

E-flite™

Gypsy



Assembly Manual

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Introduction

The Gypsy EP ARF Park Flyer is a nostalgic old timer, perfect for leisure and sport flyers who want relaxing flights. The Gypsy offers a great flying experience with excellent climb performance, high wing stability, quality balsa and plywood construction, and quality UltraCote® covered with an eye catching appeal.

Specifications

Wingspan: 35.25 in (895 mm)

Length: 27.5 in (698.5 mm)

Wing Area: 266 sq in (17.16 sq dm)

Weight w/o Battery: 13.5–14.5 oz (382–411g)

Warning

An RC aircraft is not a toy! If misused, it can cause serious bodily harm and damage to property. Fly only in open areas, preferably at AMA (Academy of Model Aeronautics) approved flying sites, following all instructions included with your radio.

Additional Required Equipment

Recommended JR® Systems

Servos: JR 241 Sub-micro servo (2)

Receiver: JR R610M 6-channel micro FM Rx

Battery and Speed Control Requirements

Li-Po Battery: 7.4V 1900 2-Cell

7-cell Ni-MH 730mAh battery

Speed Control: 10 amp (EFLA104)

Additional Tools and Adhesives

Tools

Square	Side cutters
Hobby knife	Heat gun
Ruler	Small pliers
Phillips screwdriver	Hex wrench: 3/32"
Felt-tipped pen	
Drill bit: 1/16" (1.5mm), 1/8" (3mm)	

Adhesives

Medium CA

Other

Heat gun

Motor/Gearbox

370-size with 5.33:1 gearbox (included)

Propeller (10x4.7) (included)

20mm diameter w/gearbox brushless (optional)

Contents of Kit/Parts Layout

Replacement Parts:

Main Wing	EFL2051
Fuselage	EFL2052
Tail Assembly	EFL2053
Windshield	EFL2057
Battery Hatch	EFL2058

Items not shown:

Pushrod Set	EFL2054
Main Landing Gear	EFL2055
Wheel Set	EFL2056
Decal Set	EFL2059
Micro Control Horns	EFLA200
Micro Pushrod Keepers	EFLA201
Tailskid	EFLA202
Micro Control Connectors	EFLA203
370 Motor w/5.33:1 gearbox	EFLM205
Micro Rubber Spinner	EFLA204
10x4.7 Slow Flyer Propeller	EFLP1047
Double-sided tape/Hinge Tape	EFL2060



Optional Parts

Park 370 Brushless Motor, 4100Kv	EFLM1000
10x7 Slow Flyer Propeller (2)	EFLP1070
11x4.7 Slow Flyer Propeller (2)	EFLP1147
11x7 Slow Flyer Propeller (2)	EFLP1170
12x3.8 Slow Flyer Propeller (2)	EFLP1238
12x6 Slow Flyer Propeller (2)	EFLP1260
Celectra 1-2 cell Li-Po Charger	EFLC3000
Celectra 1-3 cell Li-Po Charger	EFLC3005

Before Starting Assembly

Before beginning the assembly of your Gypsy, remove each part from its bag for inspection. Closely inspect the fuselage, wing panels, rudder and stabilizer for damage. If you find any damaged or missing parts, contact the place of purchase.

Using the Manual

This manual is divided into sections to help make assembly easier to understand, and to provide breaks between each major section.

Remember to take your time and follow the directions.

Warranty Information

Horizon Hobby, Inc. guarantees this kit to be free from defects in both material and workmanship at the date of purchase. This warranty does not cover any component parts damage by use or modification. In no case shall Horizon Hobby's liability exceed the original cost of the purchased kit. Further, Horizon Hobby reserves the right to change or modify this warranty without notice.

In that Horizon Hobby has no control over the final assembly or material used for the final assembly, no liability shall be assumed nor accepted for any damage resulting from the use of the final assembled product. By the act of using the assembled product, the user accepts all resulting liability.

Please note that once assembly of the model has been started, you must contact Horizon Hobby, Inc. directly regarding any warranty question. Please do not contact your local hobby shop regarding warranty issues, even if that is where you purchased it. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance.

If the buyer is not prepared to accept the liability associated with the use of this product, the buyer is advised to return this kit immediately in new and unused condition to the place of purchase.

Horizon Hobby, Inc.
4105 Fieldstone Road
Champaign, Illinois 61822
(877) 504-0233
www.horizonhobby.com

Checking the Wing Washout

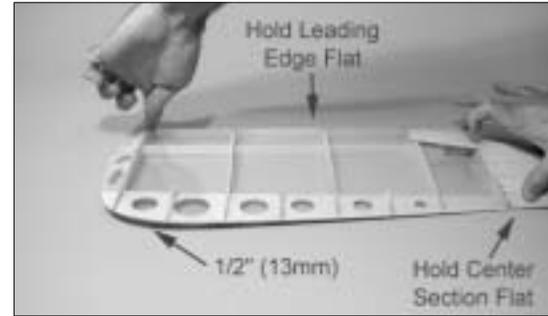
Required Parts

Wing

Required Tools and Adhesives

Heat gun

1. Place the wing on a flat surface and check the wing washout. There must be $1/2"$ (13mm) between the trailing edge of the wing at the tip and work surface when the center of the wing is flat against the work surface. If the wing is not twisted correctly, hold the wing in a twisted position and use a heat gun to remove the wrinkles from the covering. Repeat the process until the correct washout is present. The washout makes the plane more stable in flight.



