral position "drifts," this is a sign of change which should not be ignored; find out WHY before flying again.

**BATTERIES:** Nicads also can suffer from vibration, so they too should be wrapped in soft foam rubber before installing. Check their condition periodically by measuring the voltage with a volt meter or battery tester. Charge the batteries before EVERY flying session. When not used for a period of time (such as during the winter months) the batteries should be charged every 30 days. Never store batteries in a discharged condition.

**PUSHRODS:** Obviously, pushrods should be installed to operate freely, so that they place no load on the servo. Using a servo's power to move a tight rod or heavy surface by force increases the battery drain, shortens the electronic life, and can cause neutralizing problems. In addition, it is important the pushrods do not flex or vibrate. Any vibration is transferred directly to the servo, and its gear, motor, and pot. To avoid flexing and vibration, use guides and fairleads on the rods.

**CONNECTORS:** In using connectors, never pull on the wires to disconnect; grasp the plugs instead. Clean them by dunking in a solvent, such as dope thinner. Tape the connectors together when installing and make sure there is no strain on the cables.

**CHECK-UPS:** A full check-up by the factory or an authorized service center should be done AT LEAST ONCE A YEAR, as well as any time something unusual occurs during usage. A malfunction or "glitch" is the first sign of an impending failure; it should not be ignored. The checkup should include tuning and alignment of the system, as well as battery testing.

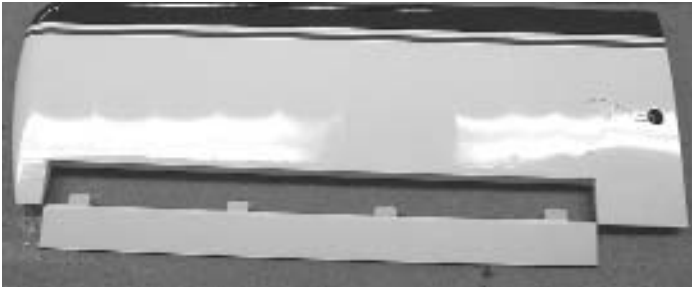
## IMPORTANT INFORMATION

**Covering coming loose is not COVERED UNDER WARRANTY. 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. 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.**

**Caution:**  
**Before starting, carefully go over all high stress areas with an epoxy or wood glue to confirm all areas are well glued.**

# WING ASSEMBLY & INSTALLATION

## AILERON INSTALLATION

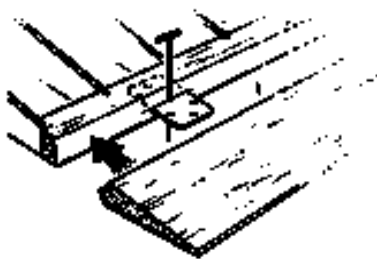


1.  Collect the following parts:

- (1) Left wing
- (1) Right wing
- (1) Left aileron
- (1) Right aileron
- (8) CA hinge



1.  Locate the pre-cut aileron hinge slots in both wing halves. Using a hobby knife (#11 blade), slide the blade into each slot to make sure it is cleanly cut.
- Repeat this process with the ailerons, making sure all hinge slots are clean.



2.  Place a straight pin into the center of each of the four CA hinges.
- Slide each hinge into the hinge slots on one of the wing halves. The pin will prevent the hinges from going in further than halfway into the wing.
3.  Select the aileron for the wing on which you are working and insert the exposed half of each hinge into the aileron slots.

- Slide the aileron toward the wing until no gap remains between the aileron and the wing.
4.  Carefully check the alignment of the aileron. There should be about 1/32" on both ends.
- When satisfied with the alignment, remove the straight pins, being sure to keep the aileron tight to the wing. You may wish to apply a few pieces of masking tape to keep the pieces in place.

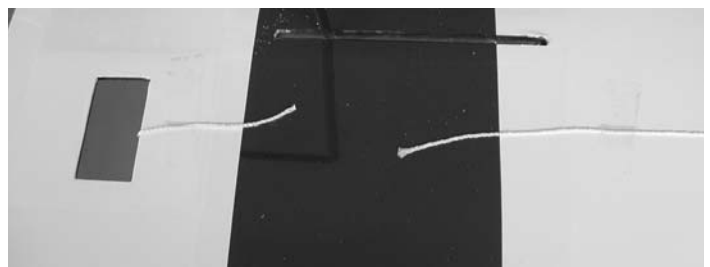


5.  Keeping the aileron and wing in position, apply 3 or 4 drops of Ultra Set thin CA to the small exposed area of each hinge.
- Turn the assembly over and again apply 3 or 4 drops of Ultra Set thin CA to the exposed hinge surfaces.
- Allow to dry for 10 minutes before flexing the aileron.
6.  Repeat the above steps for the other half of

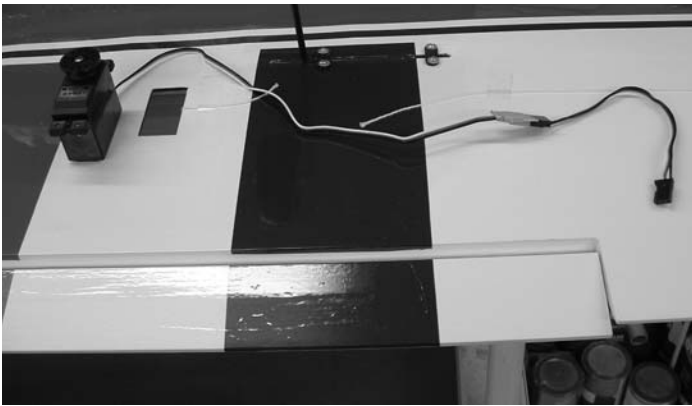
## AILERON SERVO INSTALLATION

The following pictures may not exactly match the hardware you are using. Always check the radio manufacturer's instructions when installing radio equipment.

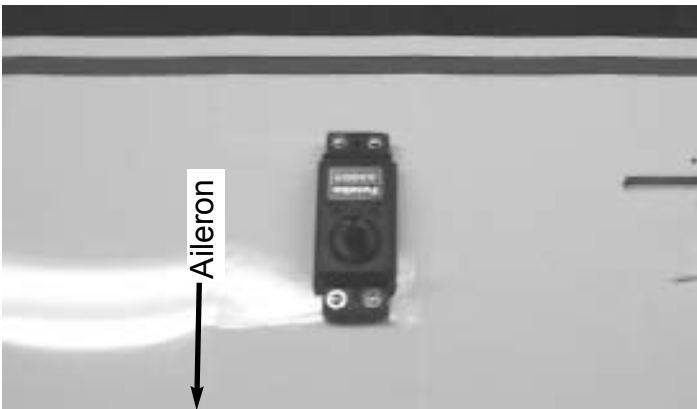
1.  Collect the following items:
- (1) Wing
  - (2) Servos with rubber grommets installed
  - (8) Servo Mounting Screw (supplied with radio)
  - (2) servo extensions 6" long



2.  Locate the string used to pull the wires through the wing.

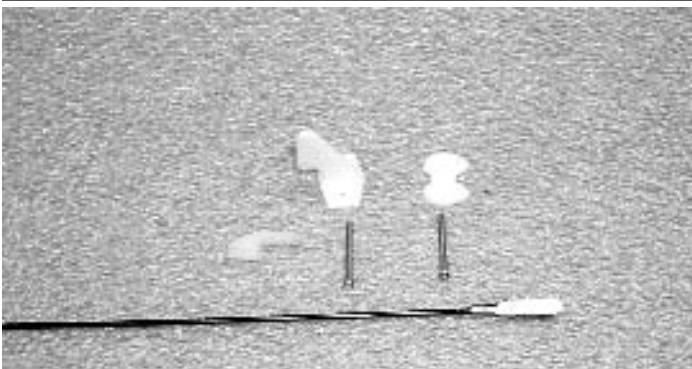


3.  Plug the servo extension wire into the servo .
- Gently pull the string out of the aileron servo hole and tie it or tape it to the servo wire.
- From the top of the wing remove the covering over the hole that is next to the center rib.
- Pull the servo wire towards the center of the wing using the string inside the wing.
- When the servo plug exits the wing then tape the plug to the top of the wing.

