

Tiger 400



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 (5151 Memorial Drive, Muncie, IN 47302, 1-800-435-9262). 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, Ltd. 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.

CARL GOLDBERG PRODUCTS, LTD.

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USING THIS INSTRUCTION MANUAL

Before you begin assembling your **Tiger 400 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 motor 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 48" 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.

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 e-mail (questions@carlgoldberg-products.com) or 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 Tiger 400 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 around the edge of the seams first then over the surface of each section with an iron (either specially designed for airplane use or the more cumbersome household iron). 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. Once you have ironed the seams stay away from them with the heat or the covering will slide when you try to shrink the middle. If this happens the wrinkles will not come out of the covering.

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.

The Tiger 400 covering can be matched using

Oracover Cub Yellow

Oracover White 870

ITEMS NEEDED TO COMPLETE THIS AIRCRAFT

- 1 RADIO GUIDANCE SYSTEM (4 CHANNEL MINIMUM REQUIRED WITH 4 SERVOS)
- 1 6" SERVO "Y" HARNESS
- 1 ELECTRONIC SPEED CONTROL (ELECTRIC FLY C-20 FROM GREAT PLANES SUGGESTED)
- 1 NIMH 8C 1100AAA BATTERY (2 OR 3 CELL 1500 MAH LI-PO BATTERY SUGGESTED)
- 4 MINI- PUSHROD CONNECTORS
- 1 CA ACCELERATOR
- 1 1 OZ. BOTTLE CA MEDIUM GLUE
- 1 1/2 OZ. BOTTLE CA THIN GLUE
- 1 5 MINUJET EPOXY
- 1 1/4" FOAM RUBBER

TOOLS AND SUPPLIES FOR ASSEMBLY.

- MODELING OR UTILITY KNIFE
- WORK SURFACE (24" X48")
- SMALL STANDARD & PHILLIPS SCREW-DRIVERS
- MASKING TAPE
- NEEDLE NOSE PLIERS
- 24" RULER
- FLEXIBLE STRAIGHT-EDGE
- 30-60-90° x 6" TRIANGLE
- SOFT PENCIL
- A FEW STRAIGHT OR "T" PINS
- WIRE CUTTER (DYKES)
- OPTIONAL HEAT GUN/COVERING IRON
- ACID BRUSH
- 5 FT. LENGTH OF STRING

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

Wing

Installing Ailerons

1. Collect the following parts:

- (1) Wing
- (2) Ailerons (Left & Right)
- (6) Mini CA hinges



1. Locate the pre-cut aileron hinge slots in both sides of the wing. 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. Find the control horn slot near one end of the aileron.
 - Align the slot in the aileron with the servo hole in the wing.
 - Insert the mini CA hinges half way into the wing and the ailerons. (Use a pin inserted into the middle of the hinge to help keep the hinge in the middle.)
 - Make sure that the aileron is tight against the wing and even with the wing tip.
 - Using thin CA glue, place one drop on all hinges top and bottom.

