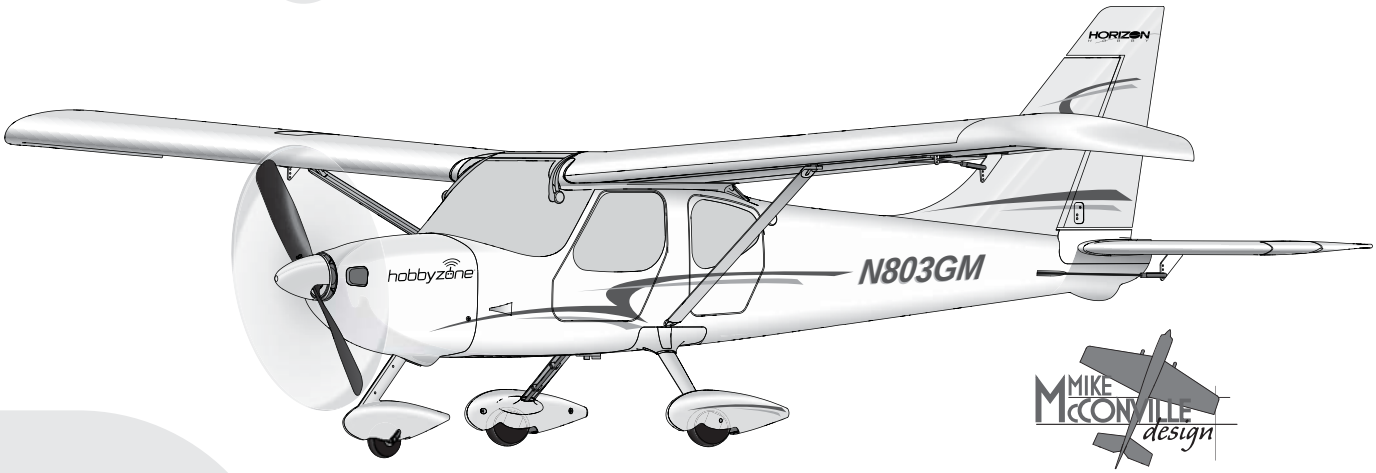
Glasair® SPORTSMAN®

Instruction Manual • Bedienungsanleitung • Manuel d'utilisation • Manuale di Istruzioni



Glasair AVIATION

Designed in cooperation with and licensed by Glasair Aviation.

RTF READY-TO-FLY

hobbyzone®

NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, Inc. For up-to-date product literature, visit 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:

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

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

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.

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 attempt disassembly, use with incompatible components or augment product in any way without the approval of Horizon Hobby, Inc. 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.

Age Recommendation: Not for children under 14 years. This is not a toy.

Safety Precautions and 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.

Introduction

Your HobbyZone® Glasair® Sportsman® aircraft is an innovative RC airplane designed to be the most advanced 4-channel trainer ever offered. Even if you've never been at the controls of a quality hobby-grade aircraft like this one, the state-of-the-art electronic assistance of patent pending Virtual Instructor™ technology will help you quickly master the controls and have fun. Not only is this model easy to fly, aerobatics champion Mike McConville designed this scale model to deliver the kind of flight experience even an expert would appreciate. Advanced features will allow you to progress gradually and teach yourself to fly.

Everything you need to fly is in the box. And because your new airplane includes the versatile Spektrum™ DX4e transmitter, not only do you have the best radio link possible, but also the ability to re-use that transmitter to explore the vast range of high-quality BNF airplanes and helicopters.

Included in the Box

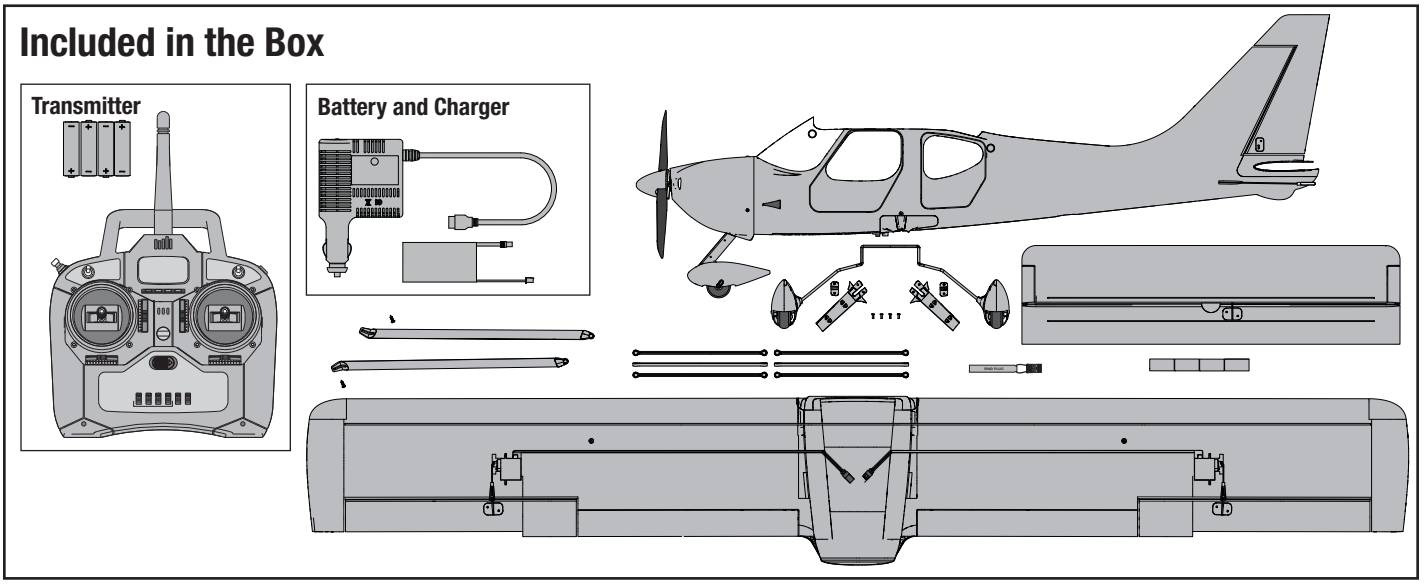


Table of Contents

Specifications

Motor: 480 Brushless outrunner, 960Kv (PKZ4416)

ESC: 18A (PKZ1814)

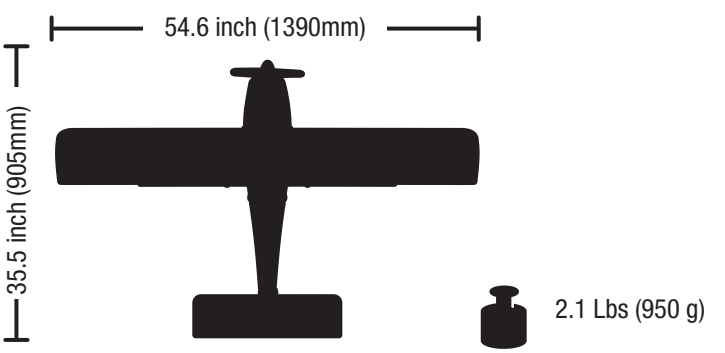
Receiver: (HBZ7651)

Servos: (1) PKZ1060 Elevator
(2) Ailerons (PKZ1060)
(1) Rudder and nose steering (PKZ1090)

Battery: 3S 1300mAh Li-Po (PKZ1033)

Battery Charger: DC powered 3S balancing fast charger (HBZ1003)

Transmitter: Spektrum™ DX4e with full range DSMX® technology



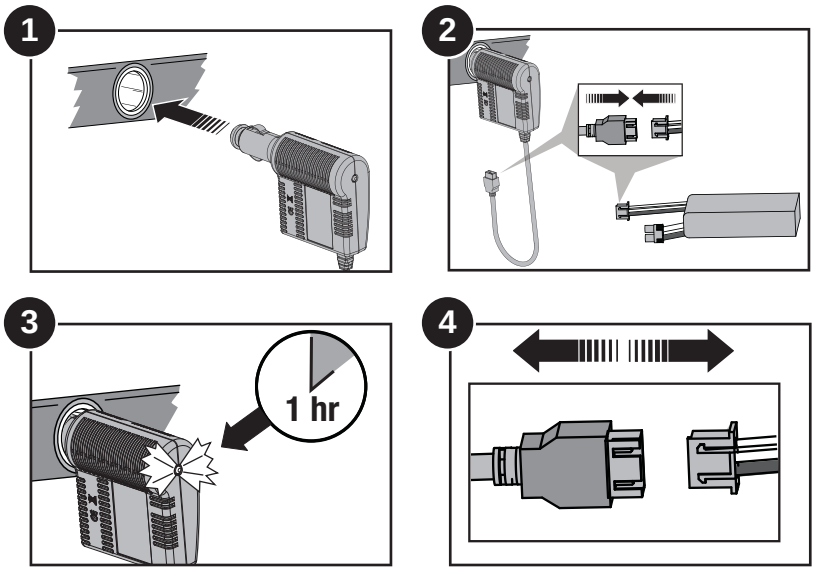
To register your product online, visit www.hobbyzonerc.com

Charging the Flight Battery

Your aircraft comes with a DC Flight Battery charger that is specifically designed to charge the included 3S Li-Po battery.

1. Insert the charger into the car outlet.
2. Connect the battery to the charger.
3. Charge the battery for approximately 1 hour (the LED flashes during charging, then turns solid when charging is complete).
4. Disconnect the battery after charging.

⚠ **CAUTION:** When connecting the battery to the battery charger, make sure the connectors are aligned as shown in figure 4. Failure to connect the battery properly could cause the terminals to short and result in fire, personal injury and/or property damage.



Charger Specifications
- Input power: 10–14V
- Max output voltage: 11.1V
- Fixed charge current: 1.3A
- Balances and charges 3S Li-Po cells with a minimum capacity of 1300mAh

This charger may be connected to a 1.5A AC Power Supply (US Only, HBZ1004), sold separately.

Charging Warnings

⚠ **CAUTION:** All instructions and warnings must be followed exactly. Mishandling of Li-Po batteries can result in a fire, personal injury, and/or property damage.

- By handling, charging or using the included Li-Po battery, you assume all risks associated with lithium batteries.
- If at any time the battery begins to balloon or swell, discontinue use immediately. If charging or discharging, discontinue and disconnect. Continuing to use, charge or discharge a battery that is ballooning or swelling can result in fire.
- Always store the battery at room temperature in a dry area for best results.
- Always transport or temporarily store the battery in a temperature range of 40–120º F (5–49º C). Do not store battery or aircraft in a car or direct sunlight. If stored in a hot car, the battery can be damaged or even catch fire.
- Always charge batteries away from flammable materials.
- Always inspect the battery before charging and never charge dead or damaged batteries.
- Always disconnect the battery after charging, and let the charger cool between charges.
- Always constantly monitor the temperature of the battery pack while charging.
- ONLY USE A CHARGER SPECIFICALLY DESIGNED TO CHARGE LI-PO BATTERIES. Failure to charge the battery with a compatible charger may cause fire resulting in personal injury and/or property damage.
- Never discharge Li-Po cells to below 3V under load.
- Never cover warning labels with hook and loop strips.
- Never leave charging batteries unattended.
- Never charge batteries outside recommended levels.
- Never attempt to dismantle or alter the charger.
- Never allow minors under the age of 14 to charge battery packs..
- Never charge batteries in extremely hot or cold places (recommended between 40–120° F or 5–49° C) or place in direct sunlight.

Transmitter

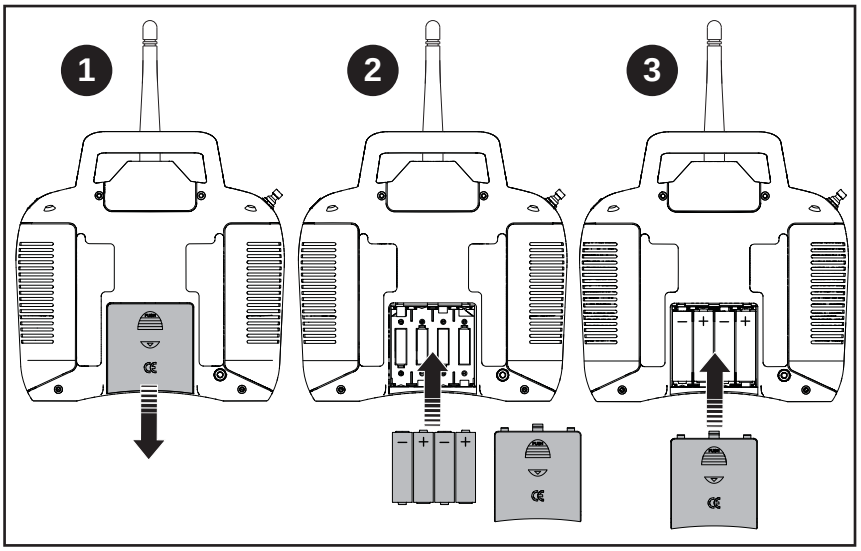
Installing the Transmitter Batteries

Your Spektrum DX4e comes prebound to the aircraft.