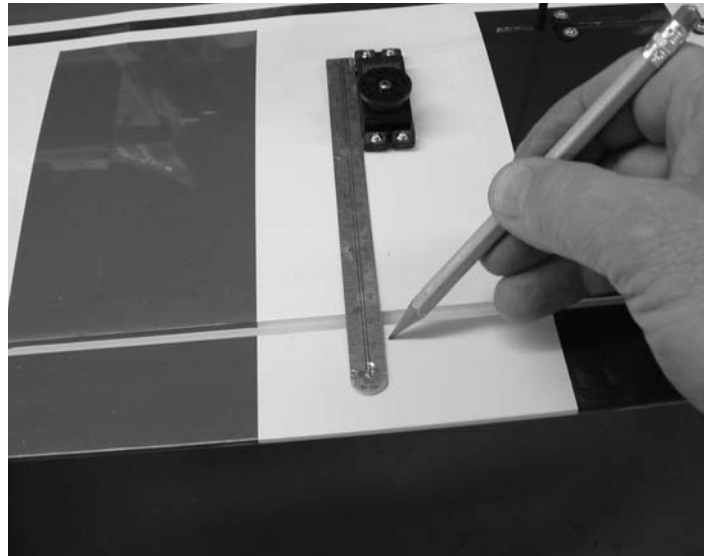


4.  Slide the servo into the servo hole in the wing with the out put arm towards the aileron.
- Using the screws that come with your radio, mount the servo into the wing.
- Repeat these steps for the other half of the wing, so that both servo extensions are exiting the holes in the center of the wing and the servos are installed in the wing.

**AILERON CONTROL HORN INSTALLATION**

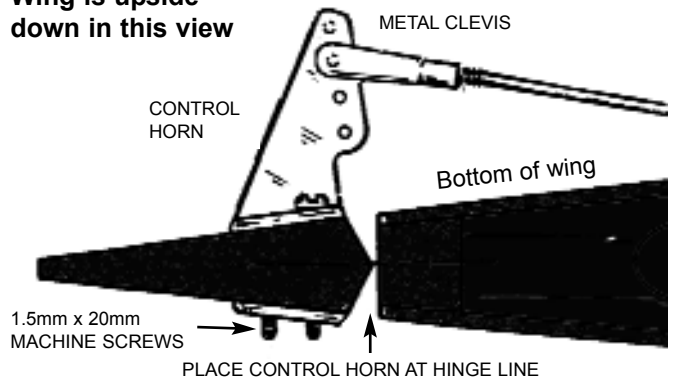


1.  Collect the following items
  - (2) Large control horn with back plate
  - (4) 3/4" screw
  - (2) Metal metal clevis
  - (2) 10" threaded rod
  - (2) Swivel keepers



2.  With the aileron servo arm in place, make a mark at a 90° degree angle to the trailing edge and in line with the servo arm.

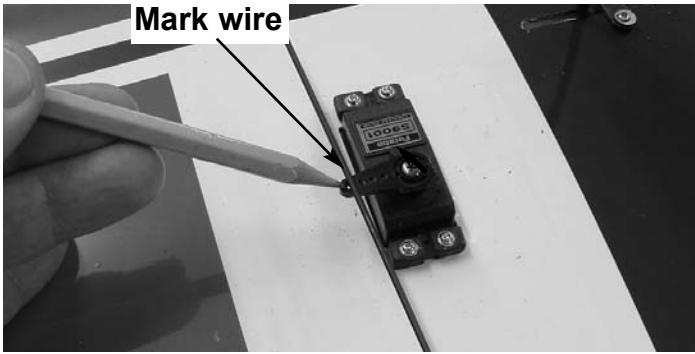
**Wing is upside down in this view**



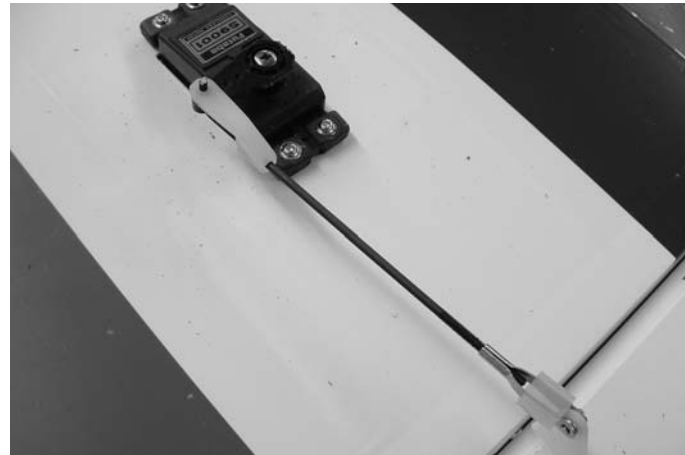
3.  Position the control horn so that the clevis holes are right next to the hinge line, as shown.
4.  Using a 3/32" drill bit, make a hole in each screw location.
  - Mount the control horn with the 1.5mm x 20mm machine screws.



5.  Thread the 10" rod onto the metal clevis. Make sure the rod shows in the center of the metal clevis.
  - Place the metal clevis in the top hole on the control horn.



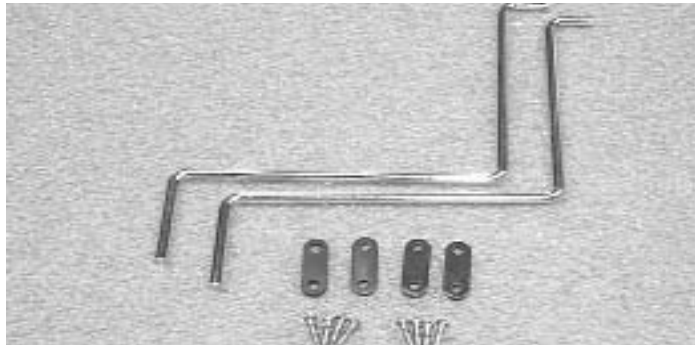
6.  Make sure the aileron is in neutral (level) position, mark where the wire meets the hole on the servo arm.
- Remove the wire and cut it about 1/2" beyond the mark.



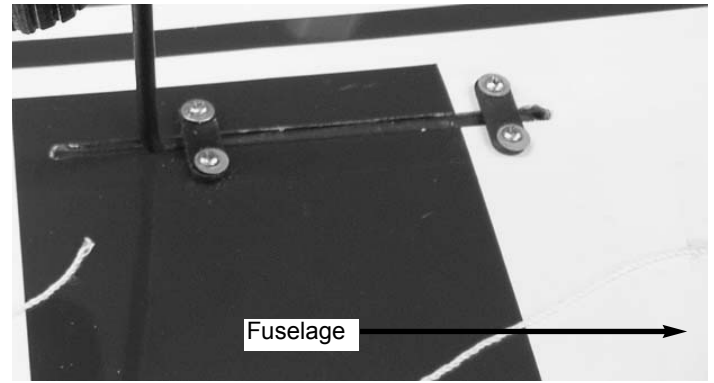
7.  Bend the wire 90 degrees up at the mark you just made.
- Slide the swivel keeper over the wire and clip onto the pushrod.
- Slide the silicone keeper over the clevis.

Repeat these steps for the other aileron servo.

