G-202 (40 Size)
Assembly Manual

Specifications:

Wingspan:	50" (1270mm)
Length:	47.4" (1203mm)
Wing area:	527 in² (49dm²)
Weight:	4.8-5.2 lbs (2.2-2.4kg)
Engine:	.36-.46 2 Cycle
	.54 4 Cycle
Radio:	4 Channel (4 Servos)

Thunder Tiger G-202 ARF Airplane (TTR4549)

Distributed in North America by Ace Hobby Distributors, Inc. • 116 W 19th ST, Higginsville, MO 64037
Phone: 660-584-7121 • www.acehobby.com • E-mail: aceinfo@acehobby.com

Warranty

This kit is guaranteed to be free from defects in material and workmanship at the date of purchase. It does not cover any damage caused by use or modification. The warranty does not extend beyond the product itself and is limited only to the original cost of the kit. By the act of building this user-assembled kit, the user accepts all resulting in liability for damage caused by the final product. If the buyer is not prepared to accept this liability, it can be returned new and unused to the place of purchase for a refund.

Notice: Adult Supervision Required

This is not a toy. Assembly and flying of this product requires adult supervision.

Read through this book completely and become familiar with the assembly and flight of this airplane. Inspect all parts for completeness and damage. If you encounter any problems, call 660-584-6724 for help.

Thunder Tiger

IF6252

INTRODUCTION

One of the most recognized names in aerobatic aviation is the Giles 202. A two seater version of the world champ G-200, this model closely duplicates the appearance and performance of its full scale counterpart.

You are about to enjoy the thrills of flying this spritely performer. Since the plane is completely built and covered in UltraCote, only a few enjoyable hours installing the engine and radio will get you in the air.

PRE-ASSEMBLY NOTES

Before beginning the assembly read the instructions thoroughly to give an understanding of the sequence of steps and a general awareness of the recommended assembly procedures.

By following these instructions carefully and referring to the corresponding pictures, the assembly of your model will be both enjoyable and rewarding. The result will be a well built, easy to assemble A.R.F. model, which you will be proud to display and also provide you flying excitement not unlike its full-scale counterpart.

If you are not an experienced R/C pilot, plan to have a fully competent pilot check your completed model and help you with your first flights. Even though we have tried to provide you with a very thorough instruction manual, R/C models are rather complicated and an experienced modeler can quickly check over your model to help make sure your first flights are successful. Your G-202 is designed for intermediate to advanced pilots.

Before you begin, check the entire contents of your kit against the parts list and photos to make sure that no parts are missing or damaged. This will also help you to become familiar with each component of your plane. If you find that any of the parts are either missing or damaged, please contact Ace Hobby Distributors, Inc., Customer Service (660-584-6704) immediately for replacements.

Note: Neither your dealer nor Ace Hobby Distributors, Inc., can accept kits for return if construction has begun.

Trial fit each part before gluing it in place. Make sure you are using the correct part and that it fits well before assembling. No amount of glue can make up for a poor-fitting part.

Thunder Tiger

GILES G-202

RECOMMENDED TOOLS & MATERIALS

Adhesives:

Instant setting Cyanoacrylate adhesive (thin CA)
Slow setting Cyanoacrylate adhesive (thick CA)
10 Minute Epoxy (fast)
20-30 Minute Epoxy (slow)
R/C 56 Glue

Tools:

Model knife, T-Pins, 1/2" vinyl tape
Small screwdrivers, medium screwdrivers
Scissors
Steel straight edge
Long nose pliers and diagonal cutting pliers
Drill and drill bits
Sanding block
Fine felt tip pen and soft lead pencil
Straight building board

R/C System:

4 Channel radio with 4 servos

Engine:

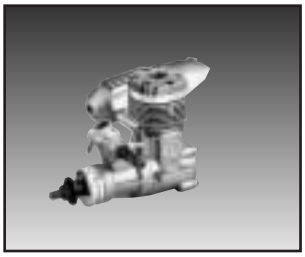
2 cycle: .36 to .46 CID
4 cycle: .54 CID

Propeller (appropriate for engine type and preferred performance)

Radio - A 4-channel radio with four standard servos is required.

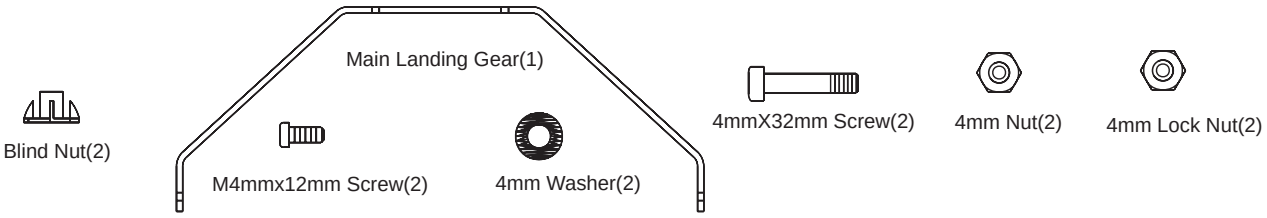
Adhesives - You will need two types of adhesives for the G-202 - Epoxy and Instant (cyanoacrylate) adhesives. We recommend that you purchase both 5-minute and 30-minute epoxy to cut down on assembly time, but you can get by with only 30-minute epoxy if time is not important. You will also need a small bottle of both "Thick" and "Thin" instant adhesive.