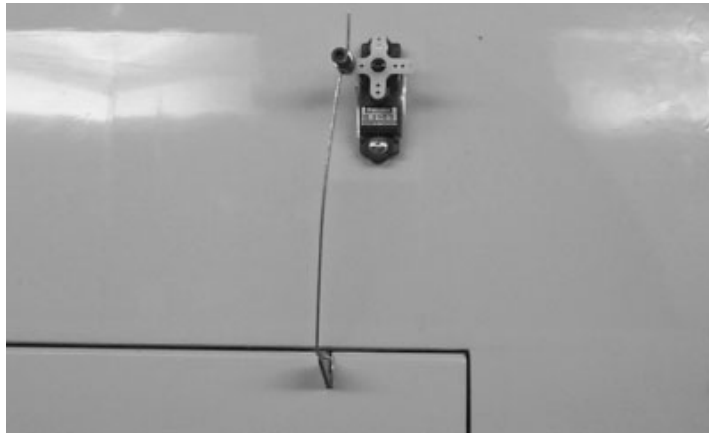
Aileron Servos

1. Collect the following parts:

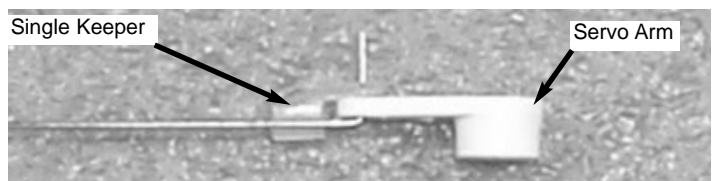
- (1) Wing
- (2) Servo with hardware
- (2) Aileron pushrod
- (2) Mini pushrod connectors (Not Included)
- (2) Single Keepers
- (2) Adjustable Horn Brackets



3. Mount the aileron servo using the hardware provided by the radio manufacture.
 - Remove the covering on the aileron where the control horn sits.
 - Using glue, attach the control horn to the aileron.



4. Find the small aileron pushrod wire, and place a "z" in one end.
 - Connect the pushrod wire to the servo arm using optional mini-pushrod connector, **OR** by using a felt marker, mark where the wire crosses the servo arm hole.
 - Bend the pushrod wire 90 degrees at the mark, and slide the pushrod wire through the servo arm hole from the bottom.
 - Hold the pushrod wire on to the servo arm by using a single keeper.

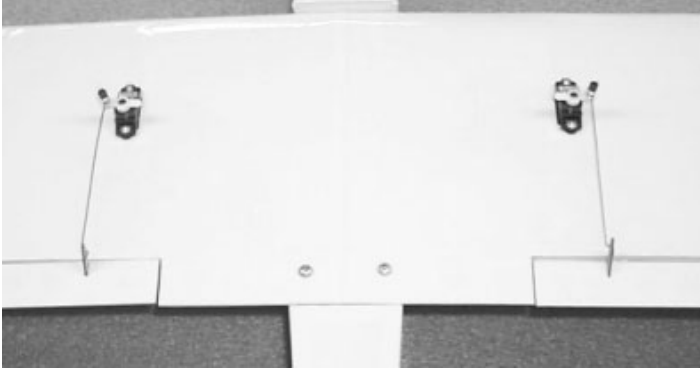


- Repeat for the other aileron.

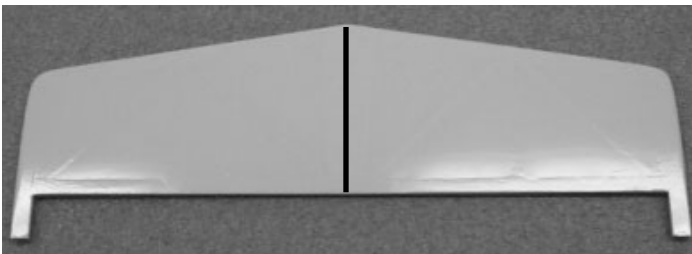
Fuselage

Stabilizer

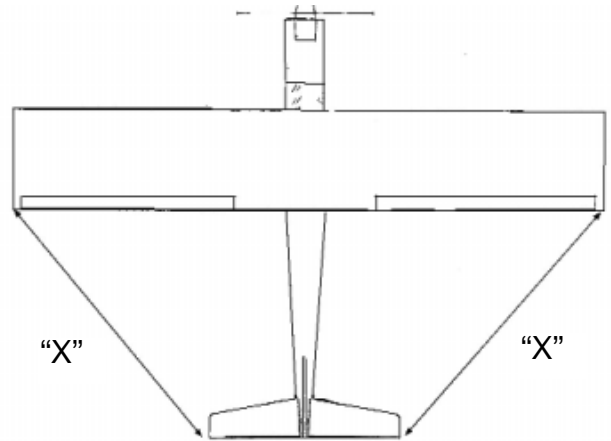
1. Collect the following parts:
 - (1) Fuselage
 - (1) Stabilizer & Elevator
 - (1) wing with mounting screws and washers



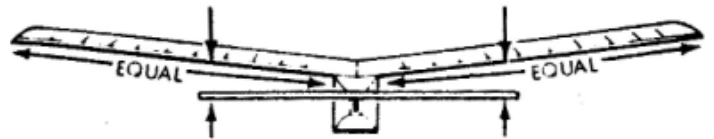
2. Locate the holes in the center of the wing for the wing bolts. Remove the covering over these holes.
 - Mount the wing to the fuselage using the long bolt and washer for the front of the wing, and the short bolt and washer for the rear of the wing
 - Make sure that the wing is perpendicular to the fuselage by measuring from both wing tips to the rear of the fuselage, the measurement should be approximately the same.



