E-flite®
ADVANCING ELECTRIC FLIGHT

EC-1500 1.5m



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BNF® BASIC

EFL15750

PNP® PLUG-N-PLAY®

EFL15775

Instruction Manual
Bedienungsanleitung
Manuel d'utilisation
Manuale di Istruzioni

435071
Created 1/23

HORIZON® HOBBY

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NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, LLC. For up-to-date product literature, visit horizonhobby.com or towerhobbies.com and click on the support or resources tab for this product.

MEANING OF SPECIAL LANGUAGE

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:
WARNING: Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.
CAUTION: Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.
NOTICE: Procedures, which if not properly followed, create a possibility of physical property damage AND little or no possibility of injury.

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

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.

WARNING AGAINST COUNTERFEIT PRODUCTS: If you ever need to replace your Spektrum receiver found in a Horizon Hobby product, always purchase from Horizon Hobby, LLC or a Horizon Hobby authorized dealer to ensure authentic high-quality Spektrum product. Horizon Hobby, LLC disclaims all support and warranty with regards, but not limited to, compatibility and performance of counterfeit products or products claiming compatibility with DSM or Spektrum technology.

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Registration

Register your product today to join our mailing list and keep up to date with product updates, offers and E-flite® news.

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Specifications	
Wingspan	60.1" (1527mm)
Length	46.9" (1190mm)
Weight	Without Battery: 83.7oz (2373g) With Recommended 4S 4000mAh Flight Battery: 97.2oz (2755g)

Included Equipment	
Receiver *(BNF only)*	Spektrum™ AR8360T 8CH SAFE® and AS3X® Telemetry Receiver
ESC	Dual 40 Amp Smart Brushless ESC (SPMXAE0240C)
Motor	3739-650Kv 14 Pole Brushless Outrunner (SPMXAM1300)
Propeller	10 x 9, 5-Blade (left and right rotation) (EFLP10905BL, EFLP10905BR)
Servos	(6) A332 9g Metal Gear Servo (SPMSA332) (Aileron, Elevator, Rudder, Flap) (1) A330R 9g Servo (SPMSA330R) (Nose Wheel Steering) (1) A370R 9g Digital Metal Gear Servo (SPMSA370R) (Cargo Door)

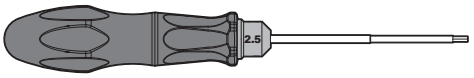
Recommended Equipment	
Transmitter	NX8 8 Ch DSMX Transmitter Only (SPMR8200)
Flight Battery	4000mAh 4S 14.8V Smart 30C (SPMX40004S30)
Battery Charger	Smart S1200 G2 AC Charger; 1x200 (SPMXC2020)

Optional Batteries	
SPMX323S30	3200mAh 3S 11.1V Smart G2 30C; IC3
SPMX324S50	3200mAh 4S 14.8V Smart G2 50C; IC3
SPMX50004S30	5000mAh 4S 14.8V Smart LiPo 30C IC5 + SPMXCA508 Adapter

Required Tools



- Phillips Screwdriver (PH#1)



- 2.5mm Hex Driver



- 10mm or Adjustable Wrench

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Transmitter Setup *BNF*

Dual Rates

Take first flights in Low Rate. For landings, use high rate elevator.

NOTICE: To ensure AS3X® technology functions properly, do not lower rate values below 50%. If lower rates are desired, manually adjust the position of the pushrods on the servo arm.

NOTICE: If oscillation occurs at high speed, refer to the Troubleshooting Guide for more information.

Exponential

After first flights, you may adjust exponential in your transmitter.

Telemetry Setup

See the Telemetry Setup table after binding. In order for the ESC and battery information to auto-populate in your transmitter's telemetry menu, you must begin telemetry setup with the aircraft bound and connected.

DX Series Transmitter Setup
1. Power ON your transmitter, click on scroll wheel, roll to **System Setup** and click the scroll wheel. Choose yes.
2. Go to **Model Select** and choose ***<Add New Model>*** at the bottom of the list. The system asks if you want to create a new model, select ***Create***
3. Set **Model Type**: Select ***Airplane Model Type*** by choosing the airplane. The system asks you to confirm model type, data will be reset. Select ***YES***
4. Set **Model Name**: Input a name for your model file
5. Go to **Aircraft Type** and scroll to the wing selection, choose ***1 AIL 1FLAP***
6. Select **<Main Screen>,** Click the scroll wheel to enter the **Function List**
7. Scroll down and select **Flap System**
8. Set **D/R (Dual Rate) and Expo**; ***Aileron*** Set **Switch**: ***Switch F*** Set **High Rates:** ***100%*****, Expo** ***10%*** **- Low Rates:** ***70%*****, Expo** ***5%***
9. Set **D/R (Dual Rate) and Expo**; ***Elevator*** Set **Switch**: ***SWITCH C*** Set **High Rates**: ***100%*****, Expo** ***10%*** **- Low Rates** ***70%*****, Expo** ***5%***
10. Set **Throttle Cut**; **Switch**: ***Switch H,*** **Position:** ***-100%***
11. Set the values in the flap menu Set ***SWITCH D*** Set **POS 0: 0% FLAP 0% Elevator** Set **POS 1: -50% FLAP 16% Elevator** Set **POS 2: -100% FLAP 25% Elevator** Set **SPEED 2.0**

‡ The settings provided above for the DX6 and DX6e do not allow for the use of a SAFE® Select switch. To use a SAFE Select switch on these systems see the *SAFE Select Switch Designation* section for transmitter setup and operation information.

NX Series Transmitter Setup
1. Power ON your transmitter, click on scroll wheel, roll to **System Setup** and click the scroll wheel. Choose yes.
2. Go to **Model Select** and choose ***<Add New Model>*** near the bottom of the list. Select ***Airplane Model Type*** by choosing the airplane, select ***Create***
3. Set **Model Name**: Input a name for your model file
4. Go to **Aircraft Type** and scroll to the wing selection, choose ***1 AIL 1FLAP***
5. Select **<Main Screen>,** Click the scroll wheel to enter the **Function List**
6. Scroll down and select **Flap System**
7. Set **D/R (Dual Rate) and Expo**; ***Aileron*** Set **Switch**: ***Switch F*** Set **High Rates:** ***100%*****, Expo** ***10%*** **- Low Rates:** ***70%*****, Expo** ***5%***
8. Set **D/R (Dual Rate) and Expo**; ***Elevator*** Set **Switch**: ***SWITCH C*** Set **High Rates**: ***100%*****, Expo** ***10%*** **- Low Rates** ***70%*****, Expo** ***5%***
9. Set **Throttle Cut**; **Switch**: ***Switch H,*** **Position:** ***-100%***
10. Set the values in the flap menu Set ***SWITCH D*** Set **POS 0: 0% FLAP 0% Elevator** Set **POS 1: -50% FLAP 16% Elevator** Set **POS 2: -100% FLAP 25% Elevator** Set **SPEED 2.0**

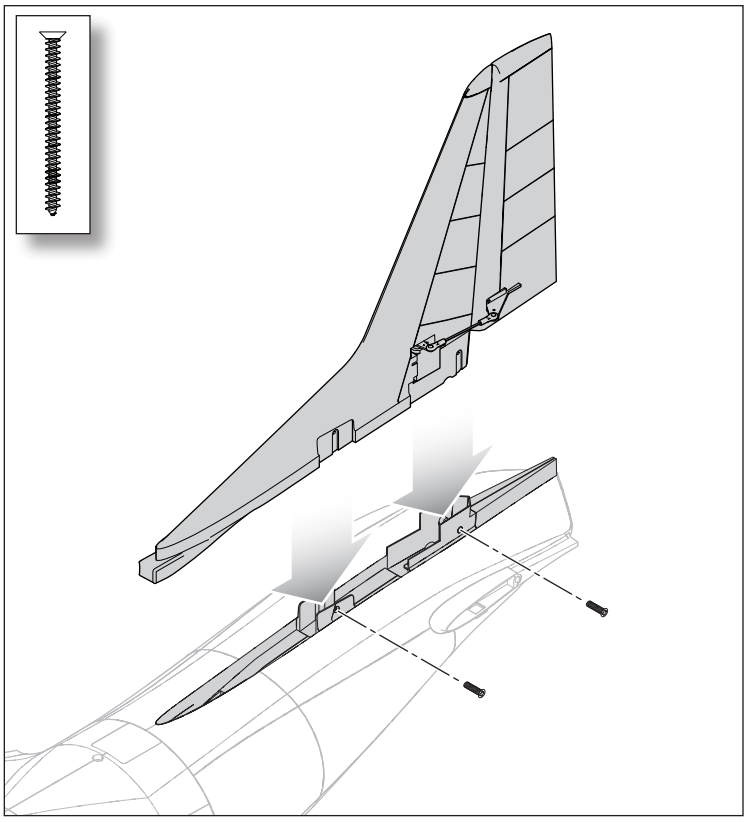
iX Series Transmitter Setup
1. Power ON your transmitter and begin once the Spektrtum Airware app is open. Select the orange pen icon in the upper left corner of the screen, the system asks for permission to **Turn Off RF**, select ***PROCEED***
2. Select the three dots in the upper right corner of the screen, select ***Add a New Model***
3. Select **Model Option**, choose ***DEFAULT***, select ***Airplane.*** The system asks if you want to create a new acro model, select ***Create***
4. Select the last model on the list, named **Acro**. Tap on the word Acro and rename the file to a name of your choice
5. Press and hold the back arrow icon in the upper left corner of the screen to return to the main screen
6. Go to **Model Setup** menu. Select **Aircraft Type** The system asks for permission to **Turn Off RF**, select ***PROCEED***. Touch the screen to select wing. Select ***1 Ail 1 Flap***.
7. Press and hold the back arrow icon in the upper left corner of the screen to return to the main screen.
8. Go to the **Model Adjust** menu.
9. Set **Dual Rates and Expo**; Select ***Aileron*** Set **Switch**: ***Switch F*** Set **High Rates:** ***100%*****, Expo** ***10%*** **- Low Rates:** ***70%*****, Expo** ***5%***
10. Set **Dual Rates and Expo**; Select ***Elevator*** Set **Switch**: ***SWITCH C*** Set **High Rates**: ***100%*****, Expo** ***10%*** **- Low Rates** ***70%*****, Expo** ***5%***
11. Set the values in the flap menu Set ***SWITCH D*** Set **POS 0: 0% FLAP 0% Elevator** Set **POS 1: -50% FLAP 16% Elevator** Set **POS 2: -100% FLAP 25% Elevator** Set **SPEED 2.0**
12. Set **Throttle Cut**; **Switch**: ***Switch H,*** **Position:** ***-100%***

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Model Assembly

Vertical Stabilizer Installation

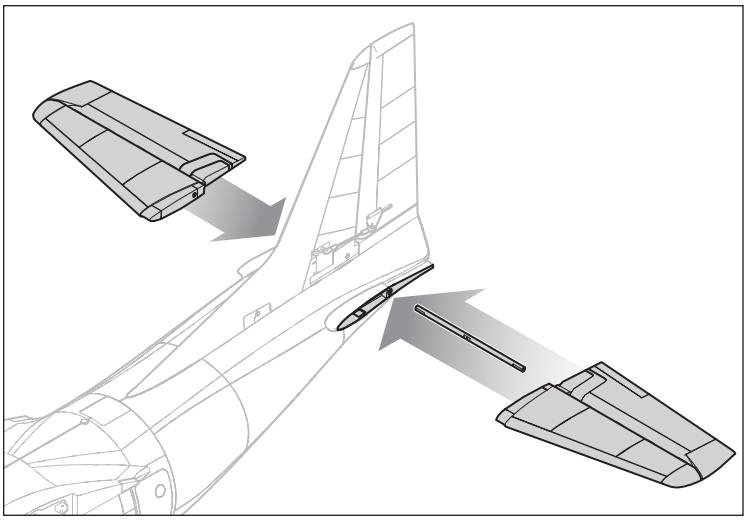
1. Slide the leading edge of the vertical stabilizer into place first and then insert the vertical stabilizer into place. Verify the integrated servo connector makes a good connection.
2. Secure the vertical stabilizer with two M3 x 24mm countersunk self tapping screws using a phillips screwdriver (PH#1).