Tools - Model assembly can be much easier if the proper tools are used. Therefore, we have included in our checklist to the left, a complete listing of all the tools we used to assemble our prototype models. As you will notice, many household tools can be utilized during construction.



Engine - The Thunder Tiger PRO-36/46 and F-54S are the ideal engines for this airplane. These quiet-running engines are easy to start, require no special break-in periods, are very easy to maintain and will last for years.

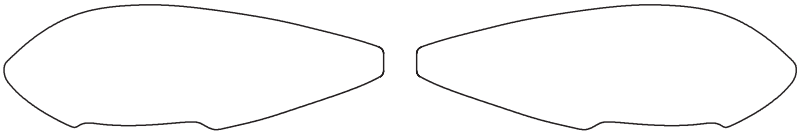
AS6102 Main Landing Gear



3254 Wheels

55mm Wheels(2)

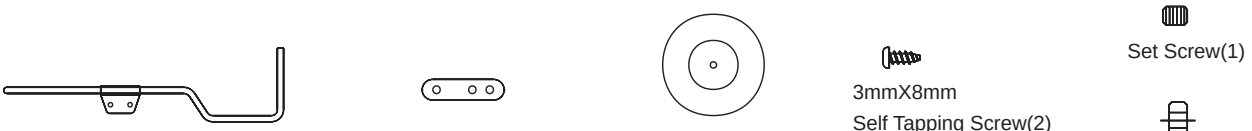
AS6103 Wheel Pants



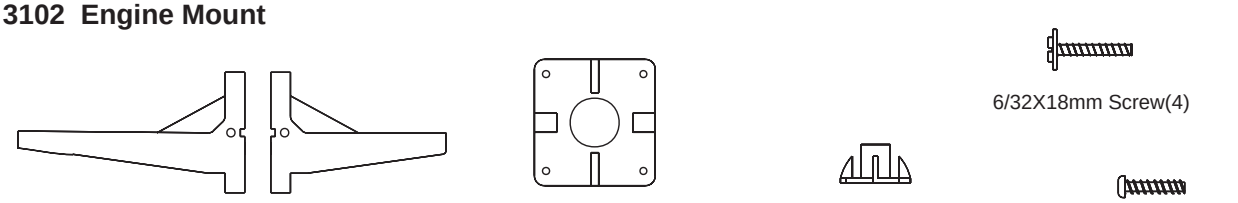
Wheel Pant(L/1)

Wheel Pant(R/1)

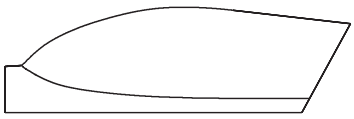
AS6037 Tail Wheel



3102 Engine Mount

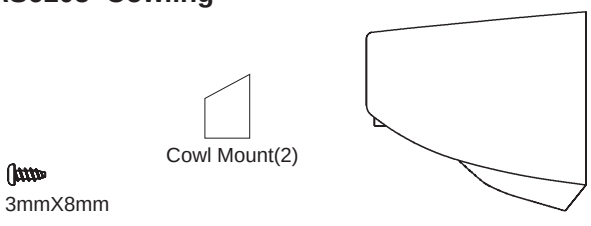


AS6104 Canopy

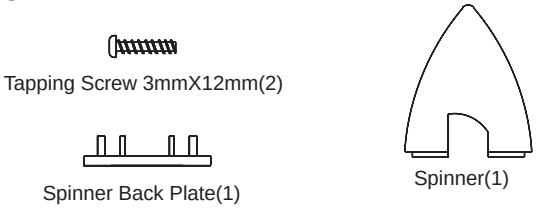


Canopy(1)

