

# DHC-2T Turbo Beaver

## INSTRUCTION MANUAL



**Rx-R**  
RECEIVER-READY

**Flyzone**<sup>®</sup>  
how high will you soar

<b>Wingspan:</b>	59.5 in [1510mm]	<b>Weight:</b>	48.2 – 53.2 oz [1367 – 1508 g]	<b>Length:</b>	40.5 in [1029 mm]	<b>Motor:</b>	D4011 – 920 kV, 40A ESC
<b>Wing Area:</b>	430 in <sup>2</sup> [27.7 dm <sup>2</sup> ]	<b>Wing Loading:</b>	16.1 – 18 oz/ft <sup>2</sup> [49 – 54 g/dm <sup>2</sup> ]	<b>Radio:</b>	5+ channel radio system required		11 x 7.5 3-blade prop

**READ THROUGH THIS MANUAL BEFORE STARTING CONSTRUCTION.**  
It contains important instructions and warnings concerning the assembly and use of this model.

**!** **WARNING:** This product may use a lithium polymer (LiPo) battery. Improper handling may result in FIRE! You are responsible for following all safety precautions as outlined in this instruction manual.

58526 FLZA4034

## NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, LLC. For up-to-date product literature, visit [www.horizonhobby.com](http://www.horizonhobby.com) and click on the support tab for this product.

## Meaning of Special Language

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:

**WARNING:** Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.

**CAUTION:** Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.

**NOTICE:** Procedures, which if not properly followed, create a possibility of physical property damage AND little or no possibility of injury.



**WARNING:** Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision. Do not use with incompatible components or alter this product in any way outside of the instructions provided by Horizon Hobby, LLC. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

**14+** AGE RECOMMENDATION: Not for children under 14 years. This is not a toy.

## SAFETY PRECAUTIONS & WARNINGS

As the user of this product, you are solely responsible for operating in a manner that does not endanger yourself and others or result in damage to the product or the property of others.

- Always keep a safe distance in all directions around your model to avoid collisions or injury. This model is controlled by a radio signal subject to interference from many sources outside your control. Interference can cause momentary loss of control.
- Always operate your model in open spaces away from full-size vehicles, traffic and people.
- Always carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.).
- Always keep all chemicals, small parts and anything electrical out of the reach of children.
- Always avoid water exposure to all equipment not specifically designed and protected for this purpose. Moisture causes damage to electronics.
- Never place any portion of the model in your mouth as it could cause serious injury or even death.
- Never operate your model with low transmitter batteries.
- Always keep aircraft in sight and under control.
- Always use fully charged batteries.
- Always keep transmitter powered on while aircraft is powered.
- Always remove batteries before disassembly.
- Always keep moving parts clean.
- Always keep parts dry.
- Always let parts cool after use before touching.
- Always remove batteries after use.
- Always ensure failsafe is properly set before flying.
- Never operate aircraft with damaged wiring.
- Never touch moving parts.

1. Your Turbo Beaver airplane should not be considered a toy, but rather a sophisticated, working model that functions very much like a full-size airplane. Because of its performance capabilities, the Turbo Beaver, if not assembled and operated correctly, could possibly cause injury to yourself or spectators and damage to property.

2. You must assemble the Turbo Beaver airplane according to the instructions. Do not alter or modify the model, as doing so may result in an unsafe or unflyable model. In a few cases the instructions may differ slightly from the photos. In those instances the written instructions should be considered as correct.

3. If you are not an experienced pilot or have not flown this type of model before, we recommend that you get the assistance of an experienced pilot in your R/C club for your first flights. If you're not a member of a club, your

local hobby shop has information about clubs in your area whose membership includes experienced pilots.

4. Check the operation of the model and all components before each flight.

5. **DO NOT install the propeller UNTIL you have completed ALL FOUR of the following steps!**

- A. You **MUST** confirm that the radio system is functioning properly.
- B. Understand the operation of the motor/failsafe/ESC in all possible operation scenarios.
- C. Learn how to properly power up and power down for each flight (see back page).
- D. Complete all of the steps in this manual, prior to the prop installation on page 18.

**Install the propeller only AFTER you have completed these four steps.**

6. While this kit has been flight tested to exceed normal use, if the plane will be used for extremely high stress flying, or if a motor or battery larger than ones in the recommended range is used, the modeler is responsible for taking steps to reinforce the high stress points and/or substituting hardware more suitable for the increased stress.

**We, as the kit manufacturer, provide you with a top quality, thoroughly tested kit and instructions, but ultimately the quality and flyability of your finished model depends on how you build it; therefore, we cannot in any way guarantee the performance of your completed model, and no representations are expressed or implied as to the performance or safety of your completed model.**

**Remember: Take your time and follow the instructions to end up with a well-built model.**

## TABLE OF CONTENTS

- NOTICE ..... 2
  - Meaning of Special Language ..... 2
- SAFETY PRECAUTIONS & WARNINGS ..... 2
- INTRODUCTION ..... 4
  - Academy of Model Aeronautics ..... 4
- REQUIRED TO COMPLETE ..... 4
  - Radio System ..... 4
  - Battery and Charger ..... 4
- CONTENTS ..... 5
- KIT INSPECTION ..... 5
- ORDERING REPLACEMENT PARTS ..... 5
- ASSEMBLY ..... 6
  - Mount the Landing Gear ..... 6
  - Mount the Floats ..... 6
  - Mount the Horizontal and Vertical Stabilizer ..... 8
  - Mount the Wings ..... 9
  - Install the Battery ..... 10
  - Receiver Installation ..... 11
  - Failsafe Setting and Function ..... 11
  - Tactic Failsafe Procedure ..... 11
  - Testing the Failsafe ..... 11
  - ESC Operation/Startup ..... 12
  - Center the Control Surfaces ..... 11
- FINAL FLIGHT PREPARATION ..... 17
  - Check the Control Throws ..... 17
  - Motor and Prop Safety Precautions ..... 18
  - Mount the Propeller and Spinner ..... 18
  - Check the Center of Gravity (C.G.) ..... 19
- FLYING ..... 19
- REPAIRS ..... 20
- LIMITED WARRANTY ..... 21
- CONTACT INFORMATION ..... 22
- POWERING UP ..... 23

## INTRODUCTION

Thank you for purchasing the Flyzone 1/10<sup>th</sup>-scale de Havilland DHC-2T Turbo Beaver Rx-R airplane. For anybody who enjoys flying float planes or who aspires to do so for the first time, the Flyzone Turbo Beaver is the perfect choice because it flies off the water so well—you virtually can't mess up a takeoff or landing unless you try! Of course, the Turbo Beaver is almost just as much at home on dry land as it is in the water. And with the flaps extended you can set your Turbo Beaver down on water or on land as light as a feather.

For the latest technical updates or manual corrections to the Turbo Beaver airplane, visit the Flyzone site at [www.flyzoneplanes.com](http://www.flyzoneplanes.com). Open the "Airplanes" link, then select the "Turbo Beaver".

## Academy of Model Aeronautics

If you are not already a member of the AMA, please join! The AMA is the governing body of model aviation and membership provides liability insurance coverage, protects modelers' rights and interests and is required to fly at most R/C sites.



### Academy of Model Aeronautics

5151 East Memorial Drive  
Muncie, IN 47302-9252

Tele. (800) 435-9262  
Fax (765) 741-0057

Or via the Internet at: <http://www.modelaircraft.org>

**IMPORTANT:** Two of the most important things you can do to preserve the radio controlled aircraft hobby are to avoid flying near full-scale aircraft and avoid flying near or over groups of people.

## REQUIRED TO COMPLETE

Other than a #1 and #2 Phillips screwdriver, and a few drops of non-permanent threadlocker (GP600), no adhesives or anything extraordinary is required to assemble the Turbo Beaver airplane.

## Radio System

The model requires a transmitter and receiver with at least 5 channels. For an economical, digital 6-channel transmitter we recommend the Spektrum DX6 or DX6e. Both are budget friendly models loaded with options that are more than adequate for flying this model. The Tactic TTX660 is another affordable computerized transmitter that would be a great choice. Part numbers are provided:

- Tactic TTX660 6-Channel Computer Transmitter (TACJ2660)
- Tactic TR625 6-Channel SLT Receiver Twin Antennas (TACL0625)
- DX6 6-Channel DSMX Transmitter Gen 3 with AR6600T Receiver (SPM6755)
- Spektrum DX6e 6-Channel Radio with AR610 Receiver (SPMJ1006)

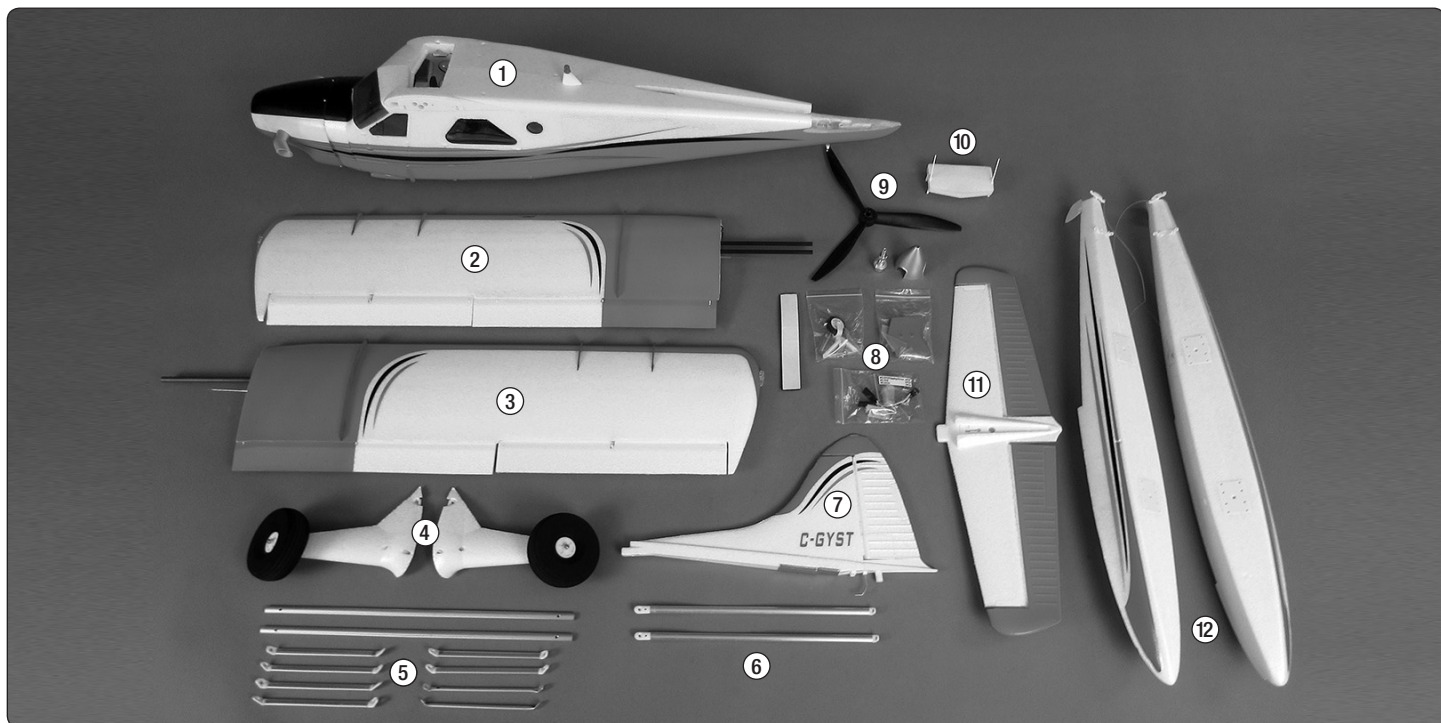
## Battery and Charger

A 3S 11.1V LiPo battery is required. A commonly used 2200mAh sized pack provides a good balance between flight time and performance. A charger capable of safely charging LiPo battery chemistry is also required. Onyx and Dynamite both offer a variety of models from your basic, economically priced chargers all the way to your high-end, feature rich models that will accommodate all of your foreseeable charging needs.