Remove the battery cover, install the four included batteries (noting proper polarity) and reinstall the battery cover.

Low Battery Alarm
When the battery voltage drops below 4.7 volts, an alarm sounds and the voltage LEDs flash. The batteries must be replaced immediately. If this happens while flying, land your aircraft as soon and as safely as possible.

⚠ **CAUTION:** If using rechargeable batteries, charge only rechargeable batteries. Charging non-rechargeable batteries may cause the batteries to burst, resulting in injury to persons and/or damage to property.

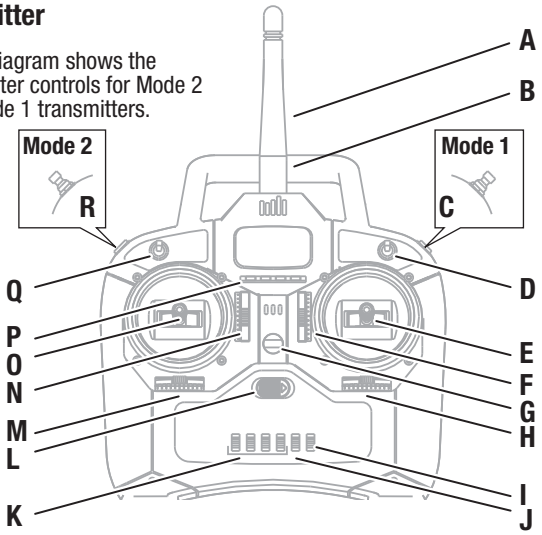


Transmitter continued

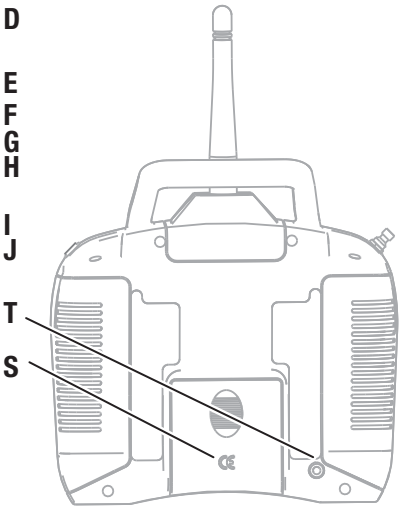
Understanding the Controls of the Transmitter

KEY	
A	Antenna
B	Handle
C	Modes 1/3 only, Trainer/Bind Button
D	Hi/Lo Rate Switch
E	Right Control Stick
F	Trim Slider (for Up-down on stick)
G	Neck Strap Connection
H	Trim Slider (for Left-right on stick)
I	Mode Switch (1/3, or 2/4)
J	Mix Switch (Elevon only)
K	Servo Reverse Switches
L	Power Switch (ON/OFF)
M	Trim Slider (for Left-right on stick)
N	Trim Slider (for Up-down on stick)
O	Left Control Stick
P	LEDs
Q	ACT/AUX Switch (Channel 5)
R	Modes 2/4 only, Trainer/Bind Button
S	Battery Cover
T	Trainer Port

* The diagram shows the transmitter controls for Mode 2 and Mode 1 transmitters.



For more information on the transmitter, go to www.horizonhobby.com/products/SPMR4400 and click on the support tab for the Spektrum DX4e to download the instruction manual.



Antenna
Do not point the antenna tip at the model. Signals transmit strongest from the antenna shaft, not the tip.

WARNING: Do not pick up the transmitter by the antenna. Do not alter or put weight on the antenna. Damage to antenna parts can decrease transmitter signal strength, which can result in loss of model control, injury or property damage.

Explanation of DX4e Transmitter LEDs, Switches and Modes For the Glasair Sportsman

Trainer/Bind Button (C: Mode 1 or R: Mode 2)
The Trainer/Bind Button is used during binding or when connecting a trainer cord (SPM6805) to the trainer port (**T**). For complete binding instructions, refer to the binding section in this manual.
When using the trainer function, connect the trainer cord into the trainer port in both the master (instructor) and the slave (student) transmitters. The master transmitter must be powered ON and bound to the receiver. The slave transmitter must be powered OFF. Any time you press and hold the trainer button on the master, it will give control authority to the slave. Releasing the trainer button returns control to the master.
IMPORTANT: The slave transmitter must always have the same reverse settings as the master.

Hi/Lo Rate Switch (D)
This switch supports high and low rate functions on aileron, elevator and rudder channels. In the upper, or "HI" position, servo travel is 100% on these channels. In the lower, or "LO", position, servo travel decreases to 70%. This switch lets you quickly change control rates from high for aggressive maneuvers to low for smooth, precise maneuvers. When learning to fly, use low rate.

MD (Mode) Switch (I)
This switch changes channel assignments to the control sticks. Always ensure the controls respond as desired before flying. A Mode 1 transmitter may be switched to Mode 3, while a Mode 2 transmitter may be switched to Mode 4.

Mix Switch (J)
This switch enables a mix for elevons on Delta wing aircraft. If needed, refer to the transmitter manual for more information.

NOTICE: The Glasair Sportsman aircraft is not a Delta wing aircraft. **DO NOT** activate elevon mixing for this model. Always ensure the controls respond as desired before flying.

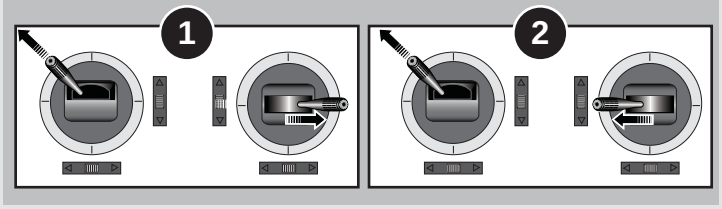
Servo Reversing Switches (K)
These switches select the servo direction of each channel. Use your fingernail or a small screwdriver to change the switch position to normal (NOR) or reverse (REV) as needed to make transmitter controls operate the model as desired. Perform the Control Direction Test before flying.

ACT/AUX Switch (Q)
This switch toggles between Virtual Instructor Training Step settings.

France RF Setting
The DX4e has a France RF setting that complies with French regulations. The France RF setting should only be turned on when operating your transmitter in France outdoors.

To set France mode (Illustration 1):
Hold the trainer button on the top of the transmitter while pushing and holding the two sticks as shown below, then power ON the transmitter. After hearing a series of descending beep tones (high to low), release the trainer switch and the sticks. The France setting is now turned on. Bind the transmitter to the receiver for the change to take effect.

To set Standard mode (Illustration 2):
Hold the trainer button on the top of the transmitter while pushing and holding the two sticks as shown below, then power ON the transmitter. After hearing a series of ascending beep tones (low to high), release the trainer switch and the sticks. The France setting is turned off.

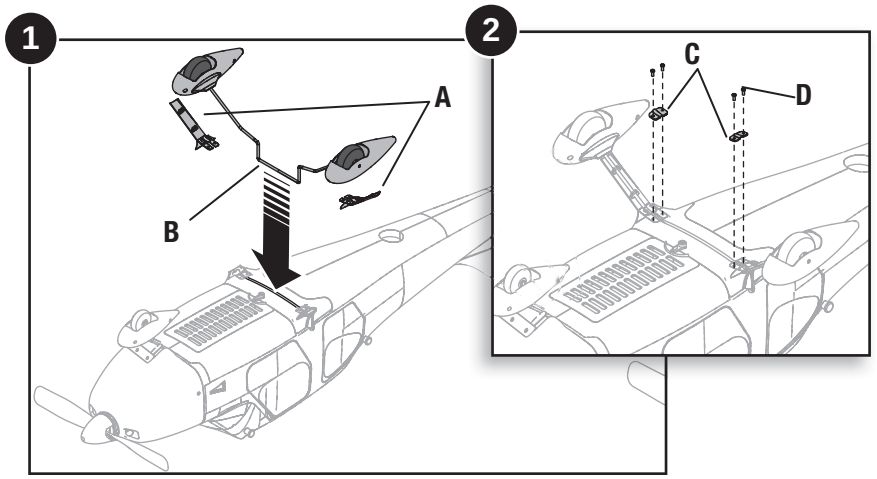


Installing the Main Landing Gear

The nose gear is installed at the factory. Always ensure the steering linkage clevis on the rudder servo arm is correctly adjusted so the nose steers straight when the rudder control is at neutral.

1. Turn the model so you can see the bottom of the fuselage.
   - Install the left and right fairings (**A**) on the respective sides of the landing gear strut as shown.
   - Install the main landing gear by inserting the main gear strut (**B**) into the slot in the fuselage as shown.
2. Install the left and right plates (**C**) on the fuselage using 4 screws (**D**) as shown.

Disassemble in reverse order.

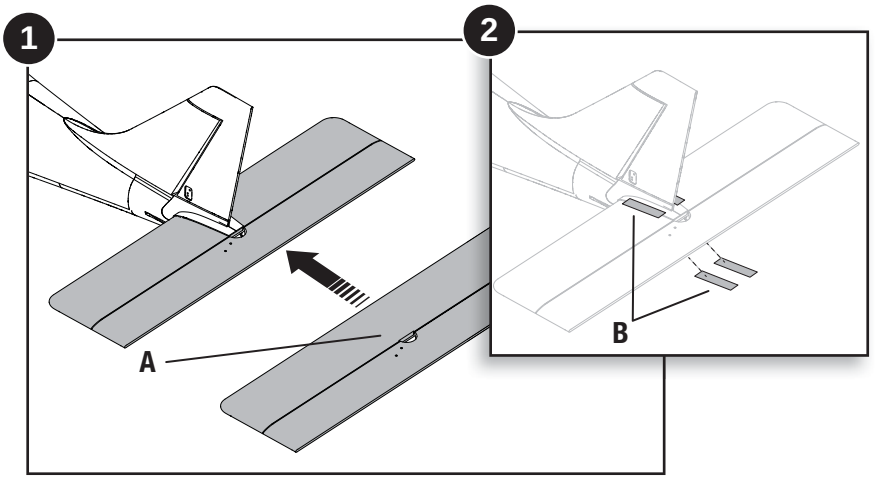


Installing the Tail

To install the tail onto the fuselage of your aircraft, start by following the 2 easy steps below:

1. Insert the tail into the slot on the fuselage. Center it by using the centering guides (**A**) located on the top side of the tail.

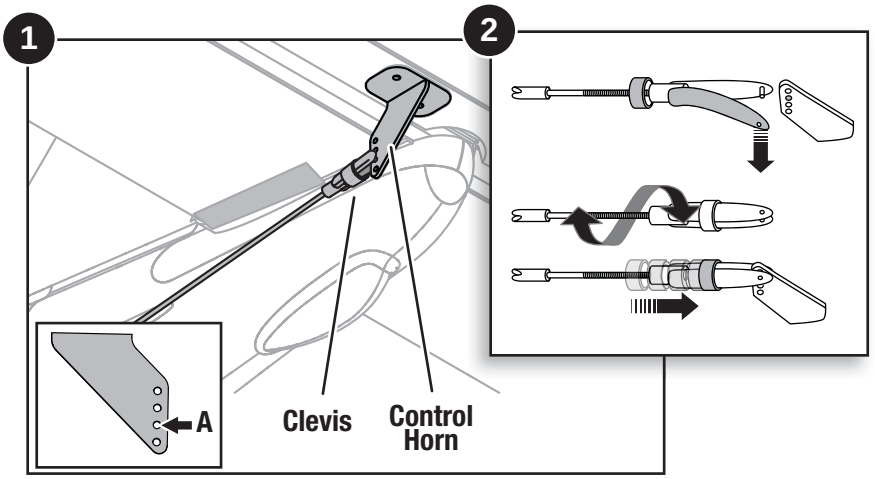
2. Once the tail is in place and centered, apply **4 pieces of tape** (included) to secure it into position, 2 on top and 2 on the bottom (**B**).