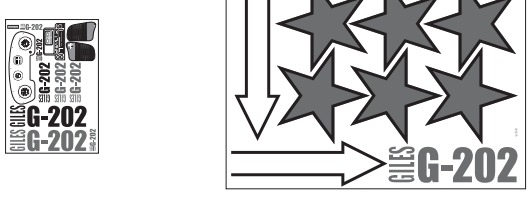
AS6105 Cowling



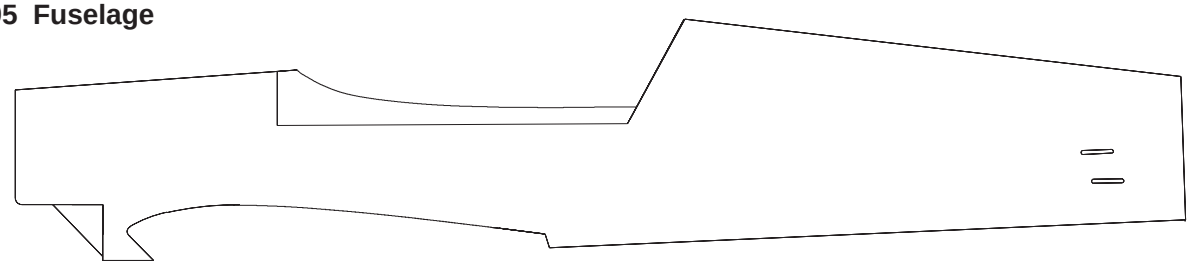
3282W



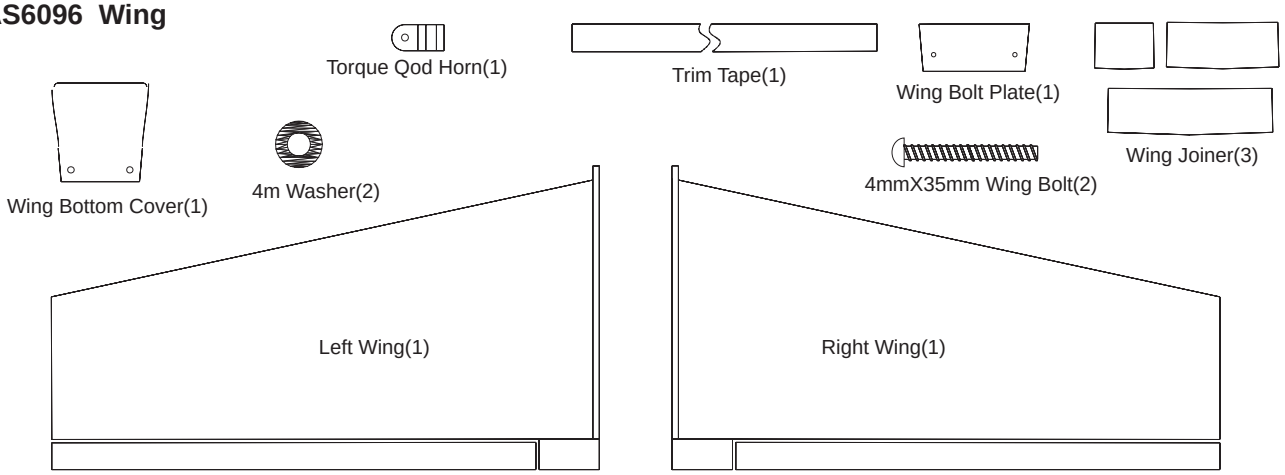
AS6106 Decal



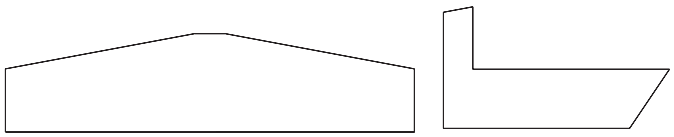
AS6095 Fuselage



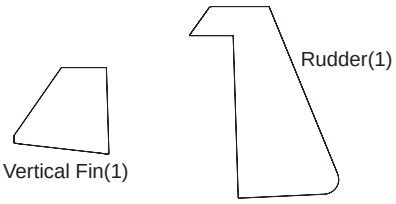
AS6096 Wing



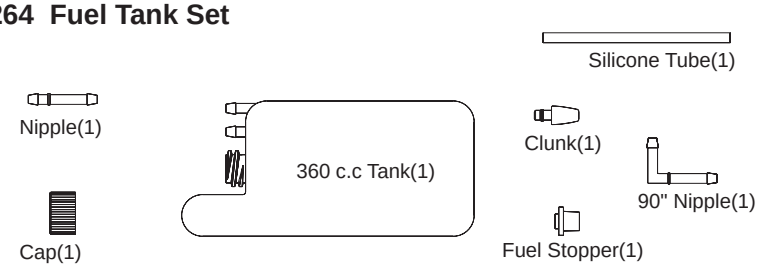
AS6097 Horizontal Tail



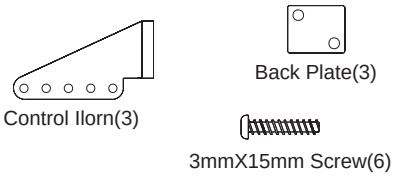
AS6098 Vertical Tail



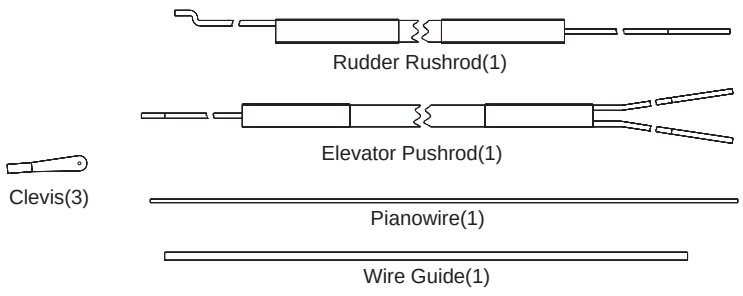
3264 Fuel Tank Set



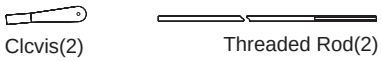
3151 Control Horn Set(Sold in Pair)