Horizontal Tail Installation

1. Slide the horizontal stabilizer tube (490mm x 3.8mm) into the hole in the rear of the fuselage.
2. Install the two piece (left and right) horizontal stabilizer as shown.
3. Press the halves in place until the stabilizers snap in position.

Press the button on the bottom of the stabilizer to disengage for removal.



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Wing Assembly

Flap Configuration

IMPORTANT: The flaps and ailerons of the E-flite EC-1500 require the installation of the included joiner either between the inner and outer flap sections OR the outer flap section and the aileron. Never install both joiners at the same time.

Install the joiner between the inner and outer flap sections for slower takeoffs and landings. Install the joiner between the outer flap section and the aileron for a higher roll rate and aerobatic flight.

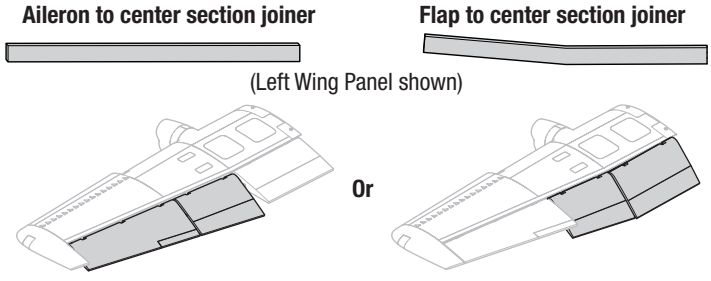
NOTICE: Failure to install a section joiner in each wing prior to flight may cause the outer flap section to flutter, which may result in a crash.

1. Determine which surfaces will be joined.
2. Insert the joiner in the slot as shown.

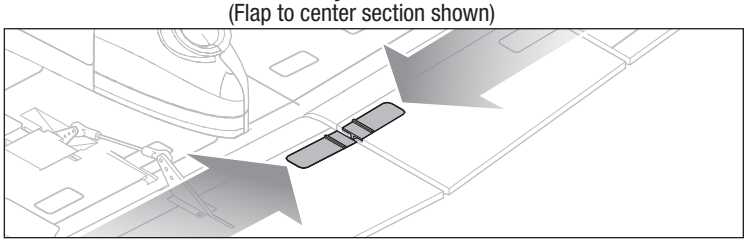
IMPORTANT: The joiner to be used between the aileron and outer flap section is flat. The inner-outer flap joiner has a slight angle. Ensure the correct joiner is used.

3. Re-install the joiner covers, ensuring they are fully seated.
4. Install the same joiner to the opposite wing panel.

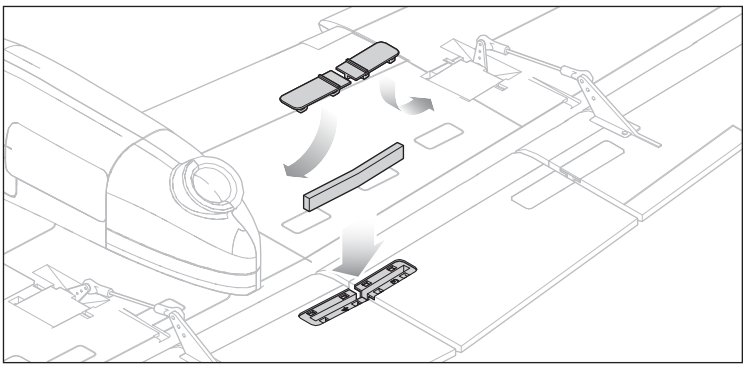
NOTICE: Only one joiner should be used in each wing panel and both wing panels must use the same joiner. Failure to do so may cause damage to the electronic components, loss of control and may result in a crash.



Center section joiner cover removal
(Flap to center section shown)



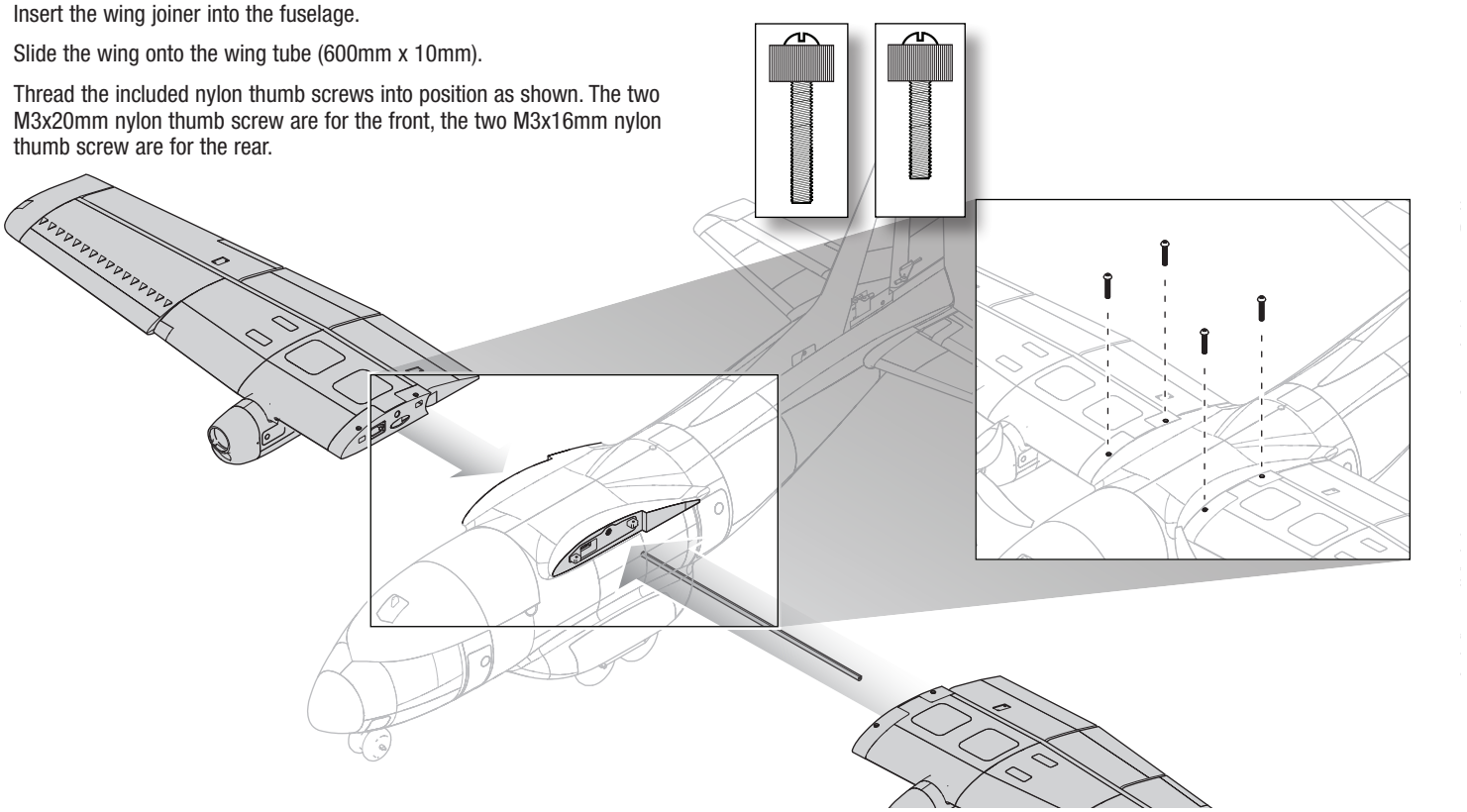
Center section joiner installation



Wing Installation

Mount the Wing to the Fuselage

1. Insert the wing joiner into the fuselage.
2. Slide the wing onto the wing tube (600mm x 10mm).
3. Thread the included nylon thumb screws into position as shown. The two M3x20mm nylon thumb screw are for the front, the two M3x16mm nylon thumb screw are for the rear.



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Propeller Installation

WARNING: Never install a cracked, nicked or otherwise damaged propeller or spinner.

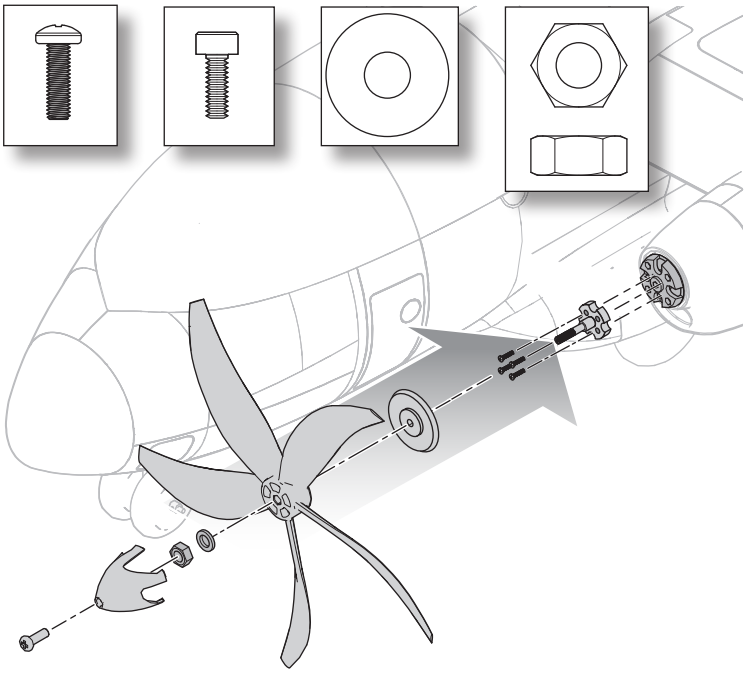
NOTICE: If the propeller is not balanced, the aircraft may vibrate, causing the stabilization system to not operate correctly and/or decrease the life of the servos.