Attaching the Clevis to the Control Horn.

Finish the installation of the tail by connecting the control rod with the clevis on the tail control horn under the elevator.

1. Open the clevis and put the pin in the **second from the outermost hole (A)** of the control horn.
2. If needed, remove the clevis from the control horn.
   - Turn the clevis (as shown) on the control rod (also called a pushrod).
   - Close the clevis onto the control horn and slide the tube towards the horn to secure the clevis.



Installing the Wing

1. Connect the left and right struts (**A**) (marked L and R) to the respective sides of the wing (**B**) using the included screws (**C**). Leave the screws loose until the wing is installed on the fuselage and the ball ends are snapped into place.
   - Connect the aileron servo connectors to the included Y-harness (**D**) in the fuselage. The left and right servos can be connected to either side of the Y-harness. Ensure the Y-harness is connected to the AILE port of the receiver.
   - Install the wing on the fuselage.
   - Firmly press the strut sockets (**E**) onto the fuselage ball mounts (**F**) as shown.
   - Secure the struts to the wing using the screws (**C**).

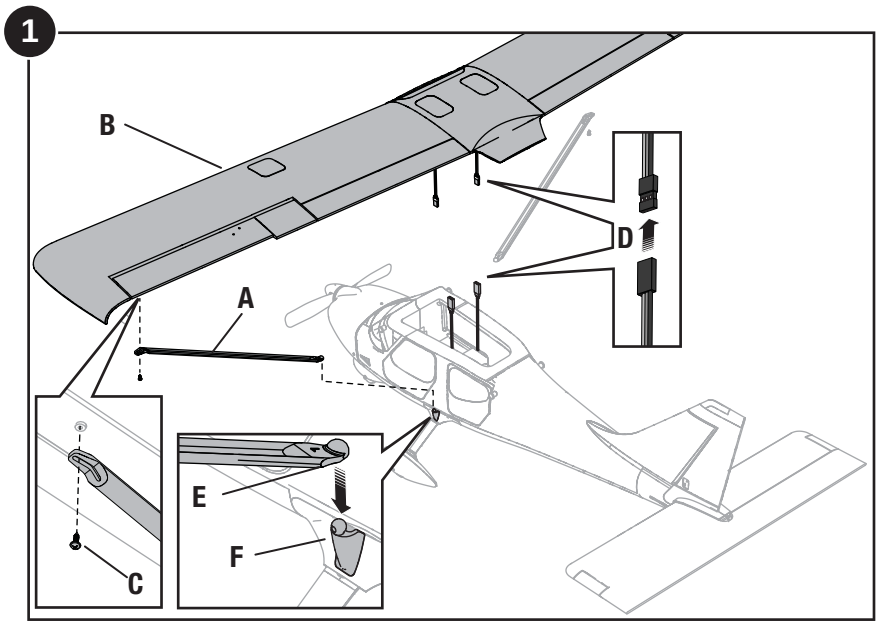
⚠ **CAUTION:** DO NOT crush or otherwise damage the wiring when attaching the wing to the fuselage.

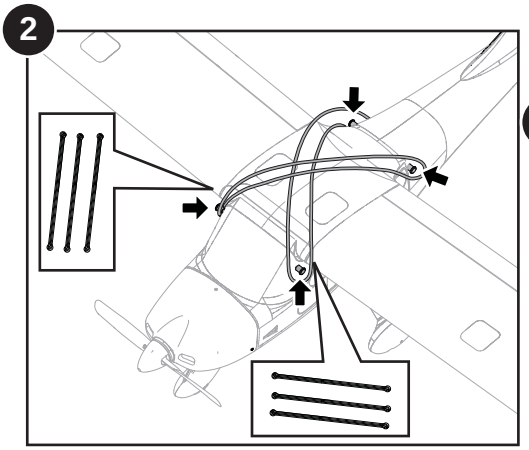
2. Install at least 3 rubber bands (**G**) on each front rod (6 total).
   - Install the rubber bands over the wing from a front rod to the rear rod on the opposite side of the fuselage as shown.

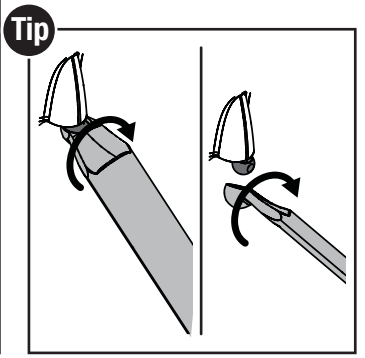
IMPORTANT: The rubber bands prevent wing damage from impact. Always replace worn or broken rubber bands.

Disassemble in reverse order.

Tip: Use a twisting motion to remove the strut socket from the fuselage ball mount.







Control Surface Centering

For best performance when using Virtual Instructor technology, it is important that excessive trim is not used. If the model requires excessive transmitter trim (4 or more clicks of trim per channel), return the transmitter trim to zero and adjust the linkages mechanically so that the control surfaces are in the flight trimmed position.

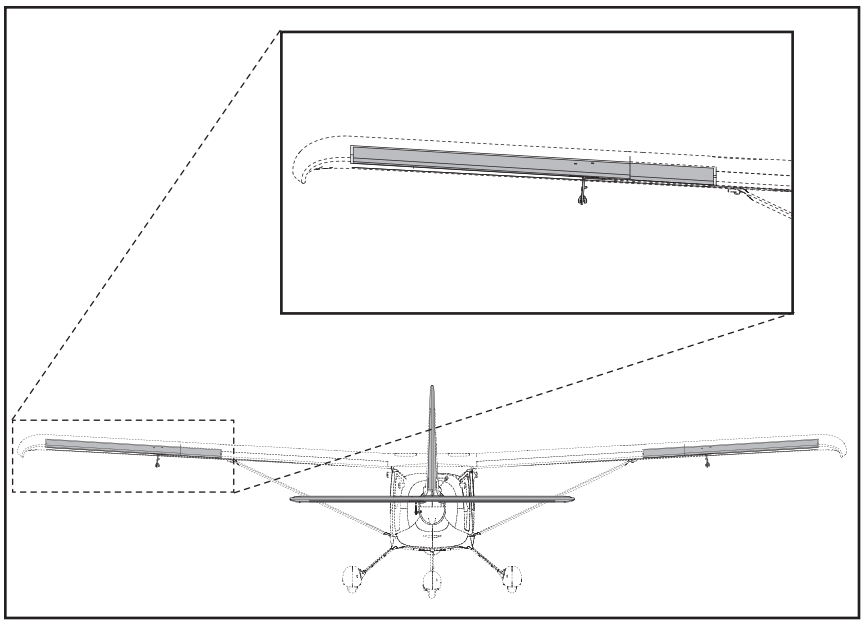
Before the first flights, or in the event of an accident, make sure the control surfaces (Rudder, Elevator and Ailerons) are centered (aligned) with the rest of the surface. If the control surfaces are not centered, centering can be achieved by following the steps below:

1. Ensure all trims are neutral.

2. Disconnect the clevis from the control horn and turn it either clockwise or counterclockwise to lengthen or shorten the linkage (see “Attaching the Clevis to the Control Horn”, step 2).

Tip: Ensure the clevis is attached to the correct hole in the control horn (see the “Factory Settings for the Control Horns and Servo Arms” section in this manual).

TIP: Always ensure the nose gear steering linkage on the rudder servo arm is correctly adjusted so the model steers straight when the rudder control is at neutral.



Installing the Flight Battery and Arming the Electronic Speed Control (ESC)

1. Rest the aircraft on a flat surface with the landing gear facing up.

2. Turn the latch (**A**) and remove the battery hatch.

3. Lower the throttle and throttle trim, then power on the transmitter for at least 5 seconds.
(Mode 2 transmitter shown)

4. Center and secure the flight battery (**B**) in the battery compartment using the hook and loop strap (**C**) so that the aircraft has a balanced Center of Gravity (CG).

IMPORTANT: Before flying, refer to the "Verifying Your Aircraft's Center of Gravity (CG)" section for details about final battery placement.

5. Connect the flight battery to the aircraft and **keep the aircraft immobile for at least 5 seconds.** The aircraft does not need to be level, but it must be kept immobile. If the aircraft moves, disconnect, then reconnect the battery.

If you accidentally connect the battery while the throttle is fully opened, a musical tone will sound after 5 seconds and the ESC will enter programming mode. Disconnect the battery immediately and go back to step 5.

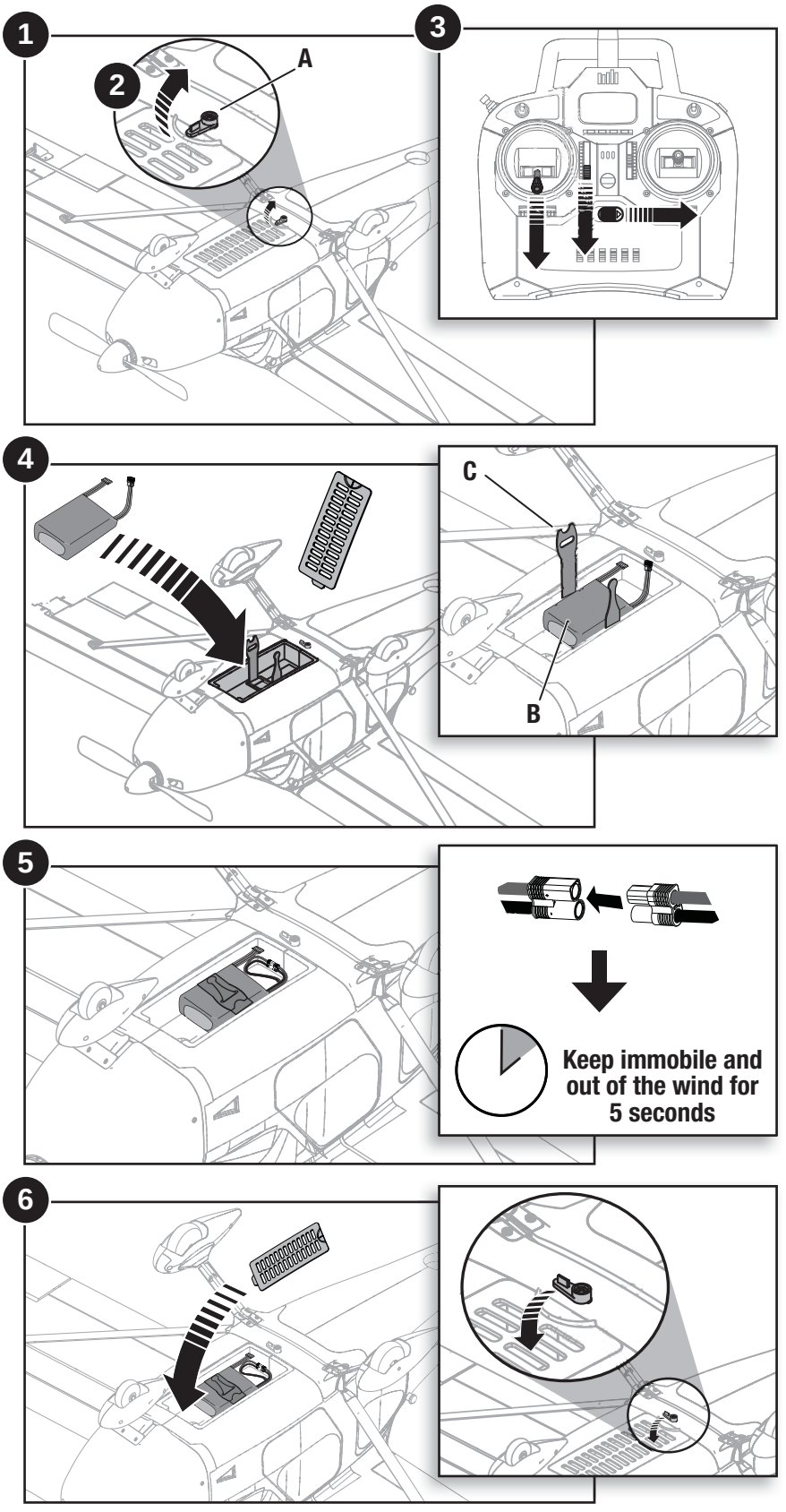
6. Replace the battery hatch and turn the latch.