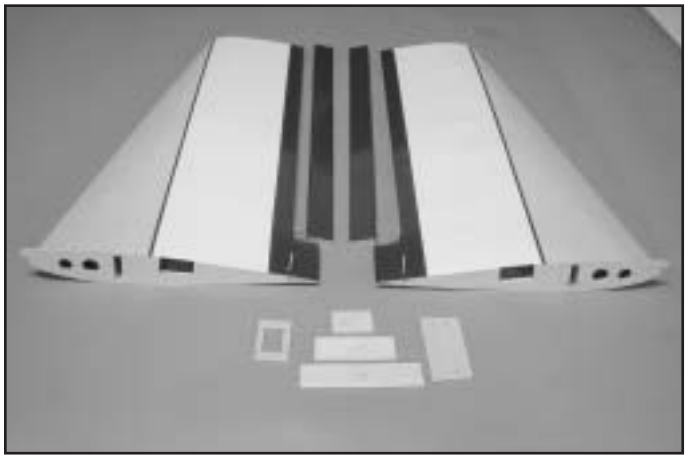
AS6099 Pushrods

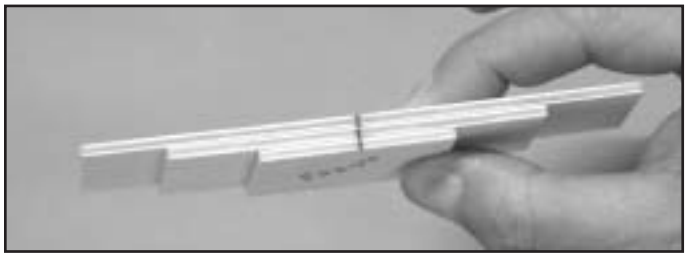


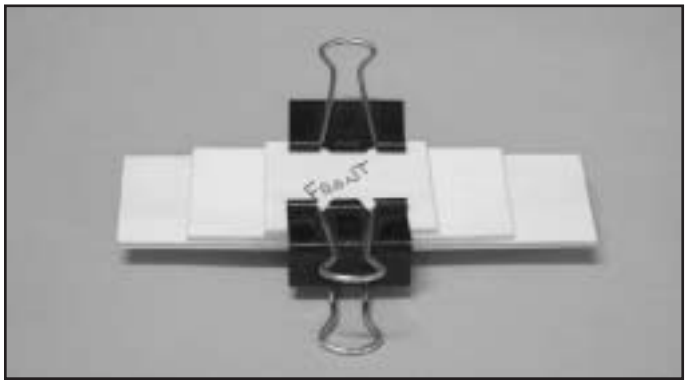
3152 Aileron Pushrods



AS6101 Hinge Set





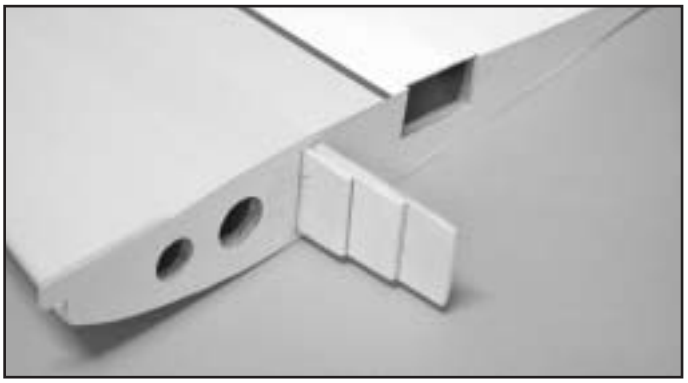


❒ Wing Joiner Braces

Locate the three wing center joiner braces. Mark each of the three pieces to say "front" (smallest), "middle," and "back" (largest). Stack the pieces together. Please note that the bottom of each brace is angled to give the correct amount of dihedral to the wing. Draw a line on the top center of each of the 3 pieces. These parts are now to be glued together with 5 minute epoxy. Use alcohol and a paper towel to wipe off any excess epoxy.

❒ The ailerons are attached to each wing panel with four CA hinges. Slip the right aileron onto the right wing with the hinges in place. While holding the aileron in the proper position and flexing it downward, put a few drops of THIN CA on the top side of the hinge. Repeat for the bottom side. After the CA has "fired," check that the aileron is secure by giving it a firm tug.

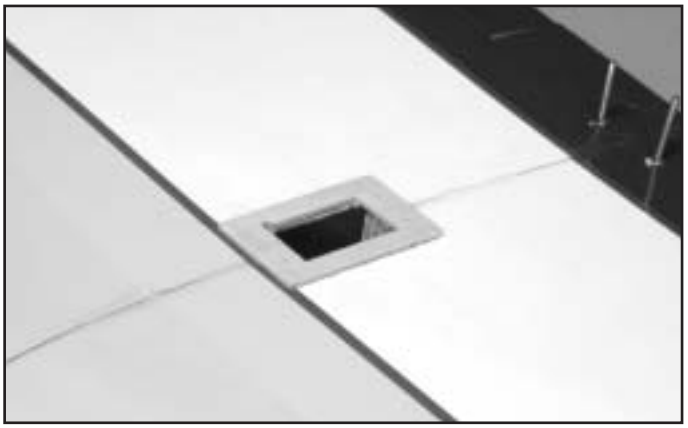
Repeat for the other aileron.



❒ Epoxy the completed wing joiner to the right wing with 5 minute epoxy and let dry.

Trial fit wing panels together.

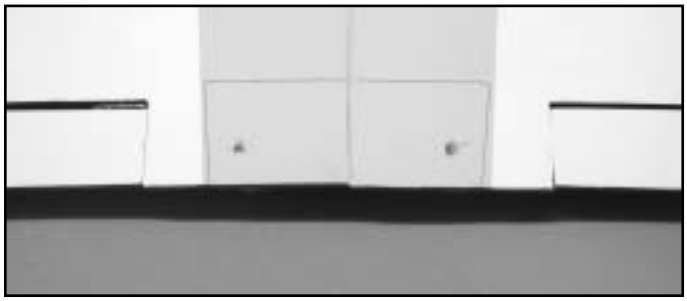
❒ We recommend using 30 minute epoxy to join the wing panels together. Be sure that the center ribs of each wing panel mate together flush and wipe off any excess epoxy. Set aside to dry.



❒ Locate the servo tray for the aileron servo. Put into place on the top of the wing and draw a line around the tray on the outside. Next draw a line around the inside of the servo tray. Set the servo tray aside and using a sharp modeling knife, cut along the inside line to remove covering and balsa sheeting for the servo to sit in. Now, using a sharp blade, lightly score along the outside line to remove the covering.

