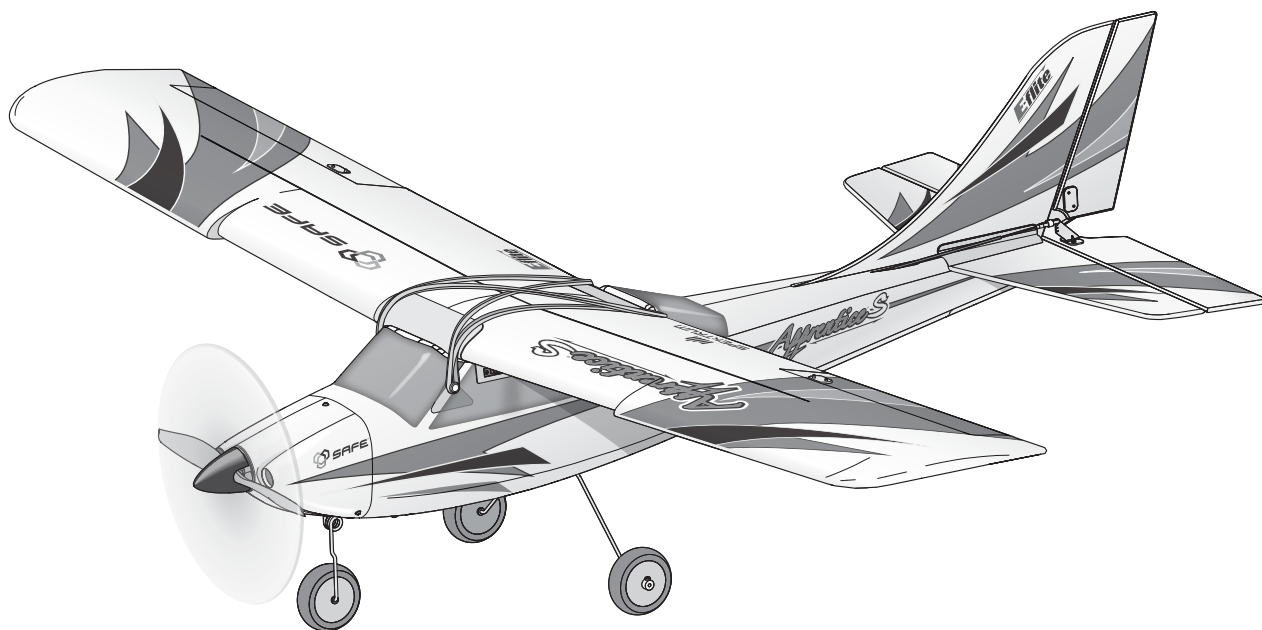# Apprentice® S 15e

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

RTF
READY-TO-FLY

SAFE™

E-flite®
ADVANCING ELECTRIC FLIGHT

Meaning of Special Language:

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

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

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

<u>WARNING:</u> 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 use with incompatible components or alter this product in any way outside of the instructions provided by 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.

Charging Warnings

The Battery Charger included with your aircraft is designed to safely balance and charge the Li-Po battery.

⚠ **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 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 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.
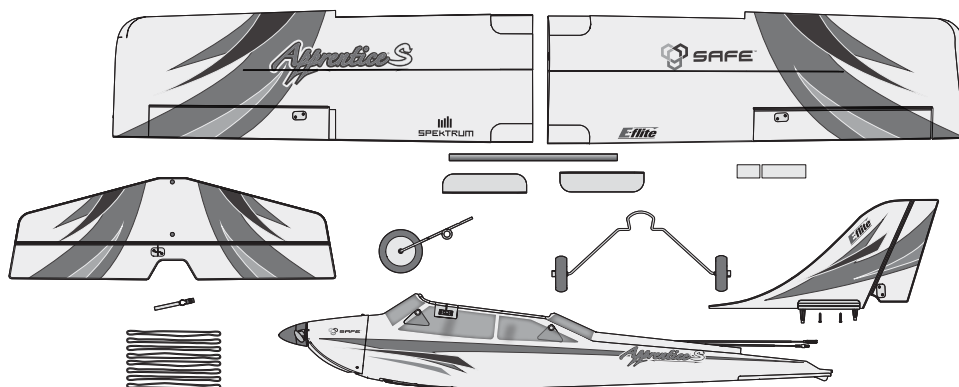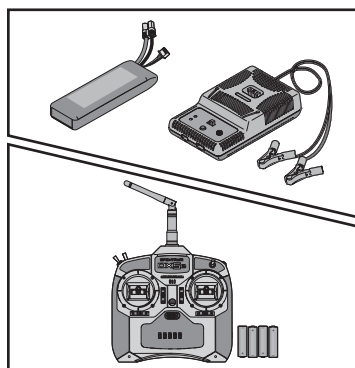
Introduction

Congratulations on choosing the E-flite® Apprentice S 15e RTF. Based on the renowned aircraft design, within your grasp is the most intelligent RC airplane ever offered by Horizon Hobby. At its heart is groundbreaking SAFE™ (Sensor Assisted Flight Envelope) technology that makes RC flight incredibly easy even for the least experienced user. Its combination of spatial awareness provides flight envelope protection which adds a degree of security never before available, while its smooth flight capability battles windy conditions so that all you feel is control that's crisp and responsive. Multiple levels of flight envelope protection are provided that can be reduced or removed as your skills progress, yet the "panic" feature is always there to instantly return the model to level flight if you ever loose orientation.

On the outside, its Z-Foam™ construction offers durability beyond comparison with traditional construction. And because your purchase includes the versatile

Spektrum DX5e DSMX® transmitter, you get the assurance of interference-free 2.4GHz technology you can use to connect with another Spektrum-compatible transmitter and take advantage of buddy-box instruction. In addition you can also reuse your DX5e transmitter with a long list of available Bind-N-Fly® airplanes and helicopters you'll want to fly next.

Your E-flite® Apprentice S 15e ready-to-fly trainer comes with everything needed to go from purchase directly to the field. All you have to do next is read and apply the information presented in this instruction manual. Once you've learned the basics of RC flight, feel free to enjoy this aircraft to learn more advanced maneuvers. Its high power-to-weight ratio gives you the authority to do realistic aerobatics or the ability to leap from a convenient lake or pond with the optional float kit (EFLA550, available separately) installed.

Box Contents

To register your product online, visit www.e-fliterc.com

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Specifications

	840Kv Brushless Outrunner (EFLM7215)	**Installed**
	30-Amp Pro Switch-Mode BEC Brushless ESC (V2) (EFLA1030B)	**Installed**
	13 g Digital Micro Servo (EFLR7155) and 37 g Standard Servo (EFLR7150)	**Installed**
	Apprentice S (SAFE RX) (EFLR310013)	**Installed**
	(4) AA and 3S 3200mAh Li-Po battery (EFLB32003S)	**Included**
	DC powered 2S–3S balancing fast charger (EFLC3010)	**Included**
	Spektrum DX5e (SPMR5510EU, SPMR55101EU (MD1))	**Included**

59.0 inches (1500mm)

42.5 inches (1080mm)

49.0 oz (1390 g)

515 in² (33.2 dm²)
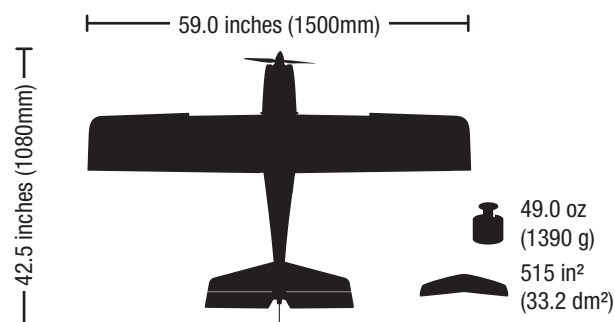
Charging the Flight Battery

Your Apprentice S trainer comes with a DC balancing charger and 3S Li-Po battery. You must charge the included Li-Po battery pack with a Li-Po specific charger only (such as the included charger). Never leave the battery and charger unattended during the charge process. Failure to follow the instructions properly could result in a fire. When charging, ensure the battery is on a heat-resistant surface. Charge the battery pack while you are assembling the aircraft. You will need the flight battery to confirm proper aircraft operation in future steps.
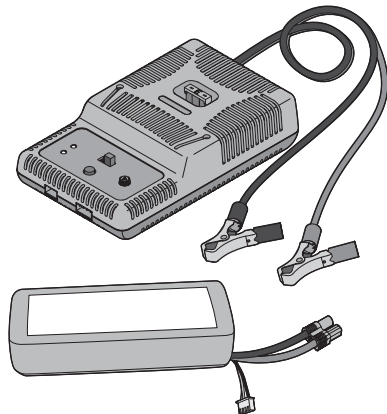
DC Li-Po Balancing Charger Features

- Charges 2- to 3-cell lithium polymer battery packs
- Variable charge rates from 500mAh to 3-amp
- Simple single push-button operation
- LED charge status indicator
- LED cell balance indicator
- Audible beeper indicates power and charge status
- Alligator Clip input cord

Specifications
- Input power: 10.5–15.0V DC, 3-amp
- Charges 2- to 3-cell Li-Po packs with minimum capacity of 500mAh

3S 11.1V 3200mAh Li-Po Battery Pack
The E-flite® 3S Li-Po battery pack features a balancing lead that allows you to safely charge your battery pack when used with the included E-flite Li-Po balancing charger.

> ⚠ **CAUTION:** The balance connector **must** be inserted into the correct port of your charger prior to charging.

The Battery Charging Process

1.	Charge only batteries that are cool to the touch and are not damaged. Look at the battery to make sure it is not damaged e.g., swollen, bent, broken or punctured.
2.	Attach the input cord of the charger to the appropriate power supply (12V accessory outlet).
3.	When the Li-Po charger has been correctly powered up, there will be an approximate 3-second delay, then an audible "beep" and the green (ready) LED will flash.
4.	Turn the control on the Amps selector so the arrow points to the charging rate required for the battery (the 3200mAh Li-Po battery will charge at 3.0 amps). DO NOT change the charge rate once the battery begins charging.
5.	Move the cell selector switch to 3-cell for your battery.
6.	Connect the balancing lead of the battery to the 3-cell (4 pin) charger port and press the Start button to begin battery charging.
7.	The green and red LEDs may flash during the charging process when the charger is balancing cells. Balancing prolongs the life of the battery.
8.	When the battery is fully charged, a beep will sound for about 3 seconds and the green LED will shine continuously. Attempting to charge an over-discharged battery will cause the charger to repeatedly flash and beep, indicating an error has occurred.
9.	Always unplug the battery from the charger immediately upon completion of charging.
⚠	**CAUTION**: Overcharging a battery can cause a fire.
⚠	**CAUTION**: Only use a charger specifically designed to charge a Li-Po battery. Failure to do so could result in fire causing injury or property damage.
⚠	**CAUTION**: Never exceed the recommended charge rate.
	NOTICE: If using a battery other than the included Li-Po battery, refer to your battery manufacturer's instructions for charging.

Landing Gear Installation

1. Remove the spinner, nut, washer, spinner back plate and propeller assembly (**A**). Remove 3 screws (**B**) and the cowling (**C**) from the fuselage (**D**). Tools are required to loosen the nut and screws.

2. Turn the model so you can see the bottom of the fuselage.

3. Under the fuselage, loosen the screw (**E**) in the nose gear steering arm and insert the strut (**F**) (flat spot facing to the front) fully in the mount (**G**).

4. Fully tighten the screw onto the flat spot of the strut.

5. Push together the main landing gear struts (**H**) and insert the top loop into the slot in the fuselage as shown.

6. Reinstall the cowling, propeller and spinner.

Disassemble in reverse order.
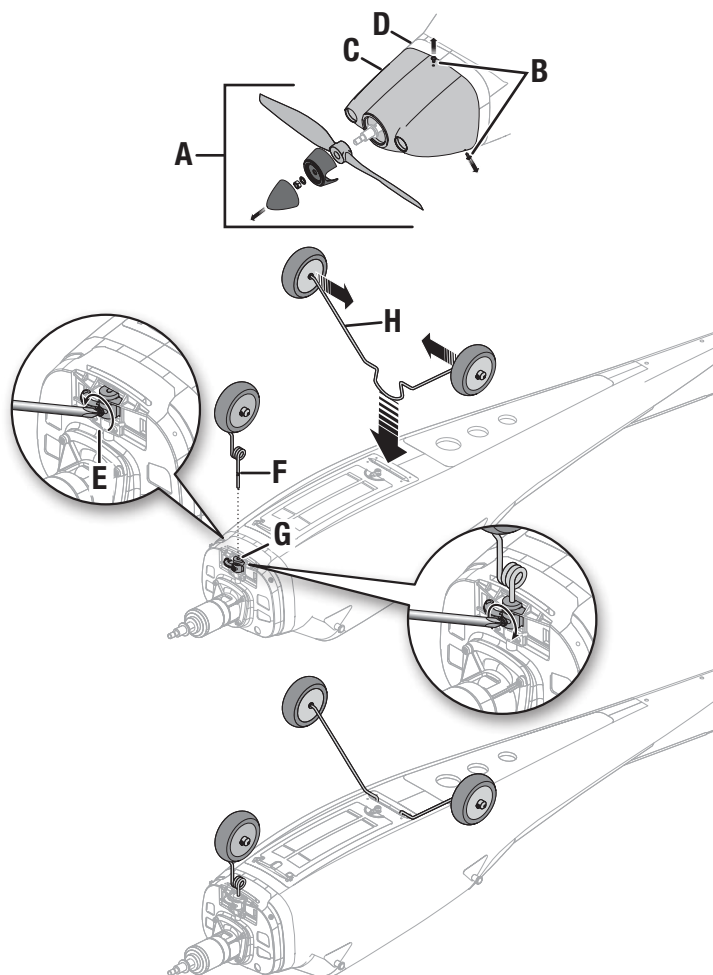
TIP

Carefully support the aircraft while installing or removing screws.