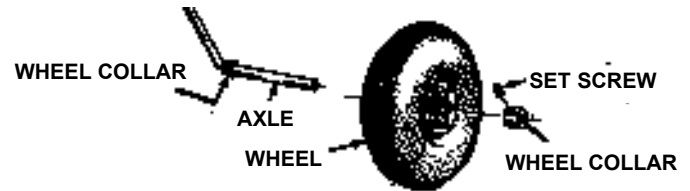
### MAIN GEAR & WHEEL INSTALLATION



1.  Collect the following items:
  - (2) Landing gear wire
  - (8) 2 x 5/16" screw
  - (4) Landing gear strap
  - (3) 2-1/2" wheel
  - (4) Wheel collar
  - (4) Allen head set screw

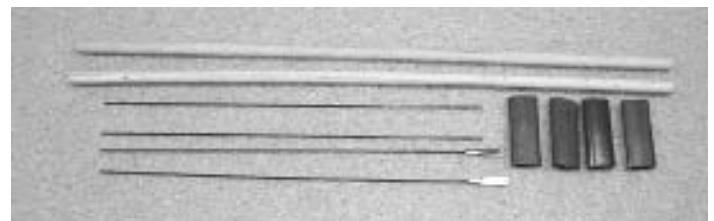


2.  Locate the landing gear slots in the bottom of the wing and remove the covering material.
- Insert the shorter end of the gear into the hole in the bottom of the slot, so that it points toward the center of the wing.
3.  Use two Metal straps and four screws on each side to secure the wire gear.



4.  Install the wheels on the axles, as shown. First the wheel collar goes on, followed by the wheel, then the second wheel collar, and the set screw. Tighten the set screw.

### PUSH ROD INSTALLATION

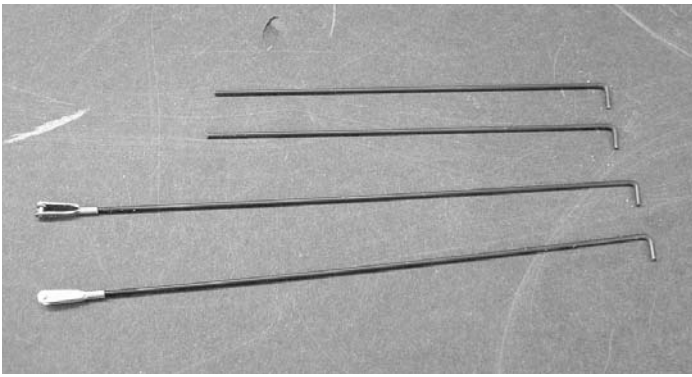


1.  Collect the following parts
  - (2) 19-3/4" Wood dowels
  - (2) 1.5mm x 15cm wire
  - (2) 1.5mm x 20cm threaded wire
  - (2) Metal clevis
  - (4) shrink tubing

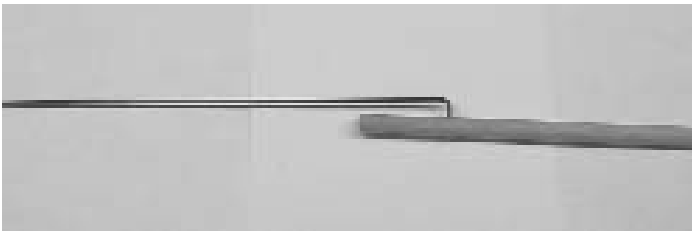
### RUDDER ELEVATOR PUSHROD



2.  Remove the metal clevis from the end of a 1.5 x 20cm wire.



3.  Make a 90 degree bend.
- Cut the wire 1/4" past the bend.



4.  Insert the wire into the hole in the wood pushrod and push down into the groove.
- Glue the wire to the wood pushrod using Ultra Set medium CA glue.



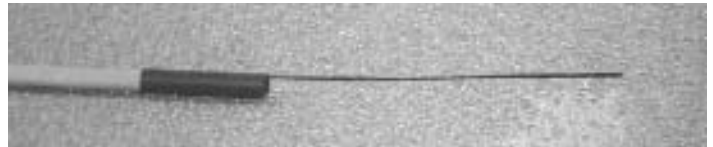
5.  Slide the heat shrink tubing over the pushrod and shrink using a blow drier.
- Glue the tubing to the wood pushrod using thin CA glue.
- This finishes one end of the elevator pushrod.



6.  Starting at the non-threaded end of the 1.5mm x 15cm wire, bend the last 1/4" up at a 90 degree angle.



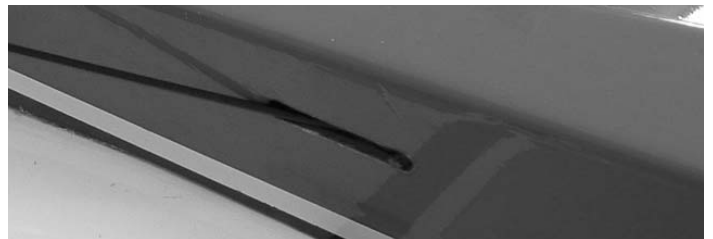
7.  Insert the wire into the hole in the wood pushrod and push down into the groove.
- Glue the wire to the wood pushrod using Ultra Set medium CA glue.



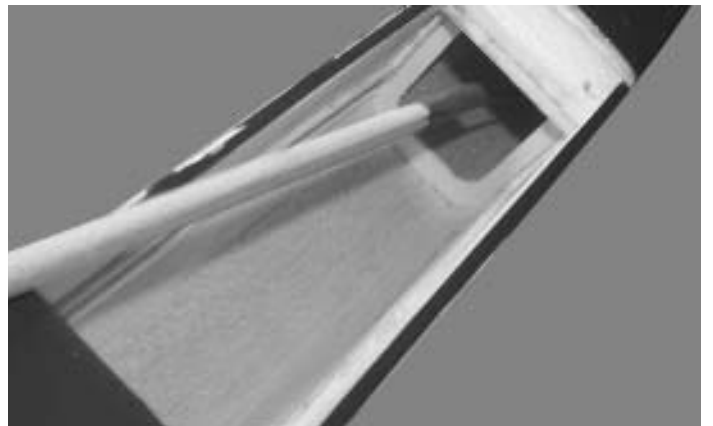
8.  Slide the heat shrink tubing over the pushrod and shrink using a blow drier.
- Glue the tubing to the wood pushrod using thin CA glue.
- This finishes the elevator pushrod.
- Repeat for the rudder pushrod.

## INSTALLING PUSHRODS

1.  Collect the following parts
  - (1) Elevator Pushrod
  - (1) Rudder Pushrod
  - (1) Fuselage



2.  Find the hole under the stabilizer on both sides of the fuselage.
- Cut the covering over each of the push rod exit holes. Note that there are two slots on each side. Use the one closer to the stab on the right side (elevator) and the lower one on the left side (rudder).



3.  Insert the rudder pushrod into the fuselage through the wing saddle area.

4.  Insert the wire into the hole in the right side of the fuselage.
- Repeat these steps for the rudder pushrod making it exit the left side of the fuselage.
- Tape the pushrods to the side of the fuselage inside the wing saddle area.

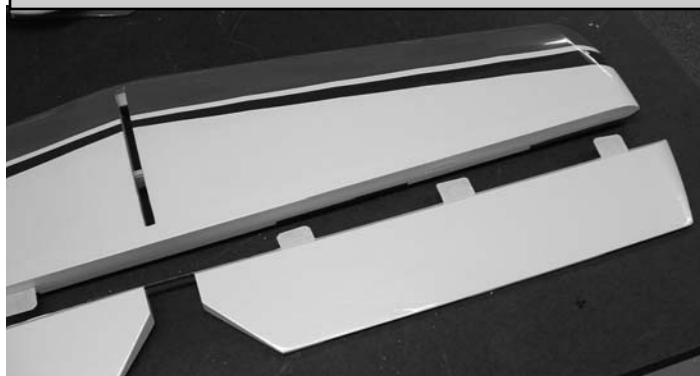
### WING INSTALLATION ON FUSELAGE

1.  Slide the aluminum wing tube into one wing panel.
- Slide the other panel on till the wings butt together.



2.  Insert the wing into the wing saddle of the fuselage by sliding the dowels on the front of the wing into the holes in the former just forward of the wing saddle.
- Insert two 3.5mm socket head screws and the 3.5mm washers through the wing and then begin to screw into the blind nut in the fuselage. Screw down until the screws are touching the wing tight.