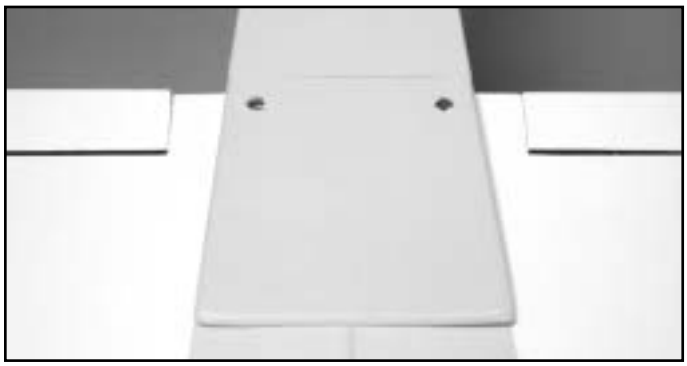
❒ Using medium CA, attach the servo tray.

❒ Trial fit wing to fuse. With the wing in place on the fuse, place the plywood wing bolt reinforcement plate on the trailing edge of the wing and draw a line around the plate. Also use the plate as a guide to mark the two wing bolt hole locations.

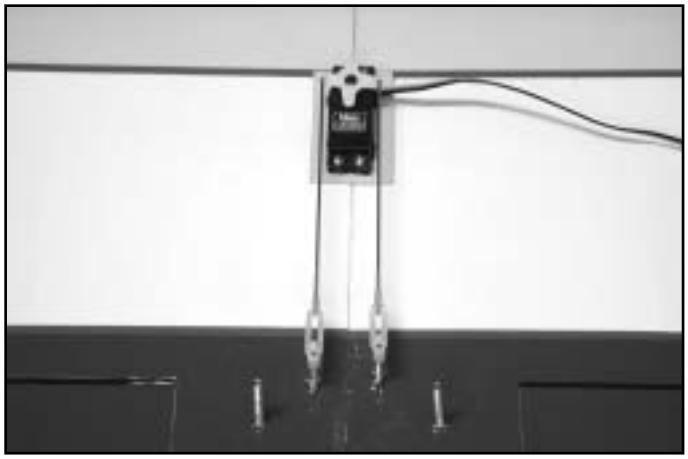


❒ Remove the plate and drill 5/16" holes in the wing for the wing bolts. Score along your marks and remove the covering. Glue the reinforcement plate in place.

❒ Install the blind nuts into the predrilled holes in the wing mounting block inside the fuselage. Use the wing bolts to draw the blind-nut's prongs into the plywood.



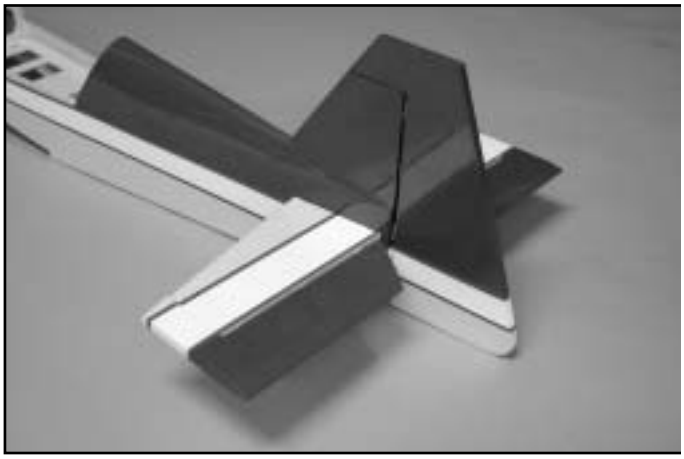
❒ Mount the wing to the fuse and install the rear wing fairing with CA.



❒ Mount the servo to the wing and install the aileron linkage.

Screw the nylon horns on to the torque rods. Nylon clevis goes on the threaded end and use a "Z-bend" at the servo end of the linkage

TAIL ASSEMBLY



❒ Locate the slots where the fin and stabilizer will mount to the fuselage and remove the Ultracote® that covers each slot. Next slide the stab into place. Install the completed wing onto the fuselage and align the stabilizer with the wing. Now mark the stab so when it is removed you have marks that show where to cut the covering away from the stabilizer's center section. Carefully score and remove the covering material about 1/16" inside of the line you drew. Do not cut into the balsa, or you will significantly weaken the stab.

❒ Mix up some 30 minute epoxy and apply to fuse and stab. Reinstal the stab and recheck the alignment.

❒ Next install the vertical fin and check for fit. Removed covering material as needed. After you are satisfied with the fit, glue in place with epoxy and recheck for straightness.

❒ Now, using three CA hinges for each elevator, install the elevators as you did the ailerons.

TAIL ASSEMBLY

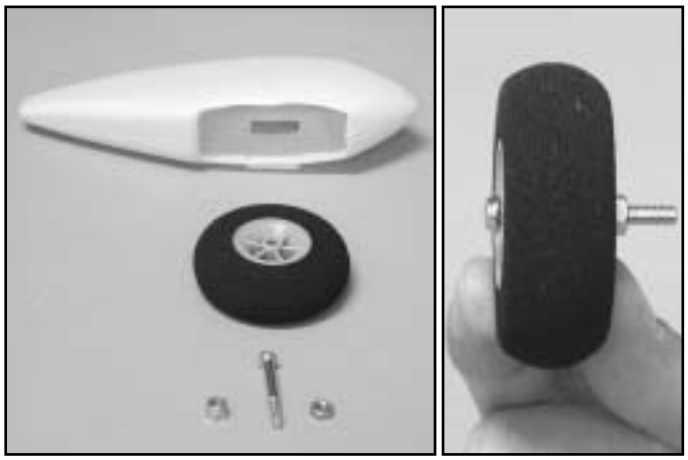
❒ Tail Wheel Assembly

Locate the tail wheel wire and mounting plate, mark and install with the two 3x8mm self tapping screws provided.

