E-flite®
ADVANCING ELECTRIC FLIGHT

Eratix 3D SWS 1.6m (64”)

Scan the QR code and select the Manuals and Support quick links from the product page for the most up-to-date manual information.
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BNF® BASIC
EFL-13350

ARF
EFL-13380

Instruction Manual
Bedienungsanleitung
Manuel d’utilisation
Manuale di Istruzioni

731532
Created 4/25

HORIZON® HOBBY

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.

Registration

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

Table of Contents

Specifications	
Wingspan	64.0 in (1625mm)
Length	61.4 in (1559.56mm)
Weight	Without Battery: 6.5lbs (2950g) With Recommended 6S 4000mAh Battery: 7.88lbs (3575g)

Included Equipment *(BNF Basic)*	
Receiver	Spektrum™ AR637TA+ 6CH SAFE® and AS3X+® Telemetry Receiver (SPM-1032)
ESC	Avian 100A Smart ESC; 6S (SPMXAE1100)
Motor	5055-500Kv Brushless Outrunner, 14 Pole (SPMXAM4740)
Propeller	16 x 8E Wood (EFL-13374)
Servos	Ailerons: (2) A179 42g High Voltage Metal-Geared Digital Servo, 380mm lead (SPMSA179) Rudder and Elevator: (2) A180 42g High Voltage Metal-Geared Digital Servo, 780mm Lead (SPMSA180)

Required to Complete *(ARF)*	
Receiver	6+ Channel Transmitter and Receiver
ESC	6S-Compatible Brushless ESC
Motor	900–1500+ Watt Brushless Outrunner Motor
Propeller	16 x 8E
Servos	(2) Mini Servos with 160+ oz-in Torque for Ailerons and (2) Mini Servos with 264+ oz-in Torque for Rudder and Elevator
Flight Battery	6S 3200-5000mAh LiPo Battery
Battery Charger	6S-Compatible LiPo Battery Charger

Recommended Equipment	
Transmitter	NX7e+ 14 Ch DSMX Transmitter Only (SPMR7110)
Flight Battery	6S 4000mAh 22.2V Smart G2 50C; IC5 (SPMX46S50)
Battery Charger	Smart S1100 AC Charger, 1x100W (SPMXC2080)

Optional Batteries	
SPMX32006S50	3200mAh 6S 22.2V Smart 50C; IC5
SPMX40006S50	4000mAh 6S 22.2V Smart 50C; IC5
SPMX50006S50	5000mAh 6S 22.2V Smart 50C; IC5
SPMX76S30	7000mAh 6S 22.2V Smart 30C; IC5*

*If using a 7000mAh battery, it is recommended to use the 15 x 8E propeller.

Replacement Covering		
HANU883	Flame Red	Oracover 22
HANU870	White	Oracover 10
HANU882	Light Gray	Oracover 11

Required Tools and Building Supplies

Phillips screwdriver (PH0)
Phillips screwdriver (PH1)
Flat screwdriver
Hex driver 1.5mm
Hex driver 2.0mm
Hex driver 2.5mm
4mm Nut Driver
8mm or adjustable wrench
1/2" or adjustable wrench
1/16" (1.5mm) drill bit and drill (ARF)
Thin CA glue
Medium CA glue
CA applicator tips
Flexible adhesive

Medium strength threadlock
Ball link pliers
15-minute epoxy
Isopropyl alcohol
Paper towels
Mixing sticks
Mixing cups
Low-tack tape
Double-sided adhesive foam tape
Clear flexible tape
Medium-grit sandpaper
Flat metal file
Rotary tool with cutoff wheel
Machine oil

Auto Transmitter Setup *BNF Basic*

The AR637TA+ receiver, installed in your Eratix 3D SWS 1.6m (64”) airplane, contains an AS3X+ /SAFE setup developed specifically for the airplane. This Smart Transmitter File (STF) allows you to quickly import the settings for your transmitter, directly from your receiver, during the binding process.

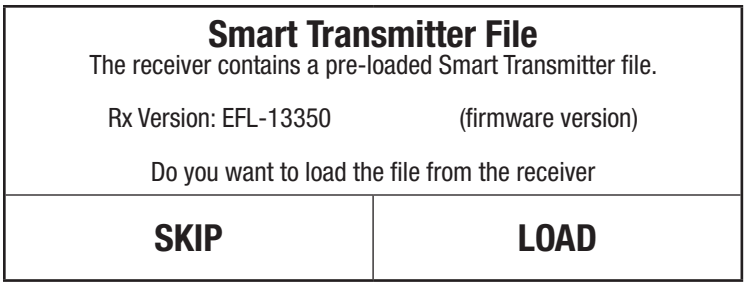
Supported Transmitters and firmware requirements:

- All NX Transmitters (with firmware version 4.0.11+)
- iX14 (with app version 2.0.9+)
- iX20 (with app version 2.0.9+)

Important: iX12 and DX Transmitters do not support Smart Transmitter File transfers at this time.

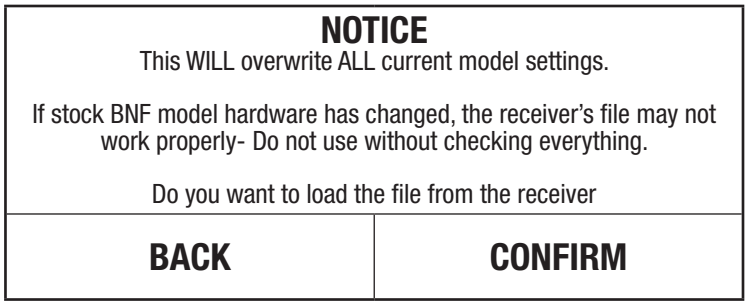
To load the Smart Transmitter Files:

1. Power ON the transmitter.
2. Create a new blank model file on your transmitter.
3. Power ON the receiver.
4. Press the bind button on the receiver.
5. Put the transmitter into bind mode. The model will bind normally.
6. Once binding is complete the download screen will appear as shown at the right.
7. Select **LOAD** to continue.



The NOTICE screen, as shown at the right, is a warning that downloading will overwrite all the information of the current model. If this is a new model it will simply populate the transmitter parameters of the Eratix into the selected model and rename it Eratix.

NOTICE: Confirming will override any previously saved transmitter setups.



8. Press CONFIRM to continue.
9. Once the download is complete the file will be installed on your transmitter and the telemetry settings will be loaded automatically.

Once loading is complete the radio will return to the home screen, and you will see “Eratix BNF-B EFL-13350”.

Transmitter setup is now complete, and you are ready to fly your aircraft.

Flight Timer
There is no flight timer loaded in the transmitter setup file. The voltage monitor provides alerts when the battery voltage has dropped to just above the LVC, indicating it is time to land.

Transmitter Setup

Dual Rates and Exponential

These values are populated automatically when the Smart Transmitter File transfer feature is used. If you are setting up your transmitter manually, use the values listed in the table for your transmitter type.