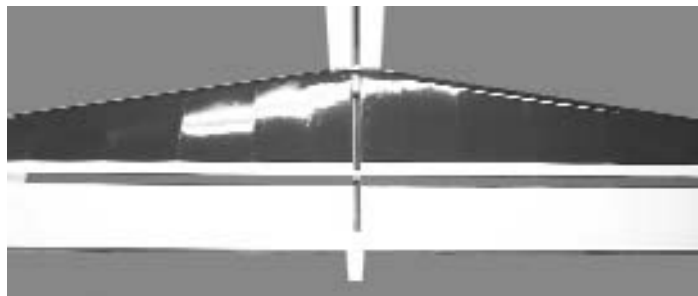
### STAB & ELEVATOR INSTALLATION



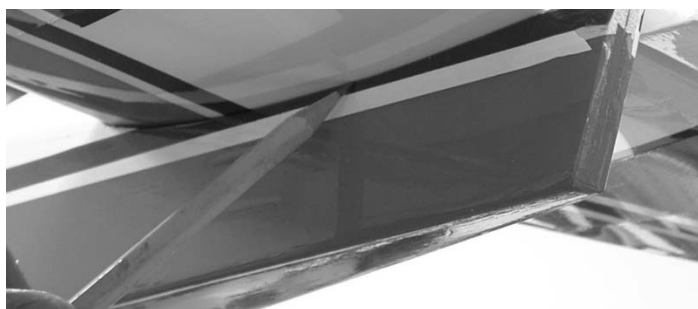
1.  Collect the following parts:
  - (1) Stabilizer
  - (2) Elevator
  - (1) Wing/fuse assembly
  - (6) CA hinges
  - (1) Elevator joiner Wire



2.  As with the wing and ailerons, use a modeling knife to make sure the hinge slots are cleanly cut.



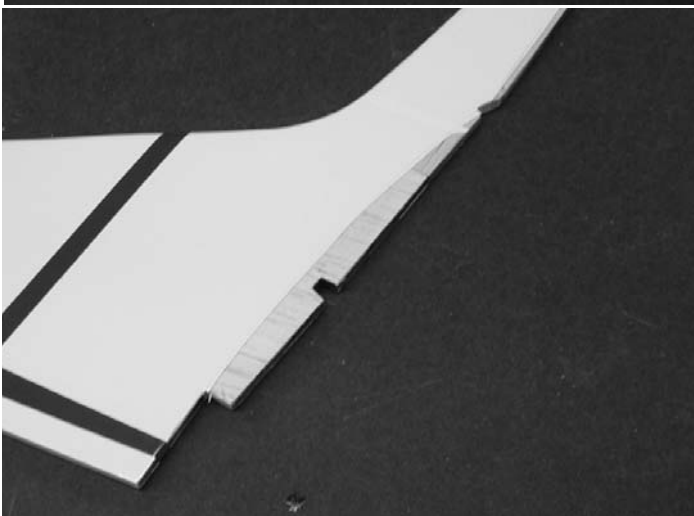
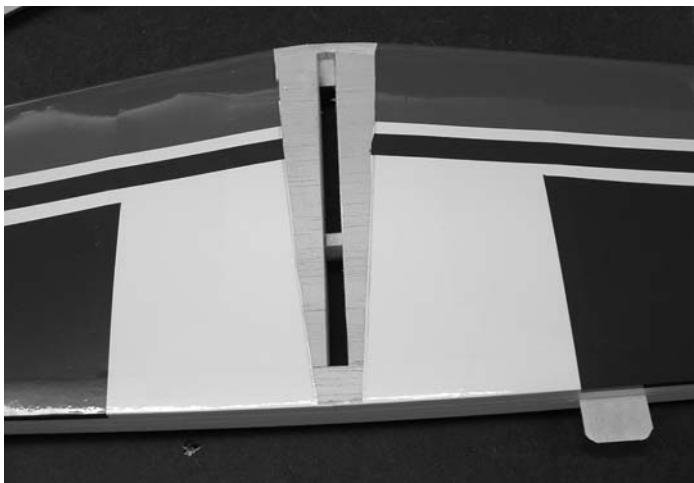
3.  Place the stab on the fuse and align the center slot with the front slot and the rear of the fuselage.
4.  Slide the fin into the slot in the fuselage and the stab.
  - Push the fin all the way into the slot till it stops.
  - Tape the fin onto the fuselage.
5.  Mark the bottom of the stab along the fuselage.
  - Mark where the fin sits on top of the fuselage both in front and rear.
  - Mark where the fin slides down into the stab



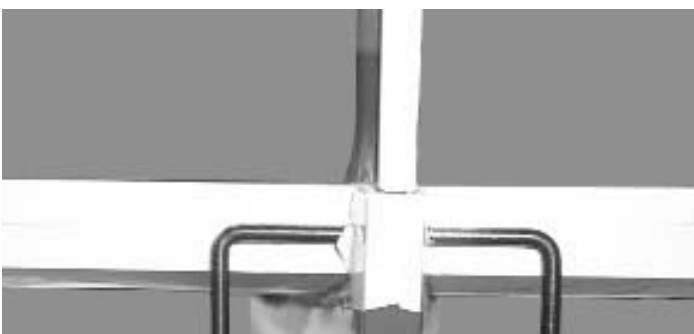
and the fuselage.







6.  Remove the stab from the fuse and, working 1/8" inside the drawn lines, carefully remove the covering from the bottom of the stab, both sides of the fin and the top of the fuselage. BE CAREFUL TO AVOID CUTTING THE WOOD



7.  Re install the stab back onto the fuselage.  
 Place the metal elevator joiner at the rear of the stab next to the fuselage.  
 Make sure the joiner twist easily up and down and is centered.



7.  Make sure the stab is level (parallel) with the wing and insert paper strip shims under the low side of the stab, if necessary.  
 Remove the stab & fin from the fuse.
9.  Spread epoxy on both the bottom of the stab, fin and the fuselage where the fin will rest.  
 Replace the stab on the platform and the fin into the slots, after again checking the alignment of the stab to the wing, tape together and allow the epoxy to dry thoroughly.

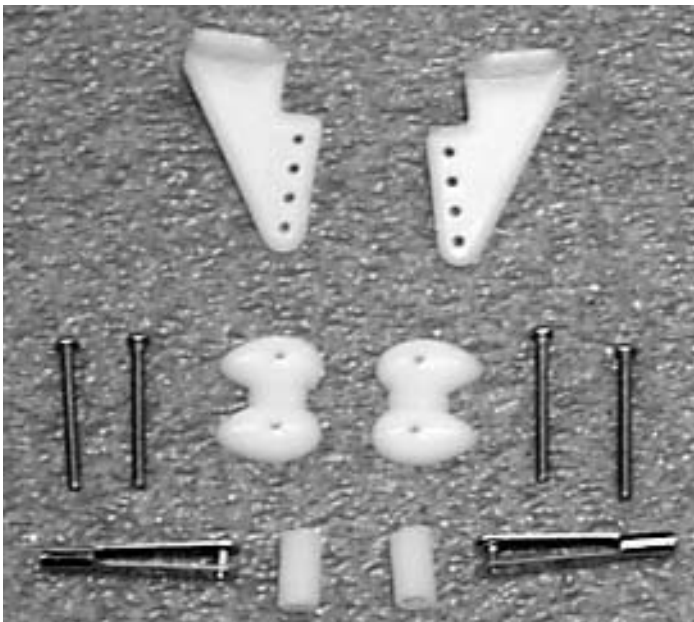


10.  As with the installation of the ailerons, insert a straight pin in the center of 6 CA hinges.  
 Mix up a small amount of epoxy and insert it into the hole in the elevator where the wire elevator joiner fits.  
 Slide the hinges halfway into the elevator and then slide the entire assembly into the hinge slots in the stabilizer making sure the wire joiner is inserted in the hole and groove .  
 Make sure the elevator is flush with the end of the stab. If desired, tape the elevator to the stab to keep the pieces together.
11.  Keeping the stab and elevator in position, remove the pins and apply 3 or 4 drops of thin CA on to each hinge location.  
 Repeat steps 10 & 11 for the other elevator.  
 Allow the elevator/stab assembly to dry for at least 10 minutes before flexing the elevator.