3. Find the center of the stabilizer, by measuring the length of the trailing edge when the elevator is removed.
 - Stand the stabilizer up on its edge and using a right triangle draw a center line up from the trailing edge to the leading edge.
 - Find the center of the fuselage in front of where the stabilizer sits.
 - Place the stabilizer on the fuselage using the mark you just made.



4. Measure from the end of the wing to the tip of the stab. This measurement should be the same for both sides.



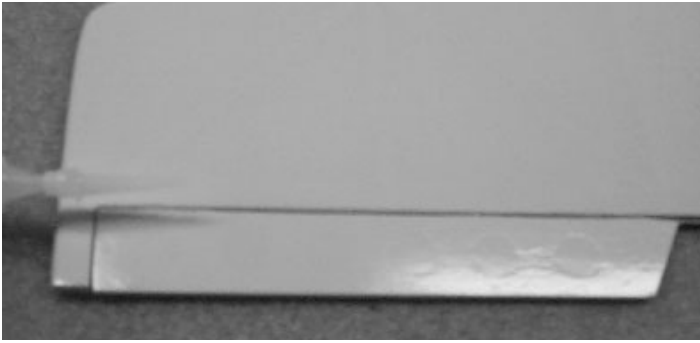
- Look down the length of the fuselage and check that the stabilizer is parallel to the wing. If it is not then shim the low side till they are parallel.
- When satisfied then glue the stabilizer in place using 5 minuet epoxy. Make sure the stabilizer remains both perpendicular and parallel to the wing and fuselage while the epoxy dries.

Elevator Installation

1. Collect the following parts:
 - (1) Fuselage with Stabilizer
 - (2) Elevator Halves
 - (1) Elevator Joiner Wire
 - (4) Mini CA Hinges



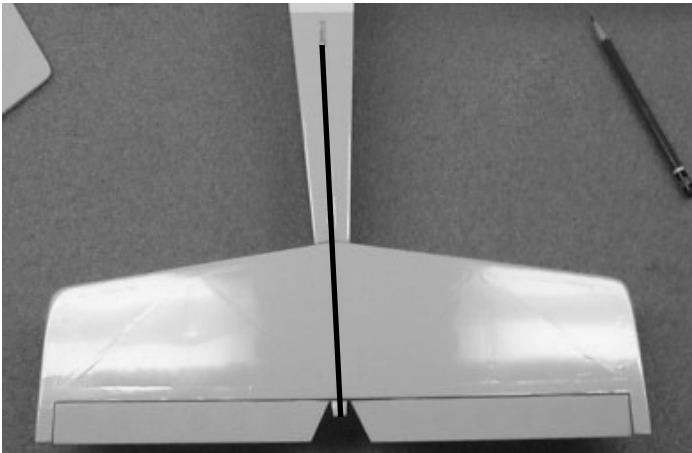
2. Locate the slot in one of the elevators near the middle bevel.
 - Remove the covering over the slot.
 - Place white glue on the joiner wire and slide the wire into the elevator with the slot.
 - Turn the elevator over and using two mini CA hinges mount the elevator on the left side of the stabilizer.
 - Mount the right side elevator using the remaining mini hinges



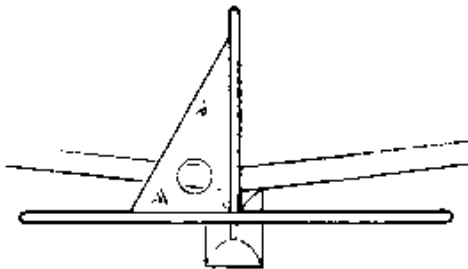
3. Push the elevator tight against the stabilizer.
- Make sure that the elevator is not rubbing on the outer edges.
- Place a single drop of thin CA on all hinges.