Attach the Wing

Required Parts

Wing

Required Tools and Adhesives

Heat gun

Hex wrench: 3/32"

1. Place the wing onto the fuselage by guiding the wing dowel into the hole on the forward former.



2. Secure the wing to the fuselage using a 4-40 x 1/2" socket head bolt and a #4 flat washer.



Note: The 4-40 socket head screw uses the 3/32" hex wrench.

Join the Vertical Fin and Horizontal Stabilizer

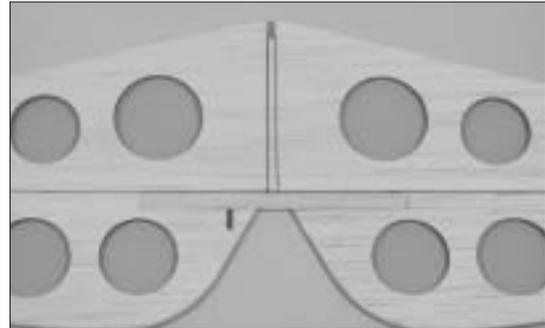
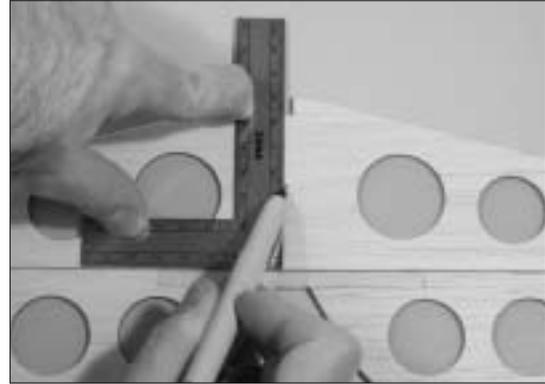
Required Parts

Vertical fin
Horizontal stabilizer

Required Tools and Adhesives

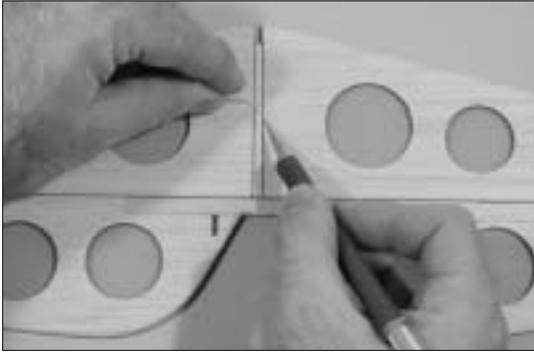
Medium CA
Square
Felt-tipped pen
Hobby knife

1. Draw two lines on the top of the stabilizer extending back from the sides of the notch in the front to the trailing edge. Use a square to make the lines 90-degrees to the trailing edge of the stabilizer.

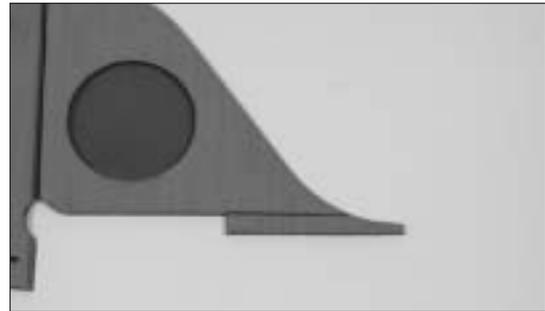
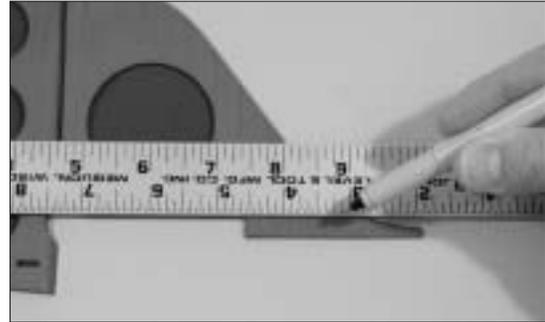


Note: The hole for the control horn will be on the left side when the top is facing up.

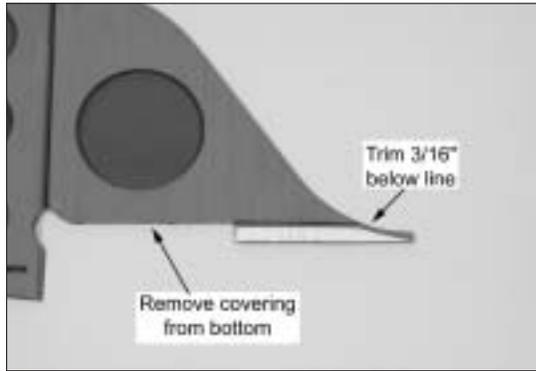
- 2. Carefully remove the covering along the lines using a sharp hobby knife. Be very careful not to cut into the underlying wood and weaken the stabilizer. If the stabilizer is weakened, it could fail in flight.



- 3. Align a straight edge along the bottom of the fin. Use a felt-tipped pen to draw a line onto the lower front section of the fin. Draw lines on both sides of the fin.