⚠ **CAUTION:** Always disconnect the Li-Po flight battery from the aircraft receiver when not flying to avoid over-discharging the battery. Batteries discharged to a voltage lower than the lowest approved voltage may become damaged, resulting in loss of performance and potential fire when batteries are charged.

⚠ **CAUTION:** Always keep hands away from the propeller. When armed, the motor will turn the propeller in response to any throttle movement.

Battery Precautions for Flight

- Keep the aircraft close until you are familiar with the flight time.
- Do not fly to LVC (motors pulsing) repeatedly. This may result in battery damage.
- Always disconnect and remove the flight battery when finished flying.



Verifying Your Aircraft's Center of Gravity (CG)

An aircraft with correct CG has its weight balanced on the center of the aircraft for safe, stable flight.

Verify the CG by supporting the aircraft 45mm (approximately 1.75 inches) back from the front edge of the wing, as shown.

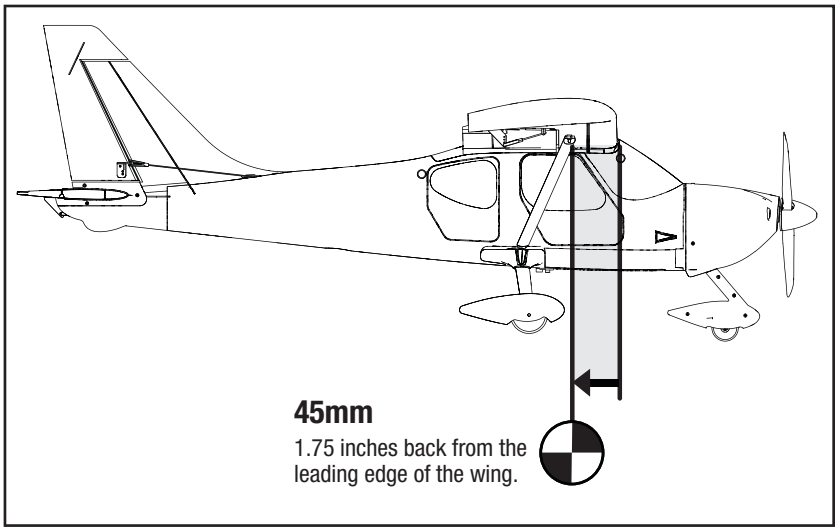
Tip: Balance the aircraft on your fingertips near the fuselage under the wings.

- If the nose goes down, move the flight battery back until the aircraft balances.
- If the nose goes up, move the flight battery forward until the aircraft balances.

When flying with correct CG, the aircraft should climb gradually at full power and fly level at 50%–60% power with no elevator input.

If the aircraft CG is too far forward (nose heavy), up elevator is required to fly level at 50%–60% power. If the aircraft CG is too far aft (tail heavy), down elevator is required to fly level.

Adjust the battery position as needed.

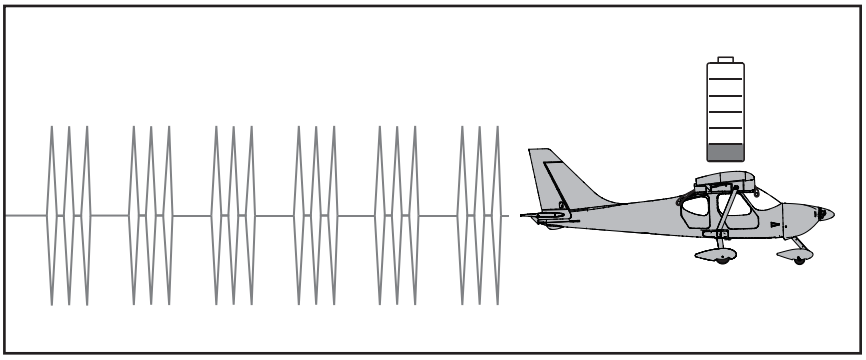


LVC (Low Voltage Cutoff)

LVC is a mechanism built into your ESC to protect the battery from over-discharge. When the battery charge is too low, LVC limits power supplied to the motor. The aircraft will begin to slow and you will hear the motor pulse. When the motor power decreases, land the aircraft immediately and recharge the flight battery.

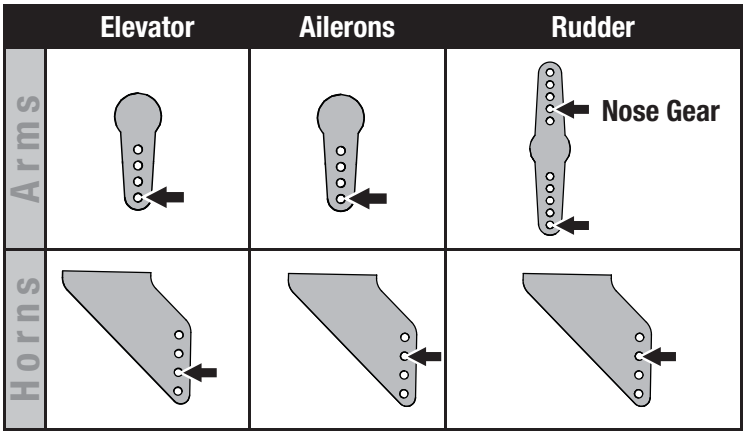
Disconnect and remove the Li-Po battery from the aircraft after use to prevent trickle discharge. Charge your Li-Po battery to about half capacity before storage. During storage, make sure the battery charge does not fall below 3V per cell.

NOTICE: Repeated flying to LVC will damage the battery.



Factory Settings for the Control Horns and Servo Arms

The Illustration shows recommended hole settings in the servo arms and control horns.



Control Direction Test

IMPORTANT: Perform the Control Direction Test before activating Virtual Instructor (advancing the throttle above 25% for the first time).

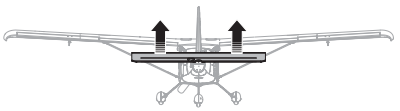
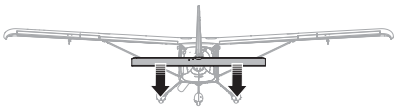
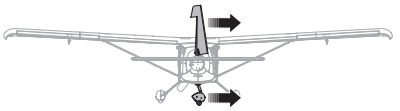
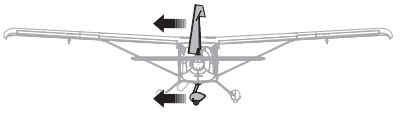
1. Power on the transmitter.
2. Make sure the throttle is at 0% and the throttle trim is fully lowered on the transmitter.
3. Power on the model.

Make sure the control surfaces (rudder, elevator and ailerons) are at neutral or 0 degrees. Ideally, centering the trim will center the surfaces. Refer to the Control Centering instructions to adjust the control surfaces. Move the transmitter control sticks so the model's rudder, elevator and ailerons move as shown.

If your model does not respond correctly, DO NOT FLY! See the Troubleshooting Guide in this manual for more information. If you need more assistance, contact the appropriate Horizon Product Support department.

The mode of the included transmitter cannot be changed between Modes 2 and 1.

Tip: To determine what mode your transmitter is, look at the Trainer/Bind button. When looking from the front, the Mode 2 transmitter's Bind button is on the left, while the Mode 1 transmitter's Bind button is on the right.

	Transmitter command (Mode 1 / Mode 2)	Control Surface Reaction
Elevator	Up Elevator Command	
	Down Elevator Command	
Aileron	Stick Right	
	Stick Left	
Rudder	Stick Right	
	Stick Left	

Flight Control

For smooth control of your aircraft, always make small corrections. All directions are described as if you were sitting in the aircraft.

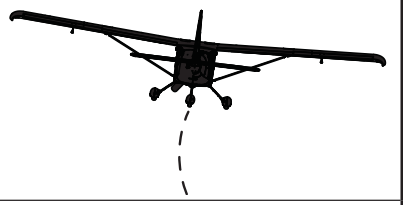
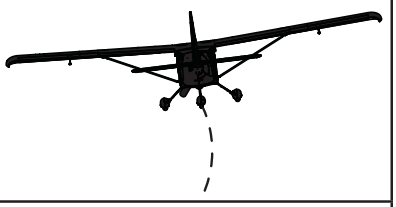
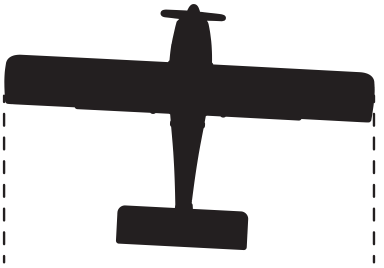
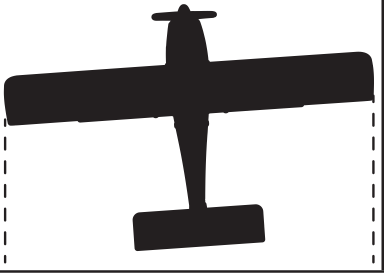
When the aircraft's nose is pointing toward you, left aileron will bank and turn the aircraft left (your right while holding the transmitter).

- *Flying faster or slower:* When your aircraft is stable in the air, push the throttle stick up to make the aircraft go faster. Pull the throttle stick back to slow down. The aircraft will climb when the throttle is increased.
- *Elevator up and down:* Push the elevator stick forward to make the aircraft go down. Pull the elevator stick back to go up.
- *Banking right and left:* Move the aileron stick right to make the aircraft turn or "bank" to the right. Move the aileron stick left to bank left.
- *Rudder left and right:* Push the rudder stick left or right to steer the aircraft while on the ground. In the air, aileron is used for turning left or right.

For the first flights, make sure Virtual Instructor is set at Step 1, its highest level to help you learn to fly.

Tip: If you get into trouble and need to go back to Training Step 1 for maximum stability, flip both switches down (ACT/AUX and RATE).

IMPORTANT: Even though the Virtual Instructor technology is a very helpful tool, the aircraft still needs to be flown manually. If incorrect input is given at lower altitudes or at slower speeds, the aircraft can crash.

	Transmitter command (Mode 1 / Mode 2)	Aircraft Reaction
Elevator	Up Elevator Command	
	Down Elevator Command	
Aileron	Stick Right	
	Stick Left	
Rudder	Stick Right	
	Stick Left	

Flight Trimming

Move the trim sliders for the controls as they are assigned on your transmitter. Familiarize yourself with your transmitter's controls and the aircraft's response before flying by performing the recommended Control Direction Test.

If you must use more than 4 clicks on a trim slider to make the aircraft fly straight and level, adjust the clevis on a control surface after you fly, as described below.

Elevator trim:
Trim the elevator at half throttle. When trimmed correctly, your aircraft will climb steadily at full throttle and will fly level at half throttle.

- If the aircraft's nose drifts up or down while the elevator stick is at neutral (centered) position, move the elevator trim slider by one or two "click" increments in the SAME direction as the drift.

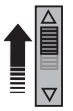
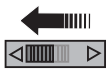
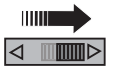
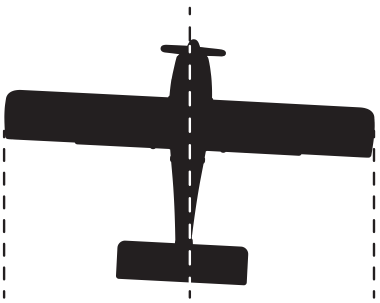
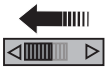
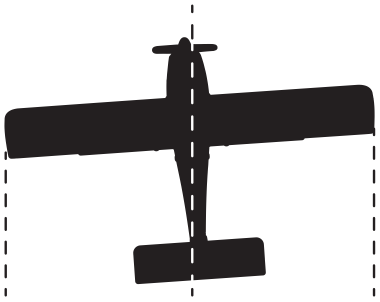
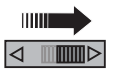
Aileron trim:
When trimmed correctly, your aircraft flies with wings level.

- If the aircraft drifts left or right when the aileron stick is at neutral (centered) position, move the aileron trim slider by one or two "click" increments OPPOSITE the direction of roll.

Rudder trim:
- If the aircraft drifts left or right while the rudder stick is at the neutral position (centered), move the rudder trim slider by one "click" increments OPPOSITE the direction of drift.

IMPORTANT: You can return any trim setting to neutral by pushing the trim slider to the middle position, then adjusting the clevis on that control surface to position it the same as it was with the trim slider offset.