Tail Installation

1. Install the horizontal tail (**A**) on the fuselage under the linkages as shown.

2. Carefully insert the 2 pins (**B**) of the vertical fin (**C**) through the horizontal tail holes into the fuselage holes.

3. Under the fuselage, install the 2 screws (**D**) into the fuselage and the vertical fin pins. Tighten the screws, but do not break the plastic.

4. Connect the respective clevises in the second to outermost holes in the rudder and elevator control horns. Refer to the clevis adjustment instructions to center the rudder and elevators.

   Disassemble in reverse order.
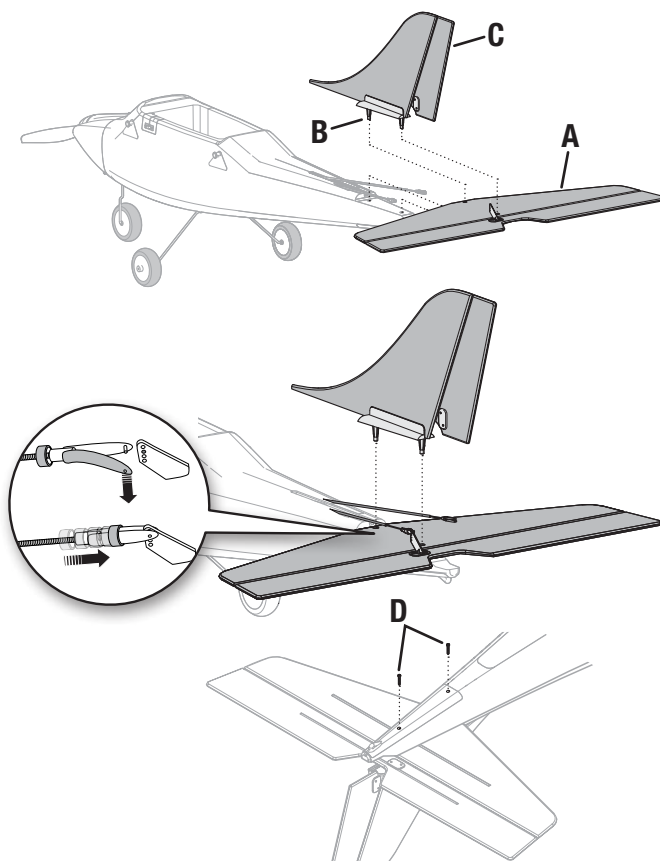
Wing Installation

1. Carefully apply the 2 strips of double-stick tape (**A**) the root of the wing as shown. Assemble the wings on the carbon wing tube (**B**) so there is no gap. No epoxy is required to hold the wings together; however, if desired, epoxy may be used (instead of the tape) to adhere the wings to each other on the wing tube.

2. Ensure the wings are correctly aligned. Using double stick tape, install the front (**C**) and rear (**D**) wing covers in their respective slots on the wing as shown.

3. Ensure the 2 DIP switches (**E**) on the receiver (**F**) are in the OFF position or the included DX5e transmitter (with 3 position ch 5 switch) and SAFE technology will not operate as described. Refer to Receiver Setup Instructions in this manual if you use a transmitter with only a 2 position Channel 5 switch.

4. Connect the aileron servo connectors to the included Y-harness (**G**) 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.

5. Install the wing on the fuselage.

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

6. Install 8 rubber bands (**H**) on the front and back rods to complete the installation.

    Disassemble in reverse order.

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

We recommend removing the wing from the fuselage for transport and storage of your model.

Before each flight, ensure the wing is centered, straight and secure on the fuselage.
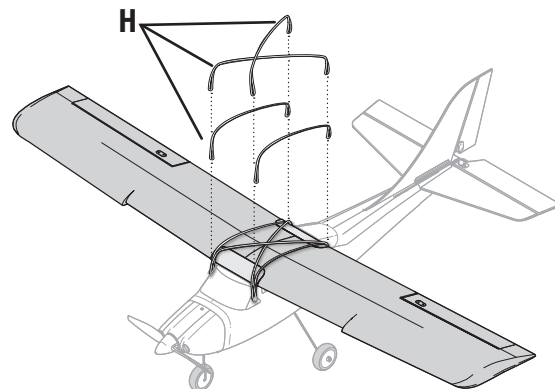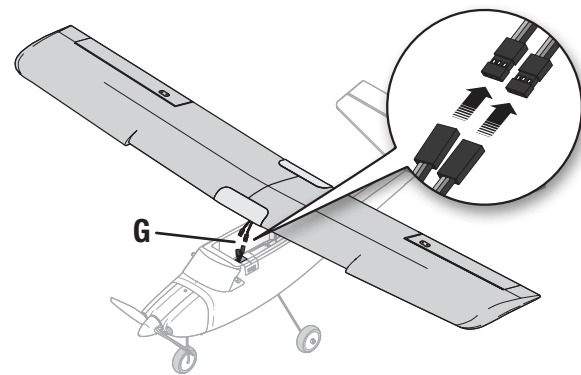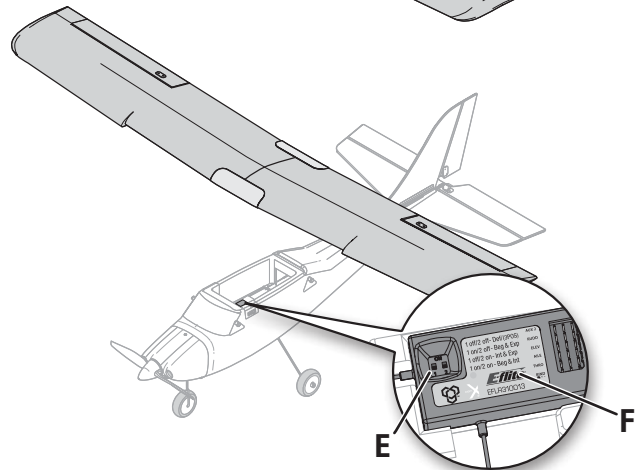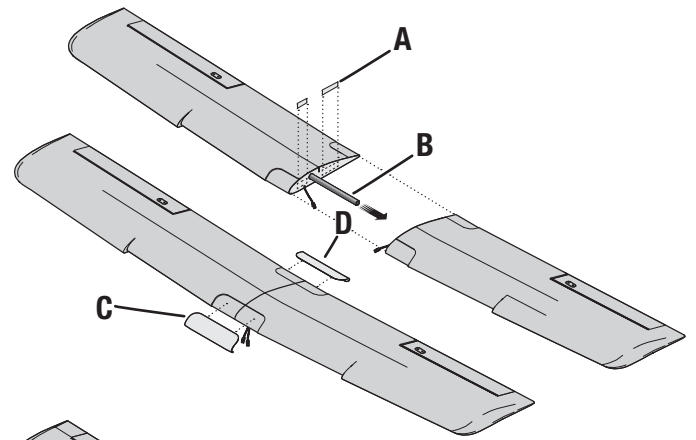
TIP

Ensure the caps are secure on the ends of the rods. If needed, apply CA (cyanoacrylate adhesive) to secure a cap on the rod.

Sensor Assisted Flight Envelope (SAFE) Technology

Sensor Assisted Flight Envelope (SAFE) Technology

SAFE technology is a revolutionary flight training system designed to give you a stable platform for safely developing your flying skills. This is not an autopilot or self-guiding robot. The sensors and software in this system help you fly the aircraft where you want to go, while decreasing the risk of an out-of-control crash. You can progress through the Beginner, Intermediate and Experienced flight modes as your skills increase, all with the confidence of an optional Panic recovery mode. At any time during a flight, you can switch between the 3 flight modes or use Panic recovery to get your aircraft to a safe flying attitude.

SAFE Flight Modes

Beginner Mode

Pitch   **Roll**
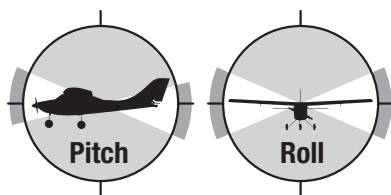
- Envelope limit: Pitch (nose up and down) and Roll (wing tips up and down) angles are limited to help you keep the aircraft airborne
- Self-leveling: when the pitch and roll controls are returned to neutral, the aircraft returns to level flight
- Stability assisted takeoff and landing
- Throttle based climb and descent

Intermediate Mode

Pitch   **Roll**

- Natural Flight Experience: In normal training flight conditions, the pilot experiences natural AS3X® flight for smooth handling and outstanding precision
- Large Flight Envelope: The pilot is only prevented from entering extreme flight conditions outside the training flight envelope

Experienced Mode

Pitch   **Roll**

- Natural Flight Experience: The pilot experiences natural AS3X flight for smooth handling and outstanding precision
- Unlimited Flight Envelope: No limit on Pitch and Roll angles (airframe limited)

Panic Recovery
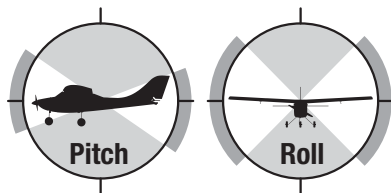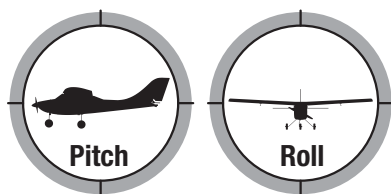
- Immediate recovery to a safe flying attitude
- Return all transmitter controls to neutral for the quickest recovery
- This mode is intended to provide the pilot with the confidence to continue to improve their flight skills

1 Pilot loses control of the aircraft in any flight mode.

2 Pilot pulls and holds the Panic Recovery switch and returns all other controls to their neutral position. The aircraft will roll wings level and pull out of a dive...

3 ...once the aircraft is flying straight and level, the pilot releases the Panic Recovery switch and continues a gentle climb to a safe altitude.
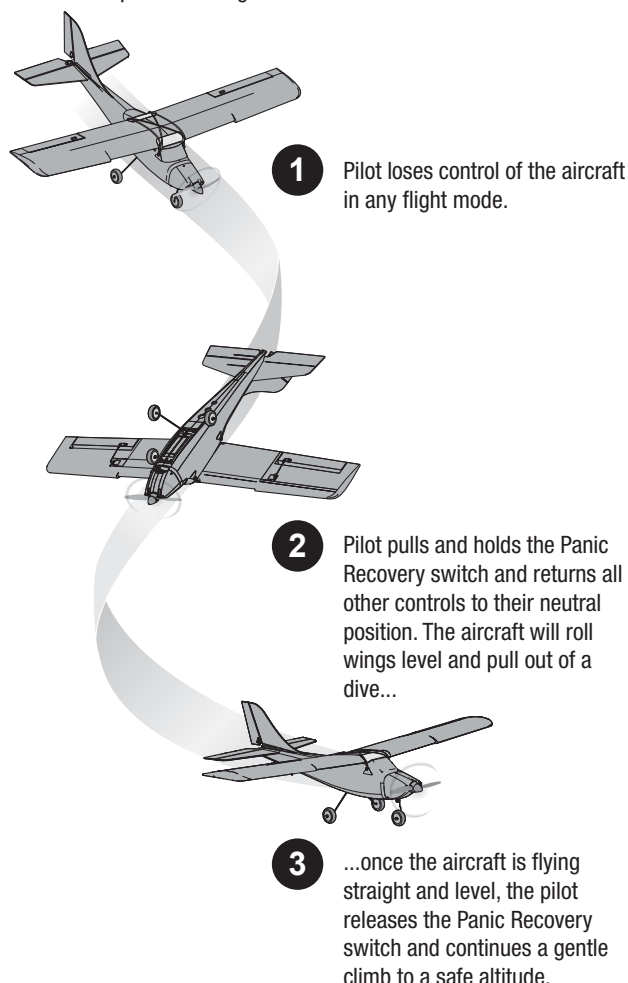
IMPORTANT: Aircraft will recover to a safer attitude even if sticks are held. Some control input is still used with panic activated.

AS3X® technology

Horizon Hobby has always made RC sport, scale and unique aircraft with the kind of performance experts appreciate. Now the exclusive Artificial Stability 3 axis (AS3X) system helps take performance expectations in aircraft a quantum leap higher. Based on the successful use of MEMS sensor technology within the AS3X Stabilization System essential to Blade® ultra micro flybarless helicopters, the specifically tuned AS3X System for airplanes helps invisibly correct for turbulence, torque and tip stalls when encountered. Furthermore, the outstanding control agility delivers an ultra smooth, locked-in feel that obeys your every command with performance that's natural feeling. It's so gratifying, in fact, that it's as though you're the RC pilot of an expertly tuned, giant-scale aircraft. AS3X will change the way you'll want to fly now and in the future. To see what we mean, go to www.E-fliteRC.com/AS3X.

Sensor Assisted Flight Envelope (SAFE) Technology

You control the help SAFE™ technology provides while you learn to fly. As your flying skills grow, decrease SAFE technology assistance. Change aircraft response at any time by moving the Channel 5 (SAFE Flight mode) switch on your transmitter.

IMPORTANT: These instructions are for the included DX5e transmitter (or similar transmitters) with a 3-position switch for Channel 5. If you fly this aircraft with a Spektrum transmitter other than the included DX5e, refer to Optional Transmitter Setup and Receiver Setup.