- 4. Remove the covering from the lower front section of the fin 3/16" (5mm) below the lines drawn in the last step. Also make sure there is no covering on the bottom of the fin as indicated. Leave the covering on the top forward fin as shown.



- 5. Place the fin onto the top of the stabilizer. The positioning of the fin will be as far back in the notch as possible, aligned with the covering removed from the stabilizer, and square to the stabilizer. Use medium CA to glue the fin to the stabilizer, keeping in mind the three alignments.



Attach the Tail to the Fuselage

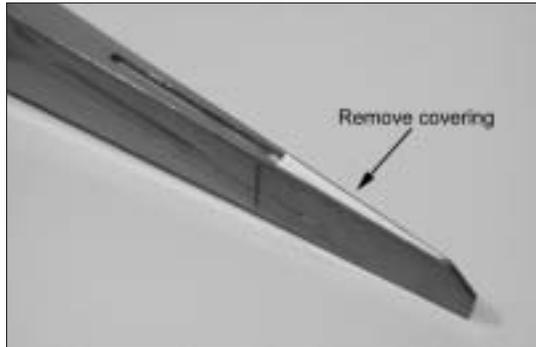
Required Parts

Tail assembly Fuselage
Clear tape

Required Tools and Adhesives

Medium CA
Felt-tipped pen
Hobby knife

1. Carefully remove the covering from the fuselage from the slot in the top to the fuselage to the very tip of the fuselage.



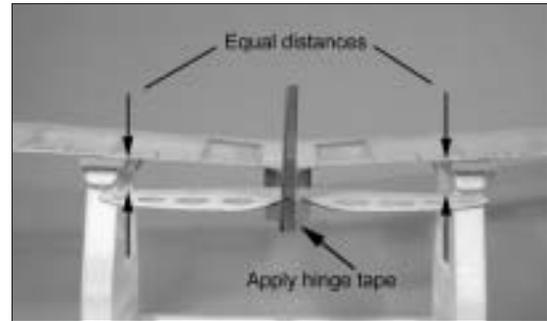
2. Place the tail assembly onto the fuselage. Trace the outline of the fuselage onto the stabilizer using a felt-tipped pen.



- 3. Separate the tail assembly from the fuselage. Remove the covering from inside the lines using a sharp hobby knife.



- 4. Place the tail assembly back in position. Before using medium CA to attach the tail assembly to the fuselage, stand about 10 feet away and see if the stabilizer and wing are parallel. Apply the CA to the slot in the fuselage where the fin fits, and to the top of the fuselage where the stabilizer rests. Allow the CA to fully cure before continuing.



- 5. Use hinge tape on both sides of the fuselage and rudder to hinge the bottom section of the rudder to the fuselage

Radio Installation

Required Parts

Fuselage

Micro control connector (2)

Control connector backplate (2)

Two-sided tape (2)

Required Tools and Adhesives

Phillips screwdriver

Side cutters

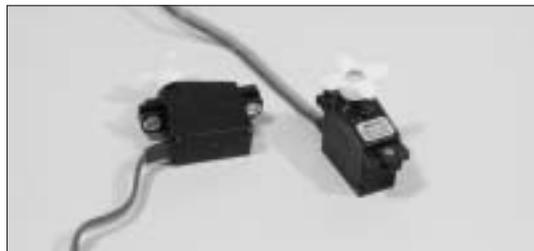
Servo (2)

Speed control

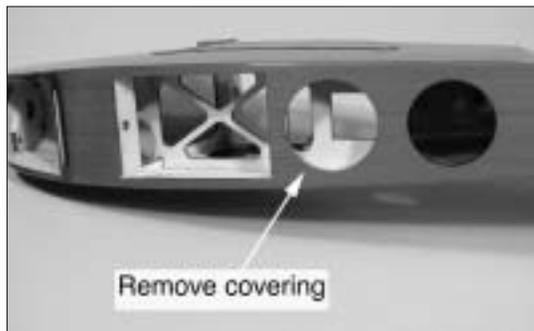
Receiver

Drill bit: 1/16" (1.5mm)

- 1. Install the servo eyelets and grommets using the instructions provided with your particular radio system.



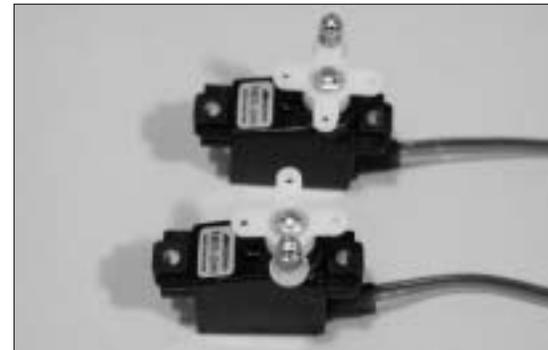
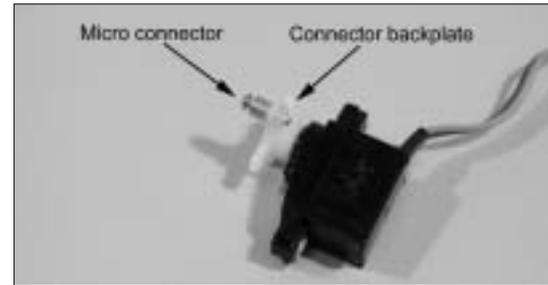
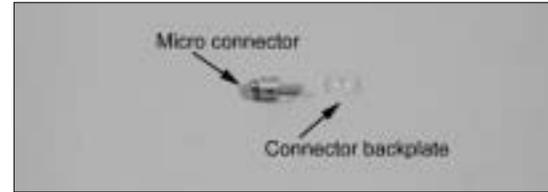
- 2. Remove the covering from the front opening on the bottom of the fuselage. This will allow cooling air to pass through the fuselage, and will also help when installing the servos.