NOTICE: Use of trim on the transmitter will affect servo travel and Virtual Instructor operation.

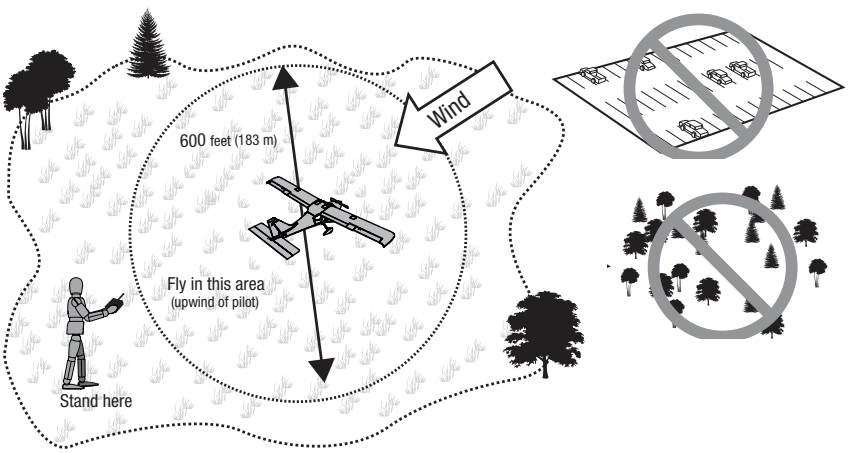
	Aircraft drift	Required Trim
Elevator		 Up Trim
		 Down Trim
Aileron		 Left Trim
		 Right Trim
Rudder		 Left Trim
		 Right Trim

Choose a Flying Field

In order to have the most success and to protect your property and aircraft, it is very important to select a place to fly that is very open. Consult local laws and ordinances before choosing a location to fly your aircraft.

The site should:
- Have a minimum of 600 feet (183m) of clear space in all directions.
- Stay clear of pedestrians.
- Stay free of trees, buildings, cars, power lines or anything that could entangle your aircraft or interfere with your line of sight.

Remember, your aircraft can reach significant speeds when flying and can cover ground quickly. Plan on flying in an area that gives you more space than you think you need, especially with first flights.



Range Test

Before each flying session, and especially with a new model, you should perform a range check. The DX4e incorporates a range testing system. Placing the transmitter in RANGE CHECK mode reduces the output power, allowing a range check.

1. Power on the transmitter for 5 seconds or more with the throttle stick and trim low. Plug in the aircraft battery and keep the aircraft immobile for 5 seconds.

2. Face the model with the transmitter in your normal flying position. **Push and hold the trainer button while toggling the HI/LO Rate switch four times.** The LEDs will flash and the alarm will sound. The system is in range check mode.

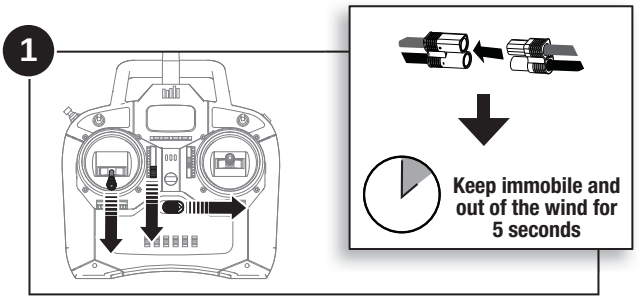
IMPORTANT: You must hold the trainer button during the entire range check process. Releasing the button will exit the range check mode.

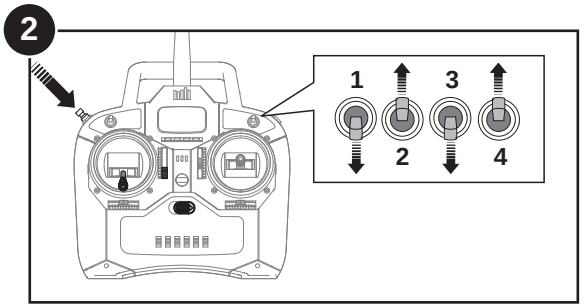
3. With the system powered on and the model restrained on the ground*, stand 28 meters (90 feet) away from the model.

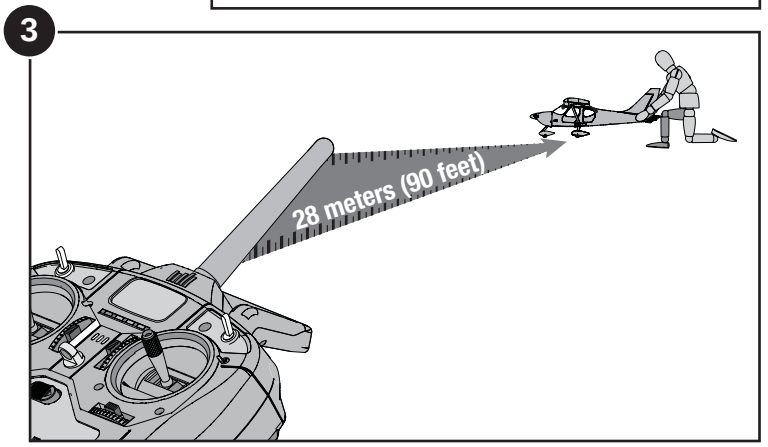
CAUTION: In some aircraft, when the model is placed on the ground, the antenna(s) can be within inches of the ground. Close proximity of the antenna(s) to the ground can reduce the effectiveness of the range check. If you experience issues during the range check, restrain the model on a non-conductive stand or table up to 2ft (60cm) above the ground, then range check the system again.

4. Move the transmitter rudder, elevator, aileron and throttle controls to ensure they operate smoothly at 28 meters (90 feet).

5. If control issues exist, do not attempt to fly. Refer to the contact table at the end of the this manual to contact Horizon Hobby product support. Also, see the Spektrum website for more information.







CAUTION: While holding the aircraft during the Range Test, always keep body parts and loose items away from the propeller. Failure to do so could cause personal injury.

Virtual Instructor™ Technology

The patent pending Virtual Instructor (VI) system will not activate until the throttle stick or trim is increased for the first time. Once VI is active, the control surfaces may move rapidly and noisily on the aircraft. This is normal. VI will remain active until the battery is disconnected.

The Virtual Instructor™ technology features 4 assisting systems:

Wing Leveling–Uses a stabilization sensor to keep the wings level during normal flight.

What you will see...after the throttle is increased above 25% for the first time, the ailerons and rudder will move when the aircraft is moved. In the air, the model will gently roll back to wings level when the aileron stick is released.

Envelope Control - Active only when VI is in Training Step 1 or 2. Uses stabilization sensors and computer logic to reduce aileron control input automatically so the model will not continue to roll and enter a spiral dive.

What you will see...ailerons will decrease in deflection after the stick is held for a short period of time.

Aileron to rudder and elevator mixing - Assists with stability in turns. Active only when VI is in Training Step 1 or 2.

What you will see....the elevator and rudder moves when the ailerons are moved.

Roll and Yaw Damping - Uses stabilization sensors to resist uncommanded movement due to wind and turbulence.

What you will see...ailerons and rudder move when model is moved, once VI has been activated with the throttle stick.

These automatic systems work together to help prevent the kind of situations experienced by new pilots, such as over-correction, that can lead to accidents.

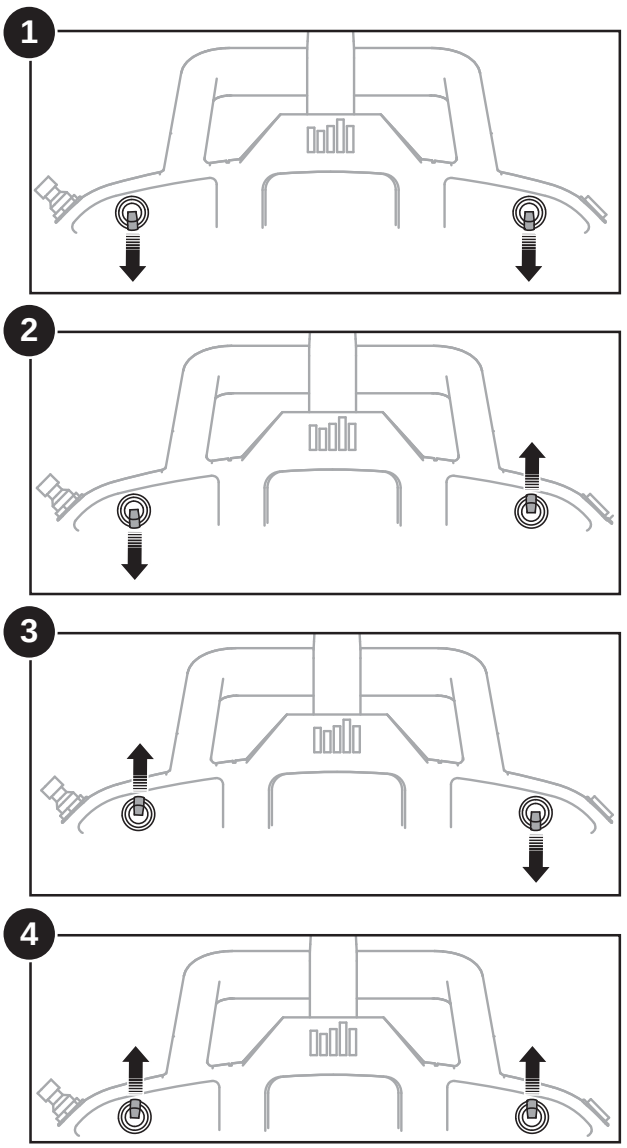
Online

For ***ADVANCED Flying tips*** go online and visit www.hobbyzonerc.com to see Mike McConville's Tips.

Virtual Instructor Training Steps

You control the help Virtual Instructor (VI) provides while you learn to fly. As your flying skills grow, try decreasing VI assistance. Change aircraft response at any time by moving the ACT/AUX and Rate switches on the transmitter.

1. **ACT/AUX at ON, Rate at LO**
   This step provides starting stabilization, including these features:
   - Wing leveling gently returns the wings to level when the aileron stick is released. If you become confused while flying, release the sticks and the aircraft will return to level flight.
   - 2-axis dampening moderates the effect of wind turbulence and provides stability in most flight maneuvers.
   - Bank limiting prevents the aircraft from entering a spiral by decreasing control input automatically, even if you become confused and hold the wrong turn input.
   - Active mixing responds to your aileron stick movements and automatically gives proper rudder and elevator inputs to make turns smooth and coordinated.
   - The aircraft responds more gently to control stick movement.
2. **ACT/AUX at ON, Rate at HI**
   This step provides starting stabilization with greater maneuverability. In high rate, the ailerons, elevator and rudder move more than at the low rate so that the aircraft responds more aggressively to control stick movement.
3. **ACT/AUX at OFF, Rate at LO**
   This step decreases VI stabilization so that bank limiting and active mixing are removed.
   You will need to be more attentive to the aircraft's response, because this Step decreases the assistance Virtual Instructor provides.
4. **ACT/AUX at OFF, Rate at HI**
   This step offers you the same freedom as step 3, with greater maneuverability.



Flying Tips

A good flying day is calm, with winds that are less than 5–7 mph (8–11km/h). Flying in faster winds than this could make flying difficult and result in a crash.

Wind near the ground can be less than the wind at the elevation where your aircraft flies.

Refer to the Virtual Instructor Training Steps to help you learn to fly.

We recommend that if you get into trouble, release all controls and keep your hands near the control sticks. When the model has enough altitude in which to recover, the VI system and aerodynamics of the model's design will level the wings and return the model to level flight.

Online
For additional Flying tips, go online and visit www.hobbyzonerc.com to see Mike McConville's Tips for First Flights.

- Resist the desire to fly at full throttle. Flying slowly at first allows for greater response time should anything go wrong.
- Always keep your aircraft in plain sight and up wind from you.
- Gain experience by first flying in large circles high off the ground. Once you feel comfortable, gradually progress to more advanced maneuvers.
- Do not attempt your first turn at low altitude. Higher altitudes allow for greater possibility of correction.
- Control stick movements are quite sensitive. Avoid pushing the control sticks to their endpoints until you become more familiar with your aircraft.
- To recover from a nose dive or loss of control, decrease throttle and release the aileron stick. Pull the elevator stick back a small amount to pull up the nose of the aircraft.
- Remember, use rudder to steer on the ground, but when in the air, use only aileron.
- Remember to flip both switches on top of the transmitter down if you get into trouble.