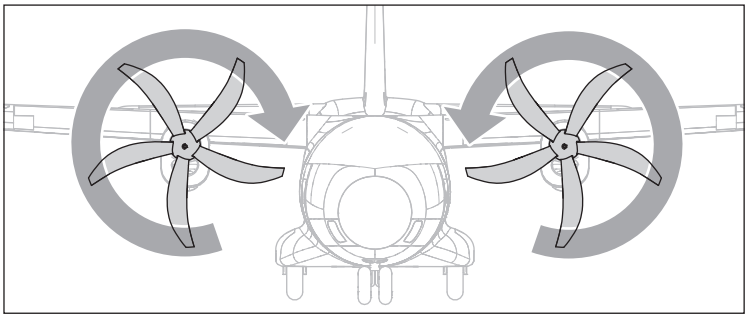
1. Determine the location of each spinner and propeller as shown. The propeller blades rotate downward on the fuselage side.
2. Install the propeller adapters onto both motors with four M3 x 8mm screws (per motor) using a 2.5mm hex driver.
3. Install the spinner back plate on the propeller shaft.
4. Install the propeller, washer and nut on the propeller shaft. Get a firm grip on the propeller, spinner backplate and motor to hold them secure while tightening the nut. Tighten the nut with a 10mm wrench or socket driver to secure the propeller in place. Ensure the nut is tight enough so the propeller and spinner backplate cannot slip.

   IMPORTANT: Do not overtighten the prop nut as damage to the propeller or threads may result.
5. Install the spinner and secure in place with an M3 x 10mm machine screw using a Phillips screwdriver (PH#1).

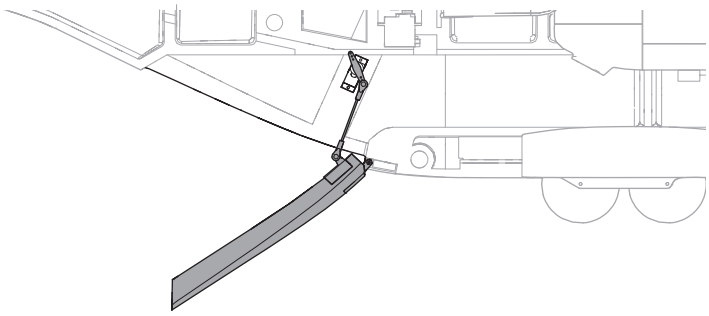
   IMPORTANT: Tighten until secure, but avoid over tightening the spinner screw. The spinner cone may become deformed and not spin true if over-tightened.

WARNING: After installation, thoroughly test the propellers with the model facing away from yourself and others. If a propeller is not installed securely it may fly off when the motor spins, and could cause bodily injury.





Cargo Door Operation



The EC-1500 1.5m features a cargo door connected to Channel 5 (BNF).

CAUTION: Always confirm the center of gravity remains within acceptable limits when adding or dropping cargo. Never fly the EC-1500 airplane with the center of gravity outside of the recommended range.

CAUTION: Adjust the Channel 5 travel adjust so the servo is not over-driven trying to close the door. If the servo is straining trying to move the door past the closed position, it will cause excess current draw and could cause a BEC failure, which would result in loss of control and a crash.

Differential Thrust

The EC-1500 1.5m is equipped with differential thrust. When the rudder is applied one motor will increase speed and one motor decrease speed to assist with yaw control. This assists in ground handling, takeoff and landing. This feature is built into the ESC and works using Smart Technology.

IMPORTANT: If you connect the included SPMXAE0240C dual ESC to a conventional PWM signal from any common receiver it will work for normal throttle control, but differential thrust will not work.

For maximum control during takeoff and landing we recommend increasing the throttle trim until the motors just start spinning. Then reduce the trim until the motors stop. It is about 3-5 trim clicks. With the trim set in this position the rudder will allow one motor to spin to maintain directional control even with the throttle at idle.

With the trim set in this position we recommend you activate throttle cut if you pick up or move the aircraft. If the aircraft is picked up and yawed without the trim lowered or throttle cut activated, a motor may start spinning. Make sure everything is clear of the propellers when handling the aircraft.

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Battery Installation and ESC Arming

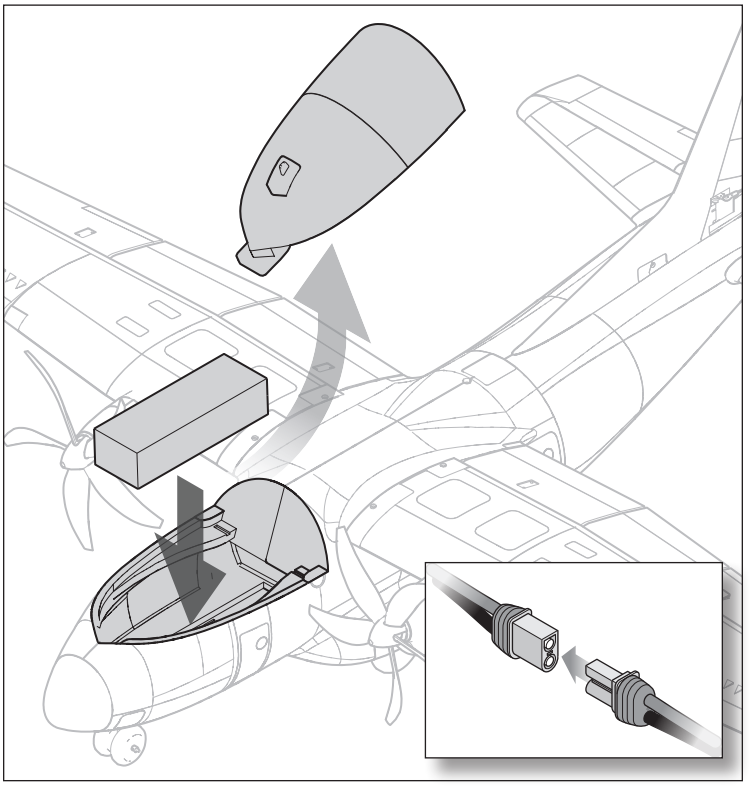
The Spektrum 4000mAh 4S 14.8V Smart 30C; IC3 Li-Po battery (SPMX40004S30) is recommended. A 3S or 4S 3200-5000mAh LiPo battery with an IC3 or EC3 connector is required, refer to the Optional Parts List for other recommended batteries. If using a battery other than those listed, the battery should be within the range of capacity, dimensions and weight of the Spektrum Li-Po battery packs to fit in the fuselage.

NOTICE: Nose weight may need to be added for lighter batteries. Always verify the model balances within the recommended CG range before flying. Attempting to fly the model with an aft CG will cause the model to be unstable.

1. Lower the throttle and throttle trim to the lowest settings. Power on the transmitter, then wait 5 seconds.
2. For added security, apply the loop side (soft side) of the optional hook and loop tape to the bottom of your battery, and the hook side to the battery tray.
3. Remove the battery hatch.
4. Install the fully charged battery in the center of the battery compartment as shown. Secure using the hook and loop straps.
5. Connect the battery to the ESC (the ESC is now armed).

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

6. Keep the aircraft immobile and away from wind or the system will not initialize.
   - The motor will emit two even tones when the battery is connected and the ESC has a throttle signal.
   - The motor will then emit a series of slow single tones to indicate the number of cells in the LiPo pack connected to the ESC (Three beeps indicates a three-cell LiPo pack. Four beeps indicates a four-cell LiPo pack).
   - Two ascending tones indicate the ESC is armed.
   - The orange LED will illuminate on the receiver when it is initialized.
7. Reinstall the battery hatch.



ESC Error Tone	Tone Meaning	Possible problem
Continuously repeating single tone	Abnormal throttle signal	Transmitter and receiver not bound
		Throttle lead damaged or not plugged into receiver
		Throttle lead plugged into receiver backward
	Throttle signal not at low position	Throttle stick not at low position
		Throttle travel reduced below 100%
		Throttle reversed
		Throttle trim raised

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General Binding Tips and Failsafe *BNF*

- The included receiver has been specifically programmed for operation of this aircraft. Refer to the receiver manual for correct setup if the receiver is replaced.
- Keep away from large metal objects while binding.
- Do not point the transmitter's antenna directly at the receiver while binding.
- The orange LED on the receiver will flash rapidly when the receiver enters bind mode.
- Once bound, the receiver will retain its bind settings for that transmitter until you re-bind.
- If the receiver loses transmitter communication, the failsafe will activate. Failsafe moves the throttle channel to low throttle. Pitch and roll channels move to actively stabilize the aircraft in a descending turn.
- If problems occur, refer to the troubleshooting guide or if needed, contact the appropriate Horizon Product Support office.

Transmitter and Receiver Binding / Enabling and Disabling SAFE Select *BNF*

The BNF Basic version of this airplane includes SAFE Select technology, enabling you to choose the level of flight protection. SAFE mode includes angle limits and automatic self leveling. AS3X mode provides the pilot with a direct response to the control sticks. SAFE Select is enabled or disabled during the bind process.
With SAFE Select disabled the aircraft is always in AS3X mode. With SAFE Select enabled the aircraft will be in SAFE Select mode all the time, or you can assign a switch to toggle between SAFE Select and AS3X modes.
Thanks to SAFE Select technology, this aircraft can be configured for full-time SAFE mode, full-time AS3X mode, or mode selection can be assigned to a switch.

IMPORTANT: Before binding, read the transmitter setup section in this manual and complete the transmitter setup table to ensure your transmitter is properly programmed for this aircraft.

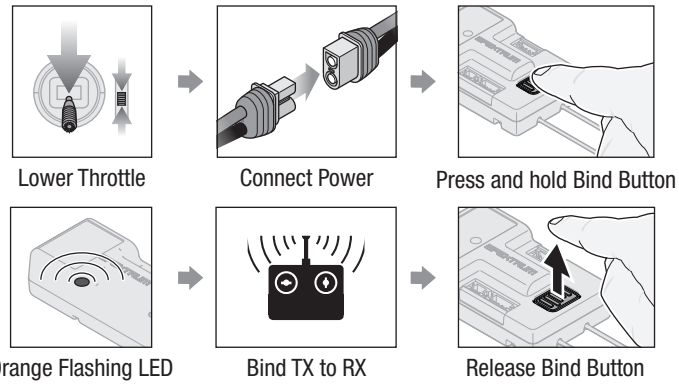
IMPORTANT: Move the transmitter flight controls (rudder, elevators, and ailerons) and the throttle trim to neutral. Move the throttle to low before and during binding. This process defines the failsafe settings.