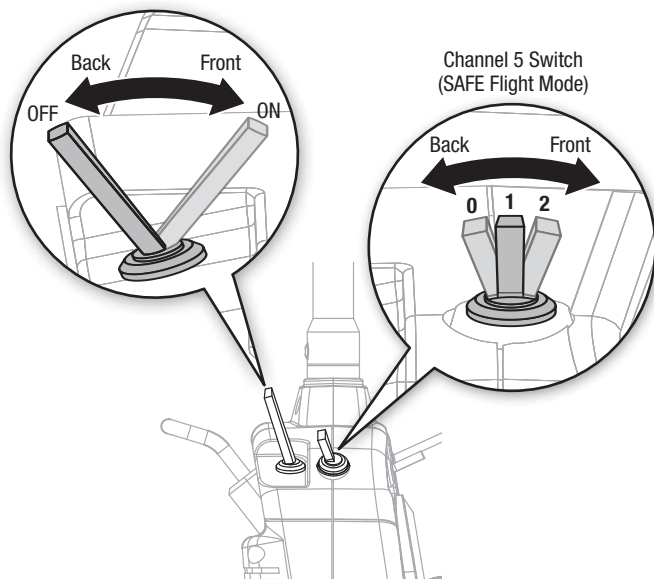| SAFE Flight Modes	Channel 5 Switch Position
Beginner Mode	Position 0
Intermediate Mode	Position 1
Experienced Mode	Position 2

Trainer/ Panic Switch

Back   Front
OFF   ON

Channel 5 Switch (SAFE Flight Mode)

Back   Front

0 1 2

Panic Recovery Mode

If you get into distress while flying in any mode, pull and hold the Trainer (Panic) Switch and move the control sticks to their neutral position. The SAFE technology will return the aircraft to a stable attitude, if the aircraft is at a sufficient height with no obstacles in its path. Release the Panic Switch to turn off Panic mode and return the current SAFE flight mode. If you get into trouble and need to go back to Beginner mode for maximum stability, remember to fully move back the Channel 5 switch.

SAFE Technology makes this aircraft a better learning tool, but you must set yourself up for success in flying:

- SAFE technology is designed as flight assistance, not an autopilot. The pilot is always in control and required to fly the aircraft at all times
- Follow the instructions provided in this manual to maintain your aircraft in top flying condition
- Seek qualified model flying instruction through your local model flying club. A qualified flight instructor can propel your advancement in this hobby
- Wind and environment can affect SAFE technology flight performance
- Ensure you have no distractions so you benefit from every moment of flight time
- You must still fly the aircraft away from obstacles and at an altitude that will allow for a safe recovery

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Activating SAFE Technology

SAFE technology is not active until you advance the throttle past 25%. Once the SAFE technology is active, the control surfaces may move on the aircraft. This is normal. The SAFE technology will remain active until the ESC is turned off.

Understanding Oscillation

In some flight conditions, you may see oscillation. If oscillation occurs, decrease the airspeed. If oscillation still persists, refer to the Troubleshooting Guide for more information.

⚠ **CAUTION:** Flying in level forward flight and calm wind conditions at full throttle in any mode or long high-speed dives may result in strong oscillation that can damage the aircraft.
If there is oscillation in any mode, decrease throttle immediately. If oscillation persists, refer to the Troubleshooting Guide.

⚠ **CAUTION:** Beginner, Intermediate, and Panic modes are intended for the training environment. Flying continuous high-G maneuvers (such as loops) in Experienced mode for an extended period of time may lead to inconsistent flight envelope and Panic mode behavior. If this occurs, land in Experienced mode and power cycle the receiver before flying again.

SAFE Landing

SAFE Take Off

Launch and Landing Assistance

Take off and landings can be better managed by using the Beginner mode. If the model is launched incorrectly, or is landing at a less than perfect attitude, pull and hold the Panic Switch. The model can correct and help to prevent a crash.
See the Take Off and Landing sections in this manual.

IMPORTANT: A level runway is required for takeoffs in Beginner mode due to throttle climb assistance.

Failsafe

In the unlikely loss of radio connection, failsafe will turn the aircraft in a descending circle to the ground, unless the radio connection is restored.
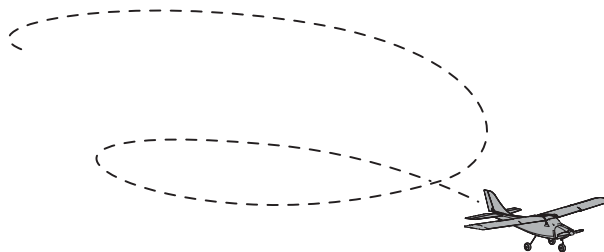
Transmitter

Installing the Transmitter Batteries

Your Spektrum DX5e 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.

Understanding the Controls of the Transmitter

KEY	
A	Antenna
B	Trainer/Bind/Panic Switch
C	(CH 5) SAFE Flight Mode
D	LEDs
E	Left Control Stick
F	Trim button (for Up-down on stick)
G	Trim button (for Left-right on stick)
H	Power Switch (ON/OFF)
I	Servo Reverse Switches
J	Hi/Lo Rate Switch
K	Right Control Stick
L	Trim button (for Up-down on stick)
M	Neck Strap Connection
N	Trim button (for Left-right on stick)
O	Handle
P	Trainer Port
Q	Battery Cover

Turn the antenna tip to point away from the model and the ground. Signals transmit strongest perpendicular from the antenna shaft, not the tip.

Mode 1

Mode 2
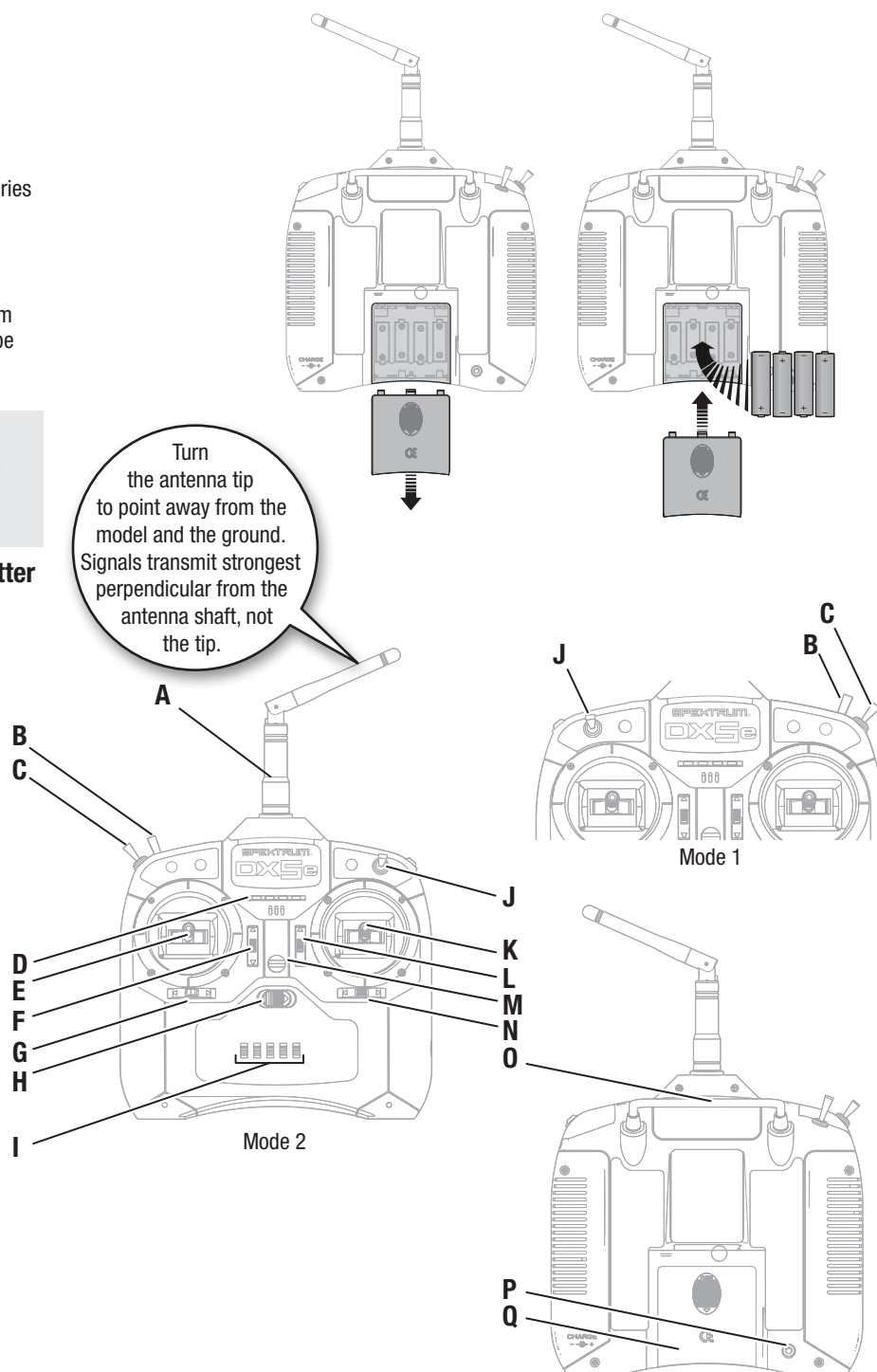
France RF Setting

The included transmitter has a France RF setting that complies with French regulations. If this product is purchased for use in France, always use the France power setting when operating the transmitter outdoors.

To set France mode (Illustration 1):
Hold the trainer switch and push and hold the Aileron trim button to the left. Turn on the transmitter. A series of descending tones should be heard. Release the switch.

To set Standard mode (Illustration 2):
Hold the trainer switch and push and hold the Aileron trim button to the right. Turn on the transmitter. A series of ascending tones should be heard. Release the switch.
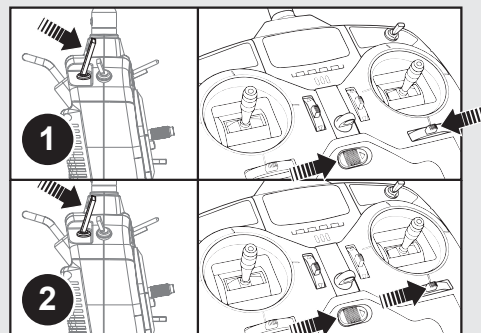
Transmitter Continued

Explanation of DX5e Transmitter LEDs, Switches and Modes for the Apprentice.

Trainer/Bind/Panic Switch (B): This switch is used as both the trainer and bind switch as well as the Panic Switch for your Apprentice S. For complete binding instructions, refer to the binding section below. When using the trainer function, connect the trainer cord (SPM6805) 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 settings as the master. See Flight Training section for setup of other Spektrum Transmitters.

Hi/Lo Rate Switch (J):
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.

Servo Reversing Switches (I)
These switches select the servo direction of each channel. Use your fingernail or a small screwdriver to change the switch position if needed. Ensure each switch is set to normal (NOR) for correct function of the SAFE technology. Perform the Control Direction Test before flying.

Channel 5 Switch (C):
This switch is used to select the SAFE Flight mode for your Apprentice S. For other conventional receivers, this switch controls a servo connected to the Channel 5/Gear port.

LEDs (D) show:
Flashing with beeps Bind mode when Trainer (Bind) switch is held and the transmitter is powered on (see Binding instructions).
**Flashing with an alarm sound** LEDs progress from 1 green LED to 3 green LEDs and 1 red LED (when transmitter battery voltage drops below 4.7 volts). Replace the batteries immediately. If this happens while flying, land your aircraft as soon and as safely as possible.

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.

NOTICE: While DSMX allows you to use more than 40 transmitters simultaneously, when using DSM2 receivers, DSMX receivers in DSM2 mode or transmitters in DSM2 mode, do not use more than 40 transmitters simultaneously.
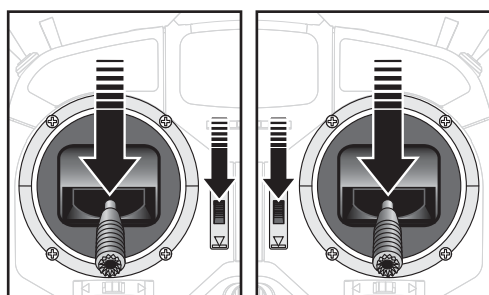
Mode 2   Mode 1
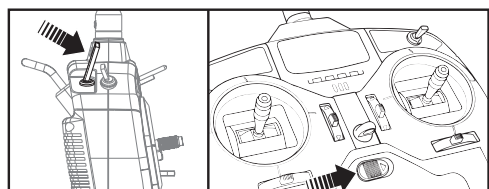
Pull and hold the trainer switch on the top of the transmitter while turning on the power switch.

✓ 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 in the aircraft, then power on the ESC switch. The receiver LED will begin to flash.
5. Pull and hold the trainer switch on the top of the transmitter while turning on the power switch.
6. 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.
7. Remove the bind plug from the bind port.
8. 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.

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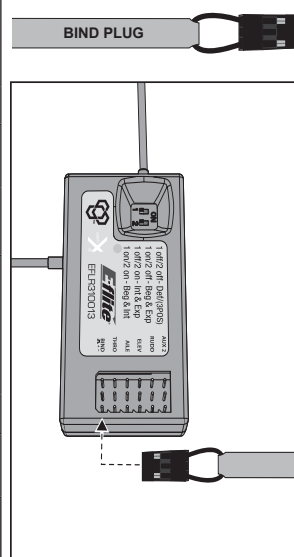
* The throttle will not arm if the transmitter's throttle control is not put at the lowest position. If you encounter problems, follow the binding instructions and refer to the transmitter troubleshooting guide for other instructions. If needed, contact the appropriate Horizon Product Support office.

Flight Battery Installation, SAFE system and Electronic Speed Control (ESC) Arming

1. Rest the aircraft on a flat surface with the landing gear facing up and make sure the ESC switch is OFF.

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

3. Lower the throttle and throttle trim, then power on the transmitter for at least 5 seconds.

4. Center and secure the flight battery (**B**) in the battery compartment using the hook and loop straps (**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 in the aircraft, then replace the battery hatch and turn the latch.

6. Put the aircraft on its landing gear, then power on the ESC Switch (D). The aircraft should be on level ground and must be kept immobile while the SAFE system initializes. If the aircraft moves during initialization, power off the ESC Switch (D) and power ON again to re-initialize the system.

7. After the SAFE system initializes, the control surfaces will move back and forth, then come to neutral to indicate the SAFE system has initialized and is ready to operate.

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. Immediately power off the ESC switch and go back to step 5.