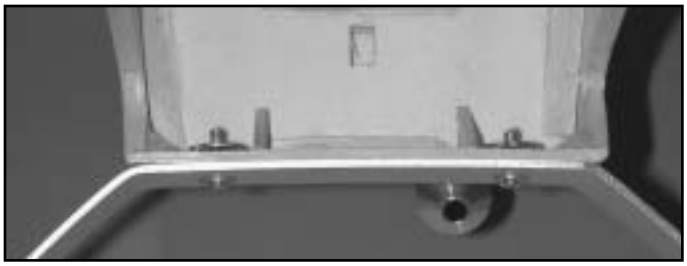
❒ Next, mark rudder and drill a 1/8" hole to accept tailwheel arm.

❒ Attach rudder to fin using the CA hinges provided.

MAIN LANDING GEAR



❒ Locate the two wheel pants and remove the wheel opening area with an utility knife. Next, remove the small area on the inside of each wheel pant for the landing gear to set inside the wheel pant. Locate the twin axle bolts and two 4mm nuts and locknuts. Next, assemble the wheels and wheel pants onto the landing gear as shown in the picture



❒ Attach the Main Gear to the fuselage with two 3mm bolts and blind nuts furnished.

RADIO INSTALLATION

❒ Install the elevator and rudder servos as shown in the picture. Note that the throttle servo is installed in this picture. You may want to wait until later to install it, because it has to be installed so it is on the same side of the fuselage as your engine's throttle arm.

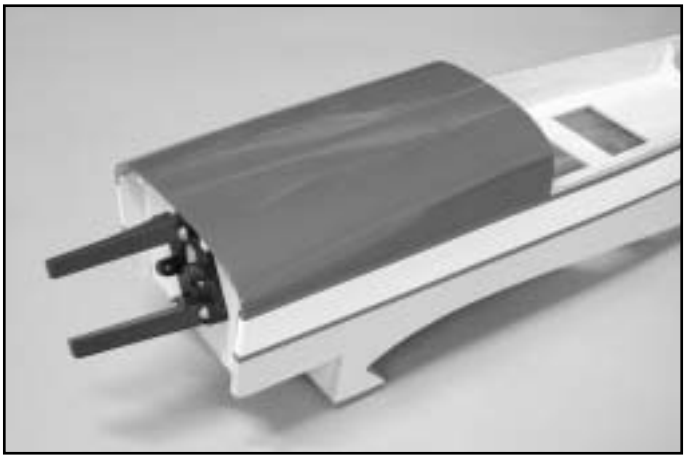
❒ Cut the covering material away from the pushrod slots in the rear of the fuselage. Place the elevator and rudder pushrods into the fuselage. The elevator pushrod is in a "Y" configuration. You may have to spread the "Y" out some. Install clevises on the ends of each pushrod.

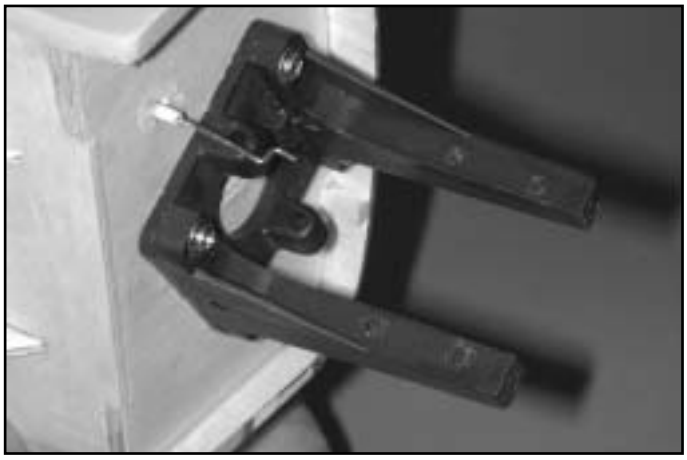
❒ Install a control horn on the left side of the rudder so it is aligned with the pushrod and the holes are aligned with the hinge line.

❒ In a similar fashion, install the two remaining control horns–one on each elevator half.

❒ Move back to the radio compartment and, with the surfaces in neutral, mark and "Z" bend the pushrods at the servo end.

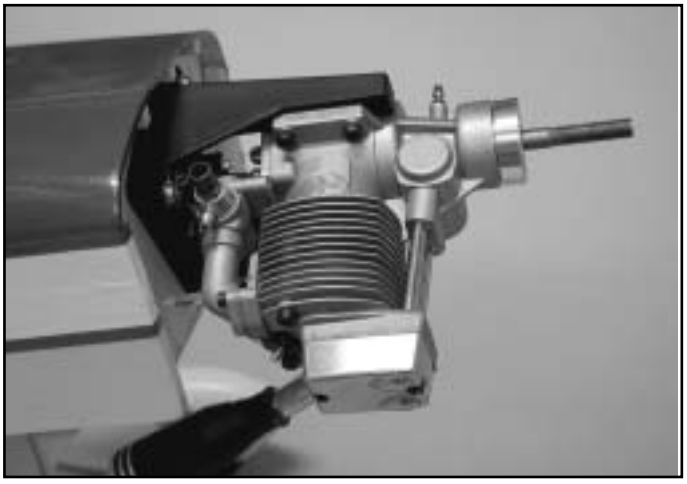
ENGINE INSTALLATION





❒ Using the 3x18mm screws provided, attach the adjustable engine mount to the firewall. Note that the width of the mount is adjustable to accommodate your engine. We used the Thunder Tiger 54 4-cycle for our G202. Place the engine on the mount so the distance from the front of the propeller drive washer to the firewall is 4-1/2" then mark the engine mounting holes. With the engine still in place, mark the location for the throttle pushrod hole to be drilled. Now, drill the four engine mount holes to 7/64" and drill the throttle pushrod tube hole at 9/64".