You can use either the bind button on the receiver case or the conventional bind plug to complete the binding and SAFE Select process.

SAFE Select can also be activated via Forward Programming in compatible transmitters.

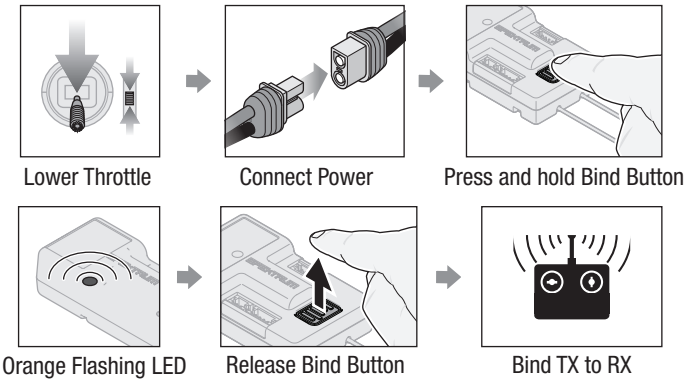
Using The Bind Button...

To Enable SAFE Select



SAFE SELECT ENABLED: The control surfaces cycle back and forth **twice** with a slight pause at neutral position every time the receiver is powered on.

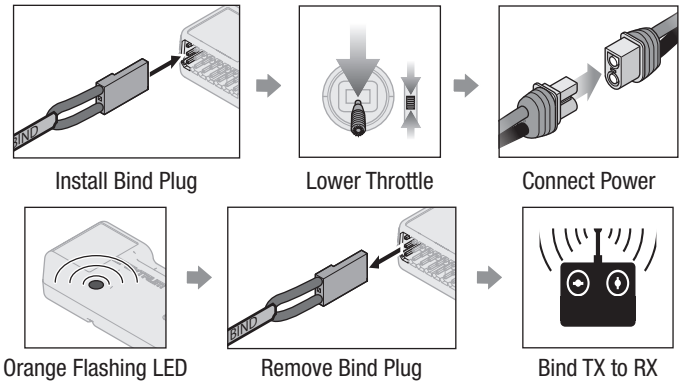
To Disable SAFE Select



SAFE SELECT DISABLED: The control surfaces cycle back and forth **once** every time the receiver is powered on.

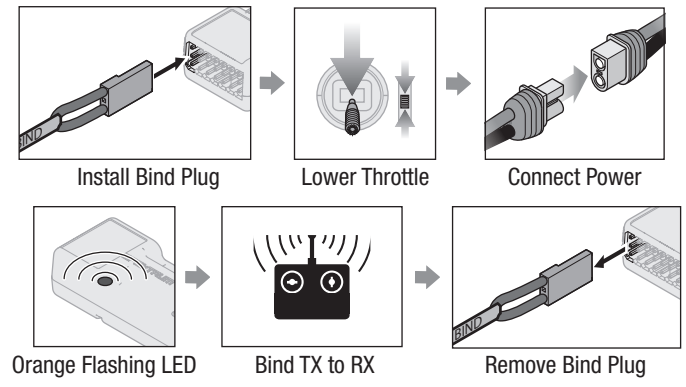
Using The Bind Plug...

To Enable SAFE Select



SAFE SELECT ENABLED: The control surfaces cycle back and forth **twice** with a slight pause at neutral position every time the receiver is powered on.

To Disable SAFE Select



SAFE SELECT DISABLED: The control surfaces cycle back and forth **once** every time the receiver is powered on.

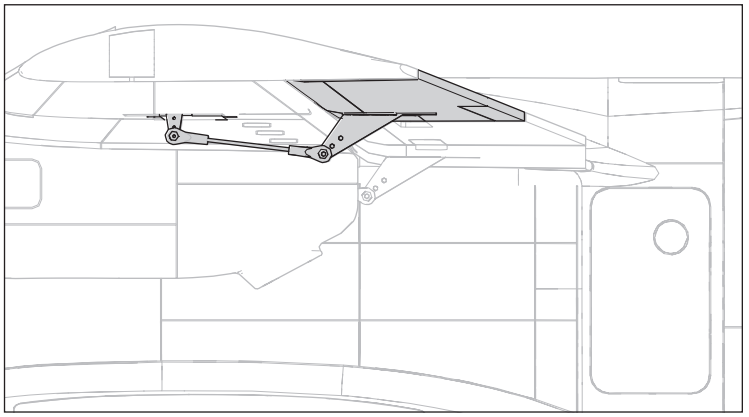
SAFE Select can also be activated via Forward Programming in compatible transmitters.

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Control Surface Centering

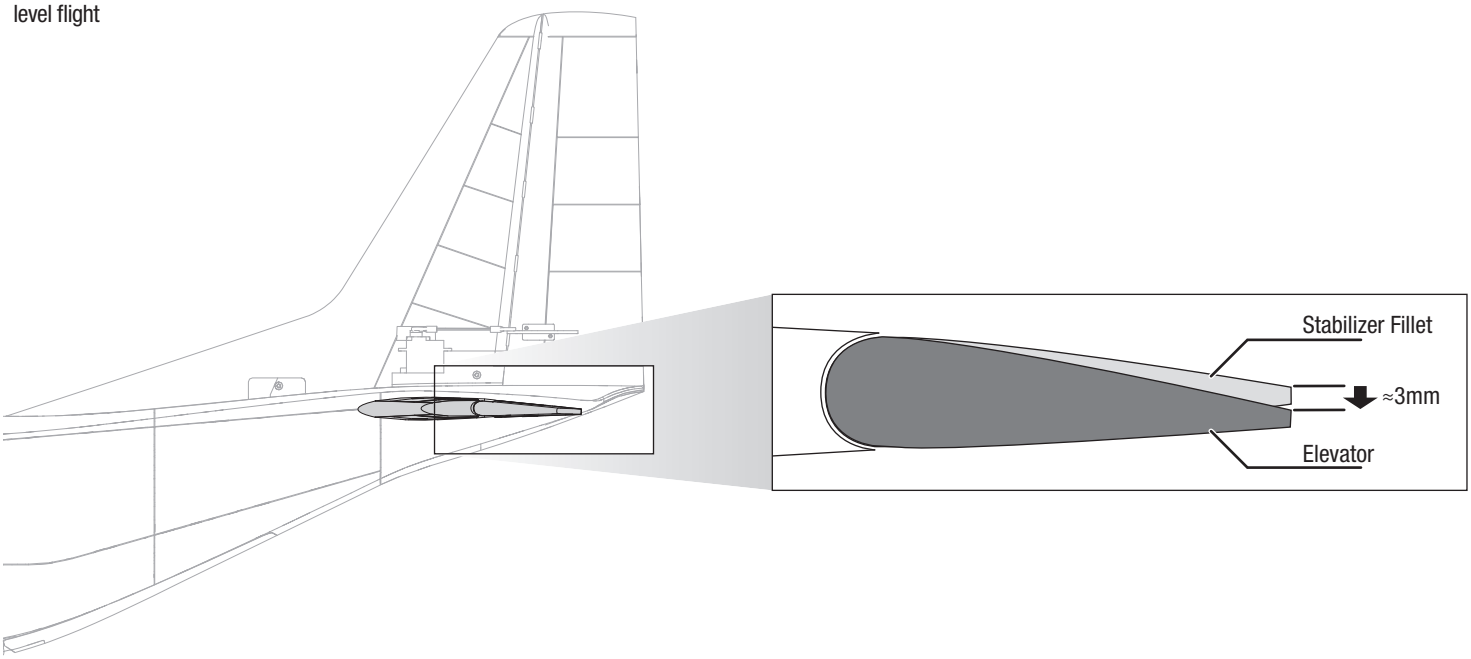
After assembly and transmitter setup, confirm that the control surfaces are centered. The model must be powered up, bound to the transmitter in AS3X mode, with the throttle left at zero. When enabled, SAFE mode is active at power up. AS3X mode is activated when the throttle is raised above 25% for the first time after being powered on. It is normal for the control surfaces to respond to aircraft movement if the aircraft is in AS3X or SAFE modes.

1. Verify the trims and subtrims on your transmitter are zero
2. Power the model in AS3X mode and leave the throttle at zero
3. Look at the tip of each control surface and verify it is mechanically centered.
4. If adjustment is required, turn the ball link on the linkage to change the length of the linkage between the servo arm and the control horn.



NOTICE: Be aware of the pushrod bottoming out in the ball linkage. Do not thread the pushrod too far into the ball link or the pushrod will damage the ball link and protrude into the area needed for the control ball. Both ends of the pushrod may be threaded in the ball links for larger changes.

TIP: The elevator will need to be centered approximately 3mm down from neutral for level flight

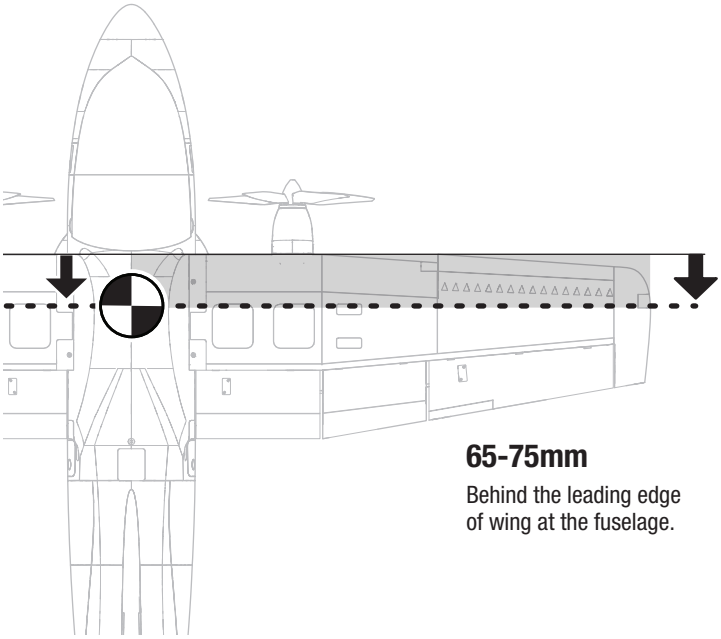


Center of Gravity (CG)

The Center of Gravity (CG) location is measured from the leading edge of the wing at the root. The CG will be affected by cargo or battery changes. Always verify the CG is within the recommended range before flight.

IMPORTANT: For general flying place the CG at 65mm from the leading edge. For aerobatics place the CG at 75mm from the leading edge.

Caution: Install the battery but do not arm the ESC while checking the CG. Personal injury may result.



65-75mm

Behind the leading edge of wing at the fuselage.