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

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. Select **<Main Screen>,** Click the scroll wheel to enter the **Function List**
6. Set **D/R (Dual Rate) and Exponential**; ***Aileron*** Set **Switch**: ***Switch F*** Set **High Rates: *100%*, Exponential *56%*. Low Rates: *70%*, Exponential *40%***
7. Set **D/R (Dual Rate) and Exponential**; ***Elevator*** Set **Switch**: ***SWITCH C*** Set **High Rates**: ***100%*, Exponential *46%*. Low Rates: *70%*, Exponential *36%***
8. Set **D/R (Dual Rate) and Exponential**; ***Rudder*** Set **Switch**: ***SWITCH G*** Set **High Rates**: ***100%*, Exponential *38%*. Low Rates: *70%*, Exponential 26%**
9. Set **Throttle Cut**; **Switch**: ***Switch H*, Position: *-100%***

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. Select **<Main Screen>,** Click the scroll wheel to enter the **Function List**
5. Set **Rates and Exponential**; ***Aileron*** Set **Switch**: ***Switch F*** Set **High Rates: *100%*, Exponential *56%*. Low Rates: *70%*, Exponential *40%***
6. Set **Rates and Exponential**; ***Elevator*** Set **Switch**: ***SWITCH C*** Set **High Rates**: ***100%*, Exponential *46%*. Low Rates *70%*, Exponential *36%***
7. Set **Rates and Exponential**; ***Rudder*** Set **Switch**: ***Switch G*** Set **High Rates: *100%*, Exponential *38%*. Low Rates: *70%*, Exponential *26%***
8. Set **Throttle Cut**; **Switch**: ***Switch H*, Position: *-100%***

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. Tap and hold the back arrow icon in the upper left corner of the screen to return to the main screen
6. Go to the **Model Adjust** menu
7. Set **Dual Rates and Exponential**; Select ***Aileron*** Set **Switch**: ***Switch F*** Set **High Rates: *100%*, Exponential *56%*. Low Rates: *70%*, Exponential *40%***
8. Set **Dual Rates and Exponential**; Select ***Elevator*** Set **Switch**: ***SWITCH C*** Set **High Rates**: ***100%*, Exponential *46%*. Low Rates: *70%*, Exponential *36%***
9. Set **Dual Rates and Exponential**; Select ***Rudder*** Set **Switch**: ***SWITCH G*** Set **High Rates**: ***100%*, Exponential *38%*. Low Rates: *70%*, Exponential *26%***
10. Set **Throttle Cut**; **Switch**: ***Switch H*, Position: *-100%***

Model Assembly

Building Precautions

Prepare the work surface prior to beginning assembly. The surface should be soft and free of any sharp objects. We recommend resting the airframe parts on a soft towel or pit mat to prevent scratching or denting the surface of the aircraft.

Removing Wrinkles

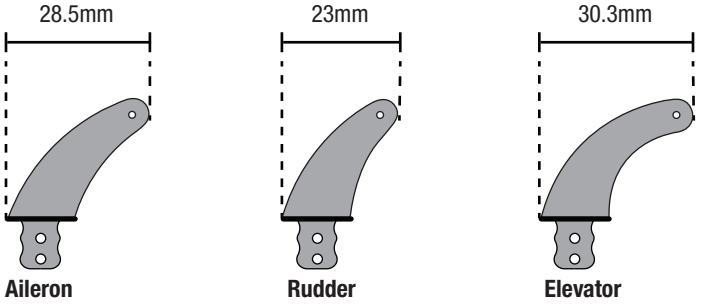
The covering of your model may develop wrinkles during shipping. Use a heat gun (HAN100) and covering glove (HAN150), or covering iron (HAN1017) with a sealing iron sock (HAN1018) to remove them. To prevent separation of colors, use caution while working around areas where colors overlap. Avoid using too much heat, which could separate the colors. Placing a cool damp cloth on adjacent colors will help prevent separation of colors while removing wrinkles.

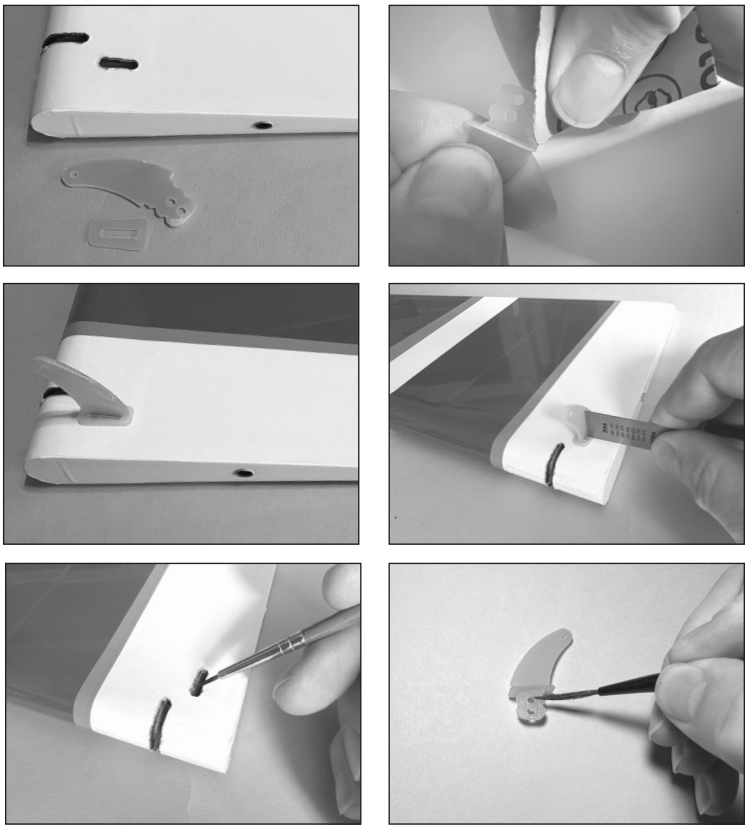
Control Horn Installation

Rudder

1. Use the illustration below to identify the rudder control horn.
2. Use medium-grit sandpaper to sand the portion of the control horn that fits into the rudder. Clean the sanded area using a paper towel and isopropyl alcohol to remove any debris or oils.
3. Slide the baseplate on the control horn, with the wider end forward. Test fit the rudder control horn in the slot in the rudder.
4. Check that the horn is 90-degrees to the surface of the rudder. If not, lightly trim the slot in the rudder.
5. Remove the control horn. Mix 10g of 15-minute epoxy. Apply epoxy to the slot in the rudder.
6. Apply epoxy to the area of the control horn that installs in the slot.
7. Insert the control horn and base in the slot in the rudder. Ensure the horn is fully seated, and perpendicular to the rudder surface.
8. Use a paper towel and isopropyl alcohol to clean any excess epoxy. Monitor the position of the control while the epoxy cures.

Repeat this process to install the aileron and elevator control horns.





TIP: If you have experience with this type of control horn installation, medium CA can be used in place of epoxy.

Be aware that using CA provides very limited time to adjust the control horn position. Excessive CA application can run onto the exterior of the surfaces, and be difficult to remove.

Servo Selection and Installation *ARF*

The recommended servos for this aircraft are the Spektrum A180 for the rudder and elevator, and the Spektrum A179 on each aileron. If you choose to install different servos, be sure and select servos with the same or greater torque specifications. Use extension leads to lengthen the servo leads to the dimension indicated.
Ailerons: 11.5 kg-cm (160 oz-in) @ 7.2V
Rudder and Elevator: 19 kg-cm (264 oz-in) @ 7.2V

Servo Location	Servo Item Number	Servo Lead Length
Ailerons	SPMSA179	380mm
Elevator and Rudder	SPMSA180	780mm

Rudder and Elevator Servo Installation

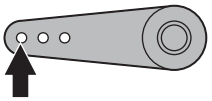
1. Locate the servo positions and mark the servo mounting holes.
2. Drill a 1/16" (1.5mm) pilot hole for each mounting screw.
3. Thread one of the self-tapping screws included with the servos to cut threads into the servo mounting screw holes with a Phillips screwdriver (PH0), then remove the screw.
4. Apply one drop of thin CA glue to each screw hole. Allow the CA to cure, do not use accelerator. Repeat this process for all servo mounting locations.