IMPORTANT: SAFE technology is not active until you advance the throttle past 25%. Once it is active, the control surfaces may move on the aircraft. This is normal. The SAFE technology will remain active until the ESC is turned off.

⚠ **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.

Mode 2   Mode 1

Keep immobile and out of the wind for 5 seconds
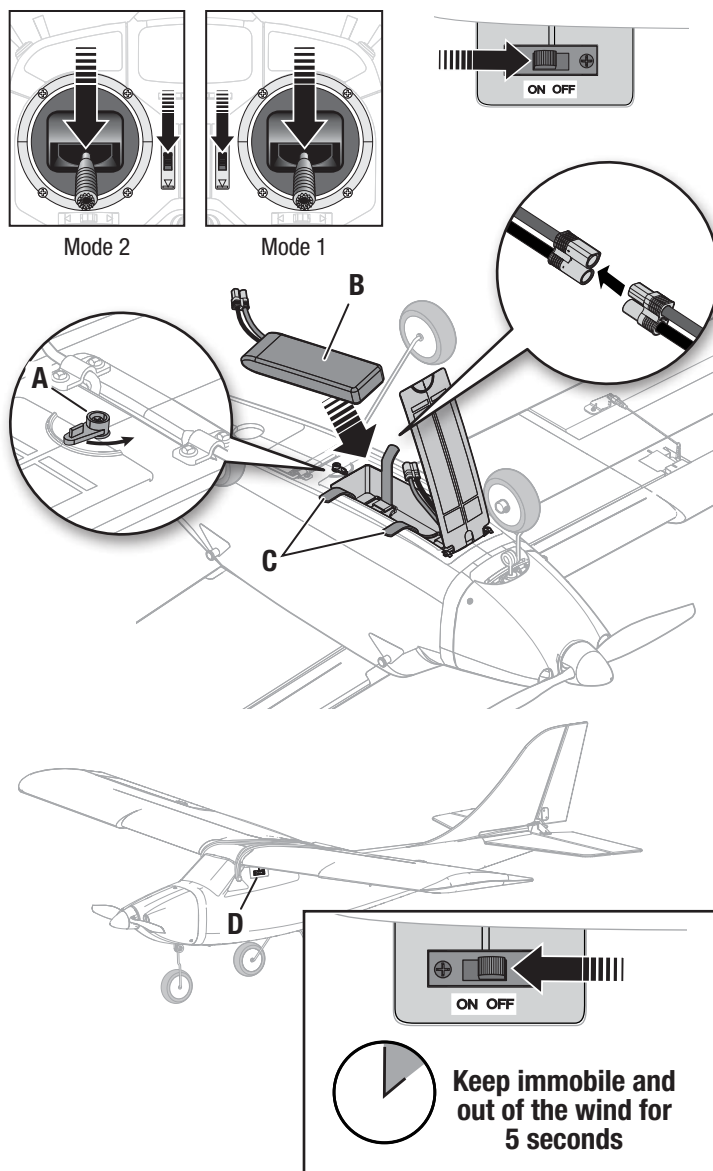
LVC (Low Voltage Cutoff)

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.

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.
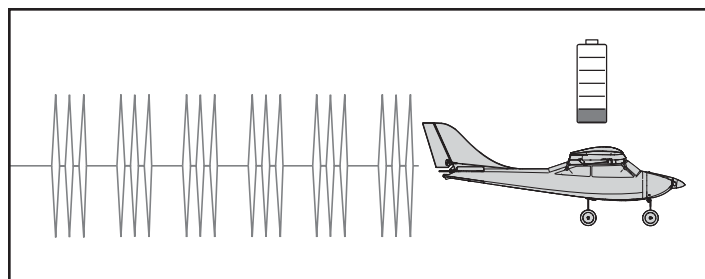
TIP

Monitor your aircraft battery's voltage before and after flying by using a Li-Po Cell Voltage Checker (EFLA111, sold separately).

Control Horn and Servo Arm Settings

NOTICE: Moving a linkage to another position may block the servo arm or affect SAFE technology functionality.

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

Recommended Rates

Use low rates for decreased control throws in all flight modes
Use high rates for increased control throws in all flight modes

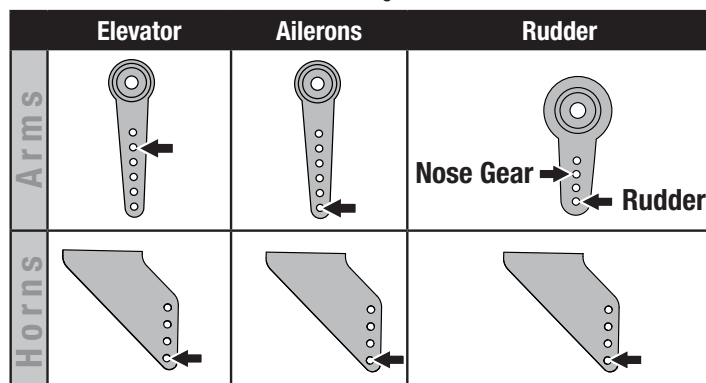| Dual Rate	High Rate	Low Rate
Aileron	23.0mm (0.91 in)	18mm (0.71 in)
Elevator	23.0mm (0.91 in)	18mm (0.71 in)
Rudder	35mm (1.35 in)	28mm (1.10 in)

	Elevator	Ailerons	Rudder
Arms			Nose Gear → ← Rudder
Horns			

Control Surface Centering and Clevis Installation on a Control Horn

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:

TIP

Turn the clevis on the linkage to change the length of the linkage between the servo arm and the control horn.

- Pull the tube from the clevis to the linkage.
- Carefully spread the clevis, then insert the clevis pin into the correct hole in the control horn.
- Move the tube to hold the clevis on the control horn.

IMPORTANT: SAFE Technology is not active until you advance the throttle past 25%. All trimming and control direction test should be done **before** SAFE technology is activated.

1.

2.

3.

4.

5.

6.
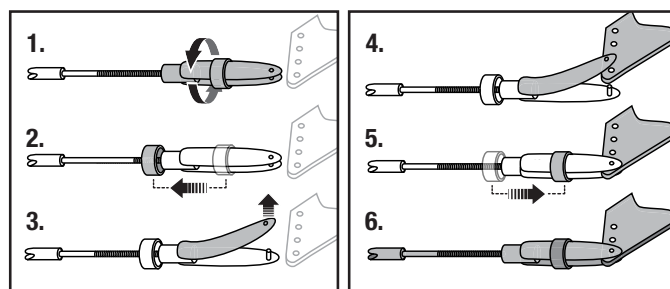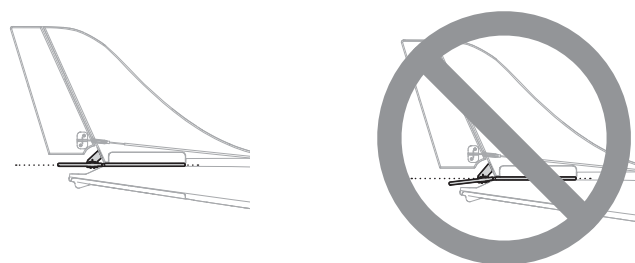
Center of Gravity (CG) Verification

An aircraft with a correct CG has its weight balanced at a calculated point where the entire airframe will balance when suspended at that point. After installing the battery (in the recommended position) and before powering on the ESC switch, verify the CG by supporting the aircraft 79.0mm (approximately 3.125 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 in beginner mode, 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.
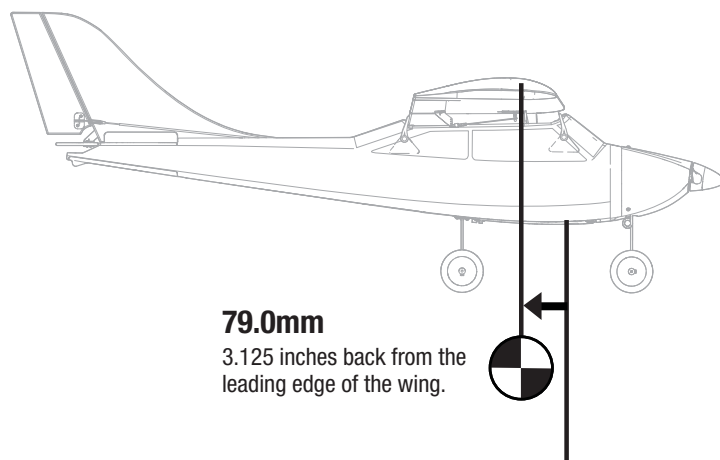
79.0mm
3.125 inches back from the leading edge of the wing.

Control Direction Test

Power on the transmitter. Make sure the throttle is at 0% and that throttle trim is fully lowered on the transmitter. Power on the model. Make sure the control surfaces (rudder, elevator and ailerons) are at neutral or 0 degrees. Ideally, centering trim will center the surfaces. Refer to Control Centering instructions to adjust control surfaces. Move the transmitter control sticks so the model's rudder, elevator and ailerons move as shown (illustrations show a view from the rear of the aircraft). 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. Mode 2 is the most common control mode used worldwide. The mode of the included transmitter cannot be changed between Modes 2 and 1.

IMPORTANT: SAFE technology is not active until you advance the throttle past 25%. All trimming and control direction test should be done **before** SAFE technology is activated.
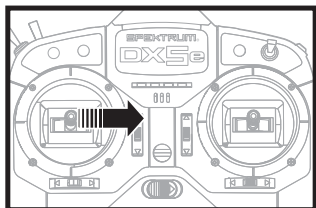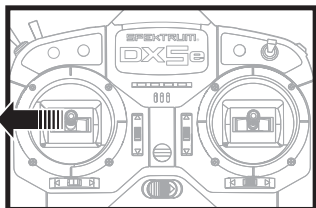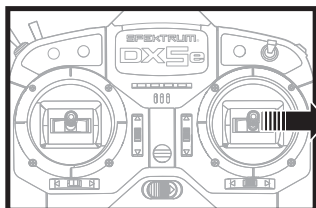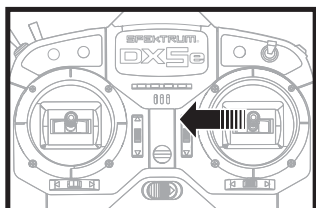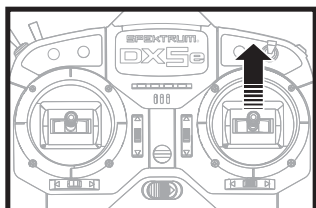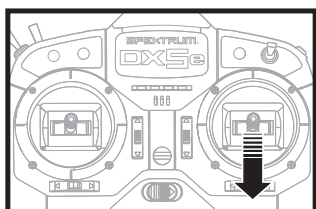
Mode 2	Mode 1	
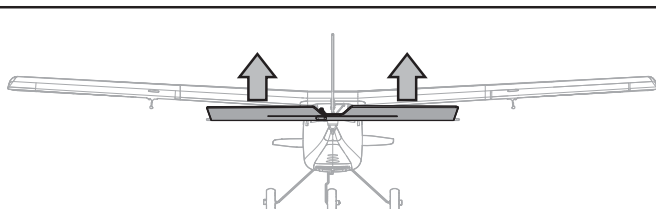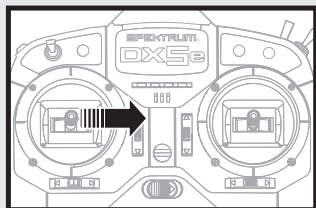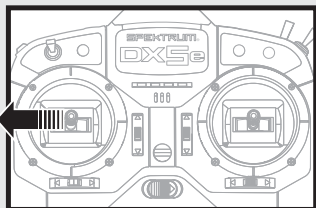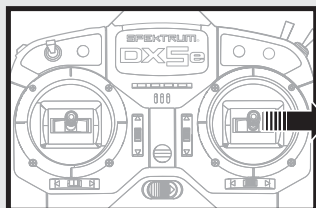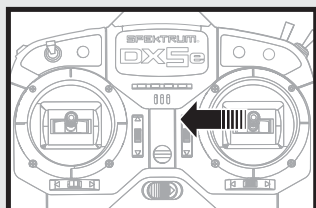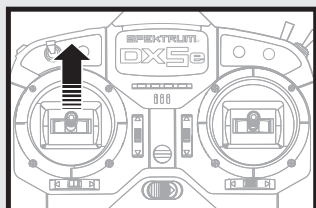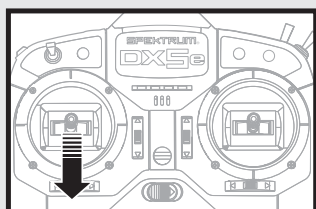
Elevator
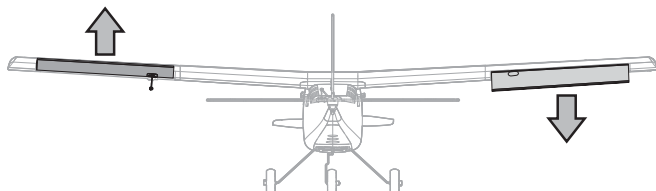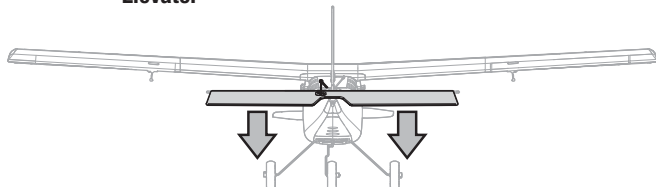
Ailerons
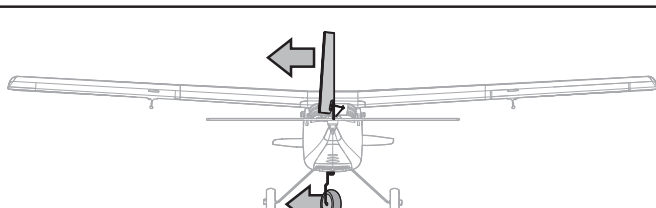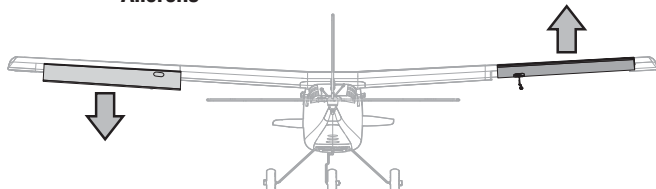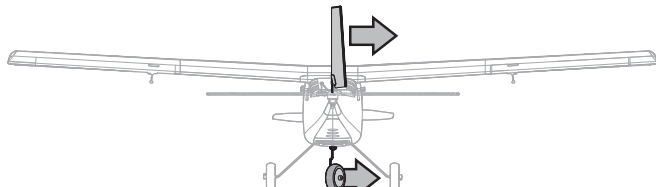
Rudder

Flight Control

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

For example, when the aircraft's nose is pointing toward you, left steering (rudder) will 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, and 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 and pull the elevator stick back to go up.