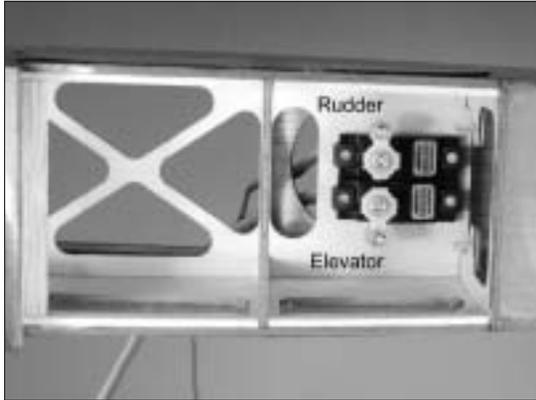
- 3. Connect the servos and battery to your radio system as shown in the radio instructions. Center the trim levers and turn on the radio. This will center the servos. It is your job to remove the servo arms and position them so they are perpendicular to the servo.



- 4. Locate the micro control connector and connector backplate. Slide the connector through the servo arm and secure its location using the connector backplate. Prepare two servos with the connectors opposed to each other as shown in the photo.



- 5. Unplug the servos from the receiver. Remove the servo arms that are not in use, using side cutters. Place the servos into the fuselage with the connectors towards the outside of the fuselage, and the servo arms towards the front of the fuselage.



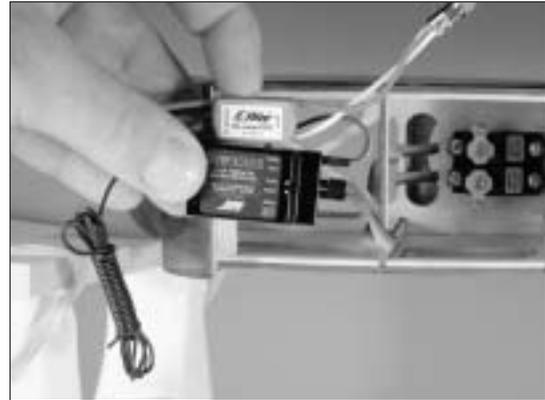
- 6. Use a 1/16" (1.5mm) drill bit to drill the locations for the servo mounting screws.



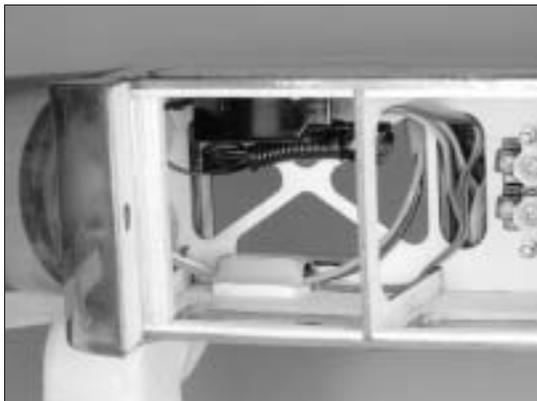
- 7. Secure the servos using the screws provided with your radio system.



- 8. Pass the servo leads through the opening in front of the servos. Plug the servos into the receiver, making sure the rudder and elevator servos are in the correct channels. Plug the speed control into the receiver at this time too.



- 9. Use two-sided tape to mount the receiver and speed control to the sides of the fuselage.



- 10. Route the receiver antenna outside the fuselage. Use tape to attach the antenna to the tail. **DO NOT** cut the antenna, as this will greatly reduce the radio range.

Linkage Installation

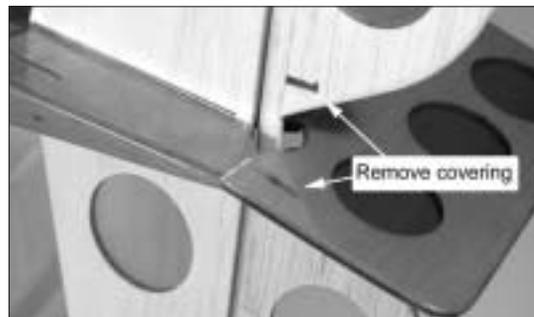
Required Parts

- Fuselage
- Pushrod wire (2)
- Micro pushrod keeper (2)
- Control horn (2)
- Control horn backplate (2)

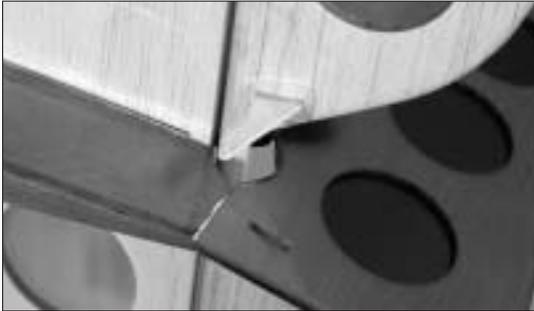
Required Tools and Adhesives

- Medium CA
- Small pliers

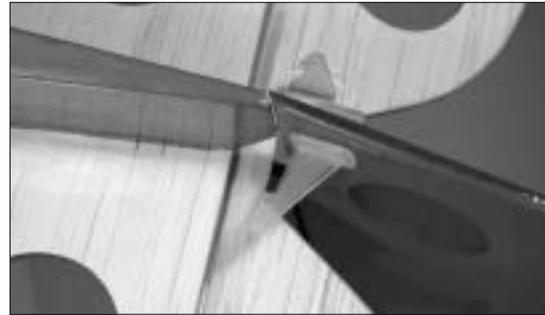
- 1. Remove the covering in the elevator and rudder for the control horns.