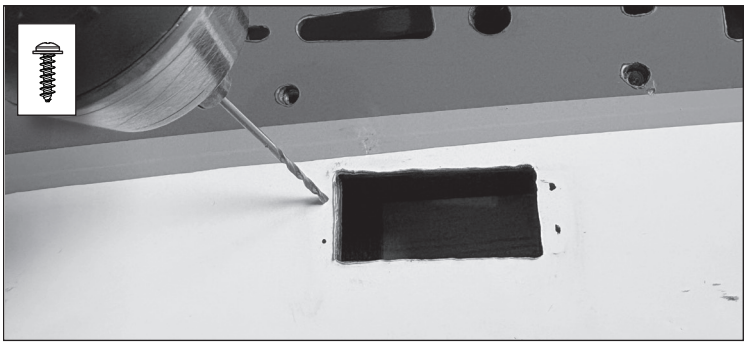
TIP: using a fine applicator nozzle will simplify this task, and reduce the possibility of spillage.

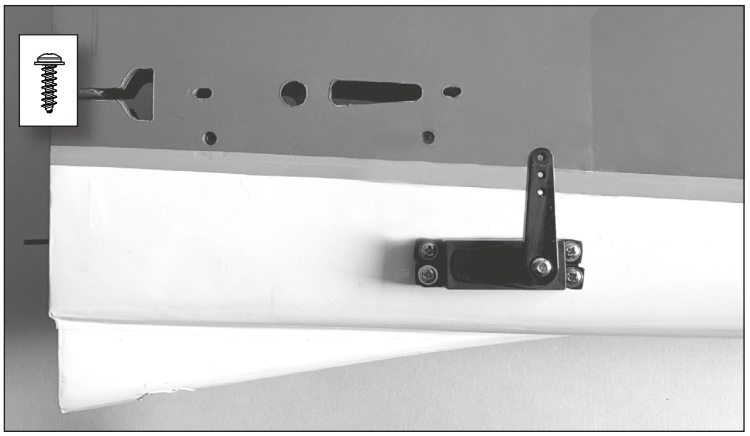
TIP: If you spill CA adhesive on the film covering, use CA debonder or acetone to remove it before it cures.

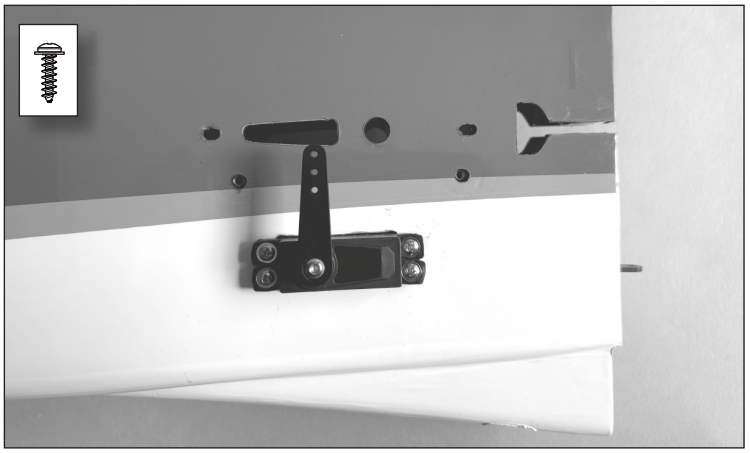
5. Guide the servo leads through the tube in fuselage.
6. Install the servos as shown, with the output shaft toward the front of the model. The rudder servo installs on the left side of the fuselage, with the servo arm down. The elevator servo installs on the right side, with the servo arm up.
7. Secure the servos with the included self-tapping screws using a Phillips screwdriver (PH0).
8. Center the servo using the radio system.
9. Place the servo arm on the servo so it is perpendicular to the servo center line. Install the servo arm retaining screw included with your servos.

TIP: The BNF Basic version of the Eratix SWS uses servo arms with an output dimension of 31.5mm. If using different servos, servo arms with a similar length will be required.









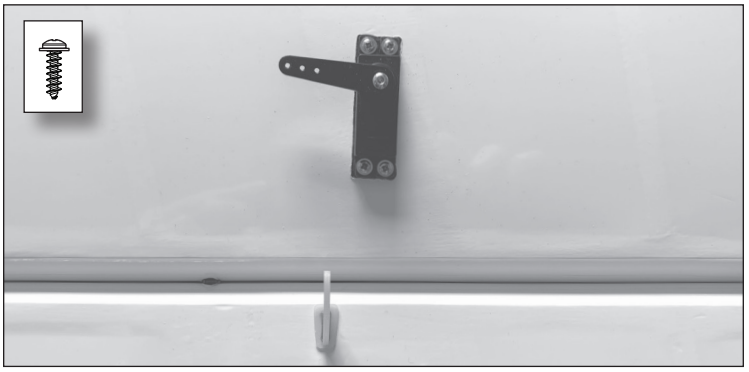
Aileron Servo and Pushrod Installation

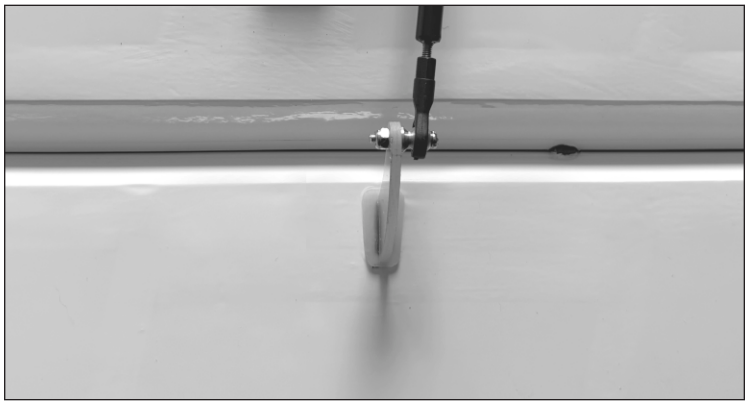
1. Apply one to two drops of thin CA in each servo screw hole, and allow to cure. Do not use accelerator.

   TIP: using a fine applicator nozzle will simplify this task, and reduce the possibility of spillage.

   TIP: If you spill CA adhesive on the film covering, use CA debonder or acetone to remove it.

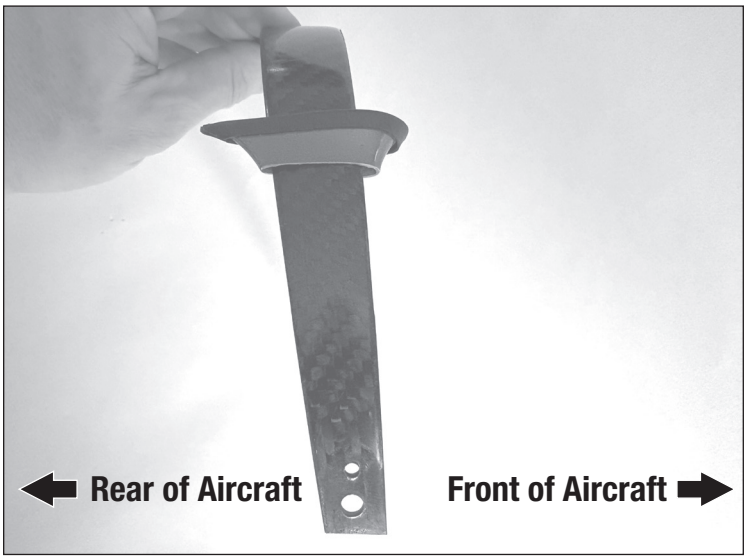
2. Guide the servo lead through the wing, to the wing root. Place the servo in the opening, with the output shaft forward. Use the screws to secure the servo.
3. Secure the servos with the included self-tapping screws using a Phillips screwdriver (PH0).
4. Center the servo using a servo driver, or the radio system. Install the servo arm facing the wing tip, oriented one spline forward of perpendicular to the servo case. Secure the servo arm with the provided screw.
5. Using a PH0 Phillips screwdriver and 4mm nut driver, connect the 119mm pushrod pushrod to the control horn with an M2 x 10mm machine screw, and M2 nylon locknut.
6. Connect the pushrod to the outer hole of the servo arm with an M2 x 12mm Philips head machine screw, and M2 nylon locknut.