Fin

1. Collect the following parts:
 - (1) Fuselage
 - (1) Fin



2. Remove the covering over the holes in the fuselage top and the fin.
- Place the fin on the fuselage using the holes you just uncovered.
- Mark using a pencil the outline where the fin rest on the fuselage top and on the stabilizer.
- Being very careful not to cut the wood, remove the covering where the fin will rest.



3. Place the fin back on to the fuselage and make sure that there is no gap between the fuselage top and the fin.
- Place a 90 degree triangle on the top of the stabilizer up against the fin.
- When you are satisfied with the fit, epoxy the fin to the top of the fuselage and stabilizer.

Rudder & Control Horn

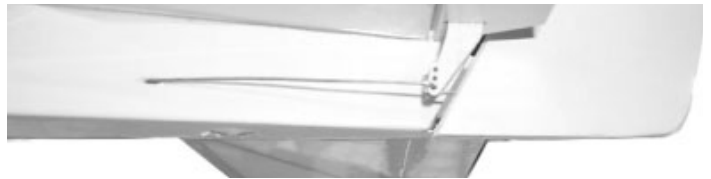
1. Collect the following parts:
 - (1) Fuselage
 - (1) .031 x 19" wire
 - (1) Small wood control arm
 - (1) Rudder



2. Remove the covering over the slot in the bottom of the rudder. (Hint: uncover only the Right side of the slot like shown above.)
- Make a "Z" bend in one end of the wire .
- Slide the wire into the hole that is on the right side of the fuselage 2-7/8" from the back of the fuselage.
- Place the "Z" bend through the middle control horn hole and glue the control horn into the slot in the rudder.

Elevator & Control horn

1. Collect the following parts:
 - (1) Fuselage
 - (1) .031 x 19" wire
 - (1) Small wood control arm

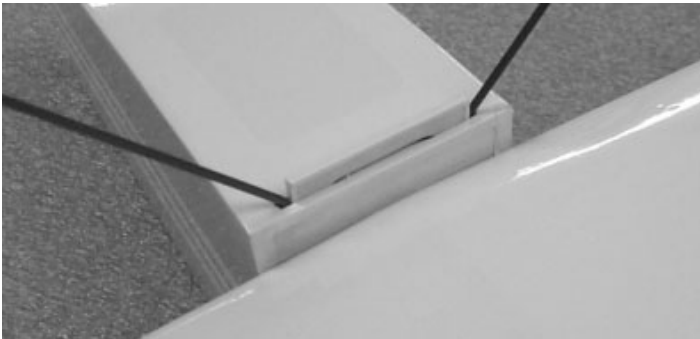


2. Find the slot in the elevator for the control horn.
- Look for the elevator pushrod exit hole on the left side of the fuselage (2-1/2" from the rear) on the opposite side of the rudder pushrod exit hole.
- Make a "Z" bend in one end of the pushrod wire .
- Slide the wire into the elevator pushrod exit hole in the side of the fuselage.
- Place the "Z" bend on the control horn and glue the control horn into the slot in the elevator.

Landing Gear

1. Collect the following parts:

- (1) Fuselage
- (1) Main Landing Gear Wire
- (1) Wood Landing Gear Holder

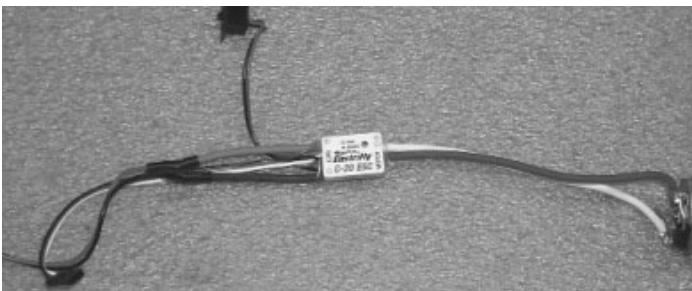


2. cut the covering over the landing gear slot just in front of the wing.
 - Insert the main landing gear wire into the bottom of the fuselage.
 - Slide the wood holder into the slot and press down till it is even with the bottom of the fuselage. Glue in place.