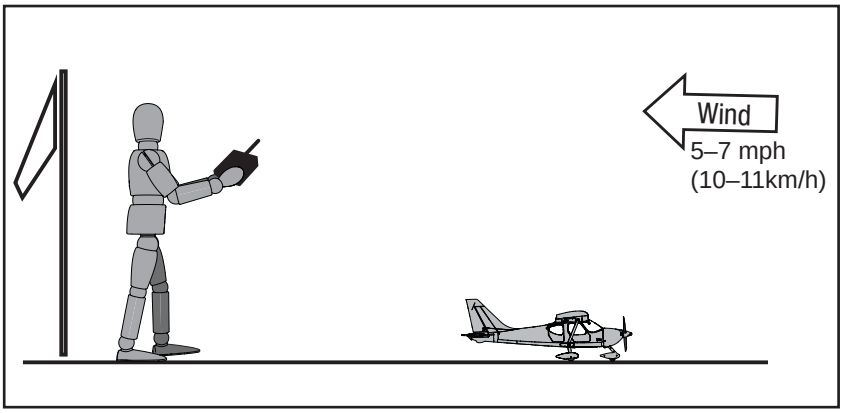
✓	Preflight Checklist
	1. Charge flight battery.
	2. Install flight battery in aircraft (once it has been fully charged).
	3. Make sure linkages move freely.
	4. Perform Control Direction Test with transmitter.

✓	Preflight Checklist
	5. Make sure control surfaces are centered.
	6. Find a safe and open area.
	7. Perform a radio system Range Check.
	8. Plan flight for flying field conditions.

Takeoff

Take off from the ground is recommended for first flights, however, if the ground is not hard and flat, get help to hand launch your aircraft.

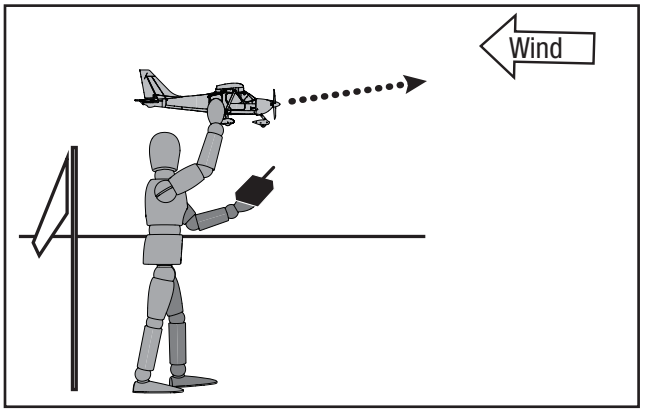
1. Place the aircraft on its landing gear in a large, open area with smooth asphalt or concrete. The aircraft's nose should point into the wind (in no greater than 5–7 mph (8–11km/hr) wind).
2. Stand behind your aircraft so you can see the rudder, ailerons and elevator.
3. Slowly move the throttle stick to FULL (100%) while gently pulling back on the elevator stick. Use the rudder to keep the aircraft's nose pointed into the wind while it leaves the ground.
4. With a full battery in calm wind, your aircraft should rise off the ground in approximately 20 feet (7 meters).



Tip: Using UP elevator will allow the aircraft to takeoff in a shorter distance, however, too much UP elevator will result in a stall.

Tip: When learning to fly, get help to hand-launch your aircraft so you can concentrate on flying. If you must hand-launch the aircraft alone, hold the model in your dominant hand and the transmitter in your other hand. An optional neck strap (SPMP610, sold separately) can help you hold the transmitter.

1. Grip the aircraft under the fuselage, behind the rear landing gear.
2. Carefully increase transmitter throttle control to FULL (100%).
3. Throw the aircraft slightly nose up and directly into the wind (less than 5–7 mph (8–11km/h)) while keeping the wings parallel to the ground.



Flying

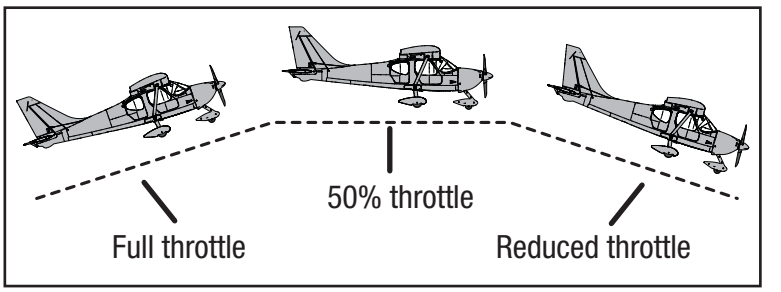
1. Let the aircraft climb at full throttle, into the wind, until the aircraft gets about 300 feet (91meters) above the ground, then decrease the throttle to half (50%).

Tip: When properly trimmed, your aircraft's wing design causes a climb at full throttle without use of elevator.

Try to make only small and gentle movements of the control sticks so you can see how the aircraft responds. Your aircraft is designed to climb and turn well.

Flying with the nose pointed toward you is one of the hardest things to do when learning to fly.

To practice piloting the aircraft with the nose pointed toward you, try flying in large circles high off the ground.



VIRTUAL INSTRUCTOR

Wing leveling system
Your aircraft will automatically level its wings to help you stay in the air. If you feel you are losing control, release the aileron stick to allow it to slowly return to level flight.

Active Control Mixing
When Virtual Instructor is on Training Steps 1 and 2, aileron input results in an automatic mix to elevator and rudder to help keep altitude in turns.

Landing

The aircraft can fly for approximately 8-10 minutes on one battery charge. This flight time is based on the recommended flying style shown in this manual.

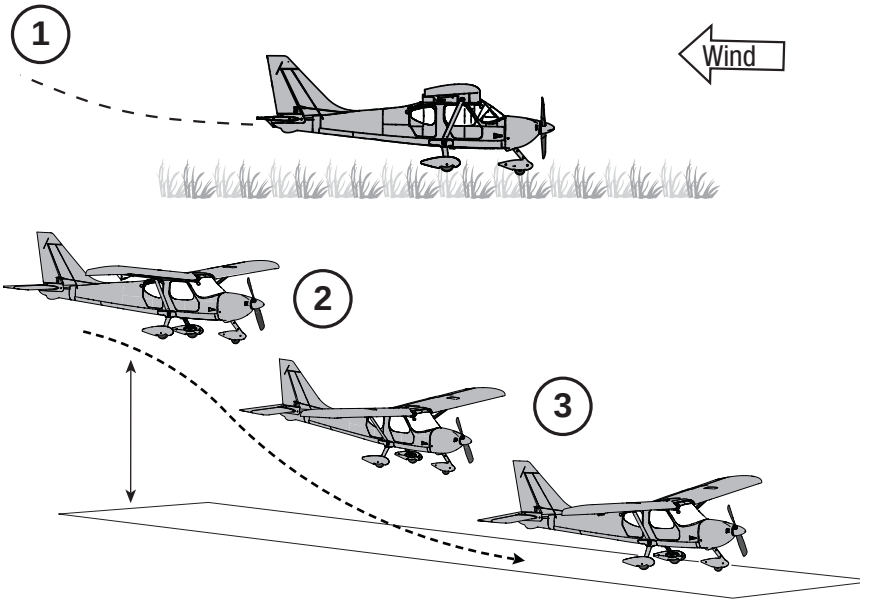
When you notice the aircraft no longer climbs while under full power, well before motor begins to pulse, land immediately and recharge the battery or you may damage the Li-Po battery.

1. Decrease the throttle and bring the aircraft's nose into the wind. Do not be afraid to fully reduce the throttle and let the aircraft glide unpowered.

2. While gliding into the wind, little or no elevator, aileron and rudder should be required. If you think the aircraft will land short of your target area, gently add a small amount of throttle and a slight amount of up elevator.

3. Once the aircraft is 3–4 feet above ground, slowly pull back the elevator stick. At this speed, this should result in a "flare", causing the nose to rise without increasing altitude. As the aircraft loses speed, the main gear will touch down first, followed by the nose gear.

4. Allow the aircraft to come to a stop.



⚠ **CAUTION:** Never catch a flying aircraft in your hands. Doing so could cause personal injury and damage to the aircraft.

NOTICE: When finished flying, never keep the aircraft in the sun. Do not store the aircraft in a hot, enclosed area such as a car. Doing so can damage the foam.

✓	Post Flight Checklist
	1. Disconnect flight battery from aircraft (Required for Safety)
	2. Remove flight battery from aircraft
	3. Power off transmitter
	4. Recharge flight battery

✓	Post Flight Checklist
	5. Repair or replace all damaged parts
	6. Store flight battery apart from aircraft and monitor the battery charge
	7. Make note of flight conditions and flight plan results, planning for future flights

Transmitter and Receiver Binding

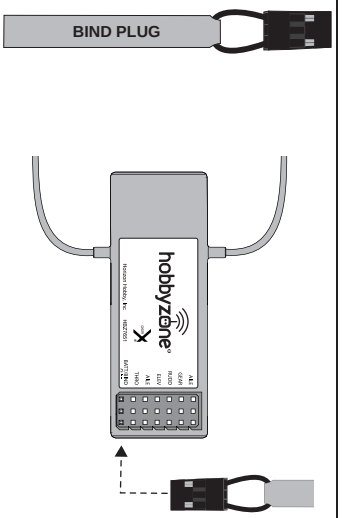
The aircraft should be bound to the transmitter at the factory, but if you need to re-bind them, follow these steps. If your aircraft does not respond to the transmitter when the batteries in the aircraft and transmitter are fully charged, your aircraft and transmitter may need to be re-bound using the instructions below.

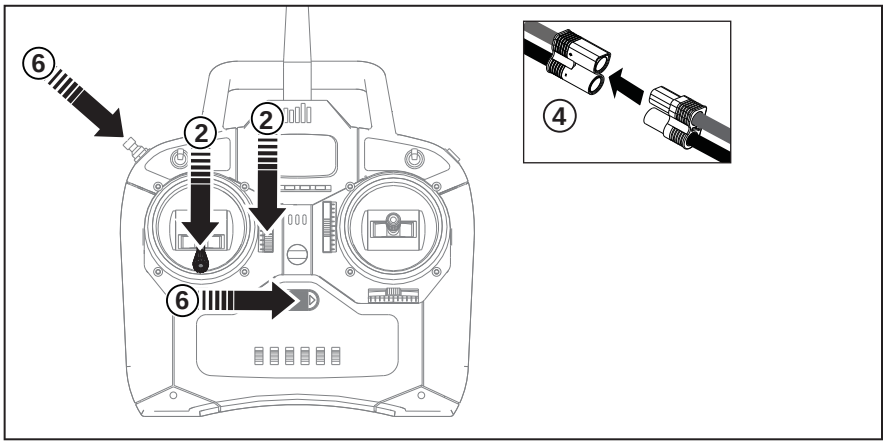
Binding is the process of programming the control unit to recognize the GUID (Globally Unique Identifier) code of a single specific transmitter. You need to 'bind' your chosen Spektrum™ DSM2®/DSMX® technology equipped aircraft transmitter to the receiver for proper operation.

Please visit www.bindnfly.com for a complete list of compatible transmitters.

* The throttle will not arm if the transmitter's throttle control is not put at the lowest position. If you encounter problems, follow the binding instructions and refer to the transmitter troubleshooting guide for other instructions. If needed, contact the appropriate Horizon Product Support office.

✓	Binding Procedure Reference Table
	1. Make sure the transmitter is powered off.
	2. Make sure the transmitter controls are neutral, the throttle and throttle trim are in the low position, and the aircraft is immobile.
	3. Install a bind plug in the receiver bind port.
	4. Connect the flight battery to the ESC. The ESC will produce a series of sounds. One long tone, then three short tones confirm that the LVC is set for the ESC.
	5. The receiver LED will begin to flash rapidly.
	6. Power on the transmitter while holding the transmitter bind button or switch. Refer to your transmitter's manual for binding button or switch instructions.
	7. When the receiver binds to the transmitter, the light on the receiver will turn solid and the ESC will produce a series of three ascending tones. The tones will indicate the ESC is armed, provided the throttle stick and throttle trim are low enough to trigger arming.
	8. Remove the bind plug from the bind port.
	9. Safely store the bind plug (some owners attach the bind plug to their transmitter using two-part loops and clips).
The receiver should retain the binding instructions received from the transmitter until another binding is done.	