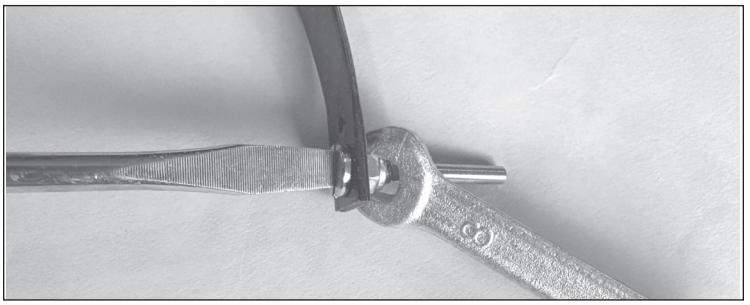


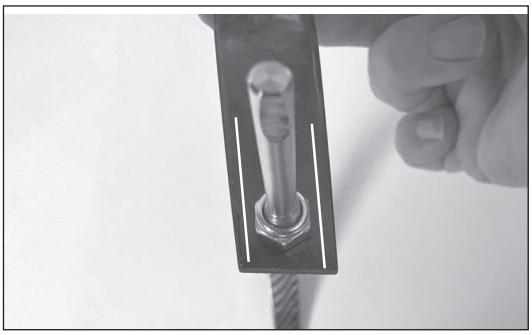
Landing Gear Installation

1. Slide the left and right intersection fairings over the landing gear, in the orientation shown. Ensure the landing gear is angled forward.

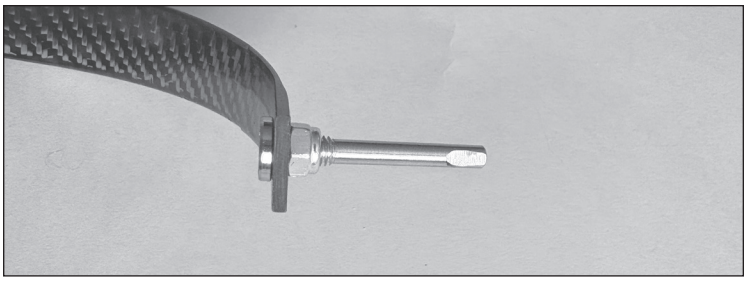


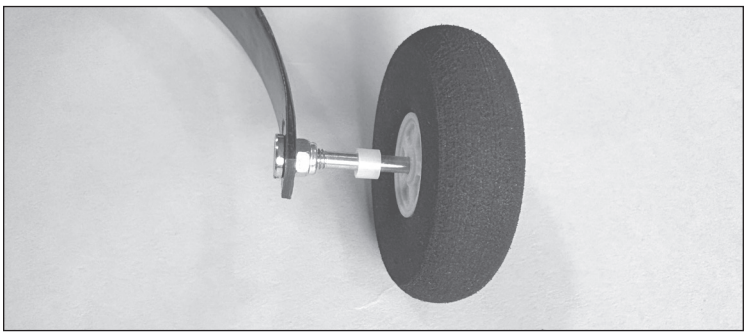
2. Secure the axles to the landing gear using an 8mm wrench and a flat blade screwdriver. Ensure two opposite faces of the nut are oriented vertically so the wheel pants install at the correct angle.

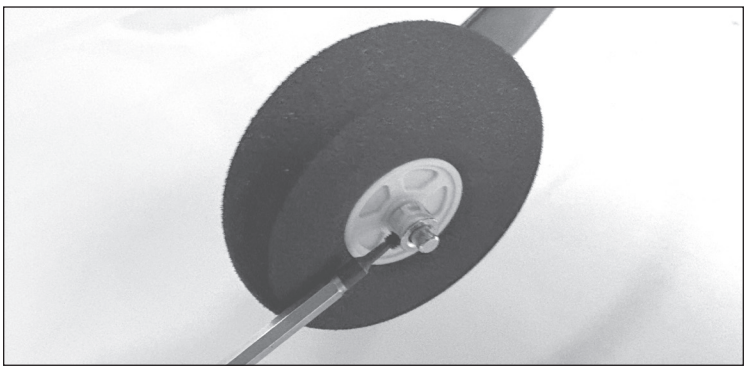




3. Use a flat file, or cutoff wheel in a rotary tool, to create a flat spot on the axle 1/4 in (6.35mm) from the end of axle.
4. Slide a nylon wheel spacer on the axle. Apply a drop of machine oil on the axle where the wheel locates. Slide the wheel on the axle.
5. Install a wheel collar on each axle. Apply a small amount of medium-strength threadlock to the set screw. Use a 1.5mm hex driver to secure the wheel collar.
6. Install the wheel pants with an M3 x 8mm machine screw and M3 washer.

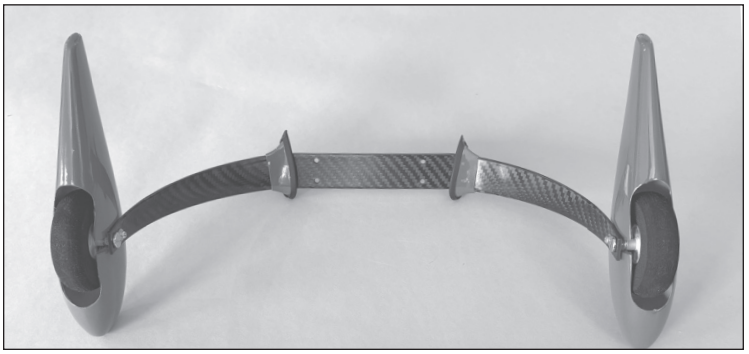






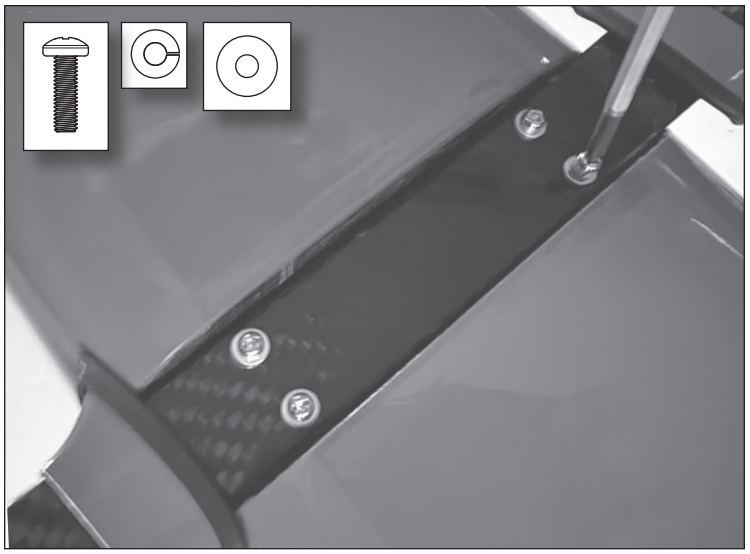
TIP: The wheel pants should be level when the fuselage is level. If necessary, adjust the axle retaining nut to adjust the angle of each wheel pant.