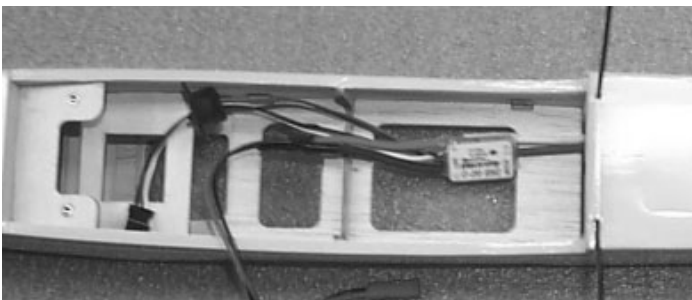
Installing Motor & ESC

1. Collect the following parts:

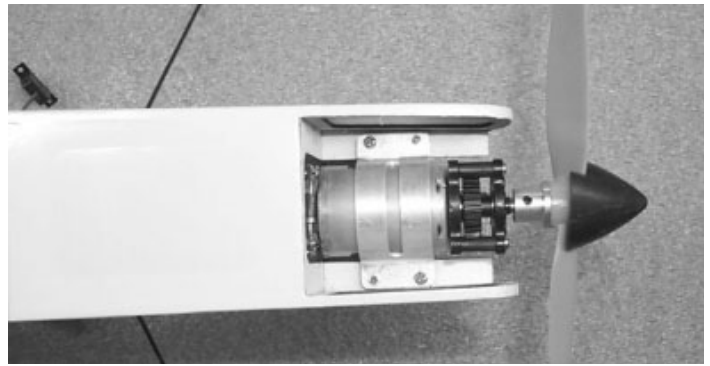
- (1) Fuselage
- (1) Motor with Gear Drive
- (1) Electronic Speed Control (Not Included)
- (2) Motor Mount Brackets
- (4) #2 x 5/16 Screws



2. Solder your speed control onto the motor, by following the instructions that came with your speed controller.



- Insert the speed control and motor assembly through the front of the fuselage and into the main cabin of the fuselage.



3. Place one half of the motor mount under the motor.
 - Slide the motor towards the firewall till the back of the propeller is approximately 1/2" away from the front from the fuselage.
 - Check to see that the motor cooling vents are not blocked by the bottom motor mount. Slide the mount forward or backwards till the vent is not blocked.
 - Mark the hole locations on the motor mount beams and drill using a 1/16" bit.
 - Place the top mount over the motor and screw both mounts and the motor to the beams.
 - Keep the gear drive "up" and centered.