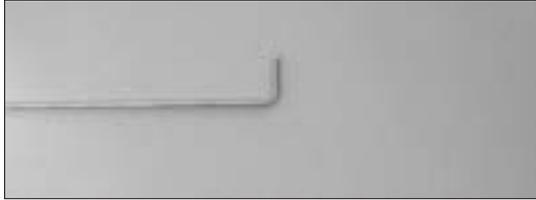
- 2. Locate one of the control horns and slide it through the hole in the bottom of the elevator. Secure the control horn by snapping the control horn backplate onto the top of the control horn. Put a couple drops of medium CA onto the control horn backplate to prevent it from coming loose in flight.



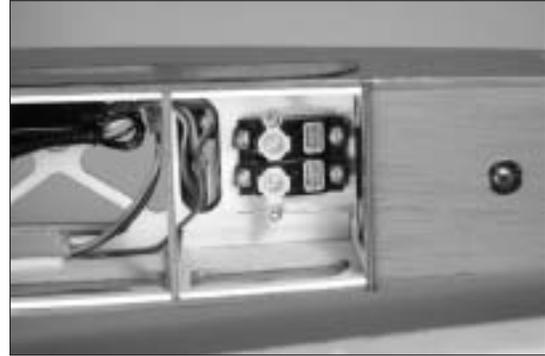
- 3. Repeat Step 2 for the rudder control horn. Note that the rudder control horn will be on the opposite side of the fuselage from the elevator control horn.



- 4. Make an L-bend in one of the pushrod wires using small pliers.



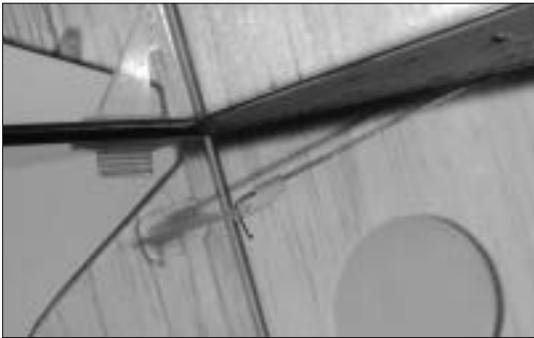
- 5. Slide the pushrod wire into the pushrod tube on the same side as the elevator control horn. The wire will pass through the hole in the micro control connector on the elevator servo.



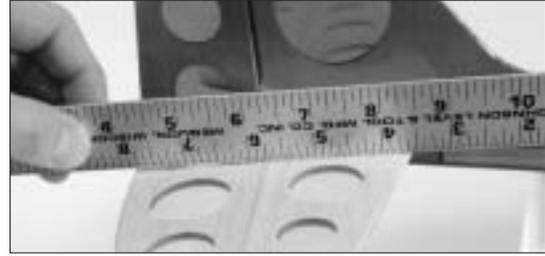
- 6. Insert the L-bend in the pushrod through the middle hole in the control horn.



- 7. Slide the micro pushrod keeper onto the L-bend of the pushrod wire. The keeper then snaps onto the pushrod wire, securing the wire to the control horn.



- 8. Use a ruler to center the elevator in the neutral position. With the radio system on, tighten the screw in the micro control connector to secure the pushrod wire at the servo.



- 9. Repeat steps 4 through 8 to install and connect the rudder linkage.

Landing Gear Installation

Required Parts

Fuselage

Main landing gear

Wheels (2)

Wheel retainers (2)

Tailskid

4-40 x 1/2" socket head cap screw

#4 washer

Required Tools and Adhesives

Medium CA

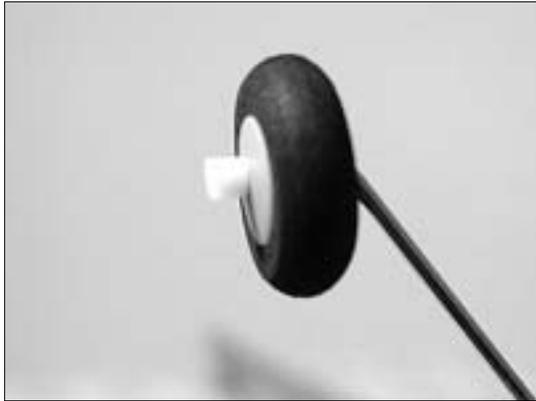
Hex wrench: 3/32"

Drill bit: 1/8" (3mm)

1. Locate the main landing gear. Slide the gear into the slot in the fuselage. Use a 4-40 x 1/2" socket head screw and #4 washer to secure the main landing gear.