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SAFE® Select Switch Designation *BNF*

Once SAFE Select is enabled, you can choose to fly in SAFE mode full-time, or assign a switch. Any switch on any channel between 5 and 9 can be used on your transmitter.

TIP: If model has a reversing ESC feature, Aux2 is not available for safe select.

If the aircraft is bound with SAFE Select disabled, the aircraft will be in AS3X mode exclusively.

CAUTION: Keep all body parts well clear of the propeller and keep the aircraft securely restrained in case of accidental throttle activation.

IMPORTANT: To be able to assign a switch, first verify:

- The aircraft was bound with SAFE Select enabled.
- Your choice for the SAFE Select switch is assigned to a channel between 5 and 9 (Gear, Aux1-4), and travel is set at 100% in each direction.
- The aileron, elevator, rudder and throttle direction are set to normal, not reverse.
- The aileron, elevator, rudder and throttle are set to 100% travel. If dual rates are in use, the switches need to be in the 100% position.

See your transmitter manual for more information about assigning a switch to a channel.

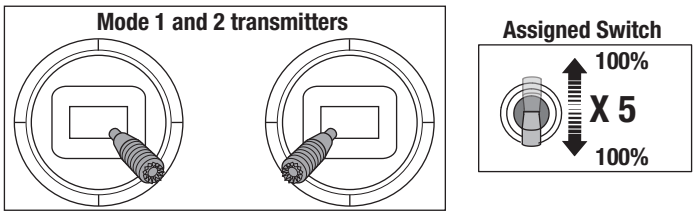
TIP: If a SAFE Select switch is desired for your 6 function aircraft, and you are using a 6 channel transmitter, the SAFE Select switch channel will have to be shared with either channel 5 or 6 of the transmitter. This does not apply to the NX6. Please refer to your NX6 instruction manual for further details.

Assigning a Switch

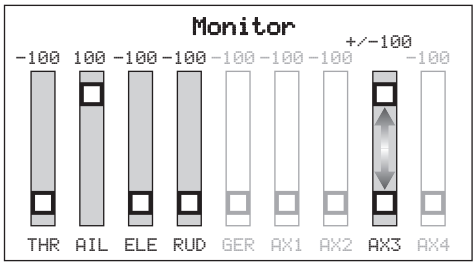
1. Power on the transmitter.
2. Power on the aircraft.
3. Hold both transmitter sticks to the inside bottom corners, and toggle the desired switch 5 times quickly (1 toggle = full up and down).
4. The control surfaces of the aircraft will move, indicating the switch has been selected.

Repeat the process to assign a different switch or to deactivate the current switch.

SAFE Select Switch Assignment Stick Positions



TIP: Use the channel monitor to verify channel movement.



This example of the channel monitor shows the stick positions for assigning a switch, the switch selection on Aux3, and +/- 100% travel on the switch.

Smart™ Technology Telemetry

Smart Technology Electronic Speed Control (ESC)

This aircraft is equipped with an exclusive Smart technology electronic speed control that can provide a variety of real-time power system related telemetry data while you fly, including motor RPM, current, battery voltage and more to compatible Spektrum AirWare™ equipped transmitters.

When powered on, the ESC will send the below information to the flight control and the information will be displayed on the transmitter telemetry screen.

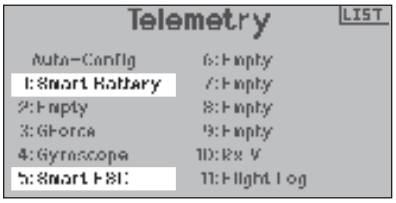
- RPM*
- Voltage
- Current
- Throttle
- FET Temperature
- BEC Temperature

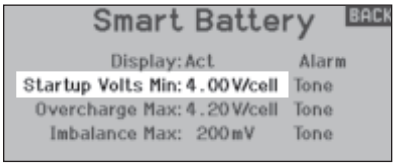
* During binding the transmitter will perform an auto configuration which will populate the telemetry page. You may need to change the telemetry values on those pages to suit this aircraft and your needs.

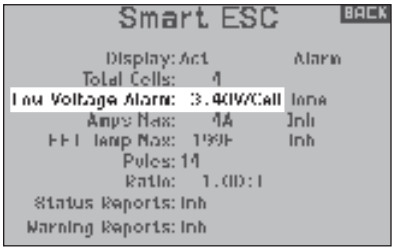
To enter the telemetry values:
(For iX series transmitters, you must select Save on each page)

1. Power on your transmitter.
2. Set the throttle cut to on.
3. Power on the aircraft and allow it to initialize.
4. In your transmitter, go to the **Function List** (**Model Setup** in iX series transmitters).
5. Select the **Telemetry** menu option.
6. Go to the **Smart Battery** menu option.
7. Scroll down to **Startup Volts**, enter **4.0V/cell**.
8. Return to the **Telemetry** menu.
9. Go to the **Smart ESC** menu option.
10. Scroll down to **Low Voltage Alarm**, enter **3.4V/cell.**
11. Scroll down to **Poles**, enter **14**.
12. Return to the main screen.

DX/NX screen shots shown below







Telemetry Alarms	
Smart Battery : Startup Voltage Minimum	4.0V
Smart ESC : Low Voltage Alarm	3.4V
Smart ESC : Motor Poles	14

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Dual Rates and Control Throws

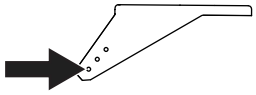
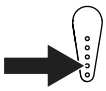
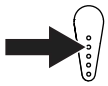
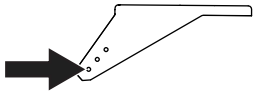
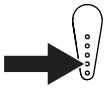
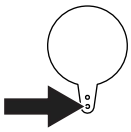
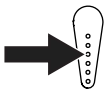
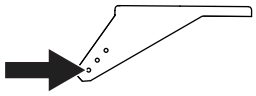
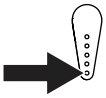
Program your transmitter to set the rates and control throws based on your experience level. These values have been tested and are a good starting point to achieve successful first flight.

After flying, you may choose to adjust the values for the desired control response.

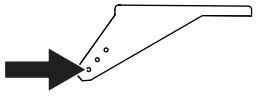
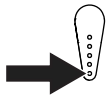
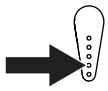
	Intermediate Pilots		Advanced Pilots	
	Low Rate	High Rate	Low Rate	High Rate
Aileron	20mm	30mm	30mm	35mm
Elevator	20mm	25mm	25mm	30mm
Rudder	25mm	40mm	35mm	45mm
Flap Travel	Half ▼ = 15mm, Full ▼ = 45mm			

The table to the right shows the factory settings for the control horns and servo arms. These settings, in conjunction with the low rate transmitter settings, are intended for intermediate level pilots to help ensure a successful flight.

Fly the aircraft at these factory settings before making changes.

Intermediate Pilots		
	Control Horns	Servo Arms
Aileron		
Elevator	Located inside fuselage, not accessible.	 To adjust this you need to remove the plastic hatch on the spine of the fuselage.
Rudder		
Nose Wheel Steering		
Flaps		

After flying, or for advanced level pilots with 3D airplane experience, you may choose to adjust the linkage positions as shown to increase control response.

Advanced Pilots		
	Control Horns	Servo Arms
Aileron, Rudder		
Elevator	Located inside fuselage, not accessible.	 To adjust this you need to remove the plastic hatch on the spine of the fuselage.

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Control Surface Direction

Switch on the transmitter and connect the battery. Use the transmitter to operate the aileron, elevator, rudder and flap controls. View the aircraft from the rear when checking the control directions.

Elevator

1. Pull the elevator stick back. The elevators should move up, which will cause the aircraft to pitch up.
2. Push the elevator stick forward. The elevators should move down, which will cause the aircraft to pitch down.

Ailerons

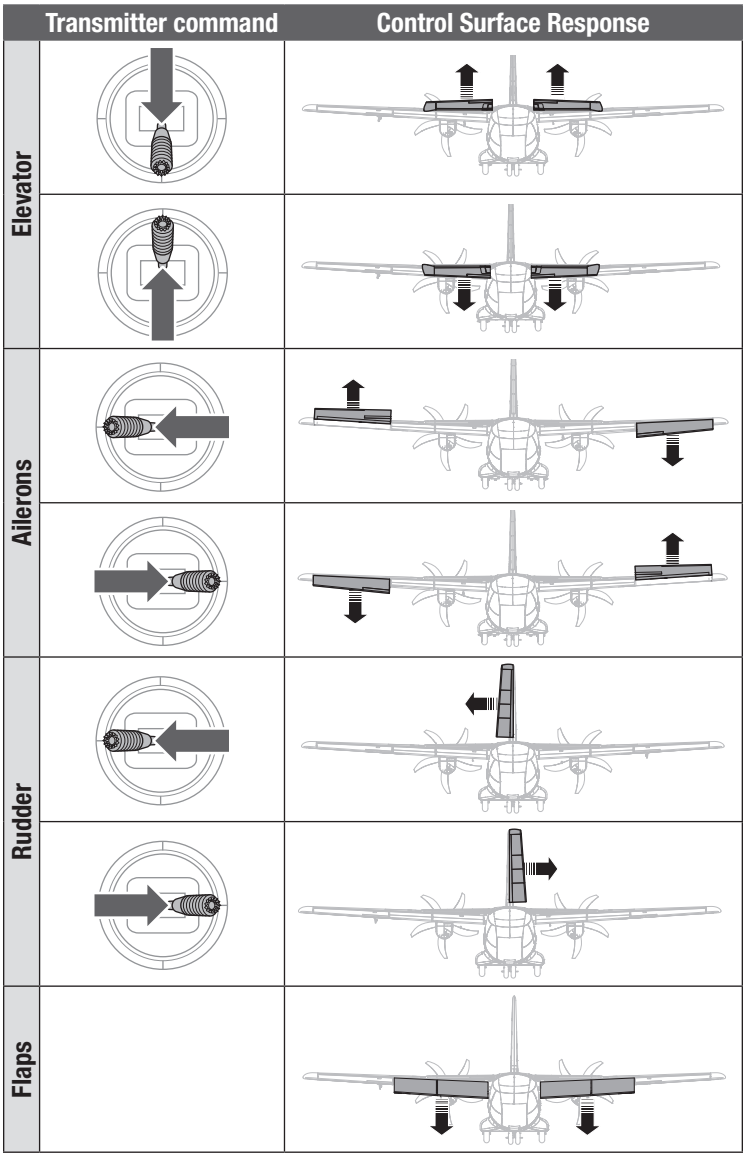
1. Move the aileron stick to the left. The left aileron should move up and the right aileron down, which will cause the aircraft to bank left.
2. Move the aileron stick to the right. The right aileron should move up and the left aileron down, which will cause the aircraft to bank right.