- 11.1V 2200mAh 3S 30C LiPo, EC3 (EFLB22003S30)
- F-Tek 2200mAh 3S 11.1V 40C LiPo EC3 LED (KXSB22003S40)

**IMPORTANT:** This model is equipped with an E-flite EC3 connector. If your charger does not include EC3 charge leads, they can be purchased separately using part number EFLAEC312.

## CONTENTS



- |                      |                        |                               |
|----------------------|------------------------|-------------------------------|
| 1. Fuselage          | 5. Float Brackets      | 9. Propeller/Spinner Assembly |
| 2. Left Wing         | 6. Wing Struts         | 10. Top Hatch                 |
| 3. Right Wing        | 7. Vertical Stabilizer | 11. Horizontal Stabilizer     |
| 4. Main Landing Gear | 8. Hardware            | 12. Floats                    |

### KIT INSPECTION

Before assembly, take an inventory of this kit to make sure it is complete, and inspect the parts to make sure they are of acceptable quality. If any parts are missing or are not of acceptable quality, or if you need assistance with assembly, contact **Product Support**. When reporting defective or missing parts, use the part names exactly as they are written in the Contents list.

**Horizon Hobby Service Center**      Ph: (877) 504 0233  
 1608 Interstate Dr.  
 Champaign, IL 61821

E-mail: [productsupport@horizonhobby.com](mailto:productsupport@horizonhobby.com)

### ORDERING REPLACEMENT PARTS

Replacement parts for the Flyzone Turbo Beaver Rx-R airplane are available using the order numbers in the **Replacement Parts List** that follows. The fastest, most economical service can be provided by your hobby dealer or mail-order company.

To locate a hobby dealer, visit the Flyzone web site at [www.flyzoneplanes.com](http://www.flyzoneplanes.com). Click on the Storefront icon at the top of the page to load the Flyzone Dealer Locator. Follow the instructions provided on the page to locate a U.S., Canadian or International dealer.

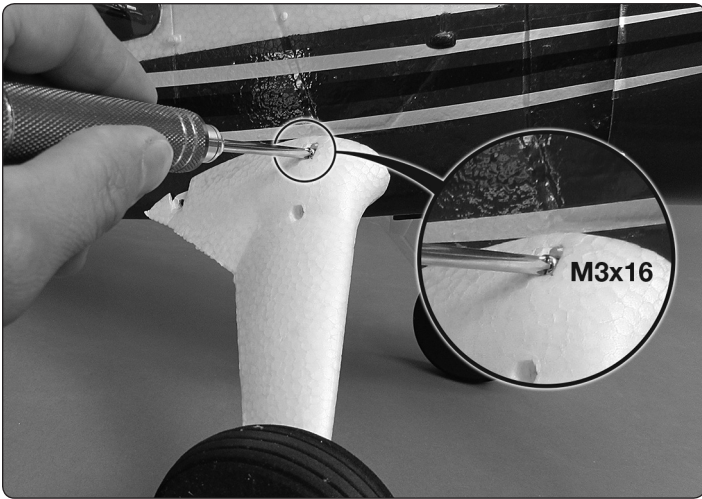
#### REPLACEMENT PART LIST

Order No.	Description
FLZA6700	Fuselage
FLZA6701	Wing
FLZA6702	Horizontal Stabilizer
FLZA6703	Vertical Fin
FLZA6704	Landing Gear
FLZA6705	Cowl
FLZA6706	Floats
FLZA6707	Hatches
FLZA6708	Spinner
FLZA6709	Prop Adapter
FLZA6710	Motor
FLZA6711	Decal
FLZA6276	Float Brackets
FLZA6284	Wing Strut Set
FLZA6554	Tundra Wheel
FLZA6270	Tail Wheel Set
FLZA6277	Water Rudders
FLZA6278	Wing Clips
EFLA1040U	40A Brushless ESC
SPMSA330R	9 Gram Servo Reversed
EFL5962	11 X 7.5 Propeller, 3-blade
FLZA6288	Lighting Set

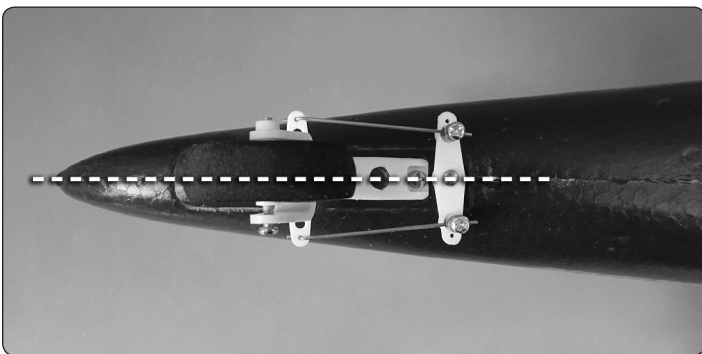
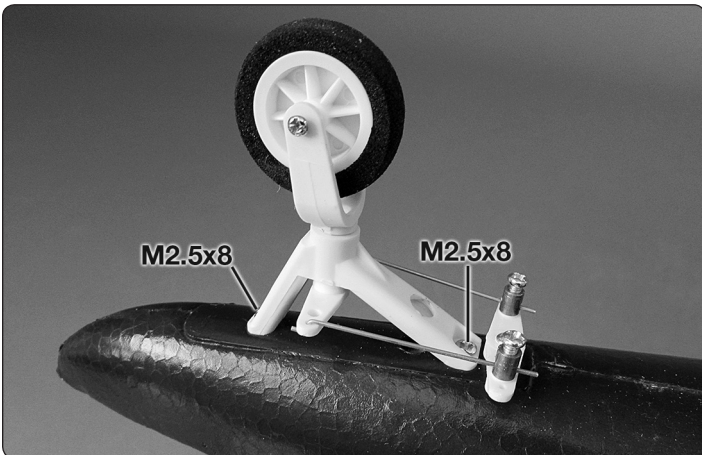
## ASSEMBLY

It's your choice to install either the landing gear or the floats. Start the assembly after making this decision.

### Mount the Landing Gear

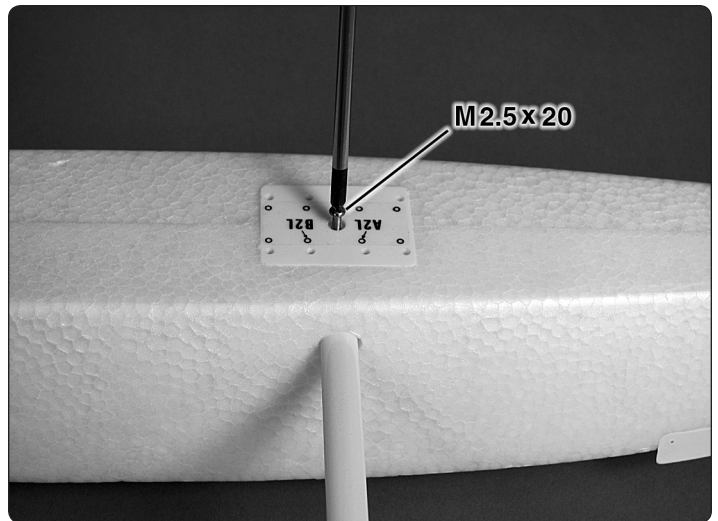
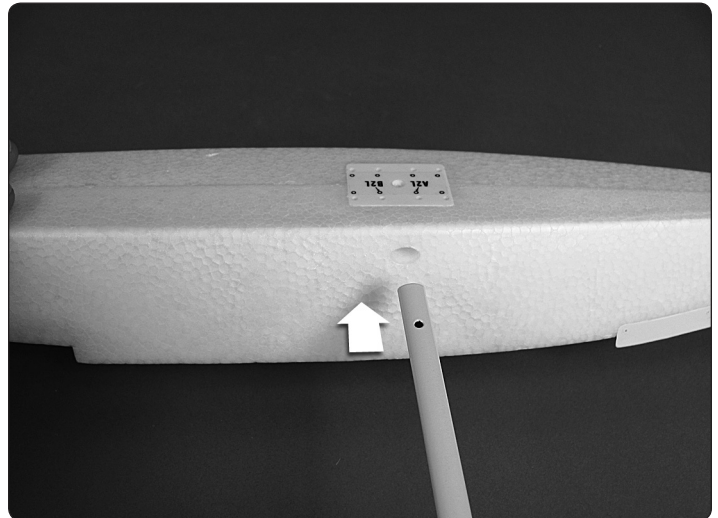


❑ 1. Use a #2 Phillips screwdriver to fasten both main landing gears to the fuselage with three M3x16 screws in each side.

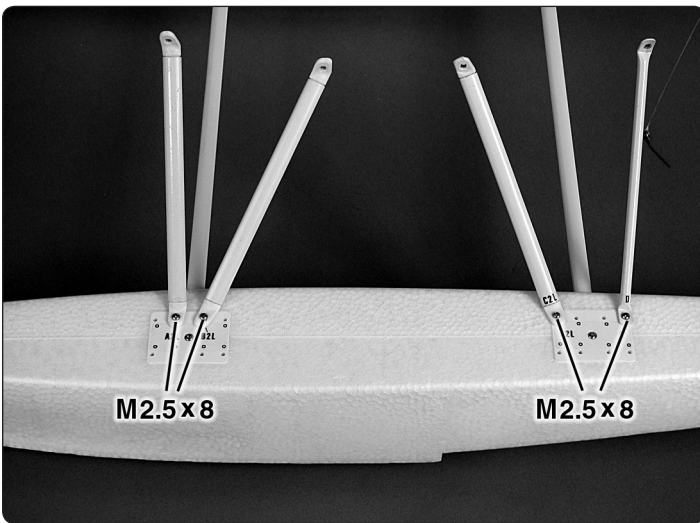
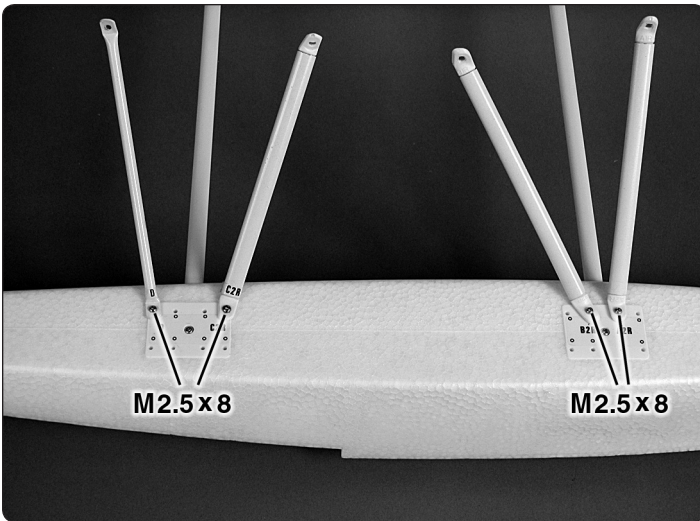


❑ 2. Mount the tail gear with two M2.5x8 screws, then fasten the pushrod wires as shown. Make sure the tail wheel is perpendicular with the steering arm and tighten the screws.

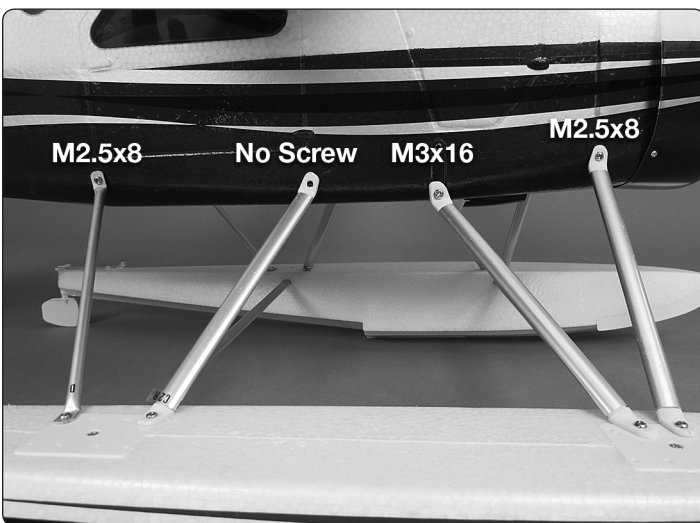
### Mount the Floats



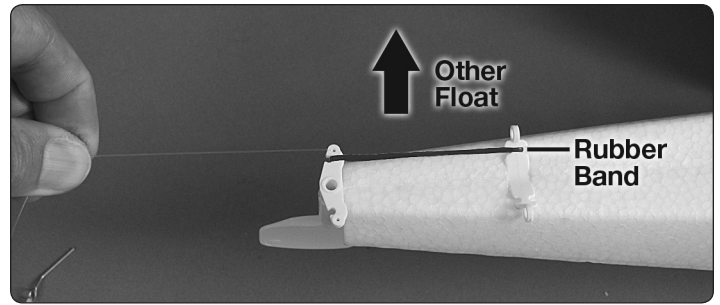
❑ 1. Connect the floats to each other with the horizontal struts and four M2.5x20 machine-thread screws.