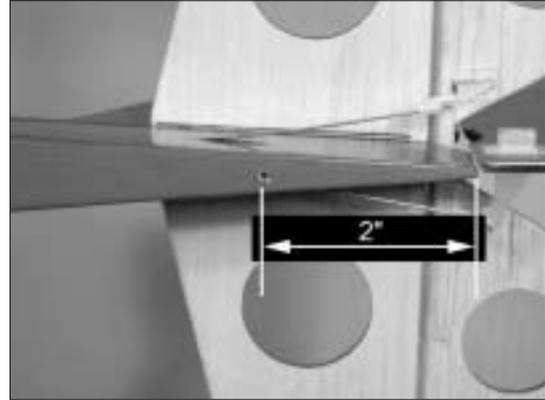


- 2. Slide one of the main wheels onto the landing gear. Secure the wheel using a plastic wheel retainer. A drop of medium CA on the outside of the retainer will keep it in position. Repeat this step for the other main wheel.

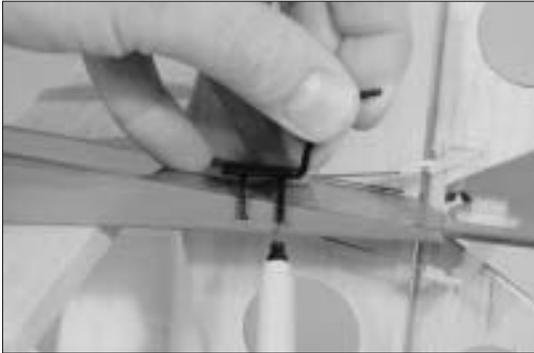


Note: Do not get CA between the wheel and landing gear.

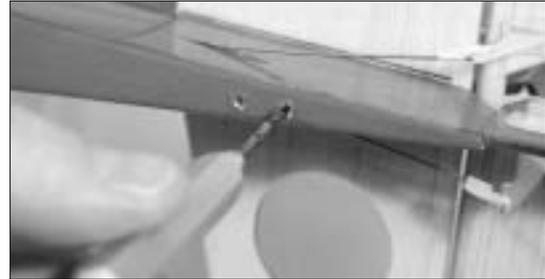
- 3. Drill a 1/8" (3mm) hole in the bottom of the fuselage 2" (51mm) forward of the end of the fuselage.



- 4. Position the tailskid so the front pin is aligned with the hole drilled in Step 3. Mark the location of the aft pin onto the fuselage using a felt-tipped pen.



- 5. Drill the location made in Step 4 using a 1/8" (3mm) drill bit.



- 6. Use medium CA to glue the tailskid to the fuselage.



Motor Break-in

Required Parts

Motor

Required Tools and Adhesives

Low voltage battery source

It is suggested to break-in the motor properly and to extend the life of the motor. Place a drop of oil on both the front and rear bushing of the motor, then run the motor for a few minutes on a lower voltage source, such as 4.8 volts. This will seat the brushes to the commutator, giving the best performance. Apply a drop of oil after every 5–6 flights for good measure.

Motor Installation

Required Parts

Fuselage

Motor

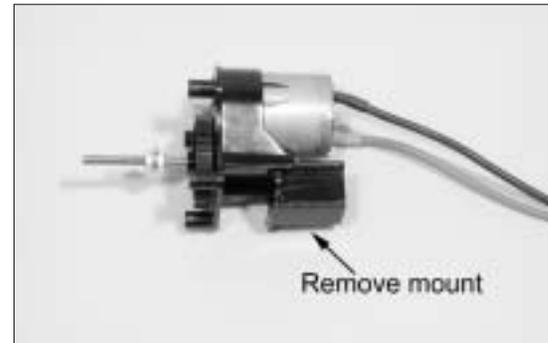
Gearbox w/motor

3 x 10mm self-tapping screw (4)

Required Tools and Adhesives

Phillips screwdriver

1. Remove the stick mount from the gearbox assembly.

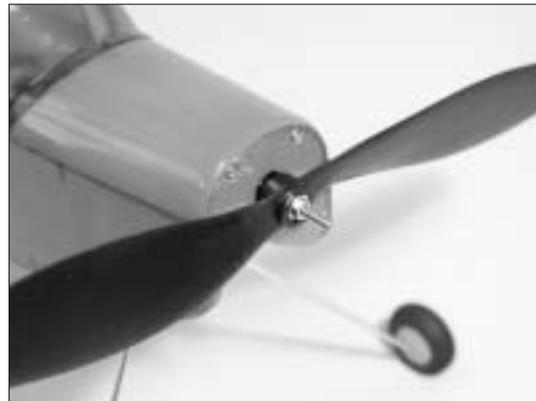


- 2. Connect the motor and speed control wires. Install the gearbox into the fuselage. Use four 3 x 10mm self-tapping screws to secure the gearbox to the firewall.



Note: It is highly suggested to make the adjustments to the speed control before installing the propeller. Use the instructions provided with the speed control for this step.

- 3. Attach the propeller to the gearbox output shaft. The single hex nut is behind the propeller, and the washer and remaining nut are on the front side of the propeller.



Note: The text on the propeller faces the front of the airplane.

- 4. Press the safety spinner onto the gearbox output shaft.