❒ Install the throttle pushrod tube and cut to the length needed for your engine and servo set up. Next, make a Z-bend at one end of the throttle pushrod and install in the tube.

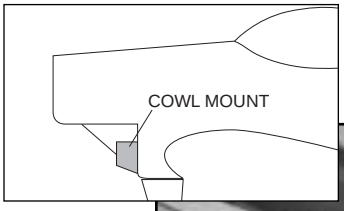


❒ Attach the engine to the throttle pushrod and mount the engine in place using the four 3 x 15mm self tapping screws.

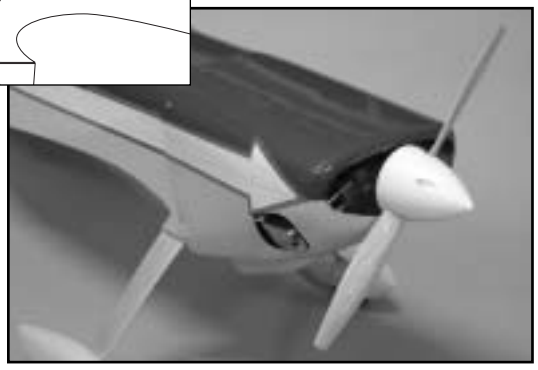
FINAL ASSEMBLY

❒ Assemble the fuel tank as shown.

❒ Place the fuel tank in the fuselage with the fill and vent lines going through the slot provided in the firewall. Slide the tank forward into the cutout provided in the former.



Locate two cowl mounts, epoxy them in place as diagram.

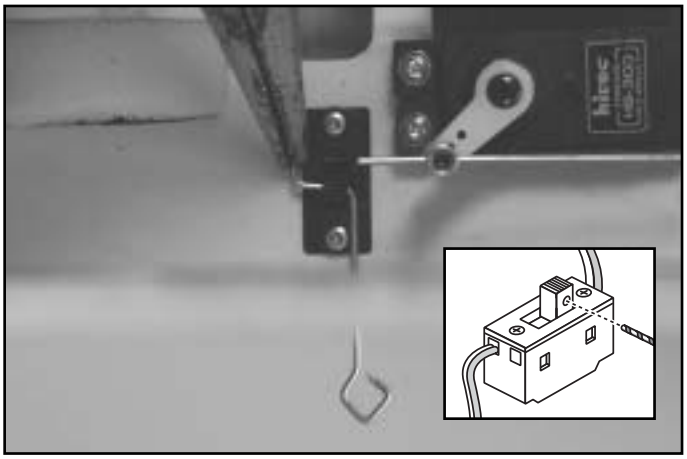


❒ With the engine in place, set the cowl onto the fuselage and mark the places on the cowl for the engine cylinder head and exhaust to exit the cowl. Remove the cowl and using a Dremel tool, cut away the areas previously marked on the cowl. Also, cut away to clear the prop shaft.

❒ Next, with the cowl in place, mark and drill four 1/8" holes to mount the cowl to the fuselage. Use four 3x8mm self-tapping screws to attach the cowl to the fuselage.

❒ Assemble, paint and glue in place the pilot. Next, trim the canopy to fit the cockpit area. Before permanently installing the canopy, cut and install the instrument panel decals. Attach the canopy using RC-56 canopy glue; then apply the trim tape provided. Note: if you fly in a hot climate, it is a good idea to drill a couple small holes in the canopy for ventilation. Pick an unobtrusive spot. Also, while the airplane is not flying, cover the canopy with a white towel to prevent excessive "greenhouse" effect inside the cockpit area...otherwise the plastic may deform.

❒ Apply the "peel 'n stick" decals as shown on the box art. Use a sharp knife to trim the decals close to the color area. On the larger decals spray some window cleaner on first, then squeegee the decal with the edge of a credit card.



Position your foam wrapped receiver and battery pack to achieve this balance point. The battery pack can go below the tank. Add ballast, if needed.

The servo tray has cutouts to accommodate your radio system switch, if desired. Drill a hole in the switch lever and make an extension from scrap wire or a paper clip. Drill a hole for this extension in the fuselage side.

CENTER OF GRAVITY/THROWS

Center of Gravity location should be between 4 and 4-1/2" back from the leading edge measured at the fuselage. Balance the plane upside down with you fingertips close to the fuselage. Flying will determine the final balance point for your particular model.

Make sure that all control surfaces move in the proper direction.

Set the control surface throws as indicated for the initial flights. These may be altered later for personal preference.

Elevators:	Hi Rate:	7/16" up, 7/16" down*
	Low Rate:	5/16" up, 5/16" down*
Rudder:	Hi Rate:	Full deflection left and right not to interfere with elevators
	Low Rate:	1-1/2" left, 1-1/2" right
Ailerons:	Hi Rate:	7/16" up, 7/16" down
	Low Rate:	1/4" up, 1/4" down

*This may seem like not enough throw, but the elevators are very effective because of the aerodynamic balancing.