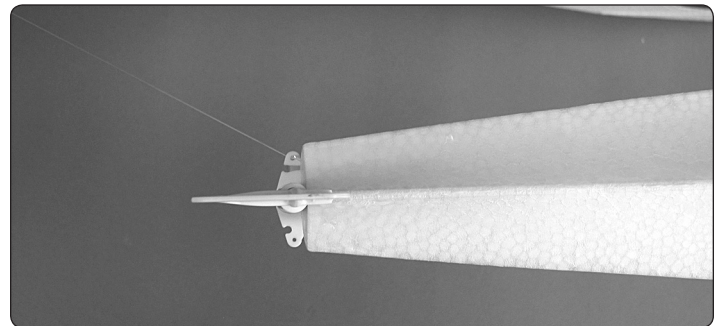
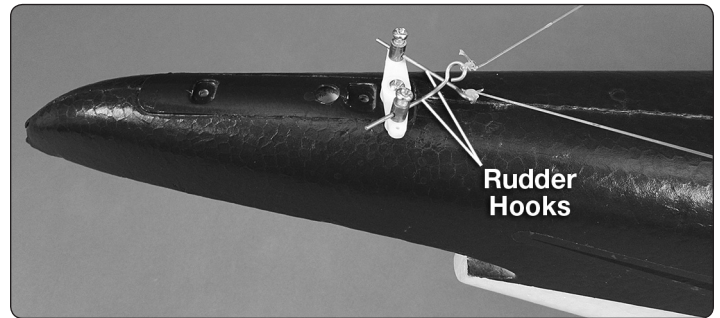
□ 2. Use eight M2.5x8 screws to fasten the braces to the floats, matching the labels printed or molded into the end of each brace to each mount location on each float.



□ 3. Fasten the float braces to the fuselage with one M3x16mm screw and two M2.5x8mm screws in each side of the fuselage. No screw is installed in the third strut at this time.

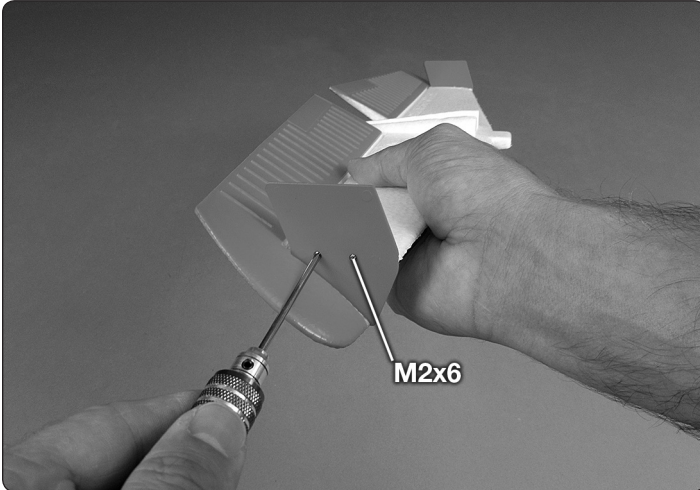


□ 4. Connect a small rubber band to the inside side of each float and water rudder as shown.

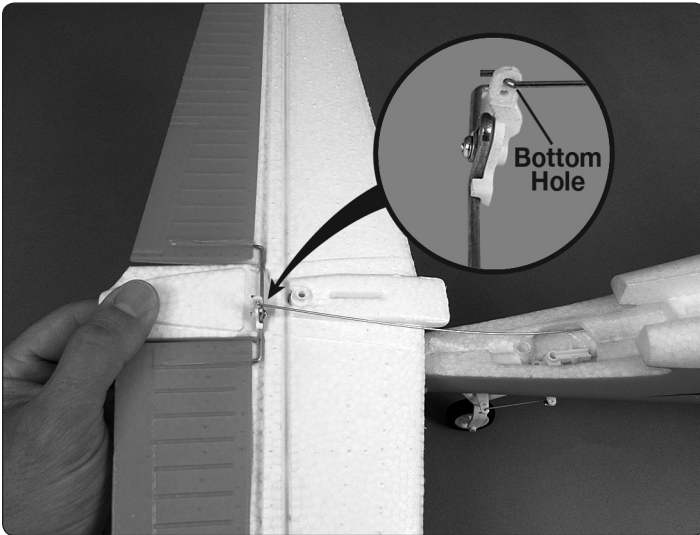


□ 5. Fasten the wire hooks on the end of each rudder line to the connectors in the steering arm. As best as you can, adjust the tension in the lines to center the water rudders—the rudders don't have to be *perfectly* centered, because over time they may drift anyway, and the rudders are forgiving and overall water handling is easy. **TIP:** One of the wire hooks will need to be bent up some to not interfere with the other hook.

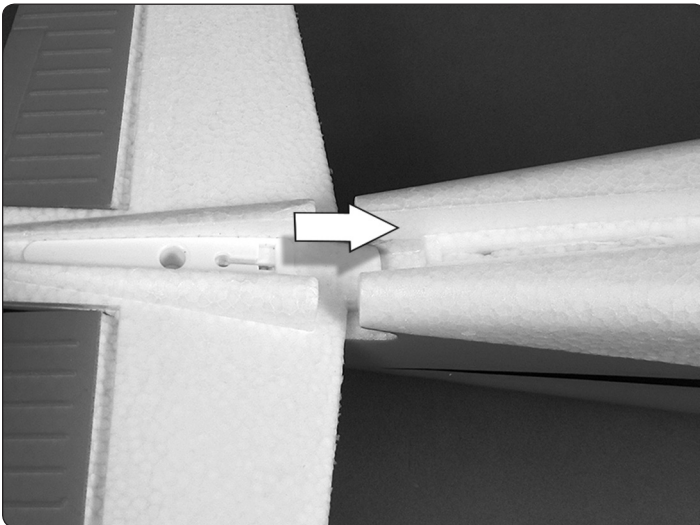
## Mount the Horizontal and Vertical Stabilizer



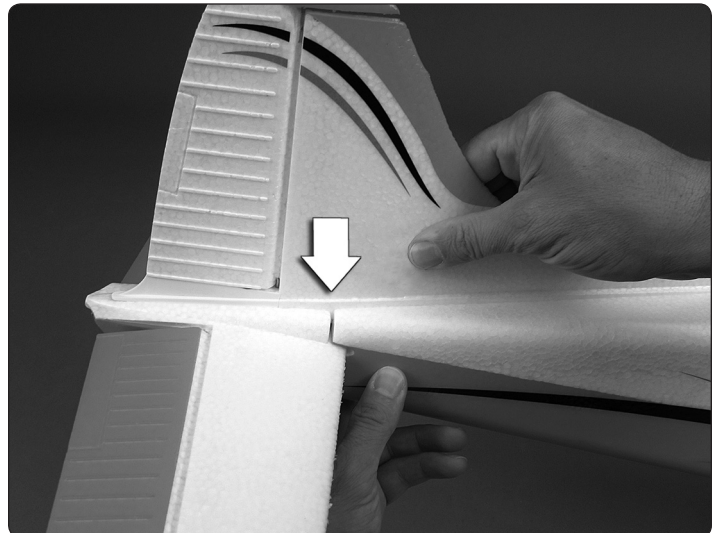
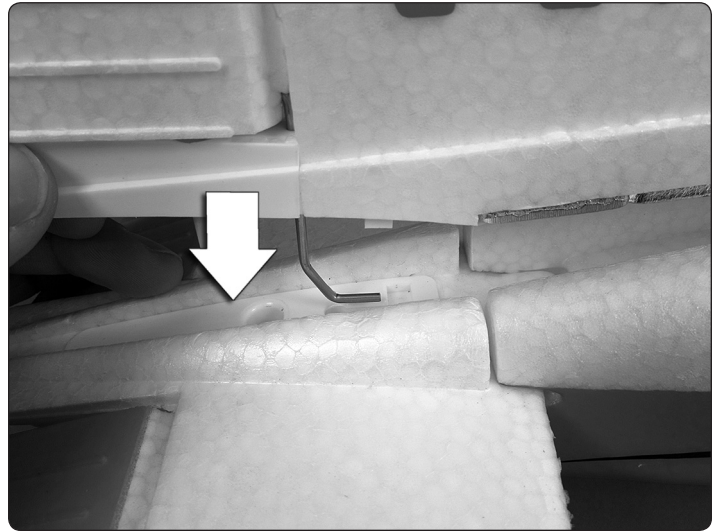
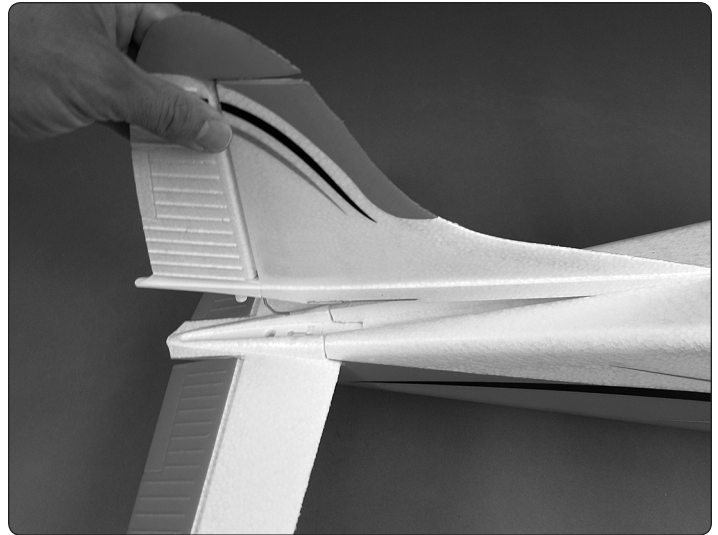
- ❑ 1. Fasten the vertical stabilizers to each end of the horizontal stabilizer (stab) with M2x6 screws.



- ❑ 2. Connect the elevator pushrod to the bottom hole in the elevator horn as shown.

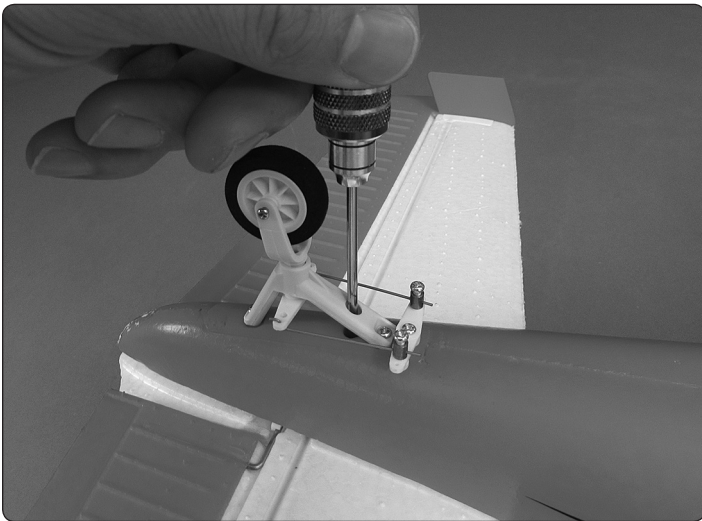
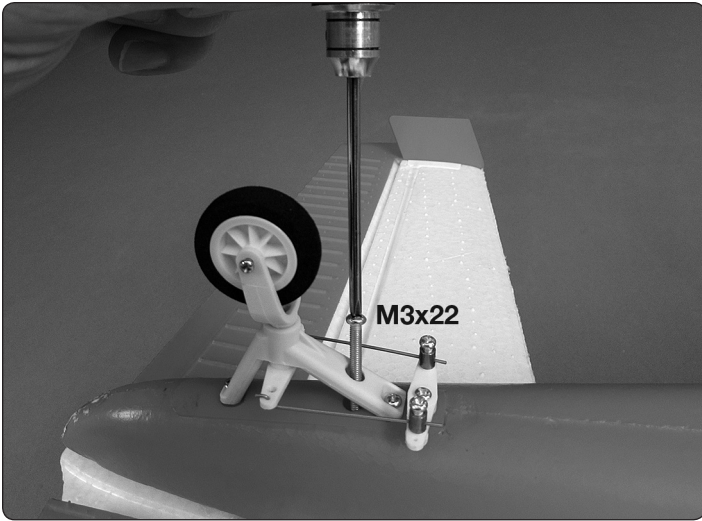


- ❑ 3. Rotate the stab upward and key it into the fuselage.