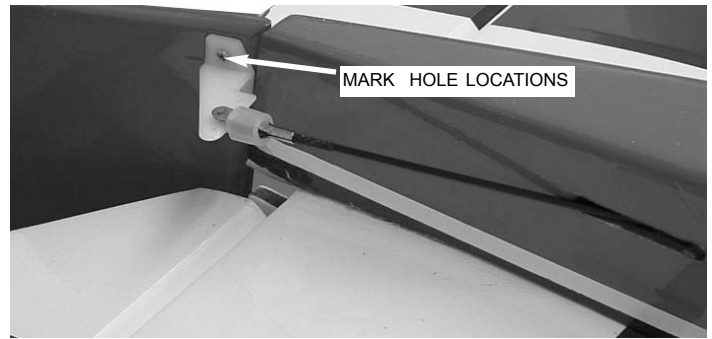


12.  Insert a straight pin in the center of 3 CA hinges.
  - Slide the hinges halfway into the rudder and then slide the entire assembly into the hinge slots in the fin.
  - Make sure the rudder is flush with the top of the fin. If desired, tape the fin to the rudder to keep the pieces together.
13.  Keeping the fin and rudder in position, remove the pins and apply 3 or 4 drops of thin CA on to each hinge location.
  - Allow the rudder / stab assembly to dry for at least 10 minutes before flexing the elevator.
  - Remove the wing from the fuselage.

### CONTROL HORN INSTALLATION



1.  COLLECT THE FOLLOWING PARTS
  - (2) Nylon Control Horns with Base Plates
  - (2) 1.5mm x 20mm Machine Screws
  - (2) 1.5mm Metal Clevis
  - (2) Silicone Clevis Keepers
  - (4) Shrink Tubing



2.  Position the control horn so that the metal clevis holes are right next to the hinge line, as shown.
3.  Using a 3/32" drill bit, make a hole in each screw location.
  - Mount the rudder control horn using the 1.5 x 20mm machine screws & base plates.
  - Place the silicon keeper over the end of the pushrod and twist the metal clevis onto the threads.
  - Attach the metal keeper to the control horn.
  - Slide the silicone keeper over the clevis till it touches the control horn.



4.  Repeat steps 2 & 3 for the rudder control horn.

### SERVO INSTALLATION

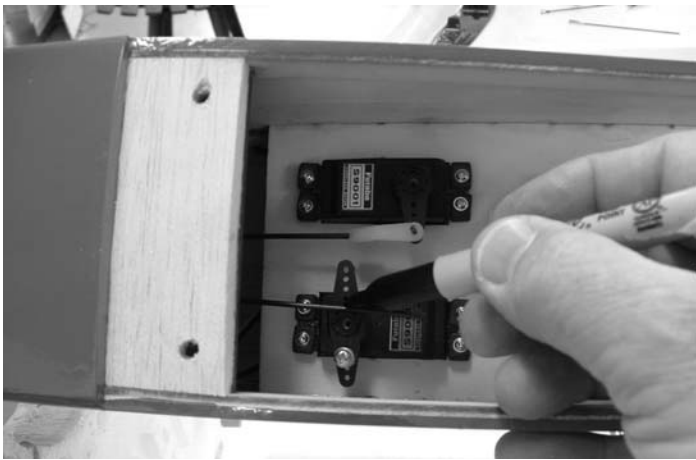
1.  COLLECT THE FOLLOWING PARTS
  - (3) Servos with mounting screws
  - (2) Nylon Swivel Keepers



2.  Mount servo as shown in tray.



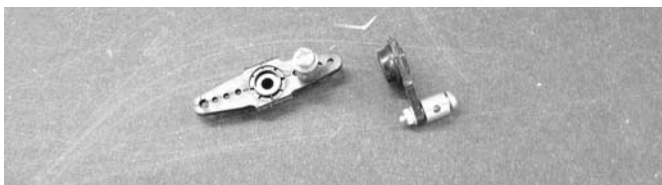
3.  Tape the elevator so that it stays in the neutral position.
- Align the servo arm so that it is sitting at 90 degrees to the servo.
- Mark the location where the elevator pushrod wire meets the outer hole of the servo arm.



4.  Bend the wire up 90 degrees at that mark.
- Slide the swivel keeper over the end of the pushrod and snap to the wire.



5.  Install the e-z connector on one end of the servo arm



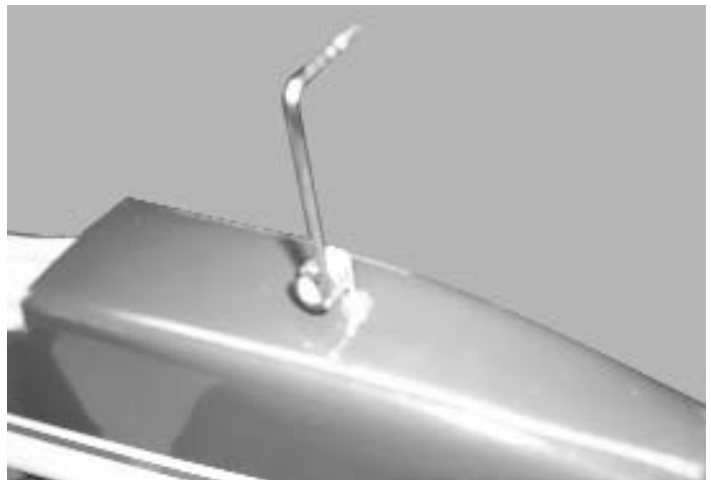
5.  Repeat steps 1 thru 4 for the rudder servo.

## NOSE GEAR INSTALLATION

1.  COLLECT THE FOLLOWING PARTS
  - (1) Nose gear strut
  - (3) Wheel Collars and set screws
  - (1) Wheel
  - (1) Nose gear steering arm
  - (1) 1.5mm x 43 cm wire and tube
  - (1) EZ connector and screw
  - (1) Nylon Swivel Keeper



2.  Slide a wheel collar with a set screw onto the top of the nose gear gear strut.



4.  Insert the nose gear strut thru the hole on the bottom of the fuselage.
- Adjust the strut so that the coil is just off the bottom of the fuselage.
- When satisfied, tighten the wheel collar set screw.
- Holding the strut up inside the fuselage, turn the fuselage over.



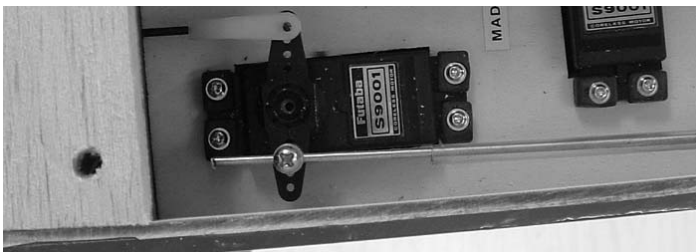
5.  Slide the steering arm on the top of the nose gear strut.
- There is a flat spot on the front side of the strut rotate the strut till it is pointing backwards and the set screw aligns with the flat spot
- Tighten the screw in the steering arm as shown above.



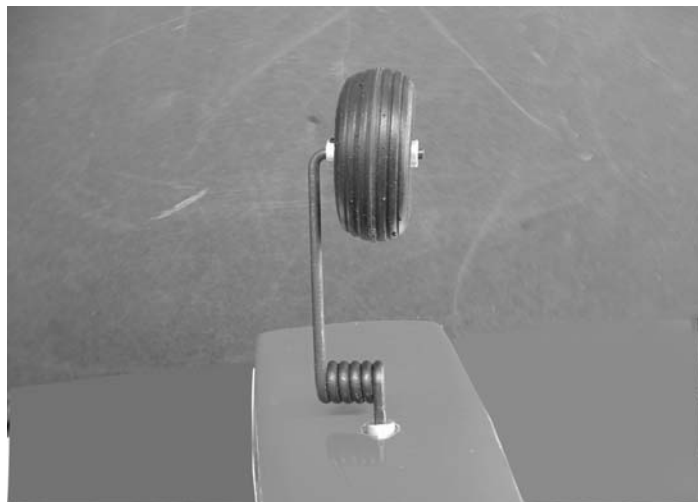
6.  Rotate the nose gear around into position.