7. Verify the wheels are free to rotate inside the wheel pants before continuing.



Main Gear Installation

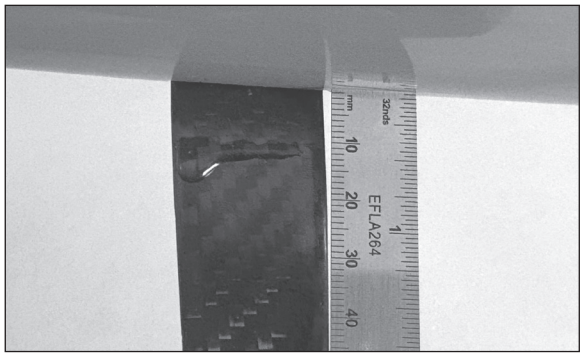
1. Align the landing gear mounting holes with the holes on the bottom of the fuselage.
2. Apply medium-strength threadlock to each screw, then use a Phillips screwdriver (PH1) to secure the landing gear with four M3 x 14mm machine screws, M3 lock washers, and M3 flat washers.

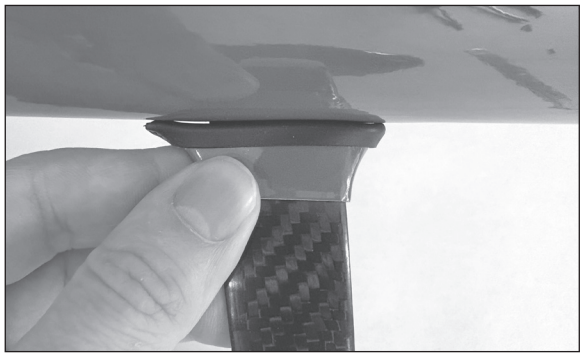


Landing Gear Intersection Fairing Installation

1. Place a bead of contact cement on the top and bottom of the landing gear, approximately 12mm from the fuselage.
2. Slide the fairing against the fuselage.
3. Tape the fairings in place while the adhesive cures.

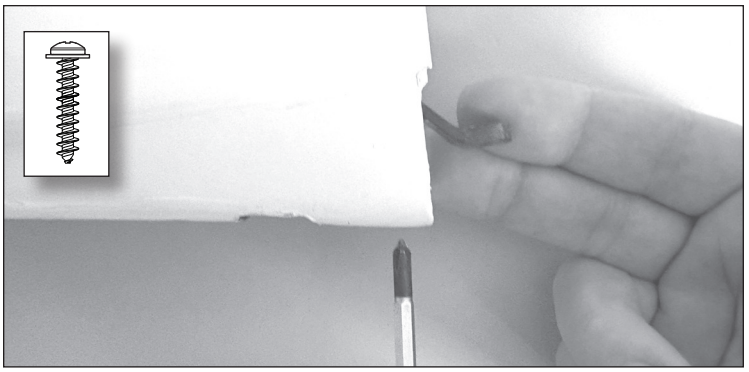
TIP: After the fairings have been secured, the landing gear can be removed and replaced as a unit, without the intersection fairings needing to be removed.

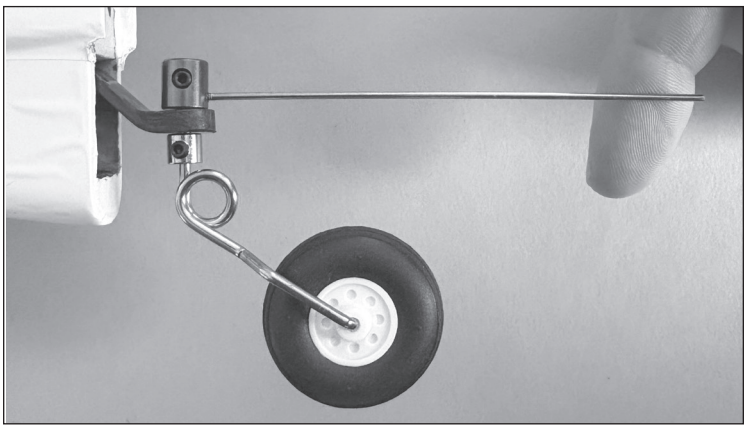




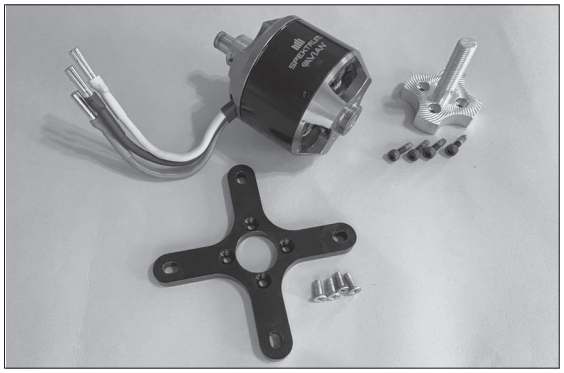
Tail Wheel Installation

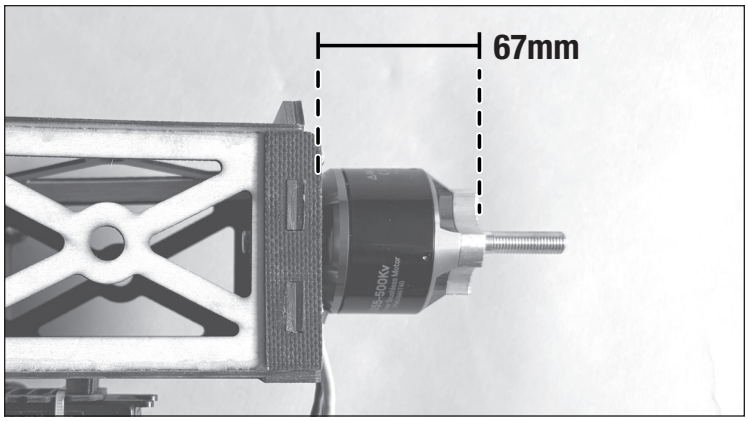
1. Align the landing gear mounting holes with the holes inside the fuselage ventral fairing.
2. Use a Phillips screw driver (PH1) to secure the tail wheel bracket in place with two M3 x 14mm screws.
3. Slide the wheel collar on the tail wheel strut.
4. Slide the tail wheel assembly in the tail wheel bracket. Place the tailwheel steering arm on the tail wheel wire. Ensure the steering arm is aligned with the tail wheel.
5. Secure the wheel collars with a 1.5mm hex wrench. The steering arm collar shall be flush with the top of the wire. The lower collar should be placed so there is no vertical motion of the wire.