Prior to the first flight ensure that all batteries are properly charged, that controls all move in the proper direction, and that a thorough range check is made with and without the engine running.

TO THE FIELD WE GO

The G-202 Cub is NOT a trainer. We assume you have mastered the basics of R/C flight. If not, we suggest you learn to fly with a trainer before attempting flight with the G-202. Thunder Tiger has a large selection of Trainers to choose from. Check with your hobby dealer for his recommendation.

TAKEOFF

For takeoff, point the plane directly into the wind and gradually advance throttle while neutralizing the elevator, letting the tail come up. Increase speed as much as possible before lifting off. Don't "horse" the plane off the ground. Fly it like a real one! A gentle climbout looks much more realistic than a 45 degree "aircraft carrier" takeoff.

FLYING

Since your G-202 is a faithful duplicate of its full scale counterpart, you will find that it is fast and extremely aerobatic due to the power-to-weight ratio. You will find that the G-202 is very crisp on the controls and has a fast roll rate yet stays in the groove. Sustained knife edge is possible without excessive rudder. All in all, the G-202 is capable and predictable.

LANDING

As with any high performance airplane, you have to watch that you don't slow the plane down to much, too high from the ground and risk tip stall. Yet, flairing to a three-point landing is the most impressive type landing with this plane...you just have to make sure that you don't flair too high from the runway. As you land, adjust the altitude of the plane with the throttle and adust the attitude of the plane with the elevator.

To perfect your landings, practice is the best teacher. As a matter of fact, shooting touch and go's for a whole flight will give you as much fun as any other type flying with your G-202, plus you can fine-tune your landing skills.

PRE-FLIGHT CHECK LIST

- ❒ 1. Check all control surfaces for possible looseness or deterioration.
- ❒ 2. Check all screws, clevises, nuts and all other connectors to make sure they are securely fastened.
- ❒ 3. Check which radio frequencies are being used. Do not turn on your radio until absolutely sure you are the only one operating on that frequency.
- ❒ 4. Check for proper operation of all control surfaces.
- ❒ 5. Check the level of charge in both the transmitter and receiver batteries before flying.
- ❒ 6. Range check the radio both with and without the engine running. Follow the radio manufacturers instructions for this.

POST-FLIGHT CHECK LIST

- ❒ 1. Be sure that both the transmitter and receiver switches are turned off.
- ❒ 2. Drain all excess fuel from the tank. Fuel left in the tank for extended periods can "gunk up" the tank, fittings and carburetor.
- ❒ 3. Clean the plane with paper towels and a light-duty spray cleanser. Keeping your plane clean will make it last longer and keep it looking nice.
- ❒ 4. Put a few drops of after-run or light oil in the carburetor and turn the prop over a few times (without the glow plug ignited) to distribute the oil throughout the engine.
- ❒ 5. Inspect the prop and replace it if any chips or cracks are found.
- ❒ 6. Inspect the entire plane for covering tears, new dings and dents, loose screws and connectors and any other wear and tear.

SAFETY PRECAUTIONS

1. Wear safety glasses when starting and running all model engines.
2. Model engine fuel is very flammable and the flame is very dangerous because it is almost invisible! Do not smoke or allow sparks, high heat or other flames near the fuel.
3. Do not run model engines inside a garage or other closed room as they give off large amounts of deadly carbon monoxide gas.
4. Do not run model engines around gravel, sand or other loose debris. These materials will be ingested through the carburetor and can also be kicked up by the prop.
5. Always stay behind the propeller when the engine is running. Make all engine adjustments from behind the engine.
6. Do not allow loose clothing or other loose objects close to the prop.
7. To stop an engine, cut off the fuel or air supply to the engine. Do not throw rags or other objects into the prop to stop the engine.
8. Do not touch the engine or muffler during or right after it has been running–it gets very hot!

Fun Tigers

FUN TIGER G-200

Designed by Fred

Fun Tiger G-200

ARF
Almost Ready to Fly

F-54

Recommended Engines:

PRO-46

Fun Tiger ARC

ARC
Almost Ready to Cover

Fun Tigers

Now you can experience the breathtaking, adrenaline-pumping thrills of this HOT category of R/C planes without having to invest any building time. Do some simple assembly, strap on a high-performance .40 engine, such as our PRO-46, install your radio system, and you are ready to join in the fun.

These outrageously maneuverable 3-D Fun Fly planes will do just about anything imaginable, especially because of Thunder Tiger's super lightweight construction. Be a "hot dog". Go vertical from dead stop on the runway in about a fuselage-length of roll-out; do knife-edge loops, rolling circles, hovering flight, snaps, spins, and anything your blood pressure will allow.

Choose either the Fun Tiger Extra or the Fun Tiger Giles-200, replicas of two of the latest full-scale aerobatic airplanes. If you want to dress one up in your favorite color scheme, choose our Almost-Ready-To-Cover version.

TTR4517 Fun Tiger G-200
TTR4518 Fun Tiger Extra
TTR4522 Fun Tiger ARC

FUN TIGER EXTRA

Fun Tigers

Wing Span:	47"	(1194mm)
Wing Area:	696 in2	(44.9dm2)
Length:	43"	(1092mm)
Weight:	4 lbs.	(1.8kg)
Engine:	.40-.50 2-stroke	
	.40-.65 4-stroke	
Radio:	4 Channel	

ARF
Almost Ready to Fly

Fun Tiger Extra