7.  slide the push rod tube through the former and into the fuel tank compartment.
- Insert the 1.5mm wire into the tube and connect the clevis to the arm.



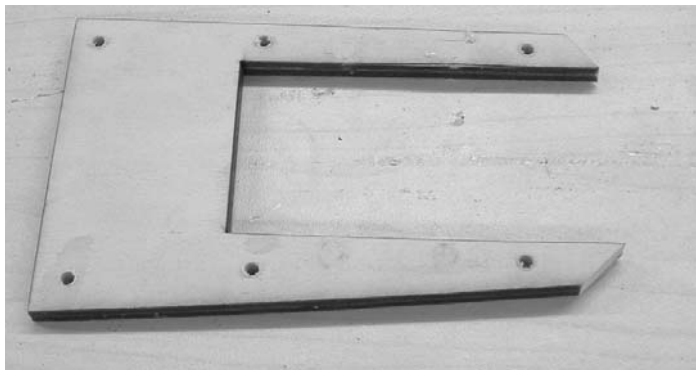
8.  Slide the nose gear wire into the hole in the EZ connector and center the servo arm and the nose gear wheel.
- When satisfied, tighten the set screw on the EZ connector.



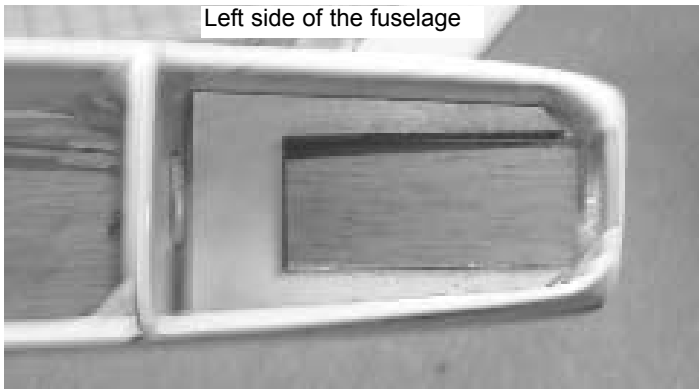
9.  Install the nose gear with a wheel collar on each side.

## ENGINE INSTALLATION

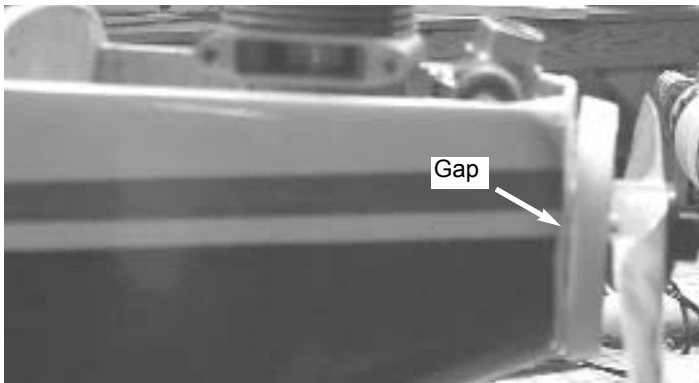
1.  COLLECT THE FOLLOWING PARTS
  - (1) ENGINE
  - (6) #6 X 3/4 SHEET METAL SCREWS
  - (3) MOTOR MOUNT PLATES
  - (1) SPINNER (3" NOT INCLUDED)



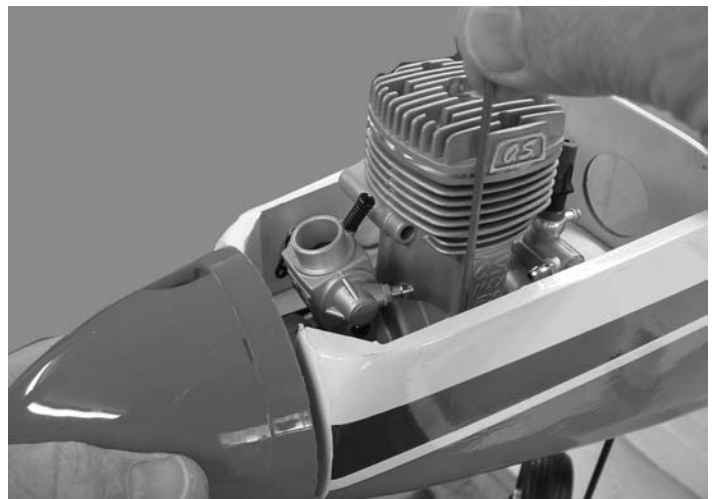
2.  Locate the 1/4" motor mounting plate. This is designed as a break away plate. Drill six 9/64" holes in the approximate position shown. The location is not critical, just make sure not to put them where the engine will sit.



3.  Place the mount into the front of the fuselage.
- Make sure that the smaller side beam is on the left side of the fuselage.
- The motor mount should point a little to the right about 2 degrees. Mark the top of the plate.



4.  Slide the engine into the motor mount and through the front nose ring.
- Open the spinner and place the spinner back plate onto the engine. This will help to center the front of the engine to the fuselage
- Make sure that there is a clearance between the spinner back plate and the front of the fuselage .



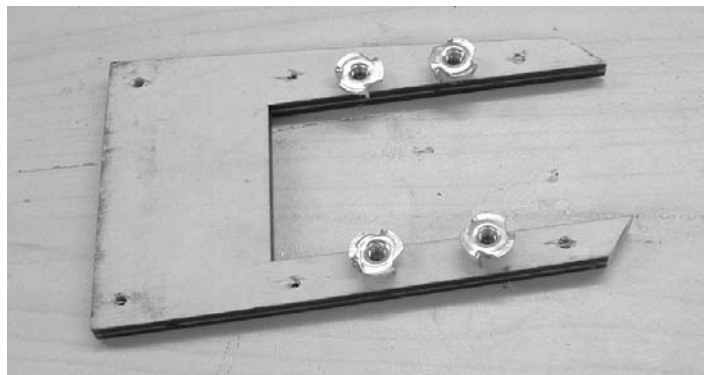
4.  Mark the location of the engine mounting holes.
- Also at this time mark the location of where the throttle pushrod should exit the firewall.
- Remove the engine and the motor mount plate.



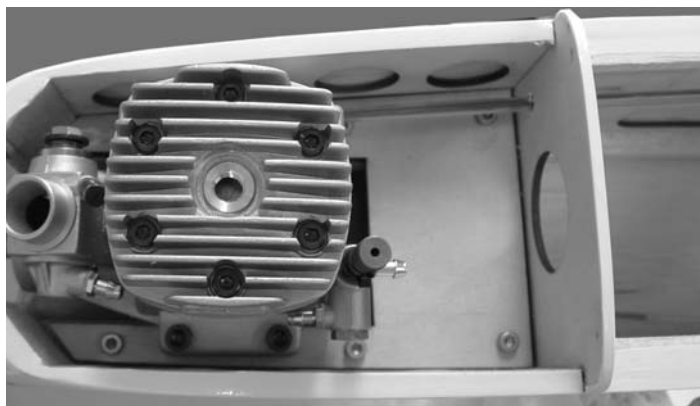
5.  Drill the engine mounting holes in the plate.



6.  Drill the hole for the engine throttle pushrod.



7.  Install the T-nuts on the bottom side of the mount.
  - Bolt the engine to the mount plate.
8.  Re-install the engine and plate into the fuse.
  - Mark the location of the six holes you drilled in the plate on the beams.
  - Drill a 3/32" hole at the marks and use six #6x3/4" screws to secure the plate.