Rudder

1. Move the rudder stick to the left. The rudder should move to the left, which will cause the aircraft to yaw left.
2. Move the rudder stick to the right. The rudder should move to the right, which will cause the aircraft to yaw right.

Flaps

1. Move your flap control switch down to the partial position.
2. Confirm that the wing flaps move down.
3. Move flap control switch to the full flap position.
4. Confirm the flaps move farther down than in step two.

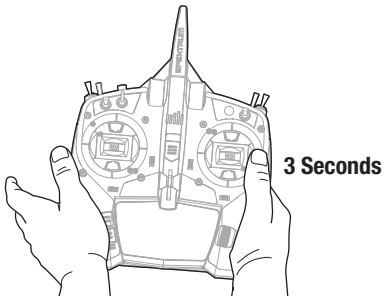


In Flight Trimming

During your first flight, trim the aircraft for level flight at 3/4 throttle. Make small trim adjustments with your transmitter's trim switches to straighten the aircraft's flight path.

After adjusting trim **do not touch the control sticks for 3 seconds.** This allows the receiver to learn the correct settings to optimize AS3X performance.

Failure to do so could affect flight performance.



Flying Tips and Repairs

Consult local laws and ordinances before choosing a flying location.

Flying Field

Always choose a wide-open space for flying your aircraft. It is recommended that you fly at a designated RC flying field. Always avoid flying near houses, trees, wires and buildings. Avoid flying in areas where there are many people, such as parks, schoolyards, or soccer fields.

Range Check your Radio System

Before you fly, range check the radio system. Refer to your specific transmitter instruction manual for range test information.

Understanding Oscillation

Once the AS3X system is active (after advancing the throttle for the first time), you will normally see the control surfaces react to aircraft movement. In some flight conditions, you will see oscillation. If oscillation occurs, decrease airspeed. If oscillation persists, refer to the Troubleshooting Guide for more information.

Takeoff

Place the aircraft in position for takeoff (facing into the wind). Set your transmitter in low rate and gradually increase the throttle from ¾ to full and steer with the rudder. As the airplane gains speed, gently pull back on the elevator and climb to a comfortable altitude. You may also set flaps to half travel for shorter takeoffs.

Flying

Fly the airplane and trim it for level flight at ¾ throttle with flaps up. After adjusting trim in flight do not touch the control sticks for 3 seconds. This allows the receiver to learn the correct settings to optimize AS3X performance.

Landing

Make sure to land the aircraft into the wind. Start to slow the model down to an approach speed and set the flaps to half travel. If landing in windy conditions, land at half flap travel. If flying in light winds, set flaps to full for final approach. With flaps and retracts extended, fly the aircraft to approximately 36 inches (90 cm) or less above the runway, using a small amount of throttle for the entire descent. Keep the throttle on until the aircraft is ready to flare. During flare, keep the wings level and the aircraft pointed into the wind. Gently lower the throttle while pulling back on the elevator to bring the aircraft down on its wheels.

Refer to the Dual Rates and expo chart for proper flap to elevator mix to help reduce the pitching tendency from flaps.

NOTICE: When using flaps with this airplane, down elevator to flap mixing is required. Failure to do so may result in loss of control or a crash.

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

NOTICE: Crash damage is not covered under warranty.

NOTICE: When you are finished flying, never leave the airplane in direct sunlight or a hot, enclosed area such as a car. Doing so can damage the foam.

Low Voltage Cutoff (LVC)

When a Li-Po battery is discharged below 3V per cell, it will not hold a charge. The ESC protects the flight battery from over-discharge using Low Voltage Cutoff (LVC). Before the battery charge decreases too much, LVC removes power supplied to the motor. Power to the motor pulses, showing that some battery power is reserved for flight control and safe landing.

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. LVC does not prevent the battery from over-discharge during storage.

NOTICE: Repeated flying to LVC will damage the battery.

TIP: Monitor your aircraft battery's voltage before and after flying by using a Smart LiPo Battery Checker and Servo Driver (SPMXBC100, sold separately).

Repairs

Thanks to the EPO foam material in this aircraft, repairs to the foam can be made using virtually any adhesive (hot glue, regular CA, epoxy, etc). 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 end of this manual.

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

Post Flight Checklist

Disconnect the flight battery from the ESC
Power OFF the transmitter
Remove the flight battery from the aircraft
Recharge the flight battery

Repair or replace all damaged parts
Store the flight battery apart from the aircraft and monitor the battery charge
Make note of the flight conditions and flight plan results, planning for future flights

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Receiver Installation *(PNP)*

The Spektrum AR8360T receiver is recommended for this airplane. If you choose to install another receiver, ensure that it is at least a 6-channel full range (sport) receiver. Refer to your receiver manual for correct installation and operation instructions.

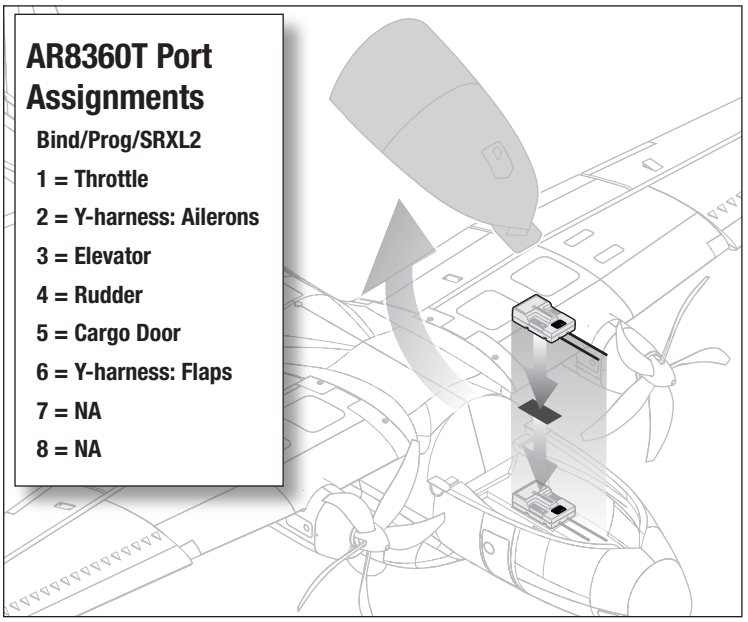
IMPORTANT: A Smart compatible Spektrum receiver is required for differential thrust, thrust reversing, and telemetry information from the ESC.

Installation (AR8360T shown)

1. Mount the receiver parallel to the length of the fuselage as shown, with the servo ports facing rearward. Use double-sided servo tape.

⚠ **CAUTION:** Incorrect installation of the receiver could cause a crash.

2. Attach the appropriate control surfaces to the their respective ports on the receiver using the chart in the illustration.



Thrust Reversing *(Optional)*

The Avian™ Smart ESC in this aircraft is equipped with thrust reversing, but it must be enabled before it will function. Reversing the motor can be helpful when taxiing or for shortening ground roll after a landing. Flipping the designated switch reverses motor rotation, throttle will still control motor speed.

⚠ **WARNING**: Never attempt to use thrust reversing in flight. Applying reverse thrust while in flight will result in loss of control and possibly a crash. Crash damage is not covered under warranty.

IMPORTANT: The motor will draw more current in reverse as the propeller becomes less efficient and creates more drag. This can reduce flight time.

IMPORTANT: Thrust reversing requires a Spektrum receiver with Smart Throttle (The AR8360T included with the BNF has this feature) and a Spektrum transmitter with a minimum of 7 channels. The Avian ESC is also backwards compatible with conventional receivers (PWM output signal) for normal operation, but reversing functions are only available with Smart Throttle technology.

Thrust Reversing Setup

Transmitter

On the transmitter, select an open channel (not already in use), and assign it to an open switch. Use a different channel for thrust reversing and SAFE Select. Motor reversing is assigned to Aux 2/Channel 7, by default, in the Smart ESC. If SAFE Select and the ESC are assigned to the same channel, the motor will reverse in flight.

⚠ **WARNING**: Do not assign thrust reversing and SAFE Select to the same channel. Doing so will reverse the motor when SAFE Select is enabled during flight, resulting in a crash.

Program the ESC for thrust reversing with the Smart ESC Programming Box (SPMXCA200, optional, not included).
See the complete instructions for the Spektrum ESC Programmer here:
https://www.horizonhobby.com/on/demandware.static/-/Sites-horizon-master/default/dw28558c9c/Manuals/Spektrum-SmartLink-ESC-Update-and-Programming-Instructions.pdf

Download the SmartLink APP for your PC here:
https://www.horizonhobby.com/on/demandware.static/-/Sites-horizon-master/default/Manuals/Spektrum-SmartLink-ESC-Programmer-V1.0.9.zip

IMPORTANT: The Spektrum Avian Dual Smart ESC has two independent ESC boards that must be updated/programmed individually with the same settings. Due to this unique arrangement, programming changes must be made using the SPMXCA200 programming box, you cannot change ESC settings through the transmitter like you can with single motor Avian ESCs.