- *Banking right and left:* Move the aileron stick right to make the aircraft drop the wing (bank) to the right and move the aileron stick left to bank left.
- *Steering right and left:* Move the rudder stick right to make the aircraft go right and move the rudder stick left to go left (as if you are seated in the cockpit).

TIP

For the first flights, make sure Channel 5 is set to Beginner mode, the best flight mode to help you learn to fly.

Mode 2	Mode 1	

Throttle

Elevator

Ailerons

Rudder
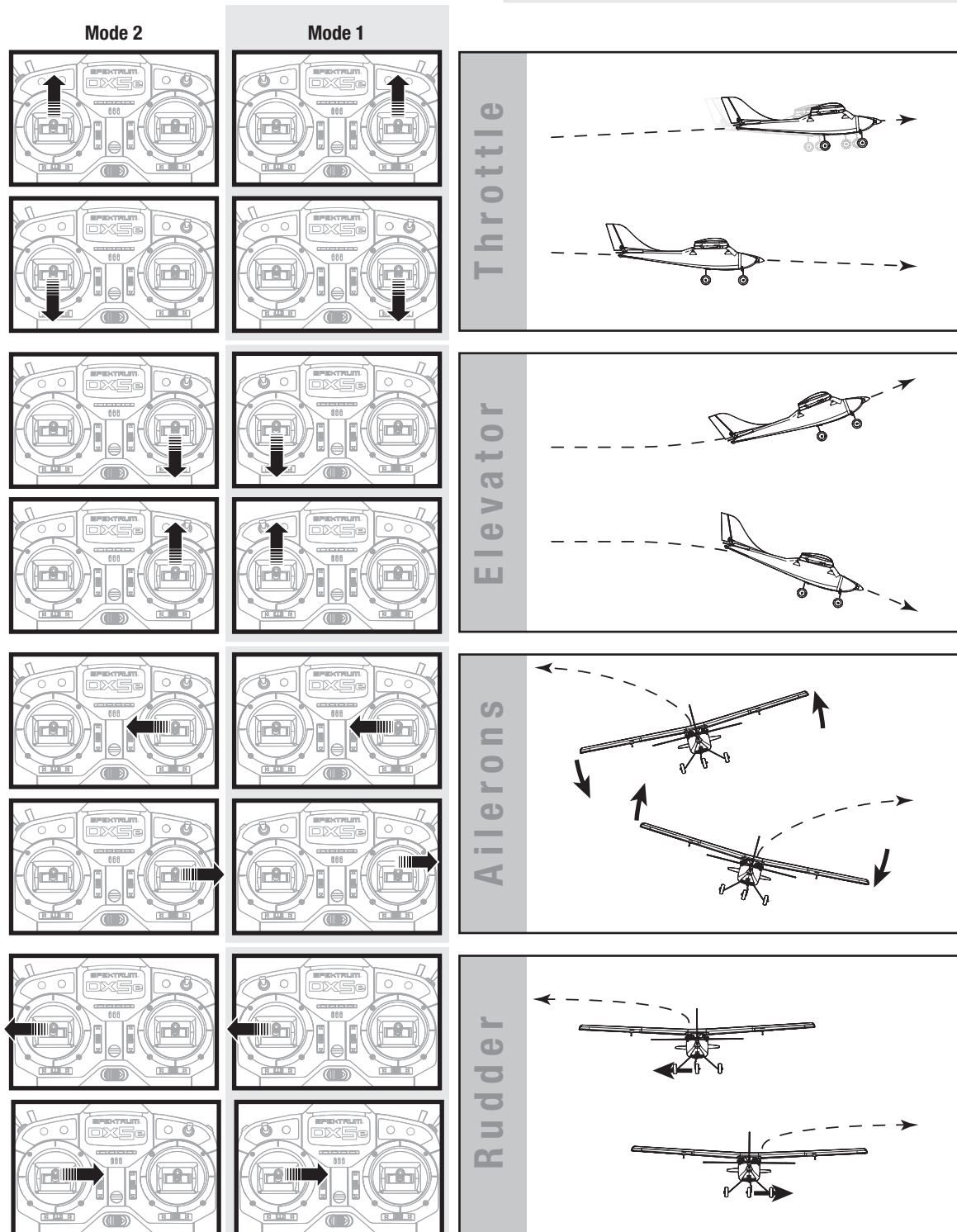
Flight Training

Simulator Use

We recommend using your DX5e transmitter with the Phoenix R/C Pro Flight Simulator 4.0 (RTM4000). The simulator software includes the original Apprentice and other trainer aircraft. Use the transmitter with the simulator to practice and experiment with your aircraft without damaging your model.

Instruction

To the new pilot:

This aircraft is easy to fly and helps you apply beginner skills to flying; however, we recommend you get help from a qualified flight instructor for your first radio controlled flights. Some model flying clubs provide flight training at their flying fields. Find a nearby flying club through your local hobby shop. In the U.S., visit the Academy of Model Aeronautics at www. modelaircraft.org. for more information on clubs and flight instruction.

To the flight instructor:

Feel free to experiment with the SAFE technology before instructing your student on this aircraft. The progressive switch positions in the SAFE technology are intended for a new pilot to learn with minimal instructor assistance. We recommend using Channel 5 Switch Position 1 to instruct a new pilot. Switch positions 0 and 2 may stabilize the aircraft more or less than you desire for instruction purposes.

DX5e Trainer Feature

Your DX5e transmitter may be connected to another transmitter through the trainer ports using a trainer cord (SPM6805, sold separately).
The DX5e transmitter is ideal* as the master as it is compatible with all JR® or Spektrum transmitters when using this feature. Servo reversing and trims must be the same on both transmitters.
This "buddy box" approach has helped many new pilots get the feel for aircraft control with the close assistance of a flight instructor. Connecting two transmitters enables your flight instructor to hold the master transmitter while you hold the slave transmitter. While you learn to fly, the instructor holds the trainer switch to give you control of the aircraft. If you need help, the flight instructor can release the switch to take control.

*IMPORTANT: If a transmitter other than the included DX5e is used for master or slave, refer to Optional Transmitter Setup in this manual.

Trainer Switch

Front

Back

Trainer port

Master

Slave

Trainer cord
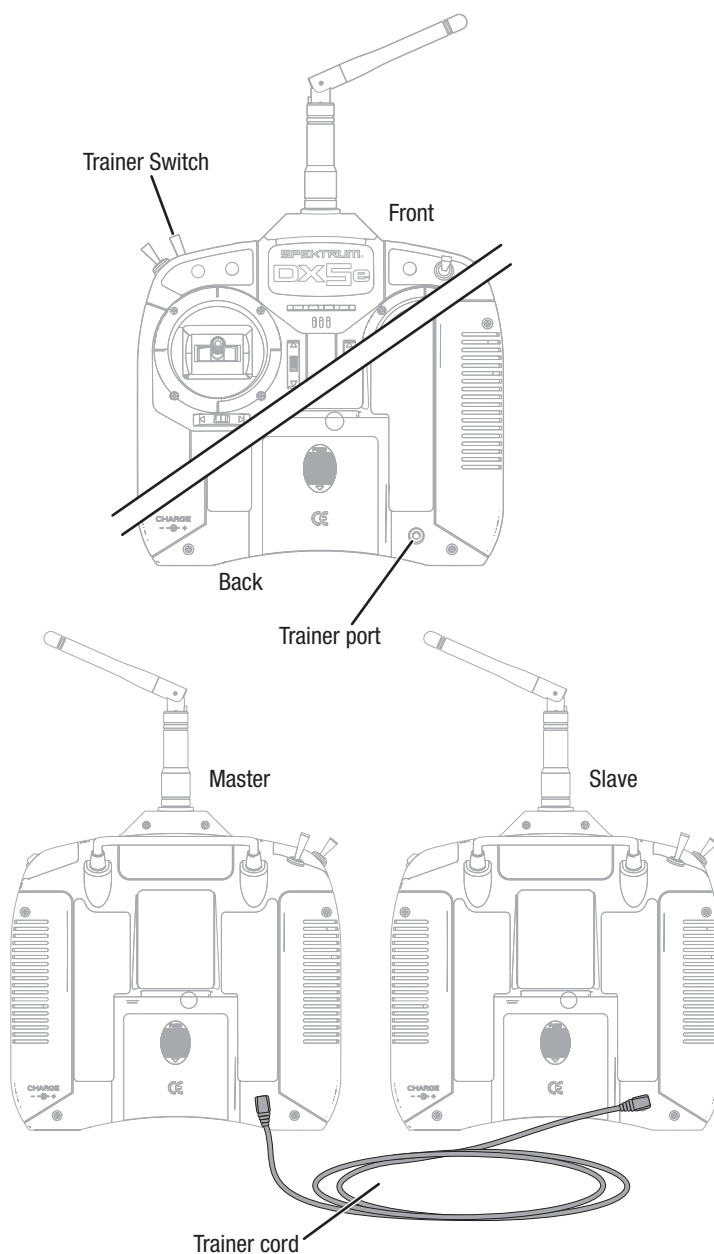
Flight Trimming

Make yourself familiar with your transmitter's controls and the aircraft's response before flying by performing the recommended Control Direction Test. The flight trim buttons are used to fine tune your aircraft for straight and level flight. When trimmed correctly, your aircraft flies a straight path with wings level, steadily climbs at full throttle, maintains a constant altitude at half throttle, and gently descends at low throttle. SAFE technology must learn your aircraft trim values to ensure consistent flight behavior. The trim values are learned when the receiver initially powers up. If you need to adjust the trim values in flight, set the aircraft to half throttle, make the necessary adjustments using the flight trim buttons, then keep the throttle position constant and the aileron, elevator, and rudder controls at the neutral position for 3 seconds. If you need more than 4 clicks on a trim button to make the aircraft fly straight and level at half throttle, you should mechanically adjust the control surfaces as shown in the control surface centering section.

Elevator trim:
Only trim the aircraft at half throttle. When trimmed correctly, your aircraft will fly level at half throttle.
• When the aircraft's nose drifts up or down while the elevator stick is at neutral (centered) position, push the elevator trim button by one or two "click" increments OPPOSITE the direction of drift.
• Adjust trim so the aircraft flies straight and level when the elevator stick is neutral.

Rudder trim:
• When the aircraft drifts left or right while the rudder stick is at the neutral position (centered), push the rudder trim button by one "beep" increments OPPOSITE the direction of drift.
• Adjust trim so the aircraft flies straight when the control stick is neutral.

Aileron trim:
Only trim the aircraft at half throttle. When trimmed correctly, your aircraft flies with wings level at half throttle.
• When the aircraft's wing drops from level on one side while the aileron stick is at the neutral (centered) position, push the aileron trim button by one or two "click" increments OPPOSITE the direction of roll.
• Adjust trim so the aircraft flies straight and level when the aileron stick is neutral.

IMPORTANT: For best results, trimming should always be done while flying directly into the wind using the Intermediate or Experienced Flight Modes.

TIP

You can return any trim setting to neutral by pushing the trim button until the beep signal sounds the middle position. Rising or descending tones sound when a switch is being pushed.

Drifting down **Straight and Level** **Drifting Up**
Up Trim **No Trim** **Down Trim**

Drifting Left **Straight and Level** **Drifting Right**
Right Trim **No Trim** **Left Trim**

Drifting Left **Straight and Level** **Drifting Right**
Right Trim **No Trim** **Left Trim**
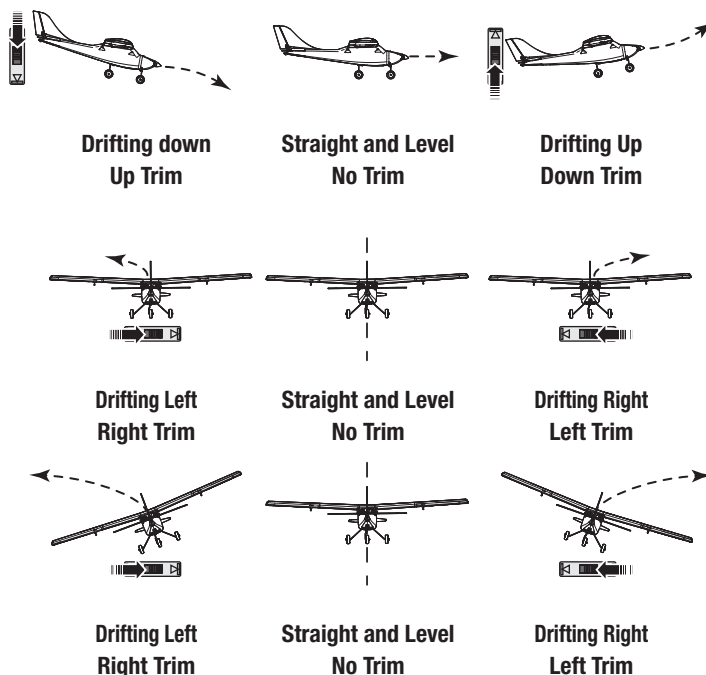
Flying Field Choice

Always choose a wide-open space for flying your aircraft. It is ideal for you to fly at an RC club flying field. Always avoid flying near houses, trees, wires and buildings. You should also be careful to avoid flying in areas where there are many people, such as busy parks, schoolyards, or soccer fields. 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, you aircraft at full throttle can cover ground quickly.