Battery Installation

Required Parts

Fuselage

Battery hatch

4-40 x 1/2" socket head cap screw

#4 washer

Required Tools and Adhesives

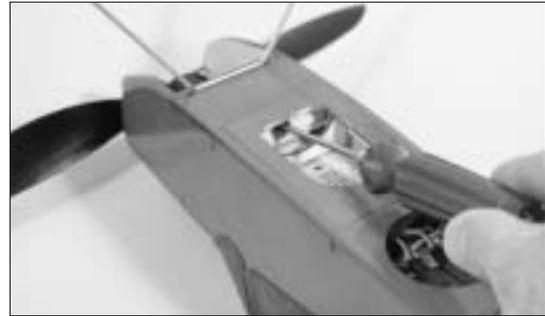
Battery

Hex wrench: 3/32"

1. Turn on the radio system and plug the battery and speed control together. Place the battery into the battery compartment.



2. Place the battery hatch onto the fuselage. Use a 3/32" hex wrench to install the 4-40 x 1/2" screw and #4 washer.



Control Throws

Required Parts

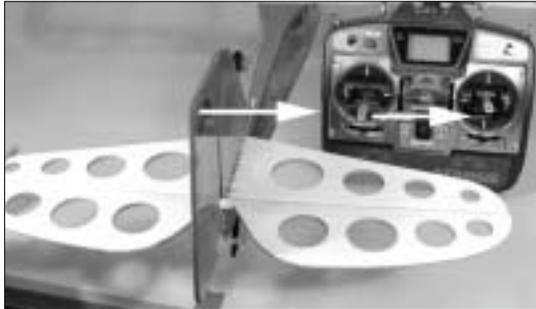
Fuselage

Battery

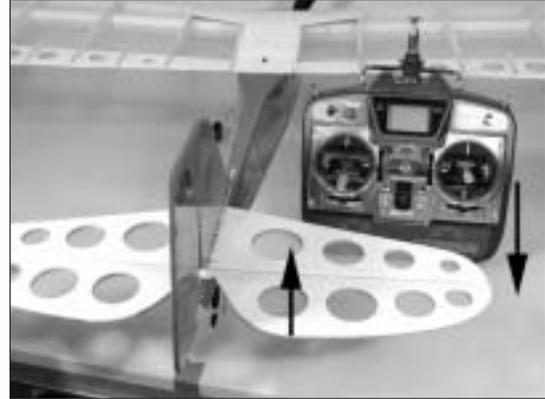
Required Tools and Adhesives

Ruler

1. Turn on the transmitter and receiver of your Gypsy. Check the movement of the rudder using the transmitter. When the stick is moved right, the rudder should also move right. Reverse the direction of the servo at the transmitter if necessary.



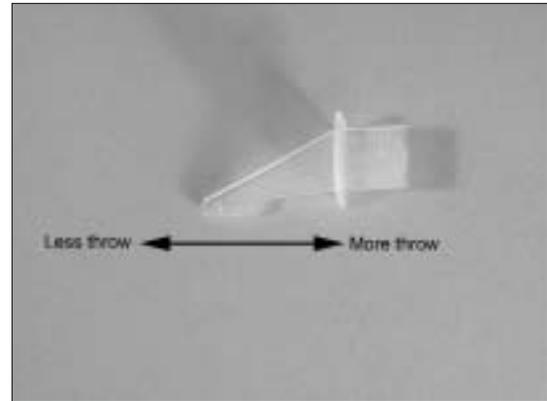
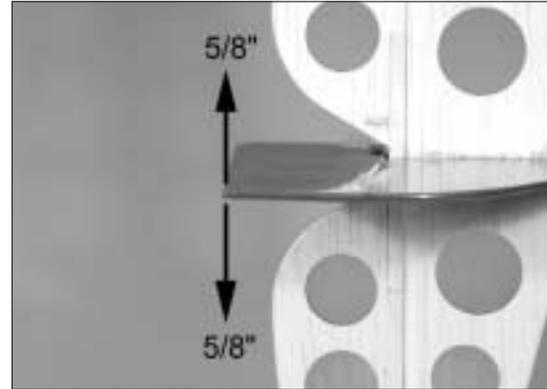
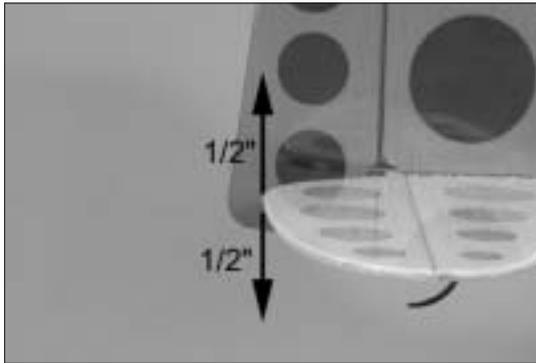
2. Check the movement of the elevator with the radio system. Moving the elevator stick down will make the airplane elevator move up.



- 3. Use a ruler to adjust the throw of the elevator and rudder. Adjust the position of the pushrod at the control horn to achieve the flowing measurements when moving the sticks to their endpoints. Moving the linkage at the control horn can increase or decrease the throw. Moving the linkage to the top of the horn will decrease the throw, while moving toward the bottom of the horn will increase the throw.

Elevator: 1/2" (13mm) Up 1/2" (13mm) Down

Rudder: 5/8" (16mm) Right 5/8" (16mm) Left



Center of Gravity

An important part of preparing the aircraft for flight is properly balancing the model.