Service and Repairs

Thanks to the Z-Foam™ material in your aircraft, repairs to the foam can be made using virtually any adhesive (hot glue, regular CA (cyanoacrylate adhesive), epoxy, etc).

NOTICE: Crash damage is not covered under warranty.

When parts are not repairable, see the Replacement Parts List for ordering by item number.

Use of CA accelerant on your aircraft can damage paint. DO NOT handle the aircraft until accelerant fully dries.

Service of Power Components

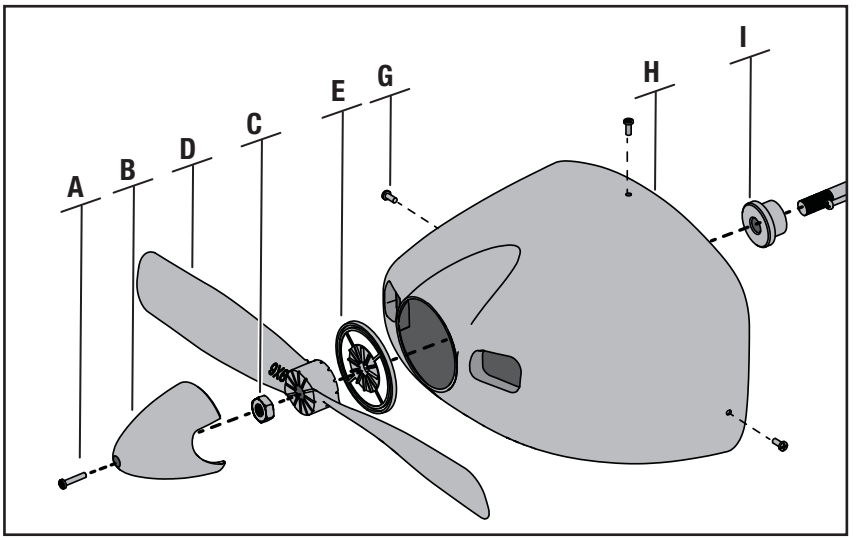
CAUTION: Always disconnect the flight battery from the model before removing the propeller.

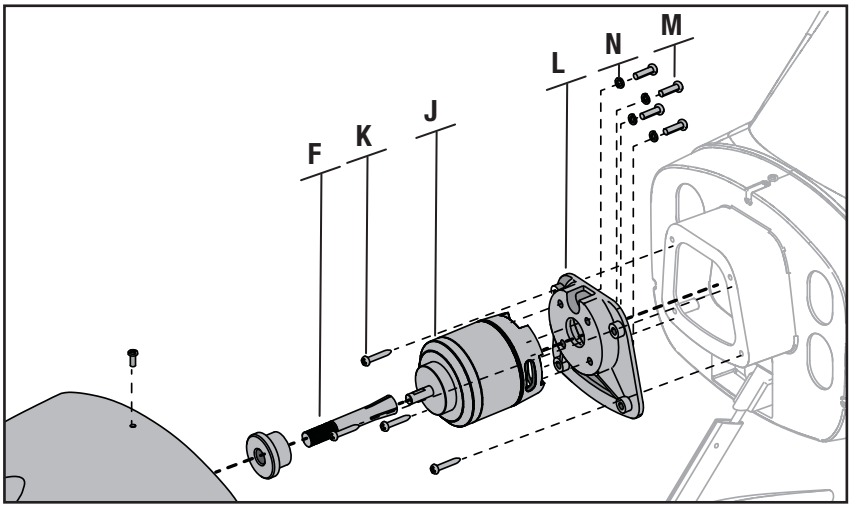
Disassembly

1. Remove the screw (**A**) and the spinner (**B**) from the hex nut (**C**).
2. Remove the hex nut, propeller (**D**) and plate (**E**) from the collet (**F**). A tool may be required to remove the hex nut.
3. Carefully remove the 3 screws (**G**) and the cowling (**H**) from the fuselage. Paint may hold the cowling on the fuselage.
4. Remove the back plate (**I**) and the collet from the motor (**J**).
5. Remove the 4 screws (**K**) from the motor mount (**L**).
6. Disconnect the motor connectors from the ESC connectors.
7. Remove the 4 screws (**M**) and 4 washers (**N**) from the motor mount and motor.
8. Assemble in reverse order.

Assembly Tips

- Correctly align and connect the motor wire colors with the ESC wires.
- The propeller size numbers (9 x 6) must face out from the motor for correct propeller operation.
- A tool is required to tighten the hex nut on the collet.
- Ensure the spinner is fully connected to the spinner back plate for safe operation.

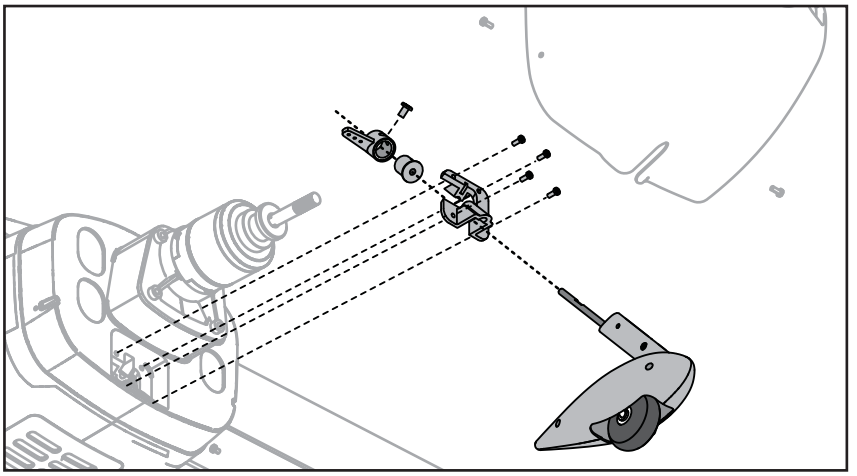




Nose Gear Service

1. Remove the spinner, propeller and cowling for access to the nose gear (as shown in the "Service of Power Components" section of this manual).
2. Loosen the nose gear screw (**A**) in the steering arm (**B**) and remove the strut (**C**). The steering arm may be loose in the steering mount (**D**) after the strut is removed, even if the servo linkage (**E**) is connected. For safe steering, ensure the linkage is kept in the same hole as it was delivered from the factory.
3. Assemble in reverse order. Install the strut with the flat spot facing forward. Fully tighten the nose gear screw against the flat surface of the nose gear strut.

Always ensure the steering linkage clevis on the rudder servo arm is correctly adjusted so the model steers straight when the rudder control is at neutral.



Trouble Shooting Guide

Problem	Possible Cause	Solution
Unit does not operate	There is no link between the transmitter and receiver	Re-Bind the system following directions in this manual
	Transmitter AA batteries are depleted or installed incorrectly as indicated by a dim or unlit LED on the transmitter or the low battery alarm	Check polarity installation or replace with fresh AA batteries
	No electrical connection	Push connectors together until they are secure
	Flight battery is not charged	Fully charge the battery
	Crash has damaged the radio inside the fuselage	Replace the fuselage or receiver
Aircraft keeps turning in one direction	Rudder or rudder trim is not adjusted correctly	Adjust stick trims, then land and manually adjust aileron and/or rudder linkages so no transmitter trim is required
	Aileron or aileron trim is not adjusted correctly	Adjust stick trims or manually adjust aileron positions
Aircraft turns when on the ground, but flies straight in the air	Nose gear linkage is out of adjustment.	Adjust the nose gear steering linkage on the rudder servo arm so the model steers straight on the ground when the rudder control is at neutral.
Aircraft is difficult to control	Wing or tail is damaged	Replace damaged part
	Damaged propeller	Land immediately and replace damaged propeller
	Center of Gravity is behind the recommended location	Shift battery forward, do not fly until correct Center of Gravity location is achieved
Aircraft nose rises steeply at half throttle	Wind is too gusty or strong	Postpone flying until the wind calms down
	Elevator is trimmed 'up' too much	If trim must adjusted more than 4 clicks when pushing the trim button, adjust push rod length
	Battery is not installed in the correct position.	Move forward approximately 1/2"
Aircraft will not climb	Battery is not fully charged	Fully charge battery before flying
	Elevator may be trimmed 'down'	Adjust elevator trim 'up'
	Propeller damaged or installed incorrectly	Land immediately, replace or install propeller correctly
Aircraft is difficult to launch in the wind	Launching the aircraft down wind or into a cross wind	Always launch the aircraft directly into the wind
Flight time is too short	Battery is not fully charged	Recharge battery
	Flying at full throttle for the entire flight	Fly at just above half throttle to increase flying time
	Wind speed too fast for safe flight	Fly on a calmer day
	Propeller damaged	Replace propeller
Aircraft vibrates	Propeller, spinner or motor damaged	Tighten or replace parts
Aircraft banks steeper in one direction when Virtual Instructor is set on Training Step 1 or 2	Incorrect trim when Virtual Instructor is set on Training Step 1 or 2	Slide aileron and rudder trim 3 clicks in the direction that the model banks less steep
	Stick trim is used to achieve flight trim, affecting Virtual Instructor	Land and mechanically adjust aileron and/or rudder linkages for flight trim without trim on the transmitter
Rudder, ailerons or elevator do not move freely	Damaged or blocked push rods or hinges	Repair damage or blockage
Aircraft will not Bind (during binding) to transmitter	Transmitter is too near aircraft during binding process	Move powered transmitter a few feet from aircraft, disconnect and reconnect battery to aircraft
	Aircraft or transmitter is too near a large metal object, wireless source or another transmitter	Move the aircraft and transmitter to another location and attempt binding again
	Bind plug is not installed correctly	Install bind plug and bind aircraft to transmitter
	Flight battery/Transmitter battery charge is too low	Replace/recharge batteries
Aircraft will not connect (after binding) to transmitter	Transmitter is too near aircraft during connecting process	Move powered transmitter a few feet from aircraft, disconnect and reconnect battery to aircraft
	Aircraft or transmitter is too near a large metal object, wireless source or another transmitter	Move the aircraft and transmitter to another location and attempt connecting again
	Bind plug is left installed	Rebind transmitter to aircraft and remove bind plug before cycling power
	Aircraft battery/Transmitter battery charge is too low	Replace/recharge batteries
	Transmitter may have been bound to a different model (using different DSM Protocol)	Bind aircraft to transmitter
After being properly adjusted, aileron and/or rudder are not in neutral position when battery is plugged in	Model was moved during initial power on	Unplug flight battery and reconnect, keeping model immobile for at least 5 seconds
Incorrect Virtual Instructor response	Loose receiver	Align and secure receiver in fuselage

AMA National Model aircraft Safety Code

Effective January 1, 2011

A. GENERAL

A model aircraft is a non-human-carrying aircraft capable of sustained flight in the atmosphere. It may not exceed limitations of this code and is intended exclusively for sport, recreation and/or competition. All model flights must be conducted in accordance with this safety code and any additional rules specific to the flying site.

1. Model aircraft will not be flown:
   (a) In a careless or reckless manner.
   (b) At a location where model aircraft activities are prohibited.
2. Model aircraft pilots will:
   (a) Yield the right of way to all man carrying aircraft.
   (b) See and avoid all aircraft and a spotter must be used when appropriate. (AMA Document #540-D-See and Avoid Guidance.)
   (c) Not fly higher than approximately 400 feet above ground level within three (3) miles of an airport, without notifying the airport operator.
   (d) Not interfere with operations and traffic patterns at any airport, heliport or seaplane base except where there is a mixed use agreement.
   (e) Not exceed a takeoff weight, including fuel, of 55 pounds unless in compliance with the AMA Large Model aircraft program. (AMA Document 520-A)
   (f) Ensure the aircraft is identified with the name and address or AMA number of the owner on the inside or affixed to the outside of the model aircraft. (This does not apply to model aircraft flown indoors).
   (g) Not operate aircraft with metal-blade propellers or with gaseous boosts except for helicopters operated under the provisions of AMA Document #555.
   (h) Not operate model aircraft while under the influence of alcohol or while using any drug which could adversely affect the pilot's ability to safely control the model.
   (i) Not operate model aircraft carrying pyrotechnic devices which explode or burn, or any device which propels a projectile or drops any object that creates a hazard to persons or property.
   Exceptions:
   • Free Flight fuses or devices that burn producing smoke and are securely attached to the model aircraft during flight.
   • Rocket motors (using solid propellant) up to a G-series size may be used provided they remain attached to the model during flight. Model rockets may be flown in accordance with the National Model Rocketry Safety Code but may not be launched from model aircraft.
   • Officially designated AMA Air Show Teams (AST) are authorized to use devices and practices as defined within the Team AMA Program Document (AMA Document #718).
   (j) Not operate a turbine-powered aircraft, unless in compliance with the AMA turbine regulations. (AMA Document #510-A).
3. Model aircraft will not be flown in AMA sanctioned events, air shows or model demonstrations unless:
   (a) The aircraft, control system and pilot skills have successfully demonstrated all maneuvers intended or anticipated prior to the specific event.
   (b) An inexperienced pilot is assisted by an experienced pilot.
4. When and where required by rule, helmets must be properly worn and fastened. They must be OSHA, DOT, ANSI, SNELL or NOCSAE approved or comply with comparable standards.