- ❑ 4. Key the rudder torque rod down into the receptacle while fitting the vertical stabilizer (fin) into the fuselage. Tightly press the assembly down into position.



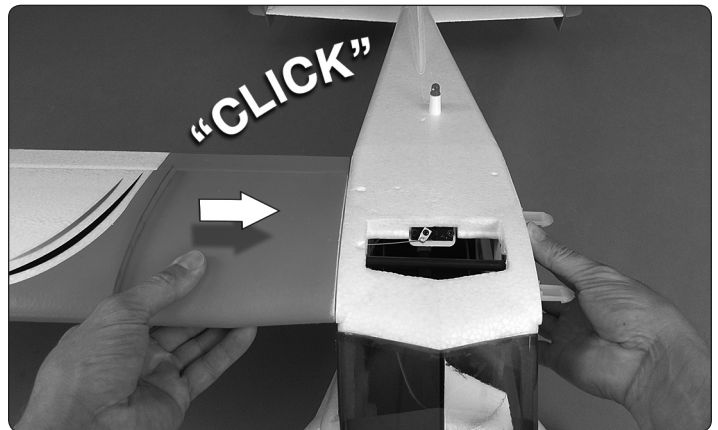
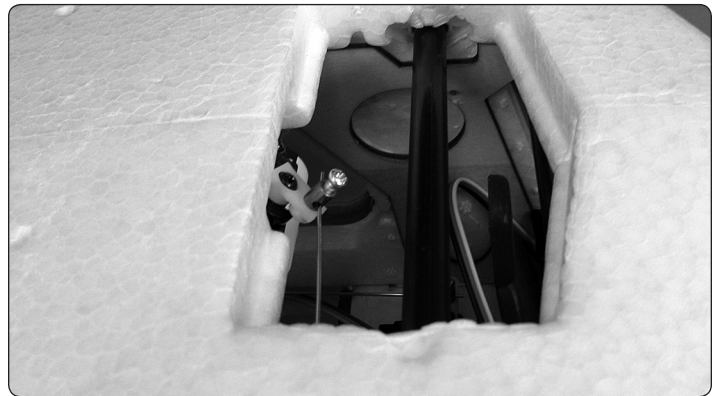
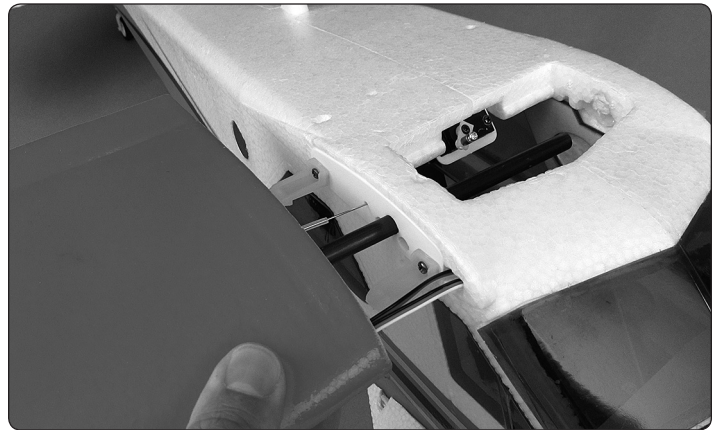
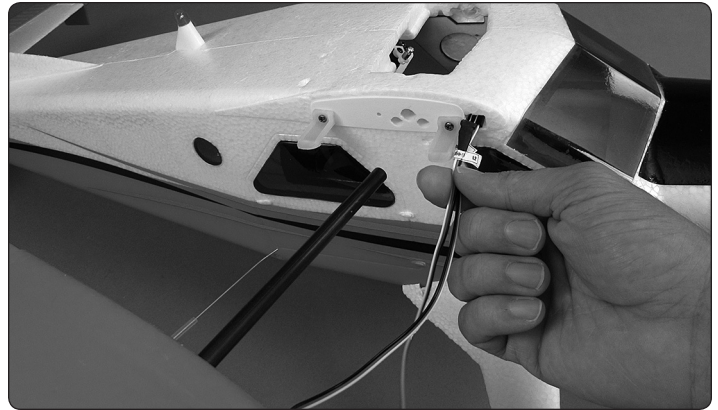


❑ 5. Secure the stab and fin with the M3x22 screw.

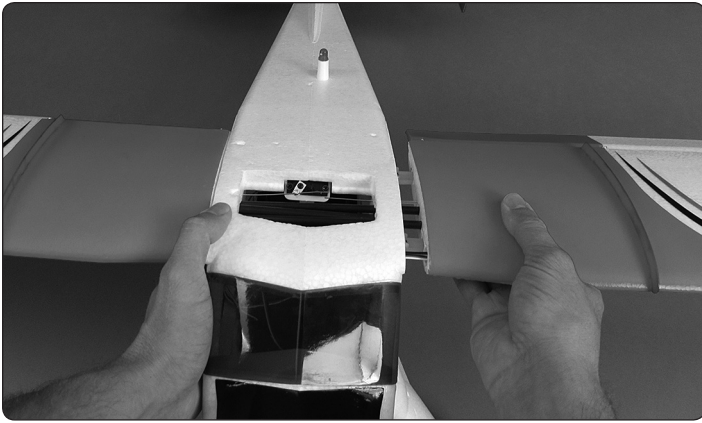
**Mount the Wings**



❑ 1. Fasten the wing clips to both sides of the fuselage with four M3x10 screws.



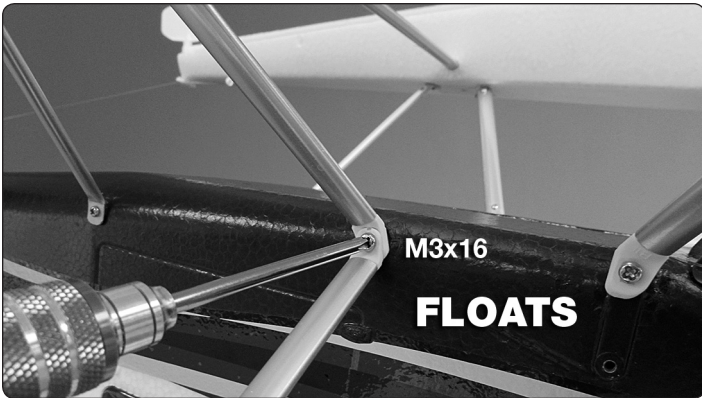
❑ 2. Guide the wires from the right wing into the fuselage, then slide the wing joiner tube and the flap pushrod wire through the corresponding holes. Also guide the flap pushrod wire into the screw-lock connector on the flap servo. Guide the joiner tube through the hole in the left side of the fuselage, then tightly "CLICK!" the wing onto the wing clips.



❑ 3. Mount the left wing the same way.

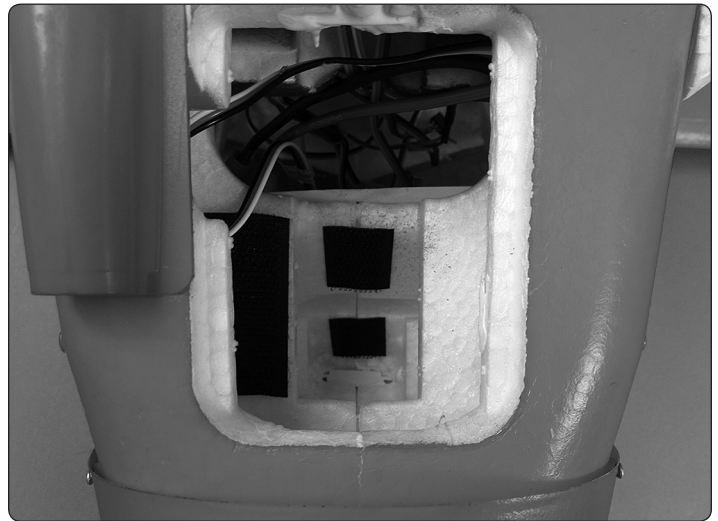


❑ 4. Mount the top of each wing strut to the wing with a M2.5x8 machine-thread screw.



❑ 5. Mount the bottom of each strut to the fuselage over the third float strut (or over the main landing gear) with a M3x16 screw.

## Install the Battery



❑ 1. Cut two 1" [25mm] strips from the rougher, "hook" side of the included adhesive-back hook-and-loop material. Apply the strips inside the fuselage where shown and press them down tightly so they adhere.

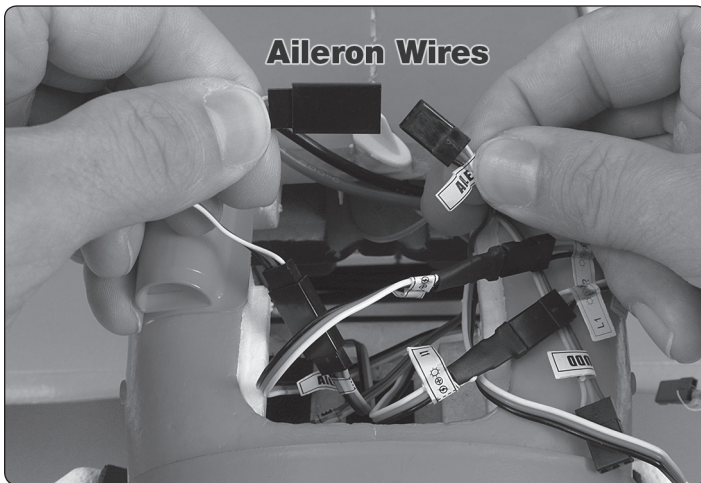
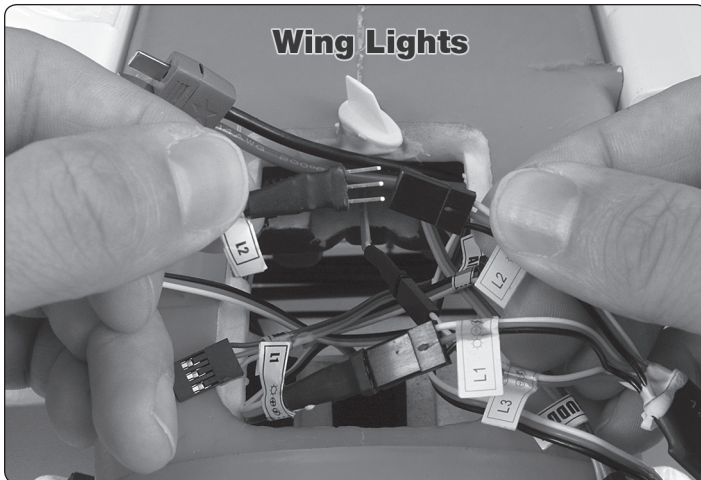


❑ 2. Cut a 3" [76mm] strip from the softer, "loop" side and attach it to the battery so the larger "discharge" wires will be on the right side as shown. (This will position the wires opposite the receiver for a better fit.)

## Receiver Installation

Install your receiver into the fuselage, connecting the servos according to the labels attached to the wires. Follow the radio manufacturer's recommendations for set-up.