Enabling the Motor / Thrust Reversing

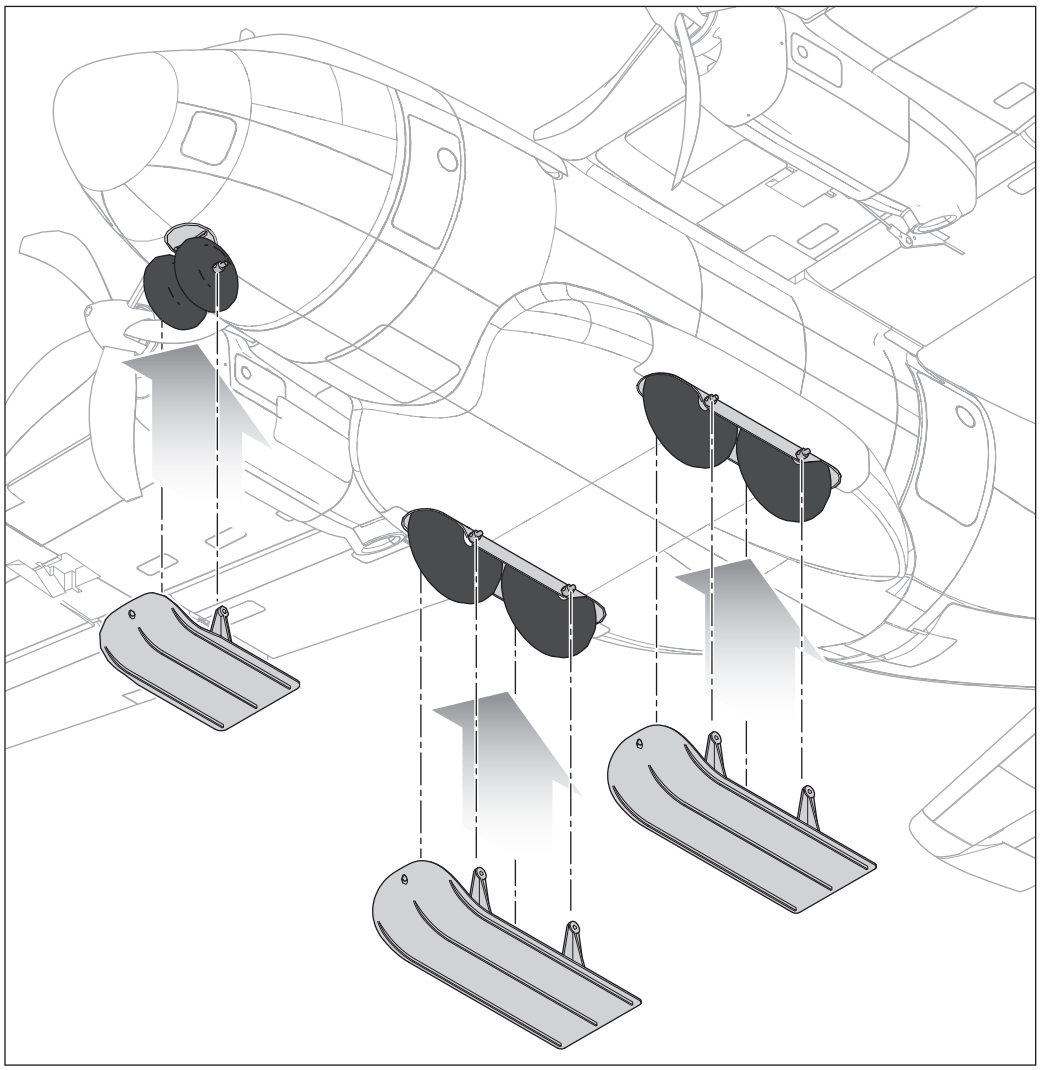
1. Connect a 3+” servo extension to one of the short programming leads/connectors.
2. Connect the other end of the extension to the Spektrum Smart ESC Programmer (SPMXCA200) using the port marked “ESC”. Match the polarity as marked. Note: Orange corresponds to gray on the ESC.
3. Remove the battery hatch from the fuselage.
4. Connect a flight battery to the IC3 connector to power the ESC.
5. On the programmer press the “EDIT” button.
6. Once you see the “Brake Type” Repeatedly press the “Edit” button until “Reverse” is selected.
7. Press “Select” to change the “Brake Force”.
8. Continue pressing the “Edit” button until “7” is shown and press “Select”.
9. The default channel is Channel 7, if you would like this on a different channel repeatedly press the “Select” button until “Thrust Rev” is shown. Repeatedly press the “Edit” button until the desired channel appears.
10. Press the “Save” button on the programmer to lock in the changes.
11. Once complete, disconnect the extension from the programming lead and connect it to the other programming lead. Repeat steps 4-11.
12. Repeat steps 3-8.
13. The motor/thrust reverse feature is now enabled on the ESC.

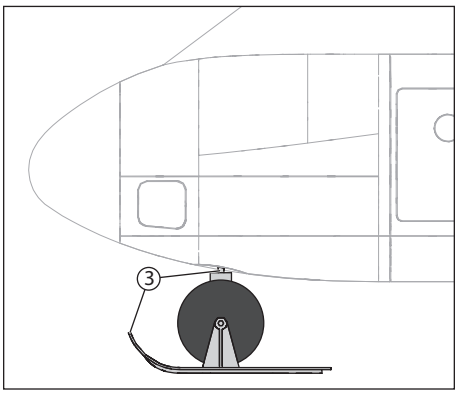
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Ski Installation *(Optional)*

1. Position the skis so they are pointed forward and aligned with the axles
2. Press the skis onto the axles to snap them in place.
3. Attach a piece of string from the front of the ski to the nose wheel steering assembly as shown to prevent the nose of the front ski from dipping down.

Disassemble in reverse order





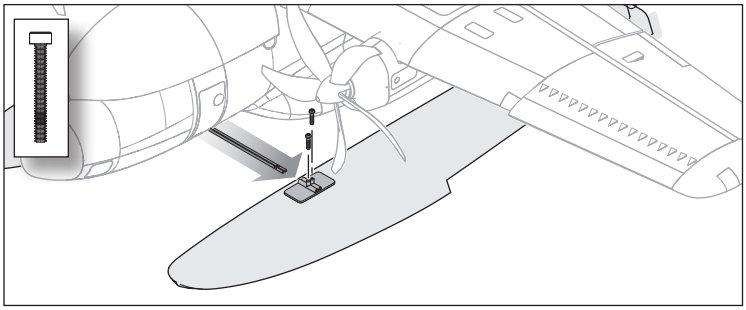
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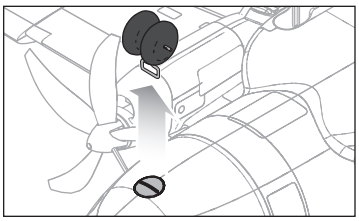
Float Installation *(Optional, floats not included)*

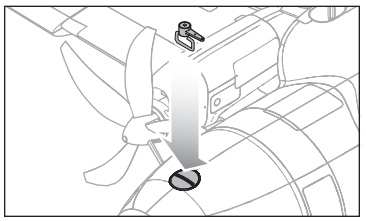
Float Set (EFLA550), Float Hardware (EFL5771)

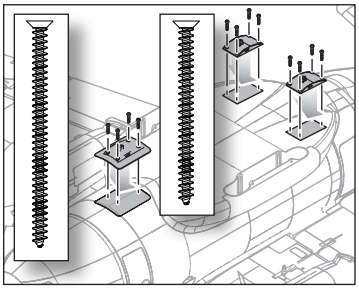
1. Pull the nose wheel assembly from the nose wheel steering bracket. The main wheels may be left on the airplane or removed for operation on floats.
2. Insert the water rudder steering assembly into the nose wheel steering bracket.
3. Locate the three mounting locations for the float mounting brackets on the bottom of the fuselage.
4. Use eight M2 x 20mm self-tapping screws to install the two rear float mounting brackets, and four M2 x 30mm self-tapping screws to install the front float mounting bracket, on the bottom of the fuselage. There is an internal block molded in the fuselage to receive these screws, the screws are not just threading into foam.
5. Install the two front and two rear cross members on the float mounting brackets. Verify the cross members are centered and tighten the set screws to secure them in place.
6. Insert the cross members into the mounting brackets on the floats and secure them with eight M3 x 25mm machine screws, included with the floats.
7. Attach the water rudder pushrod to the water rudder steering assembly at the nose and the water rudder control horn at the rear.

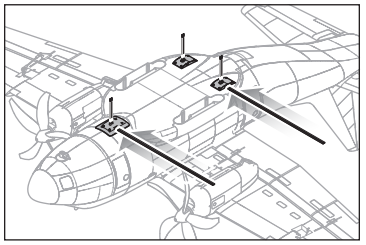
Disassemble in reverse order.

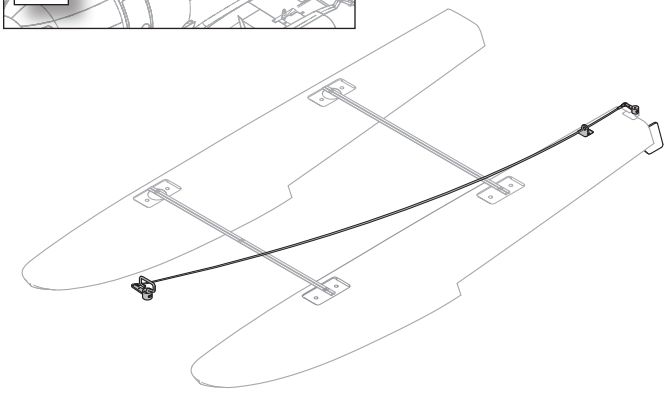












Flying Off Water

Flying off water poses a higher risk because piloting errors or water conditions can cause the aircraft to become stranded. Only fly from the water when a level of comfort has been achieved flying the aircraft from the ground.

Pre-Flight

Ensure the optional floats are secure on the fuselage and the water rudder is correctly connected and operating with the main rudder before putting the aircraft in the water. Select an area to fly that does not have water currents, salt water, or debris. Look around the flight area and be aware of trees, docks, buoys, or other obstacles. Always fly with a spotter and avoid swimmers, boaters, people fishing, and people on the beach.

Taxiing

When taxiing, use low throttle settings and the rudders to steer. Hold up elevator to help keep the rudder in the water and the nose of the floats above the surface. Steer into the wind when turning, and crab into the wind if crosswind taxiing is required. When turning or crabbing into the wind, apply aileron against the wind to keep the upwind side of the wing down and prevent the aircraft from being flipped over. Do not apply down elevator when the airplane is taxiing or during the takeoff run.

On Step

When speed increases with throttle, the floats will rise out of the water and begin to plane on the surface of the water, riding "on step." The floats will come on step at a speed below flight speed, this is a transitional phase when the aircraft is not up to flight speed yet. This is considered a high speed taxi. Do not attempt to take off as soon as the aircraft comes on step. Use low to medium throttle and hold up elevator to manage speed on the water during a high speed taxi.

Takeoff

To lift off from the water, set the flaps to the takeoff position, hold up elevator and accelerate the aircraft to bring it on step. Relax the up elevator as the airplane comes on step and accelerate to flight speed with full throttle. When the aircraft is travelling at a sufficient speed, pull back slightly on the elevator to rotate for liftoff.

Landing

To land on the water, set the flaps to the landing position, and fly into the wind. Reduce the throttle to a low setting but keep some power during the approach. As the aircraft settles into ground effect, reduce the throttle fully and hold up elevator to flare. Hold up elevator through the touch down and as the airplane decelerates on the water.

⚠ **WARNING:** Never attempt to retrieve a downed aircraft by swimming unless you are sufficiently trained and/or there is another person available to respond in the case of an emergency.

⚠ **CAUTION:** Have a plan for retrieval in the event the airplane becomes stranded. Never retrieve a downed model in the water alone.

⚠ **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.

TIP: Use a fishing pole with heavy line as a retrieval tool. Attach a tennis ball to the line, and throw the ball past a stranded aircraft to retrieve it.