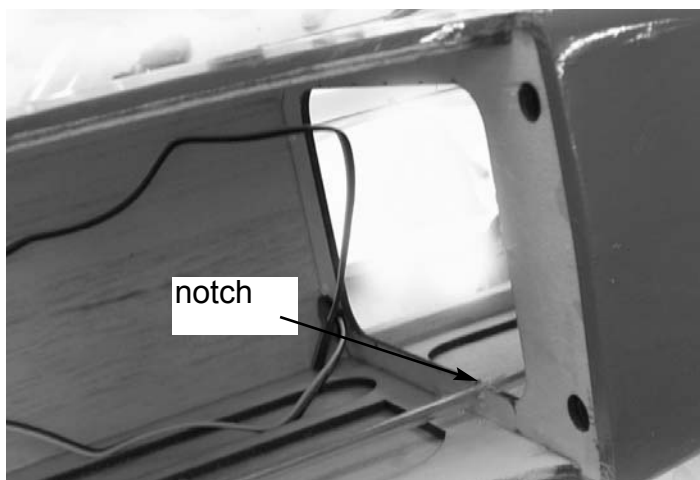


### THROTTLE PUSH ROD INSTALLATION

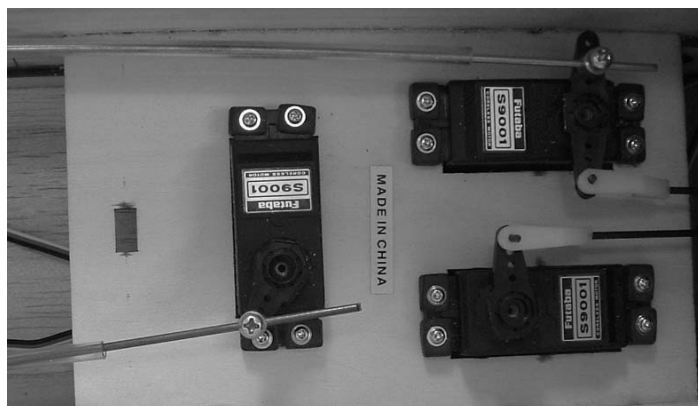
1.  COLLECT THE FOLLOWING PARTS
  - (1) 1.5MM X 40CM
  - (1) NYLON TUBE
  - (1) NYLON CLEVIS.



2.  Slide the throttle pushrod tubing into the hole in the firewall that you drilled earlier.
  - Attach the clevis to the engine throttle arm.



3.  Make a notch in the bulkhead for the nylon tube to fit into.



4.  Place the EZ connector on the throttle servo arm just as you did earlier.
  - Slide the throttle pushrod through the EZ connector and adjust as necessary.

### FUEL TANK ASSEMBLY

1.  GATHER THE FOLLOWING ITEMS
  - (1) FUEL TANK
  - (1) RUBBER TANK STOPPER
  - (1) CLUNK
  - (1) 3MM X 25MM SCREW
  - (1) CAP WASHER LARGE
  - (1) CAP WASHER SMALL
  - (1) 3MM X 40MM BRASS TUBE
  - (1) 3MM X 60MM BRASS TUBE
  - (1) SILICONE TUBE 4MM X 80MM
  - (2) SILICONE TUBE 5MM X 165MM



2.  Insert the 3mm screw through the center hole in the large washer, through the center hole in the rubber washer against the large side, and screw the small washer on the back side.



3.  Insert the brass tubes through two of the holes. They should be arranged so as the long one will be on the right side of the plane and the short one on the left side.
  - The tubes should extend out the front of the cap 5/8". Bend the long tube up at about a 20 degree angle. This should be adjusted so the end of the tube almost touches the top of the tank when installed.



4.  Install the 4mm silicone tube to the short brass tube and install the clunk to the other end of the silicone tube. This is the fuel pick-up and must be free to "flop" around in the tank so it can pick up fuel in any attitude.



5.  Install the assembly into the tank so the vent tube is turned up to the top of the tank and is positioned on the right side of the tank. Tighten the screw to expand the rubber cap. Don't over tighten or you could split the tank.

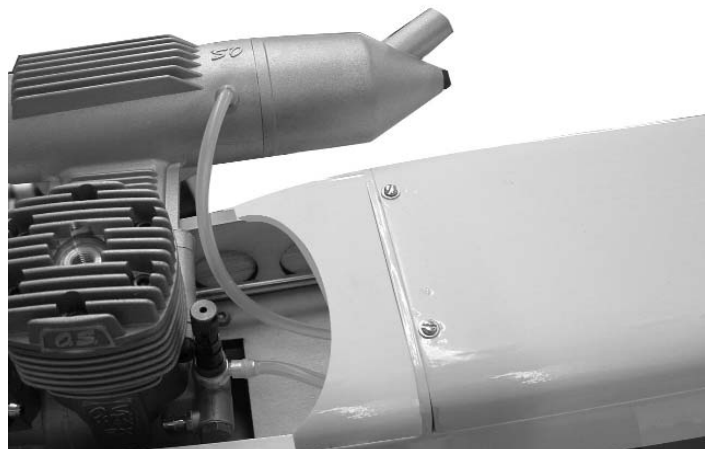


6.  Attach the two pieces of 5mm tubing to the two tank outlets. Make a note of which one you attach to which tube. The short brass with the clunk is the fuel pickup and must go to the carburetor. The long brass tube is the vent and should go to the pressure outlet on the muffler.

### INSTALLING FUEL TANK



1.  Insert the fuel tank through the hatch opening area and feed the fuel lines through the hole in the firewall.
  - Slide the tank all the way forward till the brass tubes pass through the firewall hole.
  - Attach the fuel lines to the motor.
  - Place some foam (Not included) around the tank to prevent it from sliding back out of the fuel compartment.



2.  install the fuel tank hatch on top of the fuselage with 2mm sheet metal screws on both sides of the fuselage.

## RADIO SWITCH, RECEIVER, BATTERY



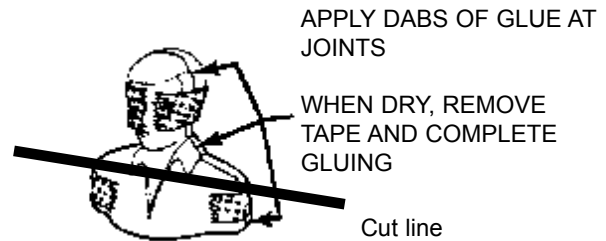
1.  We mounted the receiver and battery in front of the servo tray. Depending on what engine you use, you might need to move the battery pack forward in to the fuel tank compartment.



2.  Mount the radio switch through the side of the fuselage opposite the engine exhaust.

## COCKPIT, CANOPY AND PILOT

The pilot figure included with your airplane adds an extra touch of realism.



1.  Cut pilot halves apart at the bottom and trim off scrap. Remove the bottom of the pilot just below his neck. Gently sand the edges of each half, so that they will be smooth for joining. Carefully align the front and back pieces and hold together with tape, as shown.
1.  Tack glue the figure by applying a few drops of CA glue at key joint areas. When dry, remove tape and apply a small amount of glue all along the seam.



PAINT PILOT AS DESIRED

- Using artist's acrylics or modeling enamels, paint the pilot to suit your fancy. **WARNING:** Do not use lacquer-based paints, which will destroy the plastic.
- When dry, CA glue the pilot in place on the cockpit. You also may paint the cockpit, if added realism is desired.

**HINT:** WHEN PAINTING THE PILOT'S FACE, LEAVE THE EYES WHITE. LATER, WHEN THE FACE HAS DRIED, CAREFULLY ADD EYE DETAILS WITH A FINE BUSH OR TOOTHPICK.



2.  Sand the glue edge of the cockpit insert smooth, try to get the cockpit insert as flat as possible. Using canopy glue, glue the cockpit insert to the top of the fuselage and hold in place with tape.
- When dry, remove the tape and glue the pilot in place.
- Glue the canopy in place and hold with tape till dry.