**WARNING: DO NOT INSTALL THE PROPELLER UNTIL THE RADIO SYSTEM HAS BEEN PROPERLY SET UP WITH A WORKING FAILSAFE FUNCTION AND YOU COMPLETELY UNDERSTAND ITS OPERATION!**



□ Connect the wing lighting wires to the light wire harness in the fuselage (marked L1 and L2). The receiver end can be connected to BATTERY or any unused channel slot on your receiver. Connect the aileron servo wires to the Y-harness that was included in the hardware bag and connect the Y-harness to the aileron channel on your receiver.

## Failsafe Setting and Function

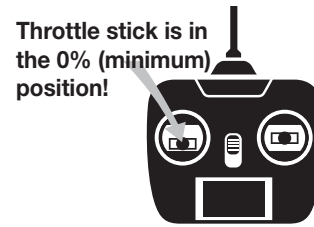
**IMPORTANT: Before installing the propeller, it's important for safety reasons to ensure that the failsafe on the receiver is at the 0% throttle preset position as indicated in the instructions below.**

Most modern radio systems have a failsafe feature which engages in the event that the radio signal from the transmitter is interrupted. If radio contact is broken, this safety feature causes the throttle channel to move to a

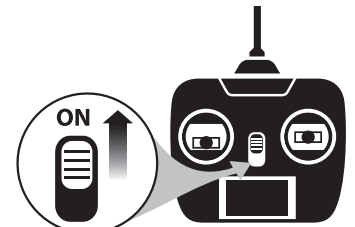
preset position. This prevents the possibility of accidental motor startup when the flight battery is connected but the receiver is not communicating with the transmitter.

If using the recommended Tactic radio system, follow these instructions for setting up and confirming the operation of the failsafe function. Setting the throttle failsafe position is similar for Spektrum radios. The failsafe is set during the binding process to the receiver. **NOTE:** Unlike Tactic, Spektrum radios will not require the throttle channel to be reversed. Continue on to *Testing the Failsafe* section when complete.

## Tactic Failsafe Procedure



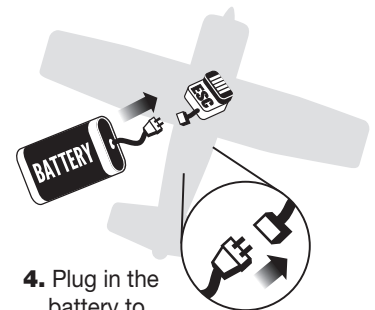
1. Make sure the throttle stick is in the minimum position or 0% throttle.



2. Power on the transmitter.

SERVO SET: Reverse	
1	NOR
2	NOR
3	REV
4	NOR
5	NOR

3. Make sure the servo reversing function for CH3 is in the REVERSE position.



4. Plug in the battery to the aircraft.



5. Press the LINK button on the Tactic receiver and hold for 2 seconds. The red LINK light should blink and then stay on. The failsafe is now set.

## Testing the Failsafe

Before continuing, it is necessary to test the failsafe setting. First, move the right transmitter stick to the left and right and confirm that the transmitter is linked to the receiver. You should see the ailerons moving. **Remember, the propeller is not installed on the motor yet!** Move the throttle stick up and confirm that the motor is working. While the motor is spinning, turn the transmitter OFF to test the failsafe function. The motor should stop. If it does not stop spinning, **DO NOT CONTINUE** until the failsafe works correctly.

## ESC Operation/Startup

### Starting Your Power System

1. Turn on your transmitter and ensure the position of the throttle stick is set to Idle/Off.
2. Plug the battery pack into the controller. You will hear 1 low long tone to indicate startup, then the respective number of medium-length mid tones to indicate the cell count or a musical tone for the 70% cutoff, followed by 3 rising tones to indicate the controller is armed.
3. When you move the throttle stick upward, the motor will run. If you continue to move the throttle stick upward to the full throttle (high position), the motor will run faster. If you lower the throttle stick below the start-up position, the motor will stop running.
4. Check servo motion as part of your preflight check. It is very important you make sure linkages are free-moving with no binding.

Remember, when in the programming mode:

**Full Throttle = Stick Up**

**Idle = Stick Down**

The default settings (from the package) for your E-flite 40-Amp Pro ESC are as follows:

- Voltage cutoff set at 70%
- Brake set to Off
- Timing set at 15 degrees
- Throttle Input Range set at 1.2ms to 1.8ms
- Start-up Rate (Acceleration Delay) set at 0.25 seconds
- PWM Frequency set at 8kHz
- Operating Mode set to normal (airplane)

### Entering the Programming Mode

1. With the battery disconnected from the controller, and the transmitter turned on, first move the throttle stick to full throttle (>1.7ms) position. Leave it in this position and then connect the battery to the controller.
2. Wait for 5 seconds, and the ESC will give two sets of fast ringing tones to indicate you have successfully entered the programming mode.
3. Once you hear these tones, move the stick to center (between 1.4 and 1.7ms) for 5 seconds, and the controller will beep 1 time, indicating you are now in Menu 1.
4. The controller will now wait 5 seconds for you to make your selection; your programming options are either full throttle (>1.7ms) or idle (<1.3ms).
5. When you have made a valid selection, the control will beep once with a lower tone, and you can move the stick back to center for the next menu item (2 beeps, 3 beeps and so on). If you do not make a selection within 5 seconds, the controller will move to the next menu item.
6. If you want to make changes in the programming menus (see specific instructions below) move the throttle stick to full throttle (>1.7ms) position. You will have 5 seconds to make your selection.

7. If you want to advance to the next menu, allow the programming to skip to the next menu after the 5 seconds have expired.

### Programming Menu 1 – Voltage Cutoff

Use this option to set the voltage at which the controller will shut down the motor to prevent damage to your battery when it reaches the cutoff voltage. You will know your battery pack has reached auto cutoff when you hear the motor “pulse” repeatedly.

1. Move the throttle stick to full throttle (>1.7ms) position to make changes to the voltage cutoff programming.
  - a. To select 3-cell low voltage cutoff – You will hear 3 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
  - b. To select 4-cell low voltage cutoff – You will hear 4 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
  - c. To select 5-cell low voltage cutoff – You will hear 5 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
  - d. To select 6-cell low voltage cutoff – You will hear 6 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
  - e. To select 70% cutoff – You will hear 7 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the first selection again.

**IMPORTANT NOTE ABOUT 70% CUTOFF:** This option will activate the soft cutoff at 70% of startup voltage. For example, if your pack measures 15.0 volts at startup, then the soft cut will occur at 10.5 volts. The 70% cutoff option will check the startup voltage every time you plug the battery into the controller, so beware of using partially charged packs, as the system cannot protect your Li-Po batteries if you are using the 70% cutoff and connect a partially charged pack. You will know your battery pack has reached soft auto cutoff when you hear the motor “pulse” repeatedly. We recommend you land your model as soon as you hear the motor pulse (indicating the pack voltage has dropped to the cutoff voltage level) to prevent over-discharge of the Li-Po battery pack, and to prevent sudden power loss.

## Programming Menu 2 – Brake Type

The default setting is Brake Off. This option gives you the choice to have the ESC stop the propeller during flight (Brake On) or allow it to windmill (Brake Off). Use the Brake On options for folding propellers.

1. Move the stick to center (between 1.4 and 1.6ms) for 5 seconds, and the controller will beep 2 times, indicating you are now in Menu 2.
2. Move the throttle stick to full throttle (>1.7ms) position to make changes to the Brake Type programming.
  - a. To select No Brake/Brake Off – You will hear 1 short beep. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
  - b. To select Soft Brake – You will hear 2 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
  - c. To select Medium Brake – You will hear 3 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
  - d. To select Hard Brake – You will hear 4 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the first selection again.

## Programming Menu 3 – Timing

The default setting is 15 degrees. As a general rule, lower pole count motors use lower timing and higher pole count motors use higher timing. Please refer to your motor instructions and specifications for an indication of the number of poles.

### LOW TIMING ADVANCE

- Timing Degrees – 5 & 10
- Motor Poles – 2 to 4
- Expected Performance
  - Good balance of power and efficiency
- Motor Poles – 6 or more
- Expected Performance
  - Best efficiency and run time (lowest power)

### STANDARD TIMING ADVANCE

- Timing Degrees – 15 & 20
- Motor Poles – 6 to 12
- Expected Performance
  - Good balance of power and efficiency
- Motor Poles – 14 or more
- Expected Performance
  - Best efficiency and run time (lowest power)

## HIGH TIMING ADVANCE

- Timing Degrees – 25
- Motor Poles – 12
- Expected Performance – Highest power, less efficiency
- Motor Poles – 14 or more
- Expected Performance – Good balance of power and efficiency

1. Move the stick to center (between 1.4 and 1.6ms) for 5 seconds, and the controller will beep 3 times, indicating you are now in Menu 3.
2. Move the throttle stick to full throttle (>1.7ms) position to make changes to the Timing programming.
  - a. To select 5 Degrees – You will hear 1 short beep. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
  - b. To select 10 Degrees – You will hear 2 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
  - c. To select 15 Degrees – You will hear 3 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
  - d. To select 20 Degrees – You will hear 4 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
  - e. To select 25 Degrees – You will hear 5 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the first selection again.

## Programming Menu 4 – Throttle Input Range (PWM)

The default setting is 1.2ms to 1.8ms and should work with most radio systems. This option allows for proper throttle input with many different radio systems. However, some radios have a wider output range, and may give a more linear response with the 1.1ms to 1.9ms range. If you feel there is too much “dead” area in the stick movement near full throttle, try adjusting the end points in your radio, or change to the wider input range. Be aware that if these settings are not correct, it may be impossible to arm the controller.

1. Move the stick to center (between 1.4 and 1.6ms) for 5 seconds, and the controller will beep 4 times, indicating you are now in Menu 4.
2. Move the throttle stick to full throttle (>1.7ms) position to make changes to the Throttle Input Range programming.

- a. To select 1.2ms to 1.8ms – You will hear 1 short beep. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
- b. To select 1.1ms to 1.9ms – You will hear 2 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the first selection again.
- b. To select 16kHz PWM Frequency – You will hear 2 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
- c. To select 32kHz PWM Frequency – You will hear 3 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the first selection again.

## Programming Menu 5 – Start-Up Rate

The default setting is 0.25 seconds. The start-up rate is the time it takes to reach maximum motor speed. Changing the setting to 1 second can be useful with power-fragile gear boxes.

1. Move the stick to center (between 1.4 and 1.6ms) for 5 seconds, and the controller will beep 5 times, indicating you are now in Menu 3.
2. Move the throttle stick to full throttle (>1.7ms) position to make changes to the Start-up Rate programming.
  - a. To select .25 second – You will hear 1 short beep. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
  - b. To select 1 second – You will hear 2 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the first selection again.

## Programming Menu 6 – PWM Switching Frequency

The default setting is 8kHz, which should be acceptable for most motors. If you have a low or very low inductance motor and know you need to use a higher PWM Frequency (refer to the manual included with the motor), then you can change the setting. Otherwise, we recommend leaving the default setting.

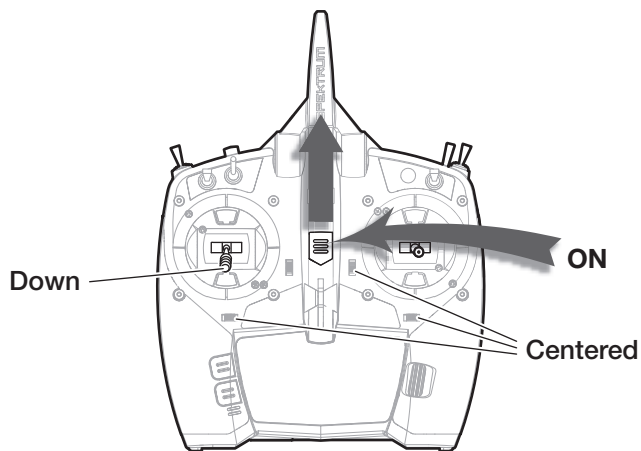
1. Move the stick to center (between 1.4 and 1.6ms) for 5 seconds, and the controller will beep 6 times, indicating you are now in Menu 6.
2. Move the throttle stick to full throttle (>1.7ms) position to make changes to the PWM Switching Frequency programming.
  - a. To select 8kHz PWM Frequency – You will hear 1 short beep. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.