Caution: Do not inadvertently skip this step!

The recommended Center of Gravity (CG) location for the Gypsy is $2\frac{3}{8}$ " (60mm) behind the leading edge of the wing against the fuselage. If necessary, move the battery pack towards the nose or the tail until the correct balance is achieved.

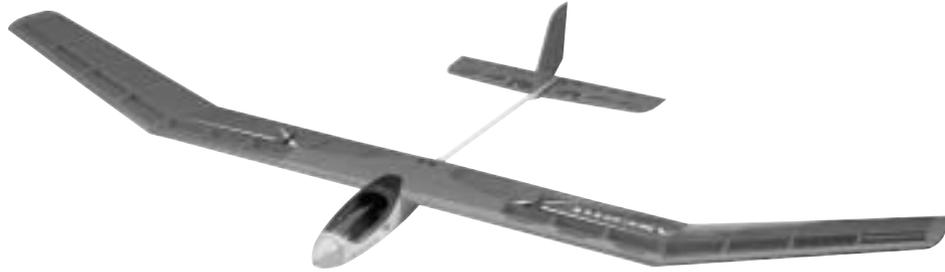


Range Test Your Radio

- 1. Before each flying session, be sure to range check your radio. This is accomplished by turning on your transmitter with the antenna collapsed. Turn on the receiver in your airplane. With your airplane on the ground and the engine running, you should be able to walk 30 paces (approximately 100 feet) away from your airplane and still have complete control of all functions.

If not, don't attempt to fly! Have your radio equipment checked out by the manufacturer.

- 2. Double-check that all controls (aileron, elevator, rudder and throttle) move in the correct direction.
- 3. Be sure that your batteries are fully charged, per the instructions included with your radio.



Compact enough for any small park, E-flite's electric Ascent ARF park glider is the perfect plane for experienced park or slow flyers who want to break into the glider set. It comes out of the box already 90% prebuilt, and the high-quality, lightweight fiberglass fuselage and bolt-on wing guarantee you'll spend less time building and more time flying. It includes a sturdy Speed 400 motor that provides plenty of power. The innovative folding prop eliminates drag and improves aerodynamics. And the Ascent is covered with bright, easy-to-see Fluorescent Transparent Red UltraCote®, which not only gives it a striking sheen, but also ensures you won't lose sight of it in the sky.

2004 Official AMA National Model Aircraft Safety Code

GENERAL

- 1) I will not fly my model aircraft in sanctioned events, air shows or model flying demonstrations until it has been proven to be airworthy by having been previously, successfully flight tested.
- 2) I will not fly my model higher than approximately 400 feet within 3 miles of an airport without notifying the airport operator. I will give right-of-way and avoid flying in the proximity of full-scale aircraft. Where necessary, an observer shall be utilized to supervise flying to avoid having models fly in the proximity of full-scale aircraft.
- 3) Where established, I will abide by the safety rules for the flying site I use, and I will not willfully or deliberately fly my models in a careless, reckless and/or dangerous manner.
- 4) The maximum takeoff weight of a model is 55 pounds, except models flown under Experimental Aircraft rules.

5) I will not fly my model unless it is identified with my name and address or AMA number, on or in the model. (This does not apply to models while being flown indoors.)

6) I will not operate models with metal-bladed propellers or with gaseous boosts, in which gases other than air enter their internal combustion engine(s); nor will I operate models with extremely hazardous fuels such as those containing tetranitromethane or hydrazine.

RADIO CONTROL

- 1) I will have completed a successful radio equipment ground range check before the first flight of a new or repaired model.
- 2) I will not fly my model aircraft in the presence of spectators until I become a qualified flier, unless assisted by an experienced helper.

3) At all flying sites a straight or curved line(s) must be established in front of which all flying takes place with the other side for spectators. Only personnel involved with flying the aircraft are allowed at or in the front of the flight line. Intentional flying behind the flight line is prohibited.

4) I will operate my model using only radio control frequencies currently allowed by the Federal Communications Commission. (Only properly licensed Amateurs are authorized to operate equipment on Amateur Band frequencies.)

5) Flying sites separated by three miles or more are considered safe from site-to site interference, even when both sites use the same frequencies. Any circumstances under three miles separation require a frequency management arrangement, which may be either an allocation of specific frequencies for each site or testing to determine that freedom from interference exists. Allocation plans or interference test reports shall be signed by the parties involved and provided to AMA Headquarters. Documents of agreement and

reports may exist between (1) two or more AMA Chartered Clubs, (2) AMA clubs and individual AMA members not associated with AMA Clubs, or (3) two or more individual AMA members.

6) For Combat, distance between combat engagement line and spectator line will be 500 feet per cubic inch of engine displacement. (Example: .40 engine = 200 feet.); electric motors will be based on equivalent combustion engine size. Additional safety requirements will be per the RC Combat section of the current Competition Regulations.

7) At air shows or model flying demonstrations, a single straight line must be established, one side of which is for flying, with the other side for spectators.

8) With the exception of events flown under AMA Competition rules, after launch, except for pilots or helpers being used, no powered model may be flown closer than 25 feet to any person.

9) Under no circumstances may a pilot or other person touch a powered model in flight.

E-fliteTM

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4105 Fieldstone Road
Champaign, Illinois 61822
(877) 504-0233
www.horizonhobby.com