Plan on flying in an area that gives you more space than you think you need, especially with first flights.

Wind

600 feet (183 m)

Fly in this area (upwind of pilot)

Stand here
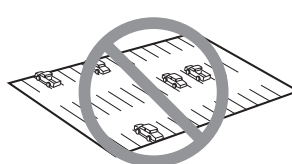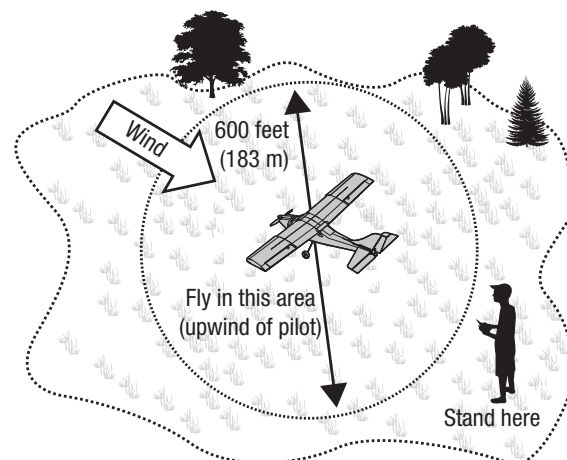
Range Check

Before each flying session, and especially with a new model, you should perform a range check. The DX5e 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. Power on the ESC Switch and keep the aircraft immobile for at least 5 seconds.
2. Face the model with the transmitter in your normal flying position. **Push and hold the trainer switch 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 switch during the entire range check process. Releasing the switch 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.

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.

* 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.

Mode 2   Mode 1

Keep immobile and out of the wind for 5 seconds

1   3
2   4

28 meters (90 feet)
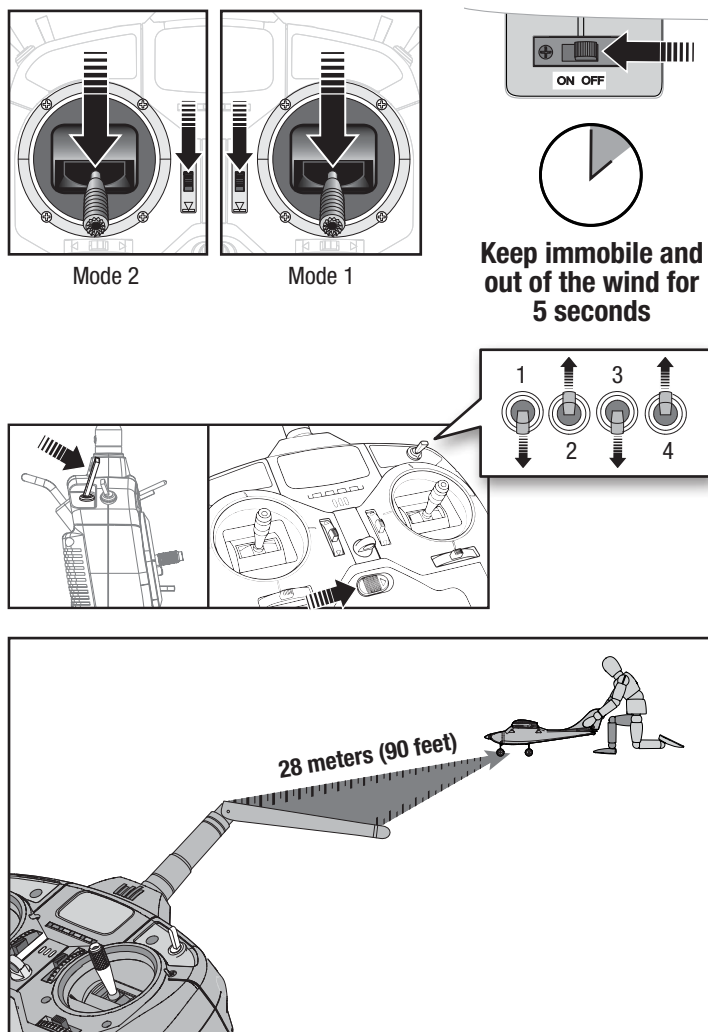
⚠ **CAUTION:** While holding the aircraft during the Range Test, always keep body parts and loose items away from the propeller. Failure to do so could cause personal injury.

Flying Tips

- Start in beginner mode. As you learn and become more confident change modes to advance.
- 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, decrease throttle and release the aileron stick. Pull the elevator stick back a small amount to pull up the nose of the aircraft.
- If you feel you have lost control pull and hold the Panic Switch.

✓	**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.
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

Ground Launch

Take off from the ground in Beginner mode is recommended for first flights, however, if the ground is not hard and level, 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

Take off in Beginner mode, increase throttle and keep the aircraft straight with the rudder control. The aircraft will rise from a level runway in a short distance. Obtain a steady climb to a safe altitude. Use Panic Switch if needed.

Hand Launch

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 while keeping the wings parallel to the ground.

TIP

Hand launch in Beginner mode with Panic mode active. The technology will keep the aircraft level and in a climb. Obtain a safe and steady climb, then release the Panic Switch and climb to a safe altitude.

TIP

If the model is launched incorrectly, or is landing at a less than perfect attitude, pull and hold the Panic Switch. The SAFE technology can correct and help prevent a crash.

Flying Conditions

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.
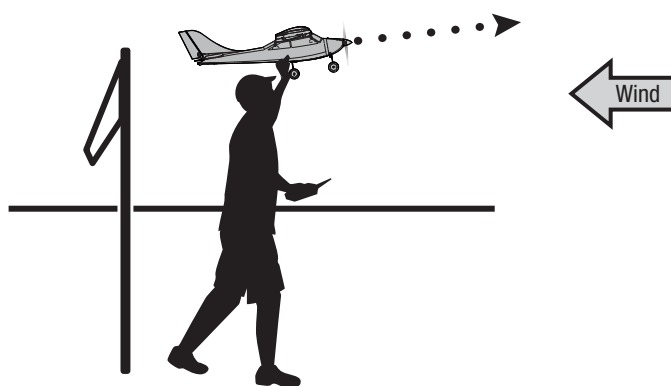
Wind

Wind

Flying

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

TIP

In Beginner mode, when properly trimmed, your aircraft will climb at full throttle without use of elevator.

50% throttle

Full throttle   Reduced throttle

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.
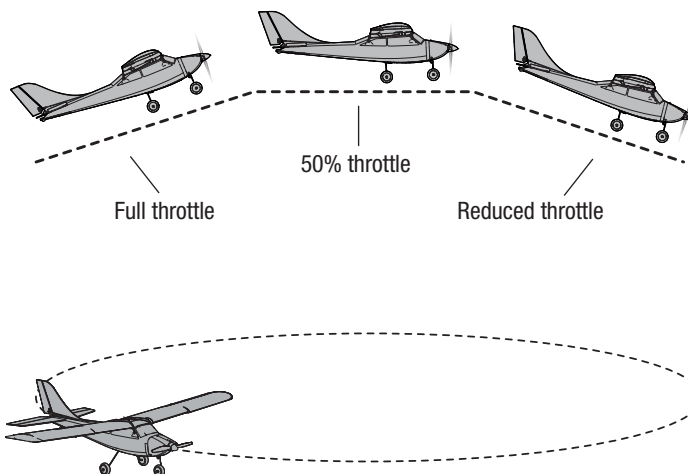
Landing

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

If the motor begins to pulse, the battery is getting low and you must land immediately.

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.

3. Once the aircraft is 1 meter (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. The aircraft will lose speed so that the main gear lands first before the nose gear touches down.

4. Allow the aircraft to come to a stop.
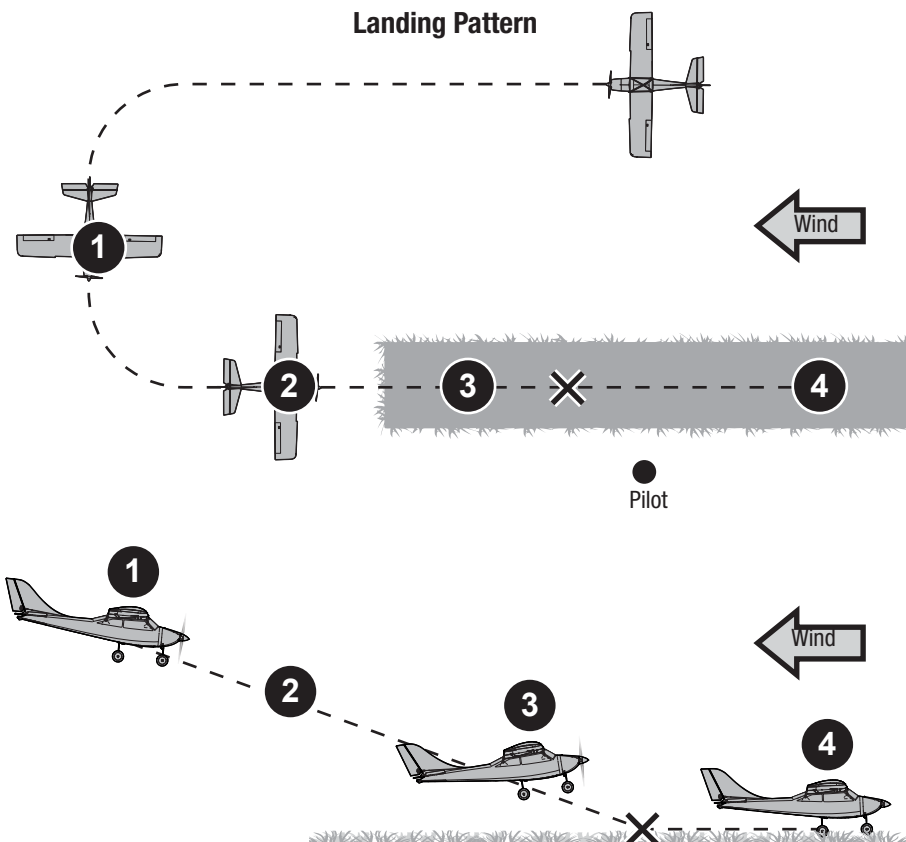
TIP

Landing in Beginner mode will give the student pilot a better chance for success.

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

NOTICE: If a crash is imminent, reduce the throttle and trim fully. Failure to do so could result in extra damage to the airframe, as well as damage to the ESC and motor.

NOTICE: Crash damage is not covered under warranty.

Landing Pattern

Wind

1

2   3   ✕   4

Pilot

1

2   3

Wind

4

⚠ WARNING
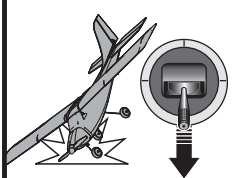
Always decrease throttle at propeller strike.

Post Flight

NOTICE: When you are 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.	Turn off ESC switch
2.	Power off transmitter
3.	Remove flight battery from aircraft
4.	Recharge flight battery
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
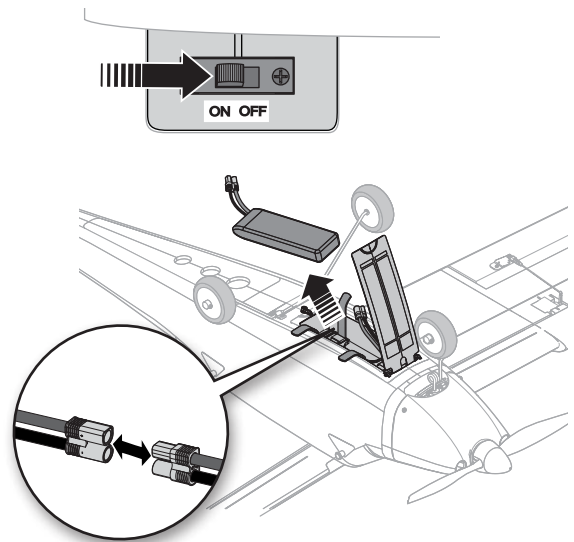
Service and Repairs

NOTICE: After any impact or replacement always ensure the receiver is **secure in the fuselage**. If you replace the receiver, install the new receiver in the same orientation and manner as the original receiver or damage may result.

Thanks to the Z-Foam™ material in the wing and fuselage of this aircraft, repairs to the foam can be made using virtually any adhesive (hot glue, regular CA (cyanoacrylate adhesive), epoxy, etc). However, use only foam-compatible CA, foam-compatible accelerant or epoxy on the vertical and horizontal tail material.
When parts are not repairable, see the Replacement Parts List for ordering by item number. For a listing of all replacement and optional parts, refer to the list at the back of this manual.
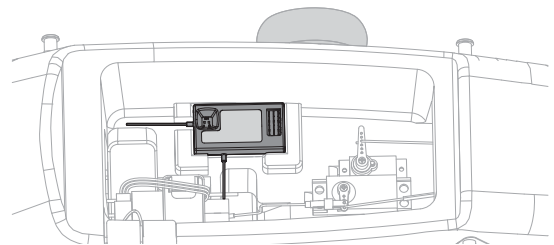
Service of Power Components

Disassembly

1. Remove the spinner (**A**) from the spinner backplate (**B**), using a small amount of force.
2. Remove the hex nut (**C**), washer (**D**) and propeller (**E**) from the collet (**F**). A tool may be required to remove the hex nut.
3. Carefully remove 3 screws (**G**) and the cowling (**H**) from the fuselage.
4. Remove the collet from the motor (**I**).
5. Remove 4 screws (**J**) from the motor mount (**K**) and the fuselage.
6. Disconnect the motor connectors from the ESC connectors.
7. Remove 4 screws (**L**) and 4 washers (**M**) from the motor mount and motor.