## Programming Menu 7 – Operating Mode

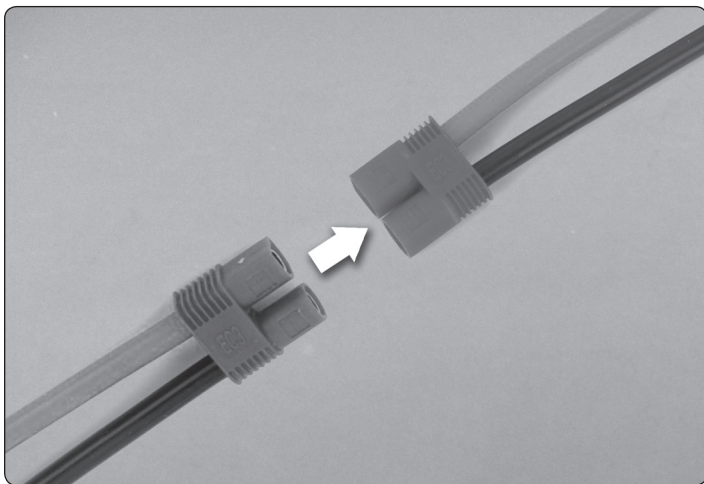
The default setting is set to Normal (airplane) Mode, which is limited to a start-up rate of 0.25 or 1 second. Alternatively, the Heli Mode can be selected which reduces the start-up rate to 5-seconds for the first start-up and any start-up after the motor/ESC has been stopped for more than 5 seconds. This helps to prevent damaging the motor, gears or any other components from an abrupt start-up when none of the parts are moving. Any time the motor/ESC has been stopped for less than 5 seconds in Heli Mode, the start-up will be immediate. This allows power to be applied immediately, such as when aborting an auto-rotation attempt or for any other reason, to help prevent a crash. Remember, you must wait more than 5 seconds after stopping the motor/ESC in order for the 5 second start-up to occur again.

1. Move the stick to center (between 1.4 and 1.6ms) for 5 seconds, and the controller will beep 7 times, indicating you are now in Menu 7.
2. Move the throttle stick to full throttle (>1.7ms) position to make changes to the Operating Mode programming.
  - a. To select Normal Mode – You will hear 1 short beep. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
  - b. To select Heli Mode – You will hear 2 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the first selection again.

## Center the Control Surfaces

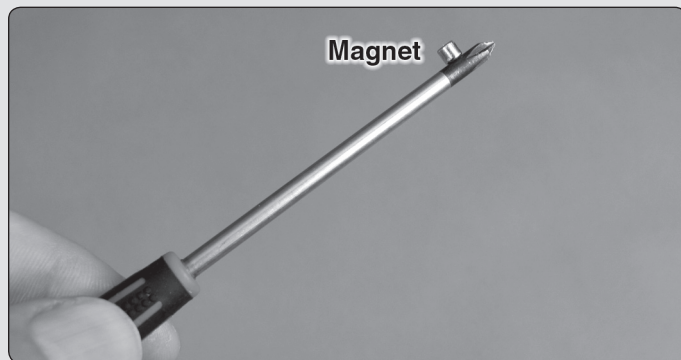


1. Turn on the transmitter, lower the throttle stick all the way to 0%, and center the trims.

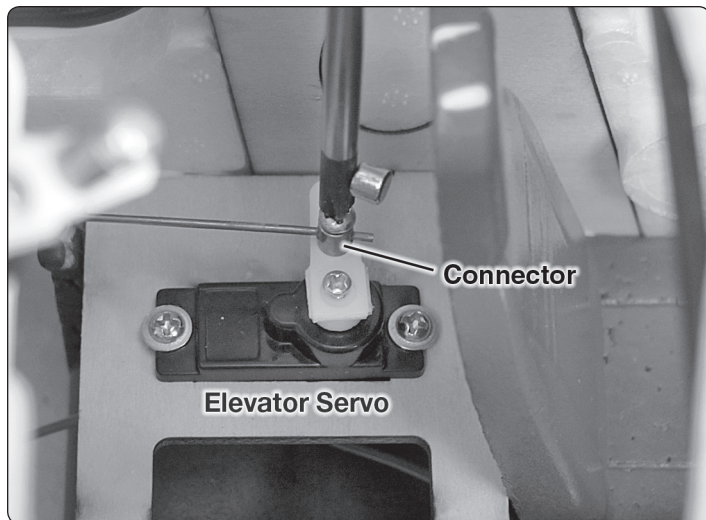


2. Connect the battery to the ESC. The motor will emit a series of tones indicating the cell count of the battery and a rising series of tones indicating the ESC is now armed.

**WARNING:** Make sure this propeller is not installed for this next step.



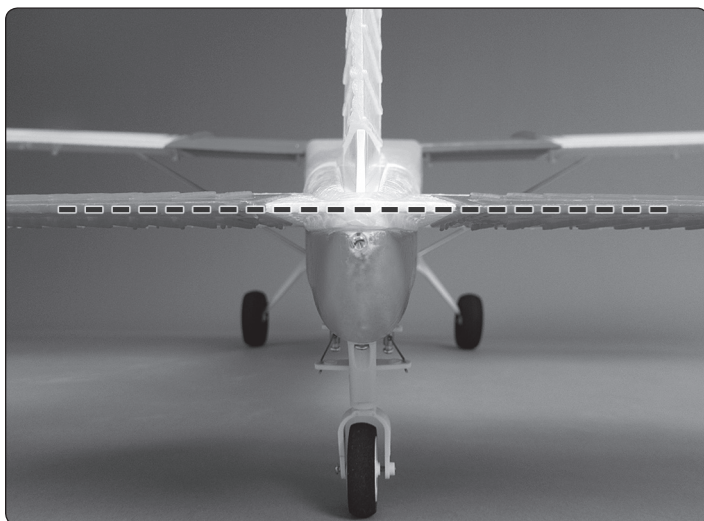
A magnetic screwdriver, or a small magnet stuck to a screw driver to make it magnetic, will be helpful for the next couple of steps.



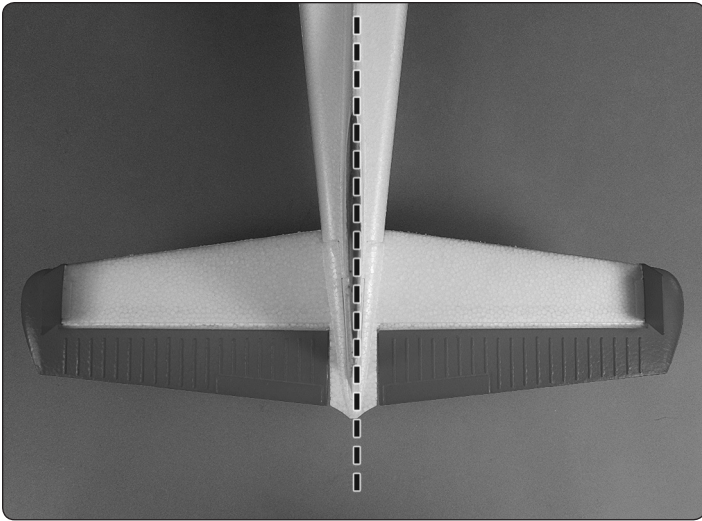
3. Remove the screw from the connector on the elevator servo arm.



4. Lightly wet the threads of the screw with threadlocker.



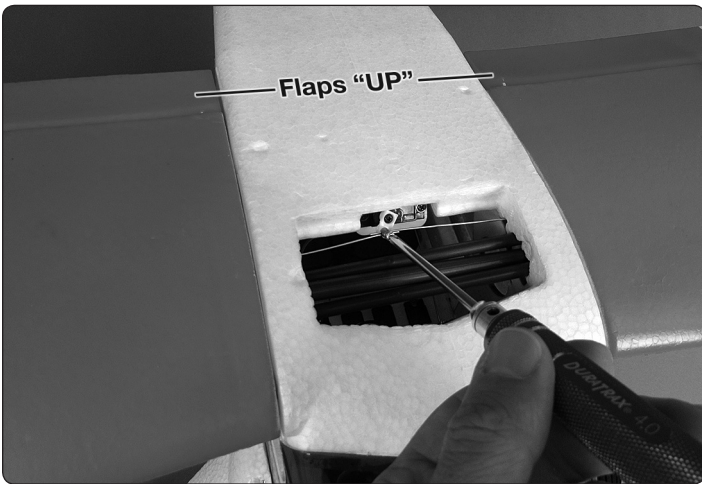
5. Reinstall the screw, but do not tighten yet. With the transmitter and receiver on, center the elevator and tighten the screw to lock the pushrod down.



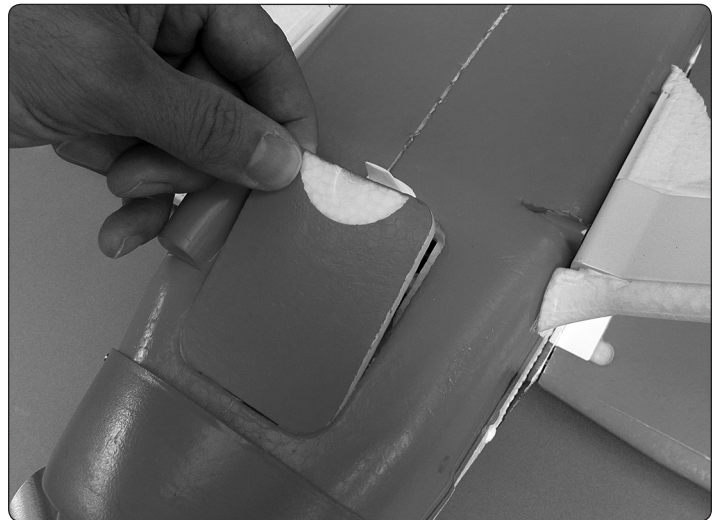
❑ 6. Repeat the same procedure for the rudder, making sure it is centered. Lock the pushrod in place on the servo arm with the screw and threadlocker.



❑ 4. With the system still on, make sure the ailerons are centered and aligned with the wing tips. If necessary, apply a few clicks of aileron trim to get the ailerons centered. If more than a few clicks of trim are required, or if you cannot get both ailerons neutralized, a small screwdriver may be used to pop off one or both aileron servo covers to access the pushrods. Adjust the pushrods in the connectors to get the ailerons centered. When finished, replace the cover, press into position, and hold in place with tape or a dab of glue.



❑ 7. Move the dial or switch on your transmitter that controls the flaps to the “up” position, rotating the flap servo arm clockwise. Remove the screw in the flap servo arm, wet the threads with threadlocker, and then reinstall and tighten the screw so the flaps will be in their fully retracted (“up”) position.



❑ 5. Test fit the battery hatch onto the fuselage.



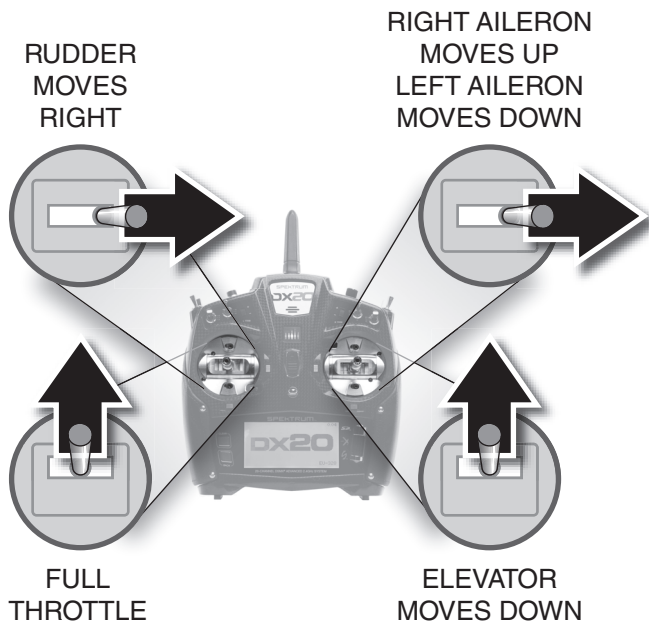


# FINAL FLIGHT PREPARATION

## Check the Control Throws

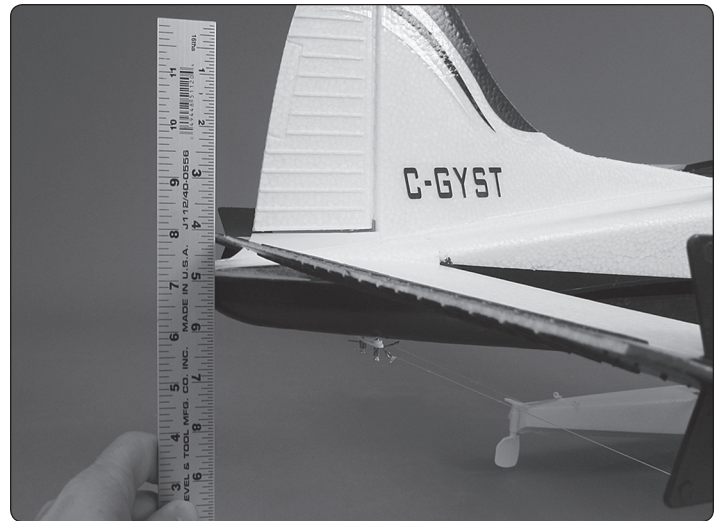
Because the servos and pushrods are factory-installed the control throws should already be correct, but because of the effect the control throws can have on a model, it's always a good idea to check them anyway.