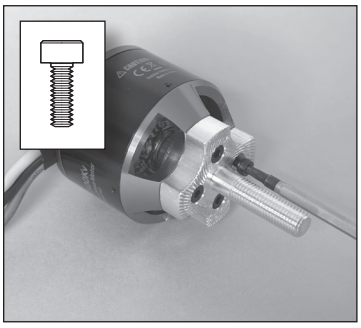


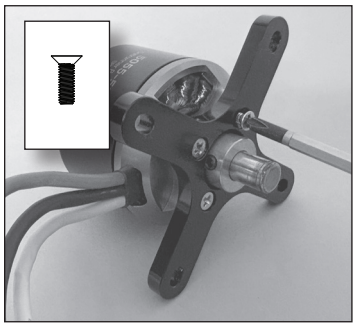
Motor Installation *ARF*

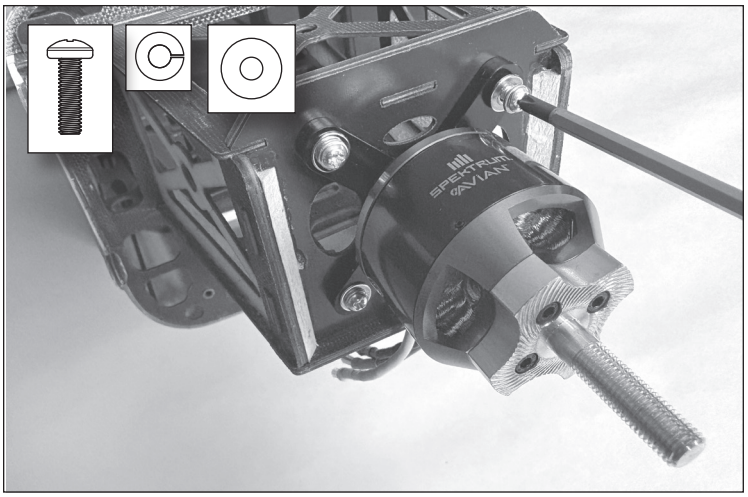




1. Mount the prop adapter to the motor with four M3 x 8mm socket head machine screws using a 2.5mm hex driver. Place a drop of threadlock on each screw before installation.
2. Install the X mount on the motor with four M3 x 8mm flat-head screws using a Phillips screw driver (PH1). Place a drop of threadlock on each screw before installation.
3. Mount the motor to the firewall with four M4 x 16mm Phillips head machine screws, M4 lock washers, and M4 flat washers using a Phillips screwdriver (PH1), with the motor wires facing the bottom of the fuselage. Apply a drop of threadlock on each screw before installation.





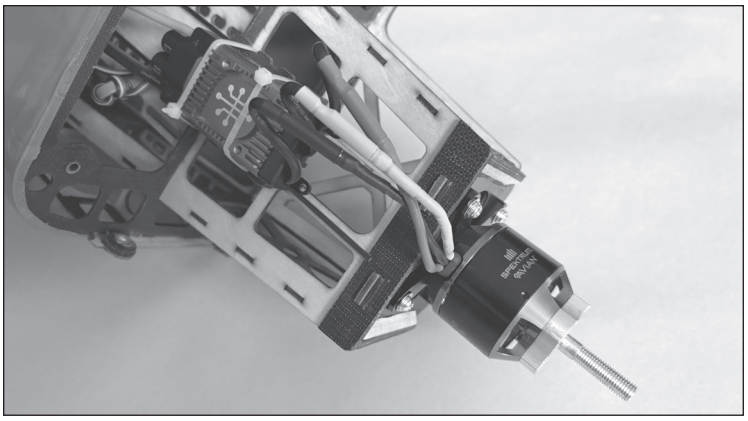


ESC Installation *ARF*

1. Mount the ESC to the mounting tray on the underside of the motor box using double sided tape (not included), and zip ties.
2. Route the battery connector to the battery tray.
3. Connect the three motor leads.
4. Route the throttle lead to the receiver mounting area.

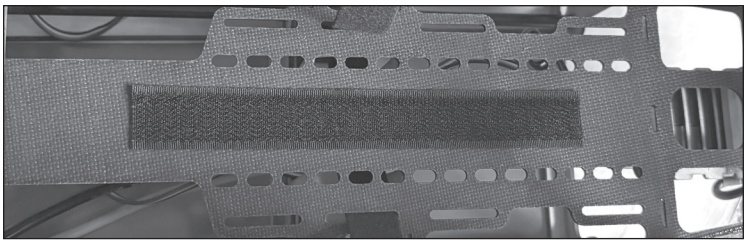
TIP: You may wish to verify the motor rotation direction before the cowling is installed. Use your radio system to operate the motor. It must rotate clockwise (viewed in the direction of flight).

TIP: If you need to reverse the motor direction, disconnect the battery first. Reverse the motor direction by swapping any two of the three motor wires. Secure the motor wires so they are out of the way, and not contacting the motor.



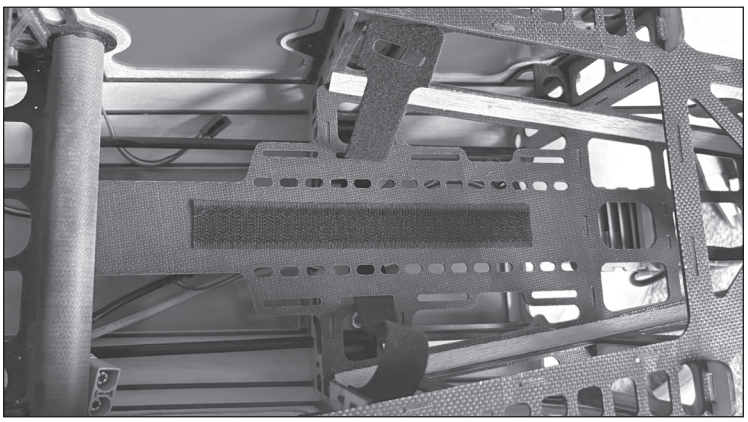
Battery Tray Hook and Loop

1. Remove the backing material and apply the hook side to the tray.
2. Apply the opposite side to the battery. (Avoid covering any warning labels on the battery.)



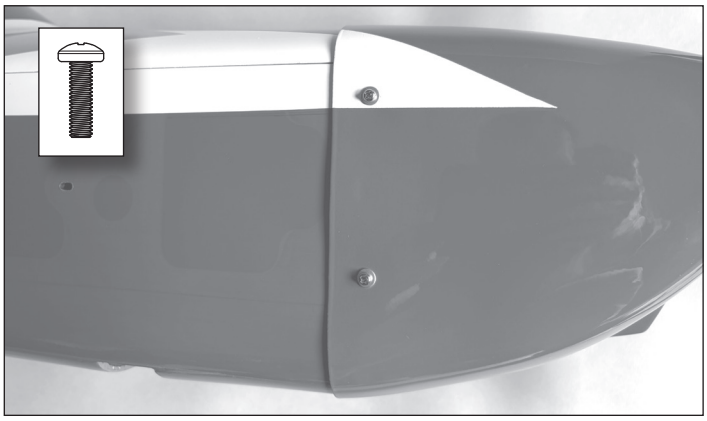
Battery Strap

1. Slide the strap through a slot and under the battery tray, and feed it through the slot on the other side of the tray. Multiple slots are provided to suit different battery sizes. After checking the CG, use the slot that best suits your battery position.



Cowling Installation

1. Secure the cowling using four M3 x 8mm Phillips-head machine screws, M3 flat washers and a Phillips screwdriver (PH1) .

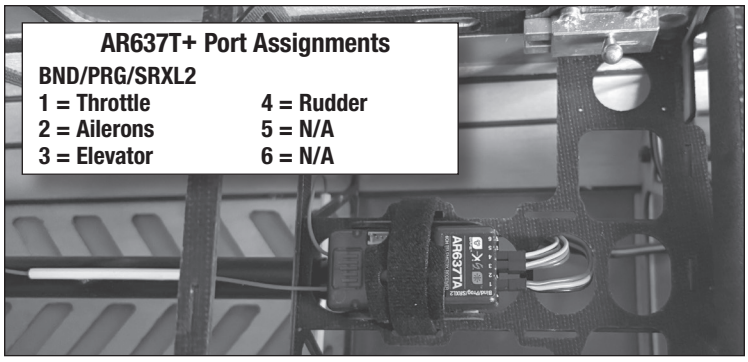


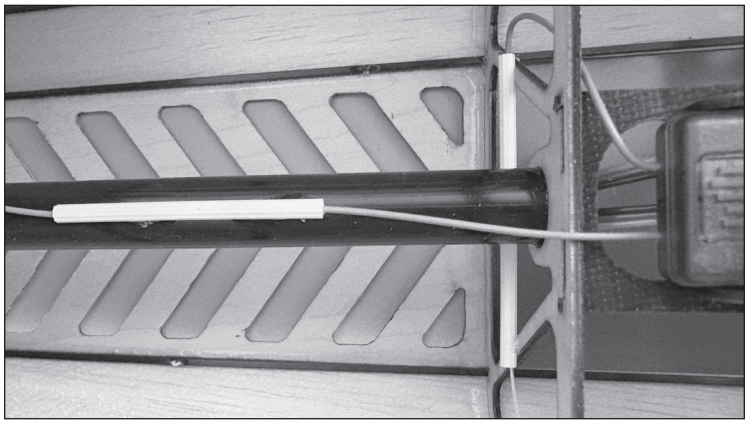
Receiver Selection and Installation *ARF*

The recommended receiver for this aircraft is the Spektrum AR637T+. If you choose to install a different receiver, ensure it is at least a 6-channel full-range receiver. Refer to the manual of your chosen receiver for correct installation and operation instructions.