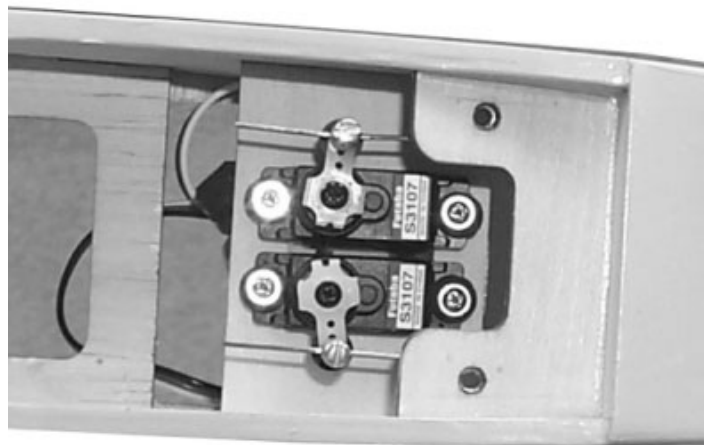
Radio Installation

1. Collect the following parts:

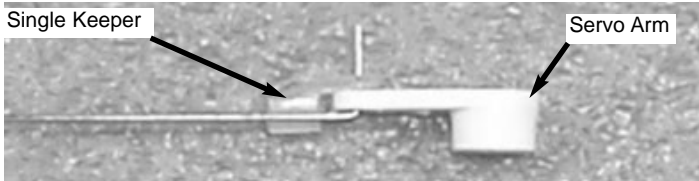
- (1) Fuselage
- (2) Micro Servos with Hardware (Not Included)
- (1) Micro Receiver (Not Included)
- (1) Servo "Y" Harness (Not Included)
- (2) Single keeper

OPTIONAL:

- (2) Mini- Pushrod Connectors (Not Included)



2. Screw the rudder servo into place using the hardware that came with the servo.
 - Connect the pushrod wire to the servo arm using optional mini-pushrod connector, **OR** using a felt marker, mark where the wire crosses the servo arm hole.



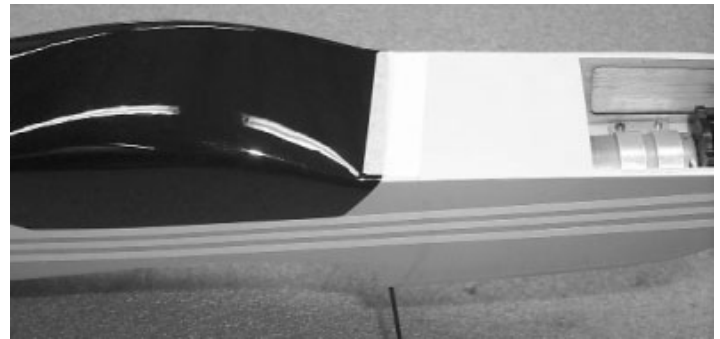
3. Bend the pushrod wire 90 degrees at the mark, and slide the pushrod wire through the servo arm hole from the bottom.
 - Hold the pushrod wire on to the servo arm by using a single keeper.
4. Install the elevator servo the same way you did the rudder servo.
 - Connect your servos to the receiver and place the receiver in the hole just behind the motor.



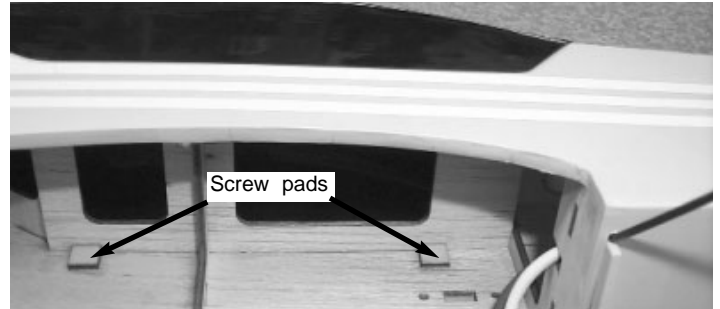
- Place the battery in on top of the fuselage under the canopy.
- Hold in place using velcro or foam.

Canopy

1. Collect the following parts:
 - (1) Fuselage
 - (1) Canopy
 - (1) Clear Tape**Optional:**
 - (4) #2 x 5/16" screws



2. Tape the front of the canopy to the top of the fuselage then tape the rear using a tab on the tape. **OR, -**



- Drill a hole through the canopy and into the rear mounting pad. You could also use the front pads if you do not want to tape the front of the canopy to the fuselage.

Installing wheels

1. Collect the following parts:
 - (1) Fuselage
 - (2) Wheels
 - (2) Plastic wheel retainers



- Slide each of the wheels onto the landing gear wire.
- Using pliers push the wheel retainers onto the wire.

Balancing

Your model should balance at 2-1/8" to 2-3/8" back from the leading edge of the wing.

Start with the controls movements at the following:

Ailerons	1/4" up and down
Elevator	1/4" up and down
Rudder	1/4" up and down

You might want to change these throws after you are comfortable flying the Tiger 400.