### 4-CHANNEL RADIO SETUP (STANDARD MODE 2)



❑ 1. Confirm that the controls are responding in the correct direction according to control inputs from the transmitter. If necessary, use the servo reversing program in your transmitter to change the servo direction of any controls that are moving the wrong way.

❑ 2. If your Turbo Beaver model is configured with wheels, use a small box or something similar to prop up the bottom of the fuselage under the tail so the wings and stab are level (or nearly level).



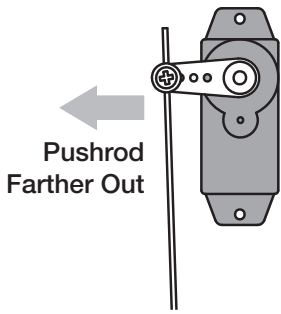
❑ 3. Measure and set the control throws according to the measurements below. The throws are measured at the widest part (front-to-back) of each surface.

Recommended Control Surface Throws				
INCHES	HIGH RATE		LOW RATE	
	Up	Down	Up	Down
ELEVATOR	7/16"	7/16"	5/16"	5/16"
AILERONS	1/2"	1/2"	3/8"	3/8"
RUDDER (R&L)	1-1/4"	1-1/4"	7/8"	7/8"
FLAP	7/16"			

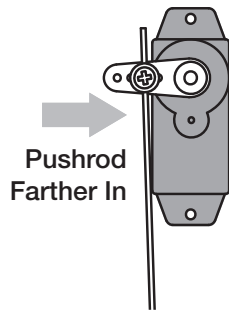
Recommended Control Surface Throws				
MILLIMETERS	HIGH RATE		LOW RATE	
	Up	Down	Up	Down
ELEVATOR	11 mm	11 mm	8 mm	8 mm
AILERONS	13 mm	13 mm	10 mm	10 mm
RUDDER (R&L)	32 mm	32 mm	22 mm	22 mm
FLAP	11 mm			

Recommended Control Surface Throws				
DEGREES	HIGH RATE		LOW RATE	
	Up	Down	Up	Down
ELEVATOR	10°	10°	8°	8°
AILERONS	20°	20°	14°	14°
RUDDER (R&L)	26°	26°	18°	18°
FLAP	34°			

### More Control Throw



### Less Control Throw



4. If any of the control throws require adjustment use the programming in your transmitter to increase or decrease the throws accordingly. If the programming isn't enough or if your radio doesn't have adjustable throws, the pushrod connectors on the servo arms can be relocated in different holes inward or outward to increase or decrease the throw—moving the pushrods **inward** on the servo arms **decreases** the throw and moving the pushrods **outward** on the servo arms **increases** the throw.

## Motor and Prop Safety Precautions

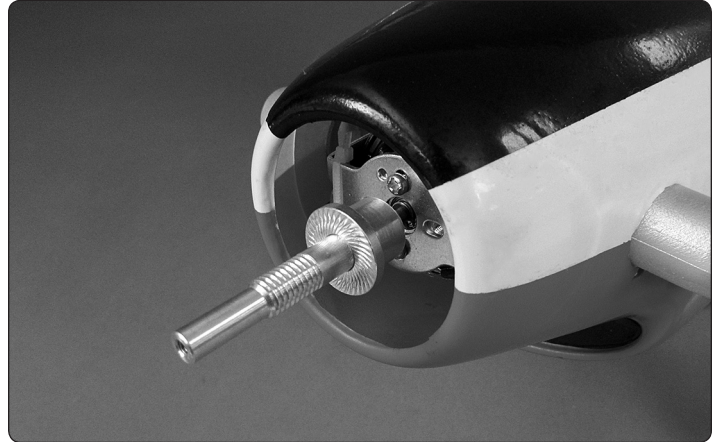
**WARNING: FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS MAY RESULT IN SEVERE INJURY TO YOURSELF AND OTHERS.**

- Wear safety glasses whenever in the proximity of a spinning propeller.
- Do not operate the motor in an area of loose gravel or sand; the propeller may throw such material in your face or eyes.
- Keep spectators as well as your own face and body out of the plane of rotation of the propeller.
- Never connect the battery to the ESC while indoors with the propeller installed.
- Always remove the propeller when testing or making repairs to the model.
- Always stay behind the arc of the propeller when handling the model.
- Always assume the motor may start unexpectedly when the flight battery is connected.
- Always remain outside the arc of the propeller when installing and/or removing the flight battery.
- Keep all loose clothing, long hair or any other loose objects such as pencils or screwdrivers that may fall out of pockets away from the propeller.

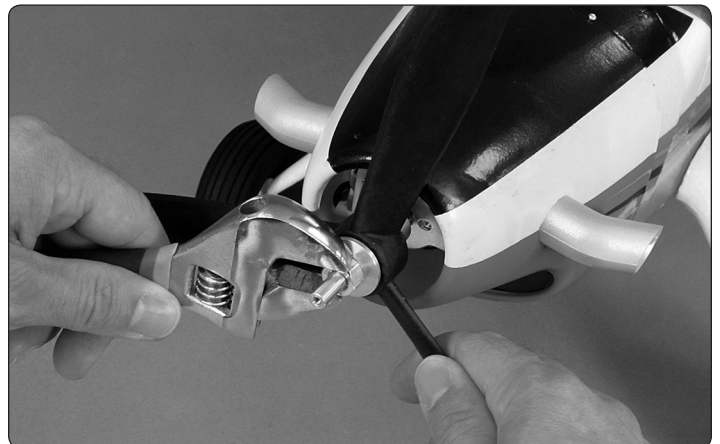
## Mount the Propeller and Spinner

**CAUTION:** Do not proceed with propeller installation until you have confirmed the correct operation of the throttle failsafe on page 11!

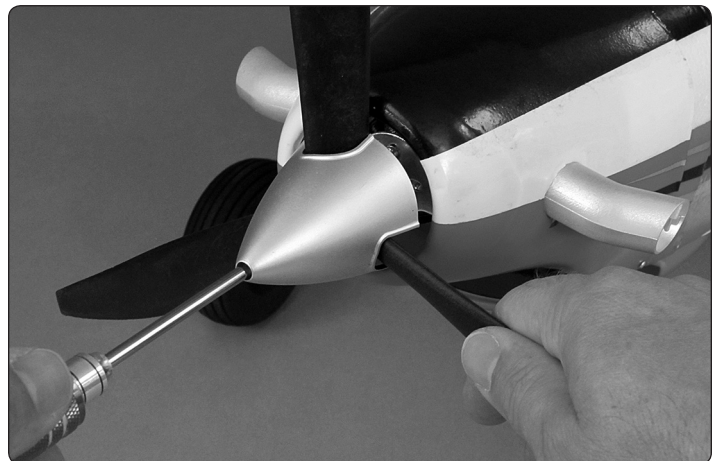
**WARNING:** DISCONNECT THE BATTERY PRIOR TO DOING ANY MAINTENANCE TO THE MOTOR!



1. Install the prop shaft and drive washer onto the motor shaft.



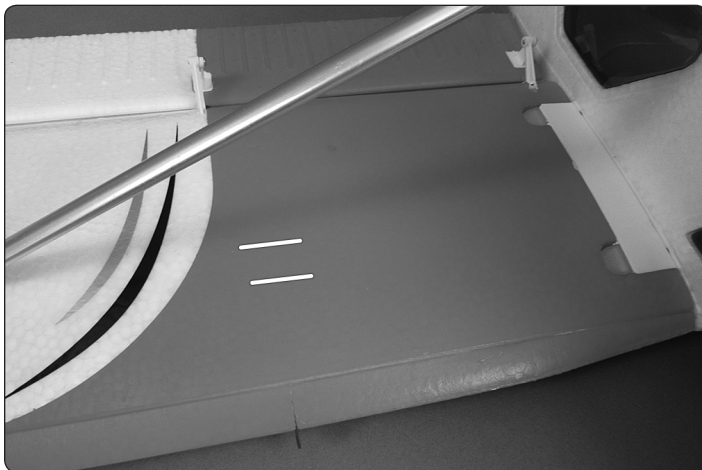
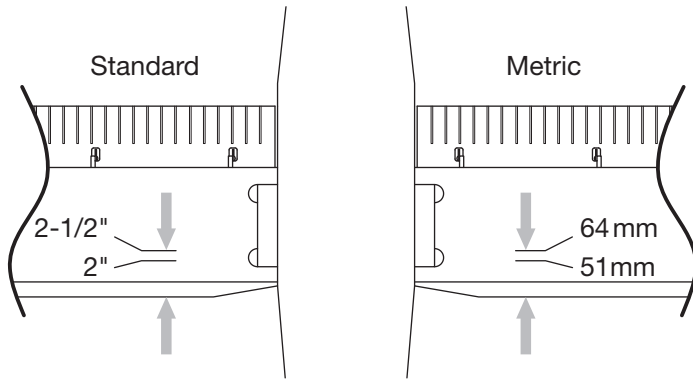
2. Secure the propeller, washer and nut. Make sure the assembly is secure to the aircraft.



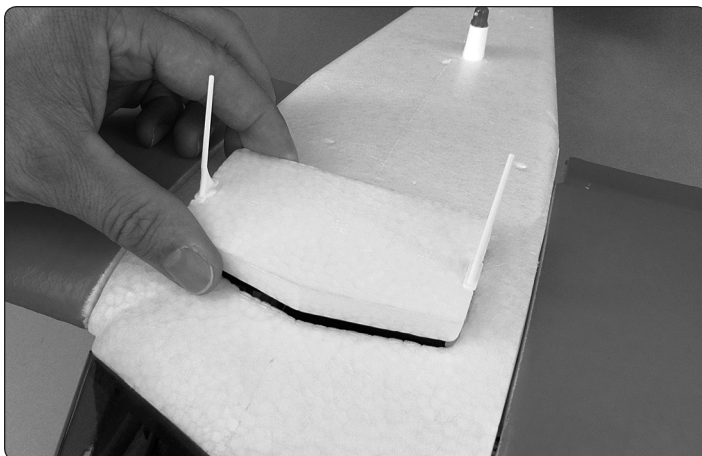
2. Install the spinner cone with a M3x8 machine screw.

## Check the Center of Gravity (C.G.)

**NOTICE:** Same as the control throws, the C.G. has a great effect on how every model flies, so do not skip this procedure. If the model is tail-heavy it may be too unstable and respond too quickly to the controls. If the model is nose-heavy it may be too stable and not respond fast enough to control input—in either case possibly causing a crash. Do not overlook this important procedure.



❑ 1. Mark the forward and aft C.G. limits on both sides of the bottom of the wing 2" and 2-1/2" [51mm and 64mm] back from the leading edge where shown—using narrow strips of tape will allow you to feel the marks when lifting the model with your fingertips to balance.



❑ 2. Install the battery, battery hatch and cabin hatch. At this point the model must be in ready-to-fly condition

with everything attached and installed including the floats or wheels and battery and propeller.