B. RADIO CONTROL

1. All pilots shall avoid flying directly over unprotected people, vessels, vehicles or structures and shall avoid endangerment of life and property of others.
2. A successful radio equipment ground-range check in accordance with manufacturer's recommendations will be completed before the first flight of a new or repaired model aircraft.
3. At all flying sites a safety line(s) must be established in front of which all flying takes place (AMA Document #706-Recommended Field Layout):
   (a) Only personnel associated with flying the model aircraft are allowed at or in front of the safety line.
   (b) At air shows or demonstrations, a straight safety line must be established.
   (c) An area away from the safety line must be maintained for spectators.
   (d) Intentional flying behind the safety line is prohibited.
4. RC model aircraft must use the radio-control frequencies currently allowed by the Federal Communications Commission (FCC). Only individuals properly licensed by the FCC are authorized to operate equipment on Amateur Band frequencies.
5. RC model aircraft will not operate within three (3) miles of any pre-existing flying site without a frequency-management agreement (AMA Documents #922-Testing for RF Interference; #923- Frequency Management Agreement)
6. With the exception of events flown under official AMA Competition Regulations, excluding takeoff and landing, no powered model may be flown outdoors closer than 25 feet to any individual, except for the pilot and the pilot's helper(s) located at the flight line.
7. Under no circumstances may a pilot or other person touch a model aircraft in flight while it is still under power, except to divert it from striking an individual. This does not apply to model aircraft flown indoors.
8. RC night flying requires a lighting system providing the pilot with a clear view of the model's attitude and orientation at all times.
9. The pilot of a RC model aircraft shall:
   (a) Maintain control during the entire flight, maintaining visual contact without enhancement other than by corrective lenses prescribed for the pilot.
   (b) Fly using the assistance of a camera or First-Person View (FPV) only in accordance with the procedures outlined in AMA Document #550.

Please see your local or regional modeling association's guidelines for proper, safe operation of your model aircraft.

Limited Warranty

What this Warranty Covers
Horizon Hobby, Inc. ("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.

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, submit a Product Support Inquiry, or call 877.504.0233 toll free to speak to 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 Horizon Hobby 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 Horizon Hobby Service Center.

NOTICE: Horizon service is limited to Product compliant in the country of use and ownership. If noncompliant product is received by Horizon for service, it will be returned unserviced at the sole expense of the purchaser.

Contact Information

Country of Purchase	Horizon Hobby	Address	Phone Number/Email Address
United States of America	Horizon Service Center (Electronics and engines)	4105 Fieldstone Rd Champaign, Illinois 61822 USA	877-504-0233 Online Repair Request: visit www.horizonhobby.com/service
	Horizon Product Support (All other products)	4105 Fieldstone Rd Champaign, Illinois 61822 USA	877-504-0233 productsupport@horizonhobby.com
United Kingdom	Horizon Hobby Limited	Units 1-4 Ployters Rd Staple Tye Harlow, Essex CM18 7NS United Kingdom	+44 (0) 1279 641 097 sales@horizonhobby.co.uk
Germany	Horizon Technischer Service	Christian-Junge-Straße1 25337 Elmshorn, Germany	+49 (0) 4121 2655 100 service@horizonhobby.de
France	Horizon Hobby SAS	11 Rue Georges Charpak 77127 Lieusaint, France	+33 (0) 1 60 18 34 90 infofrance@horizonhobby.com
China	Horizon Hobby – China	Room 506, No. 97 Changshou Rd. Shanghai, China 200060	+86 (021) 5180 9868 www.horizonhobby.com.cn

FCC Information

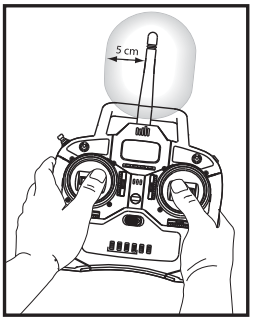
Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This product contains a radio transmitter with wireless technology which has been tested and found to be compliant with the applicable regulations governing a radio transmitter in the 2.400GHz to 2.4835GHz frequency range.

Antenna Separation Distance
When operating your transmitter, please be sure to maintain a separation distance of at least 5 cm between your body (excluding fingers, hands, wrists, ankles and feet) and the antenna to meet RF exposure safety requirements as determined by FCC regultions.

This illustration show the approximate 5 cm RF exposure area and typical hand placement when operating your transmitter.



Information de IC
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Instructions for disposal of WEEE by users in the European Union

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collections point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

Compliance Information for the European Union

AT	BE	BG	CZ	CY	DE	DK
ES	FI	FR	GR	HU	IE	IT
LT	LU	LV	MT	NL	PL	PT
RO	SE	SI	SK	UK		

Declaration of Conformity

(in accordance with ISO/IEC 17050-1)

No. HH2012111102

Product(s): HBZ Glasair Sportsman RTF
Item Number(s): HBZ7600, HBZ7600M1
Equipment class: 2

The object of declaration described above is in conformity with the requirements of the specifications listed below, following the provisions of the European R&TTE directive 1999/5/EC, EMC Directive 2004/108/EC and LVD Directive 2006/95/EC:

EN 300-328 V1.7.1: 2006
EN 301 489-1 V1.7.1: 2006
EN 301 489-17 V1.3.2: 2008

EN60950-1:2006+A11:2009+A1:2010+A12: 2011

EN55022:2010 + AC:2011
EN55024:2010

Signed for and on behalf of:
Horizon Hobby, Inc.
Champaign, IL USA
November 11, 2012

Steven A. Hall
Executive Vice President
and Chief Operating Officer
International Operations and Risk Management
Horizon Hobby, Inc.

Parts Contact Information • Kontaktinformationen für Ersatzteile • Coordonnées pour obtenir des pièces détachées • Recapiti per i ricambi

Country of Purchase	Horizon Hobby	Address	Phone Number/Email Address
United States of America	Sales	4105 Fieldstone Rd Champaign, Illinois 61822 USA	800-338-4639 Sales@horizonhobby.com
United Kingdom	Horizon Hobby Limited	Units 1-4 Ployters Rd Staple Tye Harlow, Essex CM18 7NS, United Kingdom	+44 (0) 1279 641 097 sales@horizonhobby.co.uk
Germany	Horizon Hobby GmbH	Christian-Junge-Straße1 25337 Elmshorn, Germany	+49 4121 46199 60 service@horizonhobby.de
France	Horizon Hobby SAS	11 Rue Georges Charpak 77127 Lieusaint, France	+33 (0) 1 60 18 34 90 infofrance@horizonhobby.com
China	Horizon Hobby – China	Room 506, No. 97 Changshou Rd. Shanghai, China 200060	+86 (021) 5180 9868 www.horizonhobby.com.cn

Replacement Parts • Ersatzteile • Pièces de rechange • Pezzi di ricambio

Part # I Nummer Numéro I Codice	Description	Beschreibung	Description	Descrizione
HBZ7602	Decal Sheet: Glasair	Hobbyzone Glasair : Dekorbogen	Planche de décoration: Glasair	Set adesivi: Glasair
HBZ7606	Landing Gear Set: Glasair	Hobbyzone Glasair : Fahrwerksset	Train d'atterrissage : Glasair	Set carrello: Glasair
HBZ7608	Landing Gear Set: Glasair	Hobbyzone Glasair : Spinner	Cône : Glasair	Ogiva: Glasair
HBZ7618	Prop Adapter: Glasair	Hobbyzone Glasair : Propeller Adapter	Adaptateur d'hélice : Glasair	Adattatore elica: Glasair
PKZ1019	9x6 Propeller	Parkzone P-51 Luftschraube BL 9x6	Hélice 9x6	Elica 9x6
HBZ7620	Wing: Glasair	Hobbyzone Glasair : Tragfläche	Aile : Glasair	Ala: Glasair
HBZ7127	Rubber bands (3)	Hobbzone weiße Gummibänder(6)	Bandes caoutchouc (3)	Elastici (3)
HBZ7622	Wing Struts: Glasair	Hobbyzone Glasair : Tragflächen-streben	Haubans d'ailes : Glasair	Montanti ala: Glasair
HBZ7624	Pushrod Set: Glasair	Hobbyzone Glasair : Gestänge	Tringleries: Glasair	Set comandi: Glasair
HBZ7625	Horizontal Stab: Glasair	Hobbyzone Glasair : Höhenleitwerk	Stabilisateur : Glasair	Stab orizzontale: Glasair
HBZ7626	Cowl: Glasair	Hobbyzone Glasair : Motorhaube	Capot : Glasair	Capottina: Glasair
HBZ7628	Motor Mount: Glasair	Hobbyzone Glasair : Motorhalter	Support moteur : Glasair	Supporto motore: Glasair
HBZ7651	Receiver: Glasair	Hobbyzone Glasair : Empfänger	Train avec roues: Glasair	Set carrello atterraggio con ruote: Glasair
HBZ7667	Bare Fuselage: Glasair	Hobbyzone Glasair : Rumpf o. Einbauten	Fuselage nu: FGlasair	Fusoliera nuda: Glasair
HBZ1003	3-Cell DC Balancing Li-Po Charger	Hobbyzone 3S Lipo Balance Lader	Chargeur équilibreur LI-Po DC 3S	Caricabatterie per 3 celle LiPo con bilanciatore
PKZ1033	1300mAh 3S 11.1V 20C Li-Po, 16 AWG EC3 Battery	Parkzone 11.1V 1300mAh LiPo Bat m.EC3	Batterie LI-Po 11.1V 3S 1300mA 20C, prise EC3	Batteria 1300mAh 3S 11.1V 20C Li-Po, 16 AWG EC3
PKZ1060	Mini Servo (3W) with Arms, Short Lead (Ailerons and Elevators)	Parkzone Mini Servo, 3 adrig, kurzes Kabel	Mini Servo (3 fils) avec bras, câbles courts (ailerons et profondeur)	Mini Servo (3W) con bracci, con-nettori corti (alettoni ed elevatore)
PKZ1090	DSV130M 3-Wire Digital Servo Metal Gear (Rudder and nose steering)	Parkzone DSV130 Digitalservo MG	DSV130M Servo digital (3 fils), à pi-gnons métal (dérive et roulette de nez)	DSV130M servo digitale a 3 fili con ingran. metallo (timone e carrello anter.
PKZ1814	18A Brushless ESC	Parkzone 18A Regler	Contrôleur brushless 18A	18A Brushless ESC
PKZ4416	480 Brushless Outrunner Motor, 960Kv	Parkzone BI Außenläufer 960kV : T28	Moteur brushless 480 à cage tour-nante, 960Kv	480 Brushless Outrunner Motore, 960Kv

Optional Parts • Optionale Bauteile • Pièces optionnelles • Pezzi opzionali

Part # I Nummer Numéro I Codice	Description	Beschreibung	Description	Descrizione
HBZ6513	Alligator Clip: 12V Lighter Adapter	Krokodilklemmen: 12 V Zigarettenan-zünder	Adaptateur 12V allume cigare/pinces croco	Pinze tipo coccodrillo: adattatore 12V per presa accendisigari
HBZ1004	1.5A AC Power Supply (US Only)	Hobbyzone 1.5A Netzteil	Alimentation secteur 1.5A (USA uniquement)	1.5A AC Alimentatore (solo USA)
SPMP610	SPM Neck Strap	Spektrum Sendergurt	Sangle de cou SPM	SPM Cinghia per collo

www.hobbyzonerc.com

Created 11/12 32928

HBZ7600