Assembly

Assemble in reverse order.
- Correctly align and connect the motor wire colors with the ESC wires.
- The propeller size numbers (11 x 8) 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 backplate for safe operation.

Wiring not shown.
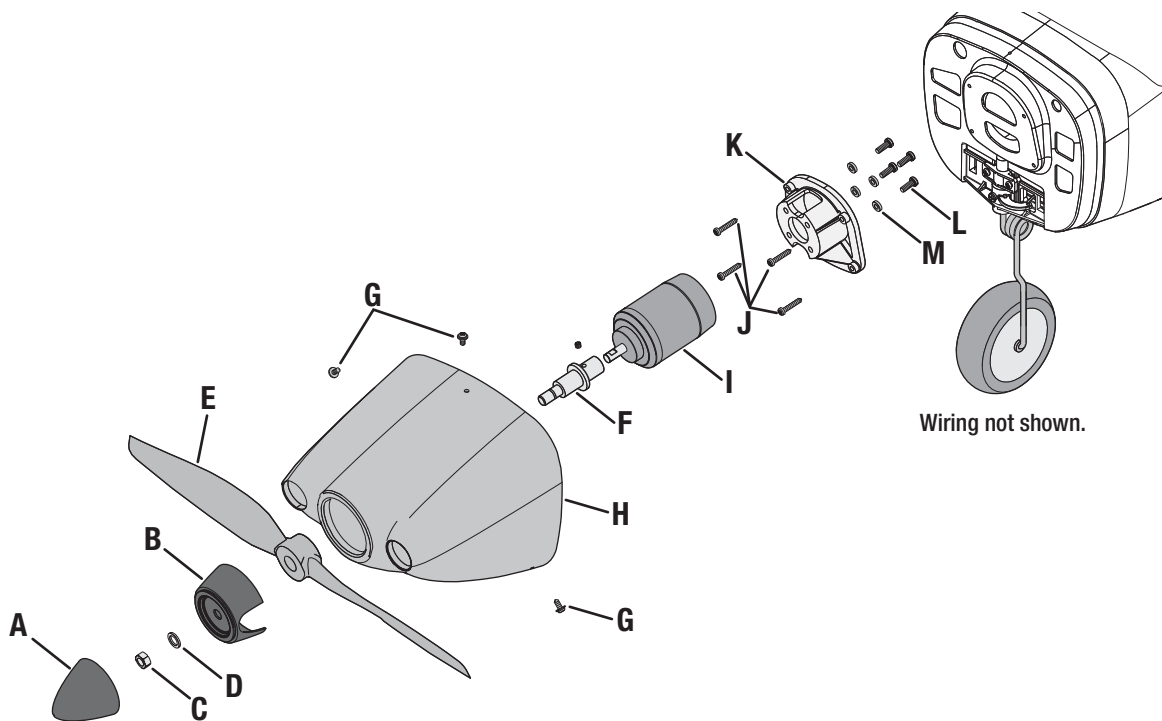
Propeller Maintenance

⚠ **CAUTION:** Always keep hands away from the propeller when a battery is connected to the aircraft. When armed, the motor will turn the propeller in response to any throttle movement. Always disconnect the battery from the aircraft before handling the propeller.

- Follow steps 1 and 2 above to remove the propeller.
- Reassemble in reverse order.
- Ensure the propeller size numbers face toward the front of the aircraft. Ensure the nut holds the propeller tightly without damaging the propeller.

NOTICE: If the propeller is not balanced, the aircraft may oscillate, causing the stabilization system to not operate correctly and/or decrease the life of the servos.

Horizon Hobby does not warrant replacement if the servos are used under extreme vibration or the stabilization system is used with an unbalanced propeller.
For more information, view John Redman's propeller balancing video at www.horizonhobby.com.

🔧 **TIP**

We recommend removal of the propeller before any radio system setup or transport of your aircraft.

Water Takeoff and Landing Using the Optional Float Set

IMPORTANT: We recommend flying with floats only once you have become able to fly comfortably in Experienced flight mode.

Only use the floats if you are comfortable flying your Apprentice and have repeatedly taken off, flown and landed with success. Flying off water poses a higher risk to the airplane because the electronics can fail if fully immersed in water.

Always ensure the optional floats (ELFA550, sold separately) are secure on the fuselage and that the float rudder linkage is correctly connected and moves freely before putting the aircraft in water.

To take off on water, steer with the rudder and slowly increase the throttle. Keep the wings level on takeoff. Hold a small amount (1/4–1/3) of up elevator and the aircraft will lift off once flying speed is reached. Avoid rapidly increasing the throttle as torque from the motor may cause the aircraft to roll to the left when on water.

To land this aircraft on water, fly the aircraft to a couple of feet off the surface of the water. Reduce throttle and add up elevator to flare the aircraft. When taxiing, you must use throttle to move the aircraft forward, but steer with the rudder stick. The stick will turn both the aircraft rudder and a small rudder attached to the left float.

Avoid taxiing cross wind if there is a breeze, as this can cause the aircraft to flip over if wind gets under the upwind wing. Taxi 45 degrees into the direction of the wind (not perpendicular to the wind) and use aileron to hold the upwind wing down. The aircraft will naturally try to face into the wind when taxiing.

Always fully dry the aircraft after landing on water.

⚠ **CAUTION:** Never go alone to get a downed model in the water.

⚠ **CAUTION:** If at any time water splashes in the fuselage while flying from water, bring the airplane to shore, open the battery hatch and immediately remove any water that may have gotten in the fuselage. Leave the battery hatch open overnight to let the inside dry out and to prevent moisture damage to the electronic components. Failure to do so could cause the electronic components to fail, which could result in a crash.
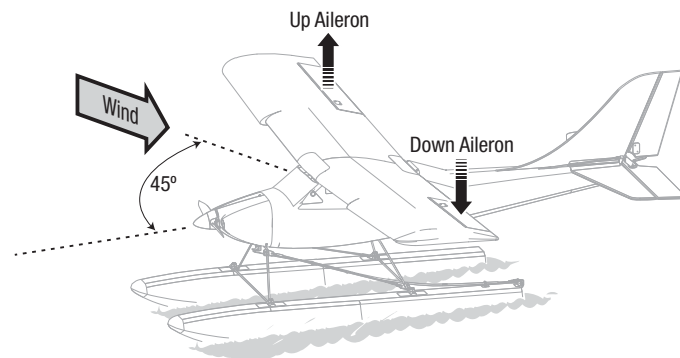
Taxi 45 degrees into the direction of the wind.

Receiver Setup

RECEIVER SETUP
No receiver setup is required for the included DX5e transmitter (or a similar transmitter with a 3-position Channel 5 switch).

Receiver setup is required for use of a transmitter with only a 2-position Channel 5 switch. Two switches (see illustration) must be moved on the receiver to select 2 of the 3 SAFE technology Flight mode options.
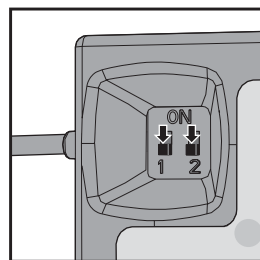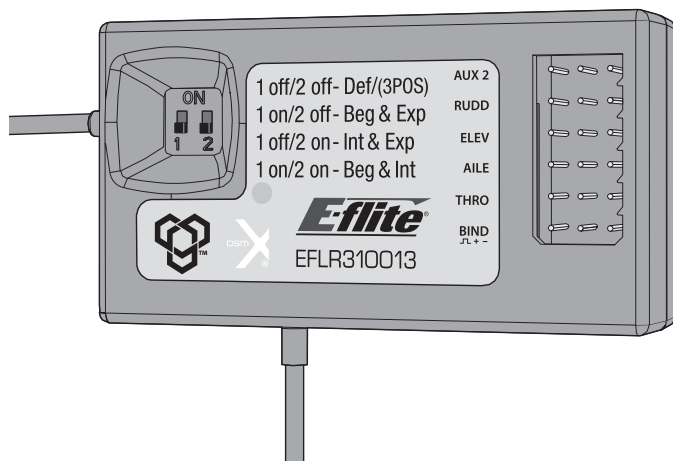
Default for the included DX5e transmitter, enabling Channel 5 3-position switch access to all 3 SAFE modes.
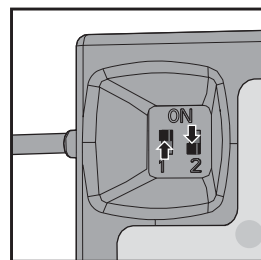
Enable Channel 5 2-position switch access to **Beginner** and **Experienced** SAFE modes.
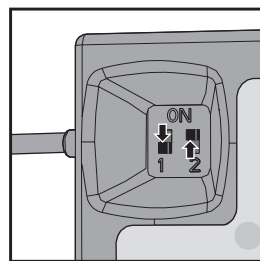
Enable Channel 5 2-position switch access to **Intermediate** and **Experienced** SAFE modes.
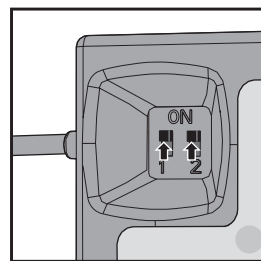
Enable Channel 5 2-position switch access to **Beginner** and **Intermediate** SAFE modes.

Optional Transmitter Setup

If using any DSM2/DSMX transmitter other than the included DX5e (3 pos gear switch) the radio will have to be configured correctly for the SAFE system to work properly.

• SAFE Flight mode is selected using Channel 5 signal (high, middle, Low)

• Panic mode is selected with Channel 6 signal (high, low)

N = Normal   R = Reverse

Transmitter	Thro	Aile	Elev	Rudd	Gear/ Ch 5	Aux 1	Flight Mode/ Panic Switch	SAFE Flight Modes Supported
DX4e	N	N	N	N	N	N/A	Default	2 pos Flight Mode
DX5e (2pos)	N	N	N	N	N	N/A	Default	2 pos Flight Mode
DX5e (3pos)	N	N	N	N	N	N/A	Default	3 pos Flight Mode
DX6i	N	N	N	N	R	N	*(Flap System) Norm UP Arrow 100 Land Down Arrow 100	2 pos Flight Mode
DX7	N	N	N	N	N	N	*(Flap System) Norm Down Mid 0 Land UP 100 (3 pos Aux1 switch–0 & 1 are normal 2 is panic	2 pos Flight Mode
DX7s	N	N	N	N	N	R	*(Switch Select) Gear to inhibit, FM to Gear, Flap to inhibit, Trainer to Aux 1	3 pos Flight Mode
DX8	N	N	N	N	N	R	*(Switch Select) Gear to inhibit, FM to Gear, Flap to inhibit, Trainer to Aux 1	3 pos Flight Mode
DX10t	N	N	N	N	N	R	*(Channel Input Config) Gear is A, Aux1 is R stick	3 pos Flight Mode
DX18	N	N	N	N	N	R	*(Channel Input Config) Gear is B, Aux1 is switch i	3 pos Flight Mode

* Refer to your transmitter's manual for more information about Flap System, Switch Select or Channel Input Config.

Buddy Box Setup

IMPORTANT: If using the buddy box option for training on a transmitter other than the included DX5e use these settings for a Master and or Slave Transmitter. Failure to do so will not allow SAFE technology Flight modes to work correctly.

IMPORTANT: If using the buddy box option the transmitter must be configured using the Transmitter Setup and Buddy Box setup charts.

Master Transmitter Set Up		Slave Transmitter Set Up	
Master Transmitter	Master Set Up	Slave Transmitter	Slave Set Up
DX4e	Factory Trainer Settings	DX4e	Factory Trainer Settings
DX5e (2pos)	Factory Trainer Settings	DX5e (2pos)	Factory Trainer Settings
DX5e (3pos)	Factory Trainer Settings	DX5e (3pos)	Factory Trainer Settings
DX6i	Factory Trainer Settings	DX6i	Factory Trainer Settings
DX7	Trainer to Normal	DX7	Factory Trainer Settings
DX7s	Activate Programmable Master and insure channels Thro - Aux 1 are set to slave	DX7s	Factory Trainer Settings
DX8	Activate Programmable Master and insure channels Thro - Aux 1 are set to slave	DX8	Factory Trainer Settings
DX10t	Activate Programmable Master and insure channels Thro - Aux 1 are set to slave	DX10t	Factory Trainer Settings
DX18	Activate Programmable Master and insure channels Thro - Aux 1 are set to slave	DX18	Factory Trainer Settings

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.

Federal Aviation Administration

Prior to flying, contact your local or regional modeling organizations for guidance and familiarize yourself with the current local rules and FAA regulations governing model aviation in your location.

More information about model aviation can be found at www.modelaircraft.org. The Federal Aviation Administration can be found online at www.faa.gov.