AR637T+ Installation

1. Use the port assignment table to connect the ESC/throttle and servo leads to the receiver.
2. Using high quality double-sided adhesive foam tape (not included), mount the receiver to the flat area behind the battery compartment, as shown. The receiver should be mounted in the orientation shown, parallel to the length of the fuselage, with the servo ports facing the front of the aircraft.





Antenna Installation

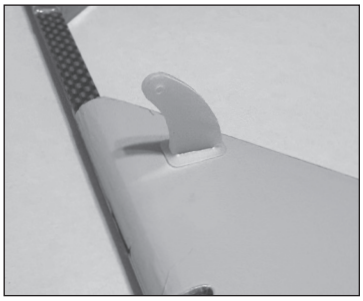
We recommend installing the antennas as shown in the illustration. The antennas should be routed through the tubes, as shown.

NOTICE: Do not cut, kink, or modify the antenna. Damage to the coaxial portion of an antenna will reduce the performance of the antenna. Shortening or cutting off the 31mm tip will reduce the range.

Horizontal Stabilizer and Aileron Installation

Control Horn Installation

1. Repeat the rudder control horn installation process to install the aileron and elevator control horns. (ARF only)

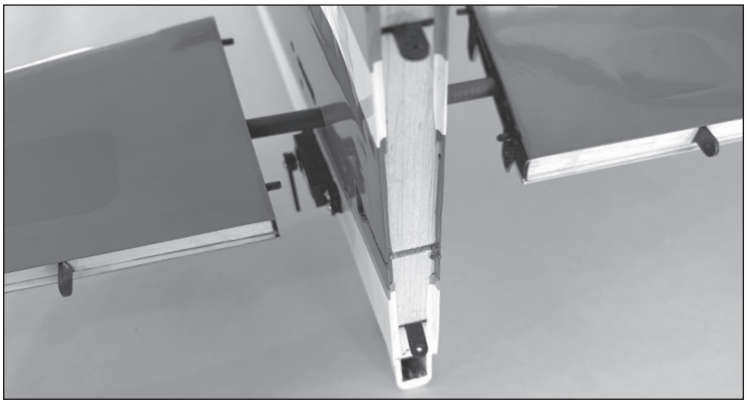


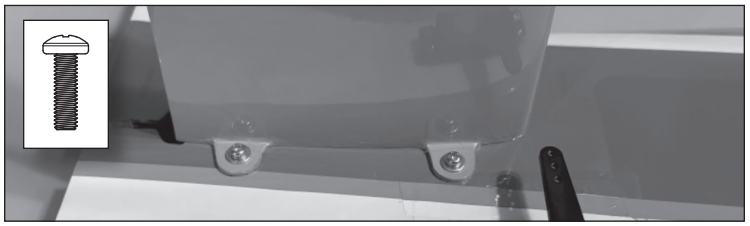
Horizontal Stabilizer Installation

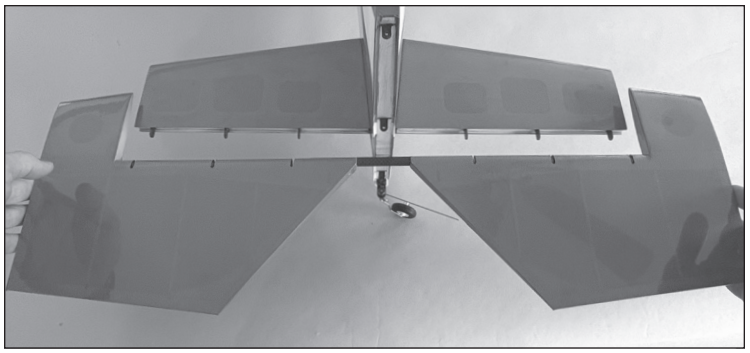
1. Slide the horizontal stabilizer tube into the socket in the fuselage.
2. Slide the horizontal stabilizer halves onto the stabilizer tube with the tabs facing down. Secure with four (two per side) M3 x 8mm Phillips head machine screws and M3 flat washers, using a Phillips screwdriver (PH1).
3. With the control horn facing down, slide the elevator through the slot in the rear of the fuselage until the hinges of the horizontal stabilizer and elevator align.
4. Secure the elevator to the horizontal stabilizer by sliding two (one per side) 241mm hinge pins through the hole at the end of each elevator until the pin is seated in the recess on each side.
5. Place a drop of flexible adhesive in the hinge pin hole and secure each hinge pin with a teardrop plate, M2 x 9mm Phillips self-tapping screw and a Phillips screwdriver (PH0).
6. Apply contact cement to the top and bottom of the fuselage filler piece, and slide in place behind the elevator.

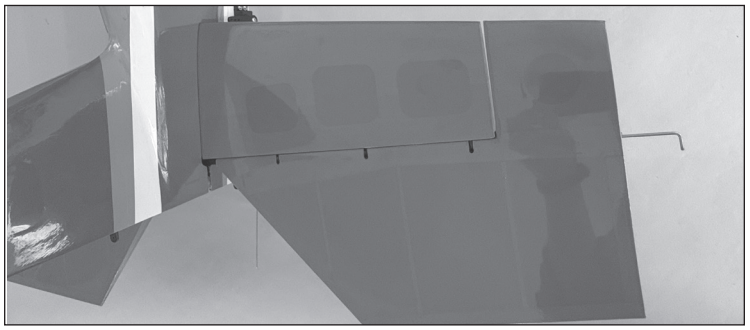
TIP: Alternately, flexible clear tape can also be used to retain the hinge pins, and the fuselage filler behind the elevator joiner.

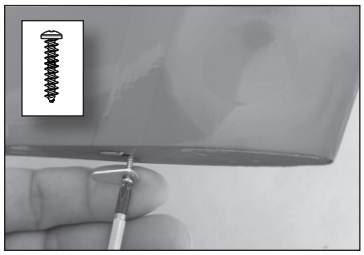
7. Connect the 119mm pushrod to the control horn and secure with a M2 x 12mm Phillips screw, Phillips screw driver (PH0), M2 nylon lock nut and a 4mm nut driver. The screw head should be on the outside and the nut on the inside of the control horn.
8. Center the servo, and install the servo arm so it is vertical.
9. Connect the pushrod to the outer hole of the servo arm, and secure with a M2 x 12mm Phillips screw, Phillips screwdriver (PH0), M2 nylon lock nut and a 4mm nut driver.