**CAUTION:** When checking the C.G., the battery should be installed, but remain DISCONNECTED.



❑ 4. Lift the model by your fingers between the lines indicating the balance range. As long as the model sits level with your fingers on the forward or aft lines or anywhere between the lines it is properly balanced and ready to fly. If you have to move your fingertips outside the lines the model is out of balance and should not be flown. If necessary, add squares of stick-on lead to the nose or tail to get the model to balance within the specified range.

## FLYING

**When powering up, make sure the throttle stick is in the minimum (0%) position. Always turn the transmitter ON before plugging the battery into the plane.**

The Turbo Beaver model flies mostly the same as any similar-type, high-wing airplane, but you may find that the roll rate is a little slower. This suits the Turbo Beaver well as it is a scale-like, STOL (Short TakeOff and Landing) craft. Just give yourself more time and altitude before trying your first full roll.

The only peculiarity arises when the flaps are extended—if you extend the flaps too soon before the model has lost enough flying speed the nose will pitch up. The way to avoid this is first by making sure you have given the model enough time to slow after cutting the throttle. You can also roll in the flaps gradually. If you have a computer radio you could also mix in some down elevator with flaps. In any regard, once the model reaches “equilibrium” and has initiated a gliding descent the nose will resume a normal, downward glide angle. Similarly, when powering up the throttle with the flaps extended the nose will pitch up, so be ready to counter with down elevator.

Unless weather conditions are poor, you should have no trouble flying the Turbo Beaver plane from either rough or calm water. The water rudders direct the model well and they don't have to be perfectly centered to be effective (so don't spend an exorbitant amount of time on the work bench

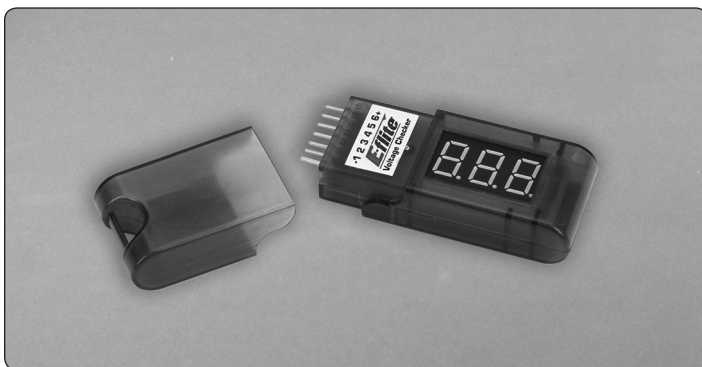
working on them!). The model turns more tightly at idle speeds, so if you need to do a U-turn, throttle back to bring the model around. At higher speeds during a takeoff run the water rudders have the correct amount of effectiveness to steer the model on its intended path. Takeoffs can be long and graceful or short and steep—either way the floats handle the water well. If the winds are really high the model can still be flown from water, but avoid turning it directly across the wind. Otherwise, the wind can get under the wing and flip the model over. In the air, the only effect of the floats is that the model flies slightly slower.

Flying “normally” (using half-throttle for general cruising and full-throttle only when required) the Turbo Beaver model can get as much as 8 minutes of flight time using a 2200mAh battery. Flying more aggressively using consistently higher throttle settings will increase the current draw from the battery and reduce flying time.

To find out for yourself how long you can fly, set your timer to a conservative 5 minutes. Fly until the timer sounds, then land. Use a charger with a digital display to find out how much capacity it took to recharge the battery (indicating how much capacity was used). To avoid over discharging your LiPos use only 80% of your battery’s capacity, so multiply your battery’s capacity by .8 to find out how much you have available. Compare the capacity used to 80% of your battery’s capacity and adjust your flight time accordingly.

**For example:** If using the recommended 2200mAh battery, your target capacity to use for a flight is 1760mAh (2200mAh x .8 = 1760mAh). If you fly for five minutes and it takes 1400mAh to recharge your battery, you still have 360mAh to go before you should land, so adjust your timer to increase your flight time accordingly until you reach your 1760mAh target. (You could also divide 1400mAh by five minutes to figure a current consumption rate of 280mAh/minute. Divide 1760mAh by 280mAh/minute to conclude that you can fly for 6.3 minutes—but round down to 6 minutes.)

**When powering off, always unplug the battery from the plane *before* turning the transmitter OFF.**



It’s also a great idea to use a LiPo battery checker such as the E-flite LiPo Vell Voltage Checker (EFLA111) to check the battery **before** each flight (to make sure you haven’t inadvertently grabbed a discharged battery) and to check the battery **after** flight to make sure you haven’t over discharged your battery by flying too long. A safe, conservative, minimum voltage is 3.65V – 3.7V per cell right after a flight.

## REPAIRS

Parts damaged beyond repair can be purchased separately. The full replacement part list is printed in the front of the manual on page 4. Often though, parts can be repaired and you can get your plane back into the air with a little glue and ingenuity.

This model is made from injection-molded EPO (expanded polyolefin) foam which can be glued with just about anything. Most people use regular CA. With CA no clamping is required, but some prefer softer, more flexible adhesives such as white glue or canopy glue. These will require clamps or tape to hold the parts together while the glue dries.

One final note about flying your model. Have a goal or flight plan in mind for **every** flight. This can be learning a new maneuver(s), improving a maneuver(s) you already know, or learning how the model behaves in certain conditions (such as on high or low rates). This is not necessarily to improve your skills (*though it is never a bad idea!*), but more importantly so you do not surprise yourself by impulsively attempting a maneuver and suddenly finding that you’ve run out of time, altitude or airspeed. Every maneuver should be deliberate, not impulsive. For example, if you’re going to do a loop, check your altitude, mind the wind direction (anticipating rudder corrections that will be required to maintain heading), remember to throttle back at the top, and make certain you are on the desired rates (high/low rates). A flight plan greatly reduces the chances of crashing your model just because of poor planning and impulsive moves. **Remember to think.**

**Have a ball! But always stay in control and fly in a safe manner.**

**GOOD LUCK AND GREAT FLYING!**

## LIMITED WARRANTY

**What this Warranty Covers** – Horizon Hobby, LLC, (Horizon) warrants to the original purchaser that the product purchased (the “Product”) will be free from defects in materials and workmanship at the date of purchase.

**What is Not Covered** – This warranty is not transferable and does not cover (i) cosmetic damage, (ii) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (iii) modification of or to any part of the Product, (iv) attempted service by anyone other than a Horizon Hobby authorized service center, (v) Product not purchased from an authorized Horizon dealer, or (vi) Product not compliant with applicable technical regulations, or (vii) use that violates any applicable laws, rules, or regulations OTHER THAN THE EXPRESS WARRANTY ABOVE, HORIZON MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER’S INTENDED USE.

**Purchaser’s Remedy** – Horizon’s sole obligation and purchaser’s sole and exclusive remedy shall be that Horizon will, at its option, either (i) service, or (ii) replace, any Product determined by Horizon to be defective. Horizon reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole discretion of Horizon. Proof of purchase is required for all warranty claims. SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER’S SOLE AND EXCLUSIVE REMEDY.

**Limitation of Liability** – HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF HORIZON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability. If you as the purchaser or user are not prepared to accept the liability associated with the use of the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

**Law** – These terms are governed by Illinois law (without regard to conflict of law principals). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Horizon reserves the right to change or modify this warranty at any time without notice.

### WARRANTY SERVICES

**Questions, Assistance, and Services** – Your local hobby store and/or place of purchase cannot provide warranty support or service. Once assembly, setup or use of the Product has been started, you must contact your local distributor or Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please visit our website at [www.horizonhobby.com](http://www.horizonhobby.com), submit a Product Support Inquiry, or call the toll free telephone number referenced in the Warranty and Service Contact Information section to speak with a Product Support representative.

**Inspection or Services** – If this Product needs to be inspected or serviced and is compliant in the country you live and use the Product in, please use the Horizon Online Service Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. An Online Service Request is available at [http://www.horizonhobby.com/content/\\_service-center\\_render-service-center](http://www.horizonhobby.com/content/_service-center_render-service-center). If you do not have internet access, please contact Horizon Product Support to obtain a RMA number along with instructions for submitting your product for service. When calling Horizon, you will be asked to provide your complete name, street address, email address and phone number where you can be reached during business hours. When sending product into Horizon, please include your RMA number, a list of the included items, and a brief summary of the problem. A copy of your original sales receipt must be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

**NOTICE:** Do not ship LiPo batteries to Horizon. If you have any issue with a LiPo battery, please contact the appropriate Horizon Product Support office.

**Warranty Requirements** – For Warranty consideration, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be serviced or replaced free of charge. Service or replacement decisions are at the sole discretion of Horizon.

**Non-Warranty Service** – Should your service not be covered by warranty, service will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail

purchase cost. By submitting the item for service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service. Non-warranty service estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashier's checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to Horizon's Terms and Conditions found on our website [http://www.horizonhobby.com/content/service-center\\_render-service-center](http://www.horizonhobby.com/content/service-center_render-service-center).

**ATTENTION:** Horizon service is limited to Product compliant in the country of use and ownership. If received, a non-compliant Product will not be serviced. Further, the sender will be responsible for arranging return shipment of the un-serviced Product, through a carrier of the sender's choice and at the sender's expense. Horizon will hold non-compliant Product for a period of 60 days from notification, after which it will be discarded.

10/2015

## CONTACT INFORMATION

### Country of Purchase: United States of America

#### REPAIRS & REPAIR REQUESTS

**Horizon Service Center**      [servicecenter.horizonhobby.com/  
RequestForm/](http://servicecenter.horizonhobby.com/RequestForm/)  
1608 Interstate Dr  
Champaign, IL 61822  
USA

#### PRODUCT TECHNICAL ASSISTANCE

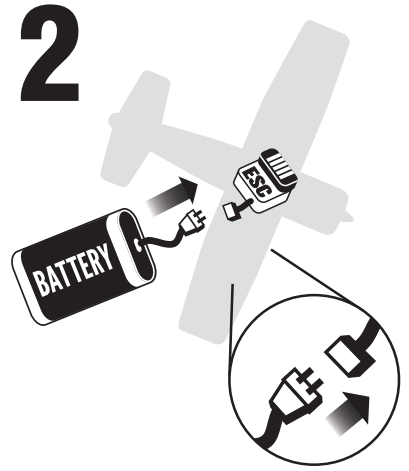
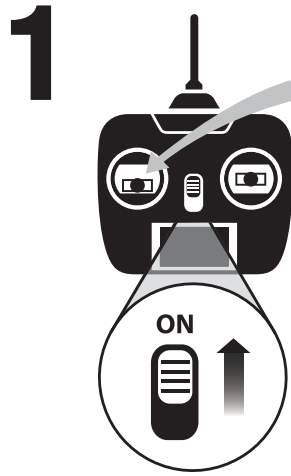
**Horizon Product Support**      [productsupport@horizonhobby.com](mailto:productsupport@horizonhobby.com)  
1608 Interstate Dr      877-504-0233  
Champaign, IL 61822  
USA

#### SALES

**Horizon Hobby, LLC**      [websales@horizonhobby.com](mailto:websales@horizonhobby.com)  
1608 Interstate Dr      800-338-4639  
Champaign, IL 61822  
USA

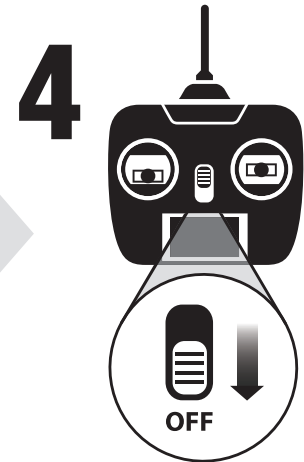
## Follow these steps in powering your model:

**ALWAYS**  
turn the  
transmitter  
“ON”  
**BEFORE**  
plugging the  
battery into  
the plane.



## When you have finished flying:

**ALWAYS**  
unplug the  
battery from  
the plane  
**BEFORE**  
turning the  
transmitter  
“OFF”.



This model belongs to:

Name

Address

City, State, Zip

Phone Number

FAA Number

AMA Number



[www.flyzoneplanes.com](http://www.flyzoneplanes.com)