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Troubleshooting Guide AS3X *BNF*

Problem	Possible Cause	Solution
Oscillation	Damaged propeller or spinner	Replace propeller or spinner
	Imbalanced propeller	Balance the propeller
	Motor vibration	Replace parts or correctly align all parts and tighten fasteners as needed
	Loose receiver	Align and secure receiver in fuselage
	Loose aircraft controls	Tighten or otherwise secure parts (servo, arm, linkage, horn and control surface)
	Worn parts	Replace worn parts (especially propeller, spinner or servo)
	Irregular servo movement	Replace servo
Inconsistent flight performance	Trim is not at neutral	If you adjust trim more than 8 clicks, adjust the clevis to remove trim
	Sub-Trim is not at neutral	No Sub-Trim is allowed. Adjust the servo linkage
	Aircraft was not kept immobile for 5 seconds after battery connection	With the throttle stick in lowest position. Disconnect battery, then reconnect battery and keep the aircraft still for 5 seconds

Troubleshooting Guide

Problem	Possible Cause	Solution
Aircraft will not respond to throttle but responds to other controls	Throttle not at idle and/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
Reduced flight time or aircraft underpowered	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 the bind process	Power off transmitter and repeat bind process. Hold transmitter bind button or switch until receiver is bound
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 to a different aircraft using different DSM protocol	Bind aircraft to transmitter
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 airplanes was selected	Re-bind or select correct airplanes in transmitter
	Flight battery charge is low	Fully recharge flight battery
	BEC (Battery Elimination Circuit) of the ESC is damaged	Replace ESC
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

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Replacement Parts

Part #	Description
EFL15751	Fuselage: EC-1500 Twin 1.5m
EFL15752	Wing; Right Hand: EC-1500 Twin 1.5m
EFL15753	Wing; Left Hand: EC-1500 Twin 1.5m
EFL15754	Nacelle Set: EC-1500 Twin 1.5m
EFL15755	Cowling: EC-1500 Twin 1.5m
EFL15757	Hatch w/plug: EC-1500 Twin 1.5m
EFL15758	Hor Stabilizer: EC-1500 Twin 1.5m
EFL15759	Vert Stabilizer: EC-1500 Twin 1.5m
EFL15763	Hardware Set: EC-1500 Twin 1.5m
EFL15765	Wing Plug Set: EC-1500 Twin 1.5m
EFL15766	Wing/Stab Tubes: EC-1500 Twin 1.5m
EFL15767	Prop Adapter Set: EC-1500 Twin 1.5m
EFL15768	Decal Sheet: EC-1500 Twin 1.5m
EFL15756	Spinner Set: EC-1500 Twin 1.5m
EFL5760	Wheel Set: EC-1500 Twin 1.5m
EFL5761	Pushrod Set: EC-1500 Twin 1.5m
EFL5762	Ski Set: EC-1500 Twin 1.5m
EFL5764	Light Set: EC-1500 Twin 1.5m
EFLP10905BL	10 x 9, Prop 5 Blade Left
EFLP10905BR	10 x 9, Prop 5 Blade Right
SPMAR8360T	AR8360T 8CH SAFE Telemetry Receiver
SPMSA330R	A330R 9g Sub-Micro Servo Reversed
SPMSA332	A332 9g Sub-Micro Metal Gear Servo
SPMSA370	A370 9g Sub-Micro Metal Gear Servo
SPMXAE0240C	Avian 40 Amp Dual BL Smart ESC
SPMXAM1300	Brushless Motor: 3739-650Kv 14-pole

Recommended Items

Part #	Description
SPMX40004S30	Battery: 4000mAh 4S 14.8V Smart 30C
SPMR8200	NX8 8 Channel Transmitter Only
SPMXC2020	Smart S1200 G2 AC Charger; 1x200

Optional Items

Part #	Description
EFL5771	Float Hardware: EC-1500
EFLA510	Parachute Jumper (3)
EFLA550	Float Set: 15-Size
SPMXCA300	Smart Lipo Bag, 16 x7.5 x 6.5 cm
EFLA250	Park Flyer Tool Asst, 5 pc
SPMXBC100	Smart Battery & Servo Tester
SPMX323S30	Battery: 3200mAh 3S 11.1V Smart G2 30C; IC3
SPMX324S50	Battery: 3200mAh 4S 14.8V Smart G2 50C; IC3
SPMX324S100	Battery: 3200mAh 4S 14.8V Smart G2 100C; IC3
SPMX40004S30	Battery: 4000mAh 4S 14.8V Smart 30C; IC3
SPMX50004S30	Battery: 5000mAh 4S 14.8V Smart LiPo 30C IC5
SPMXCA508	Adapter: IC5 Battery/IC3 Device
SPMAR10100T	AR10100T 10-Channel Telemetry Receiver
SPMAR10360T	AR10360T 10-Channel AS3X/SAFE Telemetry Receiver
SPMAR8020T	AR8020T 8-Channel Telemetry Receiver
SPMAR637T	AR637T 6-Channel AS3X/SAFE Telemetry Receiver
SPMAR6610T	AR6610T 6-Channel Telemetry Receiver
SPMR6655	DX6e 6 Channel Transmitter Only
SPMR6775	NX6 6-Channel Transmitter Only
SPMR10100	NX10 10-Channel Transmitter Only
SPMR14000	iX14 14-Channel Transmitter Only
SPMXC2040	Smart S1400 G2 AC Charger, 1x400W
SPMXC2000	Smart S2100 G2 AC Charger, 2x100W
SPMXC2010	Smart S2200 G2 AC Charger, 2x200W

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Important Federal Aviation Administration (FAA) Information

Use the QR code below to learn more about the Recreational UAS Safety Test (TRUST), as was introduced by the 2018 FAA Reauthorization Bill. This free test is required by the FAA for all recreational flyers in the United States. The completed certificate must be presented upon request by any FAA or law enforcement official.

Recreational UAS Safety Test

If your model aircraft weighs more than .55lbs or 250 grams, you are required by the FAA to register as a recreational flyer and apply your registration number to the outside of your aircraft. To learn more about registering with the FAA, use the QR code below.

FAA DroneZone

AMA National Model Aircraft Safety Code

Effective January 1, 2018

A model aircraft is a non-human-carrying device capable of sustained flight within visual line of sight of the pilot or spotter(s). It may not exceed limitations of this code and is intended exclusively for sport, recreation, education and/or competition. All model flights must be conducted in accordance with this safety code and related AMA guidelines, any additional rules specific to the flying site, as well as all applicable laws and regulations.

As an AMA member I agree:

- I will not fly a model aircraft in a careless or reckless manner.
- I will not interfere with and will yield the right of way to all human-carrying aircraftusing AMA's See and Avoid Guidance and a spotter when appropriate.
- I will not operate any model aircraft while I am under the influence of alcohol or any drug that could adversely affect my ability to safely control the model.
- I will avoid flying directly over unprotected people, moving vehicles, and occupied structures.
- I will fly Free Flight (FF) and Control Line (CL) models in compliance with AMA's safety programming.
- I will maintain visual contact of an RC model aircraft without enhancement other than corrective lenses prescribed to me. When using an advanced flight system, such as an autopilot, or flying First-Person View (FPV), I will comply with AMA's Advanced Flight System programming.
- I will only fly models weighing more than 55 pounds, including fuel, if certified through AMA's Large Model Airplane Program.
- I will only fly a turbine-powered model aircraft in compliance with AMA's Gas Turbine Program.
- I will not fly a powered model outdoors closer than 25 feet to any individual, except for myself or my helper(s) located at the flightline, unless I am taking off and landing, or as otherwise provided in AMA's Competition Regulation.
- I will use an established safety line to separate all model aircraft operations from spectators and bystanders.

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Limited Warranty

What this Warranty Covers

Horizon Hobby, LLC, (Horizon) warrants to the original purchaser that the product purchased (the "Product") will be free from defects in materials and workmanship at the date of purchase.

What is Not Covered

This warranty is not transferable and does not cover (i) cosmetic damage, (ii) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (iii) modification of or to any part of the Product, (iv) attempted service by anyone other than a Horizon Hobby authorized service center, (v) Product not purchased from an authorized Horizon dealer, or (vi) Product not compliant with applicable technical regulations, or (vii) use that violates any applicable laws, rules, or regulations.

OTHER THAN THE EXPRESS WARRANTY ABOVE, HORIZON MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

Purchaser's Remedy

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

Limitation of Liability

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

Law

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

WARRANTY SERVICES

Questions, Assistance, and Services

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

Inspection or Services

If this Product needs to be inspected or serviced and is compliant in the country you live and use the Product in, please use the Horizon Online Service Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. An Online Service Request is available at http://www.horizonhobby.com/content/service-center_render-service-center. 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.

10/15

Contact Information

Country of Purchase	Horizon Hobby	Contact Information	Address
United States of America	Horizon Service Center (Repairs and Repair Requests)	servicecenter.horizonhobby.com/RequestForm/	2904 Research Rd Champaign, Illinois, 61822 USA
	Horizon Product Support (Product Technical Assistance)	productsupport@horizonhobby.com 877-504-0233	
	Sales	websales@horizonhobby.com 800-338-4639	
European Union	Horizon Technischer Service	service@horizonhobby.de	Hanskampring 9 D 22885 Barsbüttel, Germany
	Sales: Horizon Hobby GmbH	+49 (0) 4121 2655 100	

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FCC Information

Contains FCC ID: BRWSPMAR8360T

Supplier's Declaration of Conformity

EC-1500 (EFL15750/EFL15775)

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.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Horizon Hobby, LLC
2904 Research Rd.,
Champaign, IL 61822
Email: compliance@horizonhobby.com
Web: HorizonHobby.com

IC Information

Contains IC: 6157A-SPMAR8360T
CAN ICES-3 (B)/NMB-3(B)

This device contains license-exempt transmitter(s)/receivers(s) that comply with Innovation, Science, and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following 2 conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Compliance Information for the European Union

EU Compliance Statement:
EC-1500 PNP (EFL15775); Hereby, Horizon Hobby, LLC declares that the device is in compliance with the following: EU EMC Directive 2014/30/EU; RoHS 2 Directive 2011/65/EU; RoHS 3 Directive - Amending 2011/65/EU Annex II 2015/863.

EC-1500 BNF Basic (EFL15750); Hereby, Horizon Hobby, LLC declares that the device is in compliance with the following: EU Radio Equipment Directive 2014/53/EU; RoHS 2 Directive 2011/65/EU; RoHS 3 Directive - Amending 2011/65/EU Annex II 2015/863.

The full text of the EU declaration of conformity is available at the following internet address: https://www.horizonhobby.com/content/support-render-compliance.

Wireless Frequency Range and Wireless Output Power:
Receiver:
2404-2476MHz / 19.42dBm

E328

EU Manufacturer of Record:
Horizon Hobby, LLC
2904 Research Road
Champaign, IL 61822 USA

EU Importer of Record:
Horizon Hobby, GmbH
Hanskampring 9
22885 Barsbüttel Germany

WEEE NOTICE:

This appliance is labeled in accordance with European Directive 2012/19/EU concerning waste of electrical and electronic equipment (WEEE). This label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.

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All other trademarks, service marks and logos are property of their respective owners.
US 8,672,726. US 9,056,667. US 9,753,457. US 9,930,567. US 10,078,329. US 10,419,970. US 10,849,013. Other patents pending.
https://www.horizonhobby.com/content/e-flite-rc

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