## APPLYING DECAL



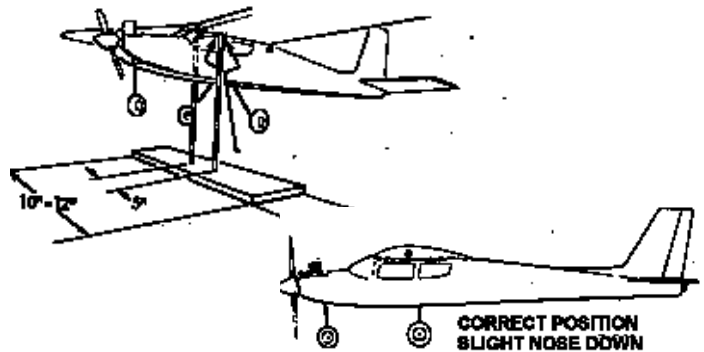
- Using glass cleaner and a soft cloth, clean model surface thoroughly before applying the decal.
- Cut the decal sheets apart in sections, as needed. Fold the decal in half, front to rear. Open at the fold and lay the decal out straight. The protective backing will bubble away from the decal at the fold.
- Using a scissors, cut the backing along the bubble, removing a strip of backing about 1" wide. Carefully position the decal on the model and stick it in place. Then, working from the center, rub the decal down while peeling off the remainder of the backing.

## BALANCING

**IMPORTANT: NEVER NEGLECT THIS STEP WITH ANY AIRPLANE.** If you try to fly a plane with the balance point behind the recommended range, you run the risk of having an unstable aircraft and the strong likelihood of a crash. **TAKE THE TIME TO PROPERLY BALANCE YOUR MODEL!**

To determine the Center of Gravity, measure back on the fuselage **3-1/2"** from the leading edge of the wing.

**The C.G. range for this aircraft is 3 1/4" to 3-3/4".**



Place the fully assembled aircraft on a model balancing stand, as shown above. You can make this simple set-up with a couple of 1/4" dowels with rounded tops, spaced 5" apart. Alternatively, lift the model under the wing near the fuse by your finger tips. (You may wish to get help from a friend if using the latter method.) Referring to the recommended balance range for your model, move the position of the plane on the balance stand until the model is level or the nose slightly down. If the is tail heavy, shift the R/C equipment away from the heavy end of the model and recheck until the model will balance within the acceptable range. If shifting the R/C gear still doesn't balance the model, add weight to the far end of the nose or tail, respectively, until the model is correctly balanced. The least weight is needed when added as far back or forward as possible. Fasten the weight permanently in place.

# FLYING YOUR SKYLARK 70 ARF

## GETTING READY TO FLY

Taking time here really pays off later. Rushing the set-up and testing frequently results in a model that never performs up to its full potential and may even lead to a crash.

**CONTROL SURFACE SETTINGS.** For the first few flights, even if you are an experienced flier, it is best to set the control surfaces at the GENTLE (LOW) settings. You can then work your way up to the higher settings. The settings for the SKYLARK 70 ARF are:

	LOW	HIGH
AILERONS	3/8"	1/2"
ELEVATOR	1/2"	3/4"
RUDDER	1"	same

**RADIO CHECK.** Many an experienced flier has rued the day he neglected to check EVERYTHING! After fully charging the batteries, turn on the receiver and transmitter and actuate all controls many times to make sure all responses are correct. Standing behind the model, the right aileron should go up when the stick is moved to the right. Moving the transmitter stick down should move the elevator up, and vice versa. Also check the wheel movement, which should move right with the right rudder movement. Check that the throttle opens to permit full power when the stick is moved up. Practice steering the model on the ground, with the throttle set at minimum, to keep model moving at a walking pace. **Before and after all tests**, make sure all gear is neatly and firmly in place - engine and servos fastened down, receiver and battery wrapped in foam and secured against shifting, propeller tight, and antenna extended.

Prior to the beginning of each day's flying, make a range check of your equipment in accordance with the manufacturer's instructions. With transmitter antenna collapsed to 6-8", you should have at least 100 feet range on the ground. Check this by turning on both the receiver and transmitter and with the model heading away from you, walk away while transmitting signals. Watch to see that no signals are missed until you are at least 100 feet away. **Remember not to use your transmitter when someone else is flying or testing on the same frequency. DO NOT ATTEMPT FLIGHTS UNLESS ALL THE EQUIPMENT WORKS PERFECTLY.**

After everything checks out, check it again! When you are satisfied with the performance of all equipment functions, point your **TIGER'S** nose into the wind and, gradually increasing to full power, take off for a short (2 to 3-minute) first flight.

Before the second flight, take off the wing and check all screws, radio equipment, engine mounting, muffler, etc. to make sure that nothing has come loose.

Spend the following flights getting familiar with your model and making sure it is properly trimmed for straight and level flight. When you feel comfortable with your model, it's time to try aerobatics.

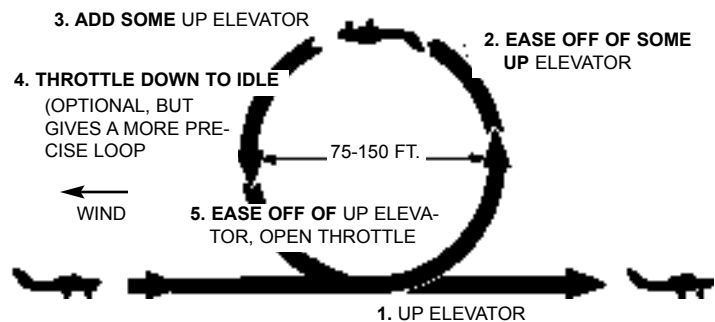
## BEGINNING AEROBATICS

Almost all maneuvers are a combination of loops and rolls, so if you can do these two things, you're off to a good start! We highly recommend the book **Flight Training Course, Volume II**, published by **R/C Modeler Magazine**. Some of the following is taken from this manual, with the gracious permission of the magazine.

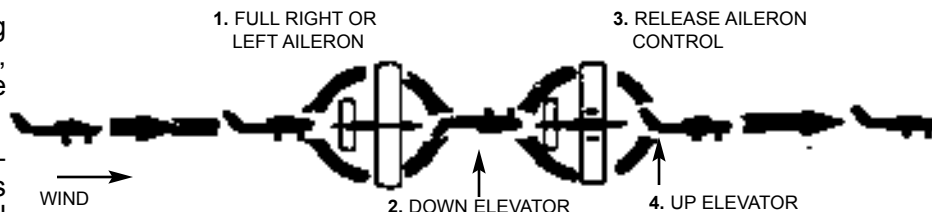
Above all, remember that top gun aerobatics are the result of practice. The crisp, graceful movements come from the pilot's willingness to do and do it again. Don't give up; practice really does make perfect!

*Which side is up?* Learning to recognize which side is up may sound foolish, but many a plane has bitten the dust because the pilot lost track of the plane's position. Other than learning to recognize the plane's silhouette at different angles and attitudes, the best insurance is to force yourself to concentrate on each thing that you do, i.e. making a left turn. If your mind strays and you forget what you're doing, coming back to it can cause a few new grey hairs!

**THE LOOP.** This is a good first stunt. The model starts flying straight and level into the wind, then pulls up into a smooth, round loop. The up and down portion should be straight, without the plane falling off to the right or left, and the speed should be constant. As the plane finishes the loop, it pulls out straight and level, at the same heading and altitude as when it entered the maneuver.



**THE HORIZONTAL ROLL.** *Important!* Always remember that, **when the plane is inverted, the elevator works backwards.** Therefore, when the plane is inverted, you give **down elevator**. Also, be sure to fly high enough to give a good margin for error, as your early attempts will probably end up in a 30° dive. We also recommend you practice with the plane in front of you, rather than overhead.



Good luck and happy flying!