Troubleshooting Guide for SAFE Technology

Problem	Possible Cause	Solution
Oscillation	Flying over recommended airspeed	Reduce air speed
	Damaged propeller or spinner	Replace propeller or spinner
	Imbalanced propeller	Balance the propeller. For more information, view John Redman's propeller balancing video at www.horizonhobby.com
	Motor vibration	Replace parts or correctly align all parts and tighten fasteners as needed
	Loose receiver	Total system failure. Align and secure receiver in fuselage
	Loose aircraft controls	Tighten or otherwise secure parts (servo, arm, linkage, horn and control surface)
	Worn parts	Adjust gain to compensate for parts wear or replace worn parts (especially propeller, pivot points or servo)
	Irregular servo rotation	Replace servo
Trim is at extreme and aircraft does not fly straight or level	Trim is not at neutral	If you adjust trim more than 4 clicks, adjust the clevis to mechanically remove trim
Channel 5 switch positions do not operate as described	In your transmitter, Channel 5 servo is set to REVERSE	In your transmitter, set Channel 5 servo to NORMAL

Troubleshooting Guide

Problem	Possible Cause	Solution
Aircraft will not respond to throttle but responds to other controls	Throttle not at lowest position or throttle trim too high	Reset controls with throttle stick and throttle trim at lowest setting
	Throttle servo travel is lower than 100%	Make sure throttle servo travel is 100% or greater
	Throttle channel is reversed	Reverse throttle channel on transmitter
	Motor disconnected from ESC	Make sure motor is connected to the ESC
Extra propeller noise or extra vibration	Damaged propeller and spinner, collet or motor	Replace damaged parts
	Propeller is out of balance	Balance or replace propeller
	Prop nut is too loose	Tighten the prop nut
	Spinner is not tight or fully seated in place	Tighten the spinner or remove the spinner and turn it 180 degrees
Reduced flight time or aircraft under-powered	Flight battery charge is low	Completely recharge flight battery
	Propeller installed backwards	Install propeller with numbers facing forward
	Flight battery damaged	Replace flight battery and follow flight battery instructions
	Flight conditions may be too cold	Make sure battery is warm before use
	Battery capacity too low for flight conditions	Replace battery or use a larger capacity battery
Aircraft will not Bind (during binding) to transmitter	Transmitter too near aircraft during binding process	Move powered transmitter a few feet from aircraft, disconnect and reconnect flight battery to aircraft
	Aircraft or transmitter is too close to large metal object, wireless source or another transmitter	Move aircraft and transmitter to another location and attempt binding again
	The bind plug is not installed correctly in the bind port	Install bind plug in bind port and bind the aircraft to the transmitter
	Flight battery/transmitter battery charge is too low	Replace/recharge batteries
	Bind switch or button not held long enough during bind process	Power off transmitter and repeat bind process. Hold transmitter bind button or switch until receiver is bound
	ESC is powered off	Power on the ESC switch
Aircraft will not connect (after binding) to transmitter	Transmitter too near aircraft during connecting process	Move powered transmitter a few feet from aircraft, disconnect and reconnect flight battery to aircraft
	Aircraft or transmitter is too close to large metal object, wireless source or another transmitter	Move aircraft and transmitter to another location and attempt connecting again
	Bind plug left installed in bind port	Rebind transmitter to the aircraft and remove the bind plug before cycling power
	Aircraft bound to different model memory (ModelMatch™ radios only)	Select correct model memory on transmitter
	Flight battery/Transmitter battery charge is too low	Replace/recharge batteries
	Transmitter may have been bound using different DSM protocol	Bind aircraft to transmitter
	ESC is powered off	Power on the ESC switch
Control surface does not move	Control surface, control horn, linkage or servo damage	Replace or repair damaged parts and adjust controls
	Wire damaged or connections loose	Do a check of wires and connections, connect or replace as needed
	Transmitter is not bound correctly or the incorrect model was selected	Re-bind or select correct model in transmitter
	Flight battery charge is low	Fully recharge flight battery
	BEC (Battery Elimination Circuit) of the ESC is damaged	Replace ESC
	ESC is powered off	Power on the ESC switch
Controls reversed	Transmitter settings are reversed	Perform the Control Direction Test and adjust the controls on transmitter appropriately
Motor power pulses then motor loses power	ESC uses default soft Low Voltage Cutoff (LVC)	Recharge flight battery or replace battery that is no longer performing
	Weather conditions might be too cold	Postpone flight until weather is warmer
	Battery is old, worn out, or damaged	Replace battery
	Battery C rating might be too small	Use recommended battery

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 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.

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.

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
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-Straße 1 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 info@horizonhobby.com.cn

FCC Information

This device complies with part 15 of the FCC rules. 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 Spektrum 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 regulations. The illustration shows the approximate 5 cm RF exposure area and typical hand placement when operating your Spektrum transmitter.
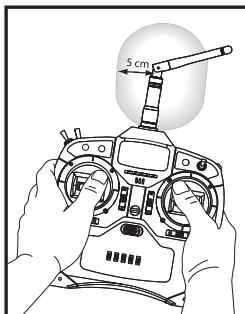
IC Information
This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

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. HH2013032603

Product(s): EFL Apprentice S 15e RTF
Item Number(s): EFL3100, EFL3100M1
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 V1.9.2: 2012
EN301 489-17 V2.1.1: 2009

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
March 06, 2013

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

Part # l Number Numéro l Codice	Description	Beschreibung	Description	Descrizione
EFL3100	Apprentice S 15e RTF	E-flite Apprentice S 15e RTF	Apprentice S 15e RTF	Apprentice S 15e RTF
EFL3100MD1	Apprentice S 15e RTF (Mode 1)	E-flite Apprentice S 15e RTF (Mode 1)	Apprentice S 15e RTF (Mode 1)	Apprentice S 15e RTF (Mode 1)
EFL310001	Wing Set: Apprentice S 15e RTF	E-flite Apprentice S : Tragflächenset	Paire d'ailes: Apprentice S 15e	Set ala: Apprentice S 15e RTF
EFL310002	Fuselage: Apprentice S 15e RTF	E-flite Apprentice S : Rumpf	Fuselage: Apprentice S 15e	Fusoliera: Apprentice S 15e RTF
EFL310003	Tail Set: Apprentice S	E-flite Apprentice S : Leitwerksset	Empennages: Apprentice S 15e	Set coda: Apprentice S
EFL310004	Cowl: Apprentice S 15e RTF	E-flite Apprentice S : Motorhaube	Capot: Apprentice S 15e	Naca motore: Apprentice S 15e RTF
EFL310005	Pushrod Set: Apprentice S 15e RTF	E-flite Apprentice S : Gestängeset	Set de tringleries: Apprentice S 15e	Set barrette comandi: Apprentice S 15e RTF
EFL310006	Nose Gear: Apprentice S 15e RTF	E-flite Apprentice S : Bugfahrwerk	Train de nez: Apprentice S 15e	Carrello anter.: Apprentice S 15e RTF
EFL310007	Main Landing Gear: Apprentice S 15e RTF	E-flite Apprentice S : Hauptfahrwerk	Train principal: Apprentice S 15e	Carrello principale: Apprentice S 15e RTF
EFL310008	Firewall: Apprentice S 15e RTF	E-flite Apprentice S : Brandschott	Cloison pare feu: Apprentice S 15e	Ordinata motore: Apprentice S 15e RTF
EFL310009	Nose Gear Arm&Mounting Strap: Apprentice S 15e RTF	E-flite Apprentice S : Steuerarm Bugfahrwerk	Support et bras de train de nez: Apprentice S 15e	Braccio carrello anter. e fissaggio: Apprentice S 15e RTF
EFL310010	Battery Door: Apprentice S 15e RTF	E-flite Apprentice S : Akkuklappe	Trappe à batterie: Apprentice S 15e	Sportello batteria: Apprentice S 15e RTF
EFL310011	Wheels 65mm (3): Apprentice S 15e RTF	E-flite Apprentice S : Räder 65mm	Roues diamètre 65mm (3): Apprentice S 15e	Ruote 65mm (3): Apprentice S 15e RTF
EFL310012	Decal Set: Apprentice S 15e	E-flite Apprentice S : Dekorbogen	Planche de décoration: Apprentice S 15e	Set adesivi: Apprentice S 15e
EFLR310013	Receiver: Apprentice S 15e (SAFE RX)	E-flite Apprentice S : Empfänger (SAFE X)	Récepteur (Système SAFE): Apprentice S 15e	Ricevitore: Apprentice S 15e (SAFE RX)
EFLM7215	840Kv Brushless Outrunner	E-flite BL15, 840kV	Moteur brushless 840Kv à cage tournante	840Kv Motore Brushless Outrunner
EFLA1030B	30-Amp Pro Switch-Mode BEC Brushless ESC (V2)	E-flite 30-Amp Pro Switch-Mode BEC Brushless Regler (V2)	Contrôleur brushless 30A Pro switch mode Bec	Regolatore 30-Amp Pro Switch-Mode BEC Brushless ESC (V2)
EFLB32003S	3S 3200mAh Li-Po battery	3S 3200mAh Li-Po battery	Batterie Li-Po 3S 3200mA	Batteria 3S 3200mAh Li-Po
EFLR7155	13 g Digital Micro Servo	E-flite 13g Digital Micro Servo	Micro servo digital 13g	13 g Micro Servo digitale
EFLR7150	37 g Standard Servo	E-flite 37g Standard Servo	Servo standard 37g	37 g Servo standard

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

Part # l Number Numéro l Codice	Description	Beschreibung	Description	Descrizione
SPMR5510EU, SPMR55101EU (MD1)	DX5e DSMX 5-Channel Transmitter	Spektrum DX5E DSMX 5-Kanalsender ohne Empfänger MD 1	Emetteur DX5E DSMX 5 voies	Trasmettitore DX5e DSMX 5-canali
EFLC3010	2-3S LiPo Balancing Charger, 0.5-3A	E-flite 2-3SLiPo Balancing Ladegerät,0.5-3A	Chargeur équilibreur Li-Po 2S-3S 0.5 à 3A	Caricatore bilanciato 2-3S LiPo Balancing Charger, 0.5-3A
PKZ4421	Clevis Set (4)	Parkzone Schubstangen Set (4)	Set de chapes (4)	Set forcelle (4)
EFLP11080E	11 x 8 Electric Prop: Apprentice S 15e	E-flite 11 x 8 E-Flug Luftschraube	Hélice électrique 11x8	Elica 11 x 8 Electric: Apprentice S 15e
PKZ1132	Servo Arm Assortment (3W & 5W)	Parkzone Servohebel Set	assortiment de bras de servos (3W et 5W)	Assortimento bracci servi (3W & 5W)
EFL2733	Spinner: Apprentice S 15e	E-flite Apprentice S: Spinner	cône: Apprentice S 15e	Ogiva Apprentice 15e
EFL2734	Motor Mount: Apprentice S 15e	E-flite Apprentice S: Motorträger	Support moteur	Supporto motore Apprentice 15e
EFL2735	5mm Prop Adapter: Apprentice S 15e	E-flite Apprentice S: Propelleradapter	Adaptateur d'hélice diam 5mm: Apprentice S 15e	Adattatore elica 5mm Apprentice 15e
EFL2737	Wing Hold Down Rods with Caps: Apprentice 15e	E-flite Apprentice S: Tragflächenbe-festigung	Tiges de fixation d'aile avec capu-chons: Apprentice S 15e	Barrette fissaggio ala con cappucci Apprentice 15e
EFL2738	Rubber Bands (8): Apprentice S 15e	E-flite Apprentice S: Gummibänder (8)	Elastiques (8): Apprentice S 15e	Elastici (8): Apprentice S 15e

Optional Parts • Optionale Bauteile • Pièces optionnelles • Pezzi opzionali

Part # l Number Numéro l Codice	Description	Beschreibung	Description	Descrizione
EFLA550	Float Set: Apprentice S 15e	E-flite Apprentice S : Schwimmerset	Set de flotteurs: Apprentice S 15e	Set galleggianti Apprentice S 15e
EFLC3025	Celectra 80W AC/DC Multi-Chemistry Battery Charger	Celectra 80 W AC/DC Multi-Chemistry-Batterieladegerät	Chargeur de batterie AC/DC Celectra 80 W multi-types	Caricabatterie per batteria multichi-mica 80 W c.a./c.c.
EFLAEC302	EC3™ Battery Connector, Female (2)	EC3 Akkukabel, Buchse (2)	Prise EC3 femelle (2pc)	EC3 Connettore femmina x batteria (2)
EFLAEC303	EC3 Device/Battery Connector, Male/Female	EC3 Kabelsatz, Stecker/Buchse	Prise EC3 male/femelle	EC3 Connettore batteria maschio/femmina
EFLC3020	200W DC multi-chemistry battery charger	200W DC Multi-Batterie Ladegerät - EU	Chargeur multiple DC 200W	200W DC Caricabatterie universale
EFLC4010	Celectra 15VDC 250W Power Supply	Celectra 15 V DC 250-W-Netzstecker	Alimentation Celectra CC 15 V 250 W	Alimentatore Celectra 15V c.c., 250 W
EFLA250	Park Flyer Tool Assortment, 5 pc	E-flite Park Flyer Werkzeugsortiment, 5 teilig	Assortiment d'outils pour parkflyer, 5 pièces	Assortimento attrezzi per Park Flyer
EFLA111	Li-Po Cell Voltage Checker	E-flite Li-Po Cell Volt Checker	Testeur de tension pour batterie li-Po	Voltmetro per celle LiPo
	DX6i DSMX 6-Channel Transmitter	Spektrum DX6i DSMX 6-Kanal Sender	Emetteur DX6i DSMX 6 voies	DX6i DSMX Trasmettitore 6 canali
	DX7s DSMX 7-Channel Transmitter	Spektrum DX7s DSMX 7 Kanal Sender	Emetteur DX7s DSMX 7 voies	DX7s DSMX Trasmettitore 7 canali
	DX8 DSMX 8-Channel Transmitter	Spektrum DX8 DSMX 8 Kanal Sender	Emetteur DX8 DSMX 8 voies	DX8 DSMX Trasmettitore 8 canali
	DX10t DSMX 10-Channel Transmitter	Spektrum DX10t DSMX 10 Kanal Sender	Emetteur DX10t DSMX 10 voies	DX10t DSMX Trasmettitore 10 canali
	DX18 DSMX 18-Channel Transmitter	Spektrum DX18 DSMX 18 Kanal Sender	Emetteur DX18 DSMX 18 voies	DX18 DSMX Trasmettitore 18 canali
	DX18QQ DSMX 18-Channel Transmitter	Spektrum DX18QQ DSMX 18 Kanal Sender	Emetteur DX18QQ DSMX 18 voies	DX18QQ DSMX Trasmettitore 18 canali

Flight Log • Fugbuch • Journal De Bord • Registro di volo

Flight #	Date	Battery(s)	Flight Time (M)	(s)	Recharged (mAh)	Comments
example	01/13	3S 3200mAh	8	0	2560mAh	

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EFL3100