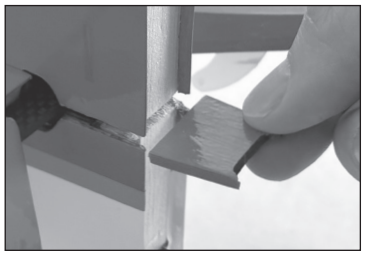


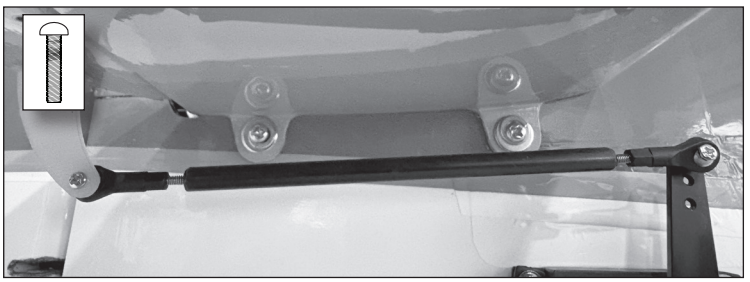






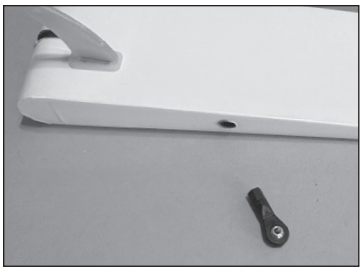


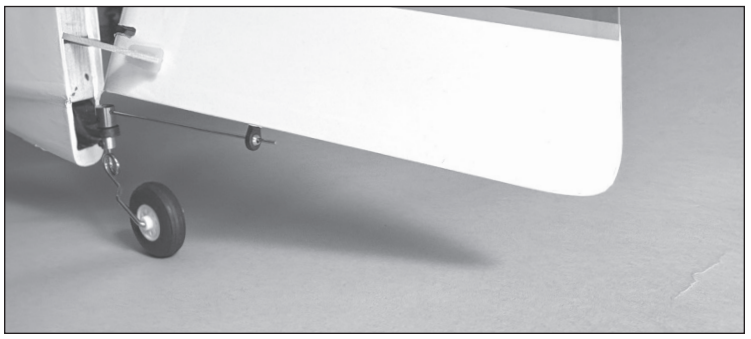


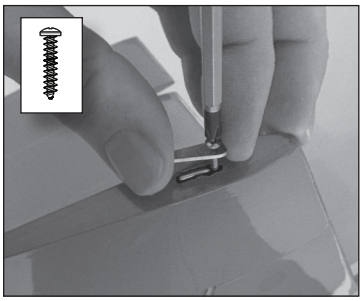


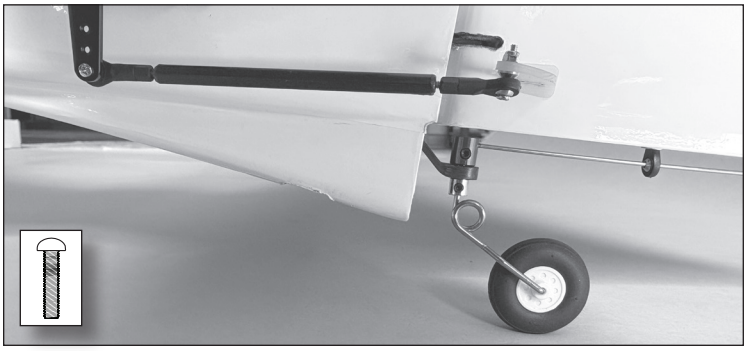
Rudder Installation

1. Apply 1-2 drops of medium CA in the hole in the base of the rudder. Insert the tailwheel steering ball link as shown. Allow the adhesive to cure.
2. Slide the tail wheel steering wire through the ball link , then slide the rudder against the vertical stabilizer until the hinges align.
3. Secure the rudder to the vertical stabilizer by sliding the 355mm hinge pin through the hole in the top of the rudder until the pin seats fully in the slot..
4. Place a drop of contact adhesive in the hinge pin hole and secure the hinge pin with using a teardrop plate, M2 x 9mm Phillips-head self-tapping screw and a Phillips screwdriver (PH0).
5. Connect the 105mm pushrod to the control horn and secure in place using a M2 x 10mm Phillips screw, Phillips screw driver (PH0), M2 nylon lock nut and a 4mm nut driver.
6. Center the servo, and install the servo arm so it is vertical, facing down.
7. Connect the pushrod to the servo arm at the selected outer most hole, and secure in place using a M2 x 12mm Phillips screw, Phillips screw driver (PH0), M2 nylon lock nut and a 4mm nut driver.
8. Check the rudder is aligned with the tailwheel. If necessary, adjust the position of the steering arm wheel collar on the tail wheel wire to correct any misalignment.



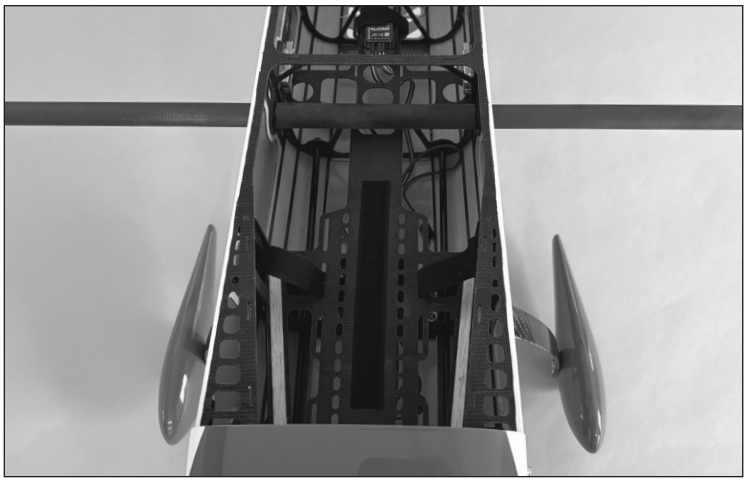




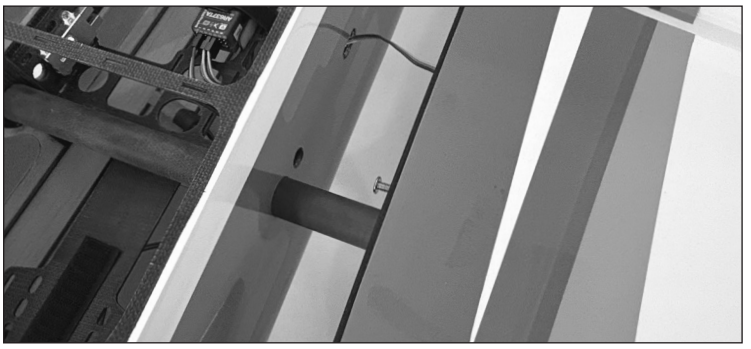


Wing Installation

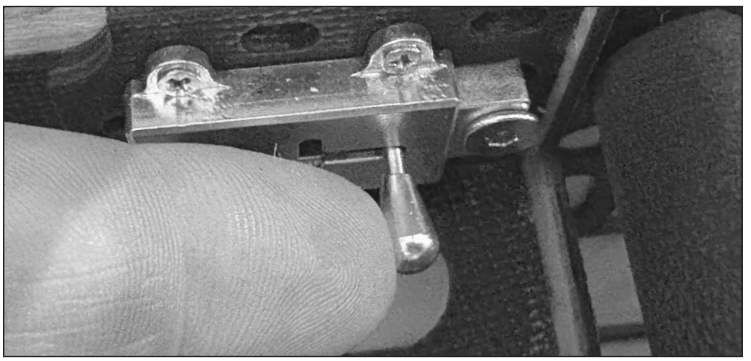
1. Slide the wing tube into the socket in the fuselage.
2. Check the wing retaining latches are disengaged before the wing is installed. The latch is disengaged when the lever is completely rearward, and in either the up or down position.
3. Slide each wing panel on the wing tube.

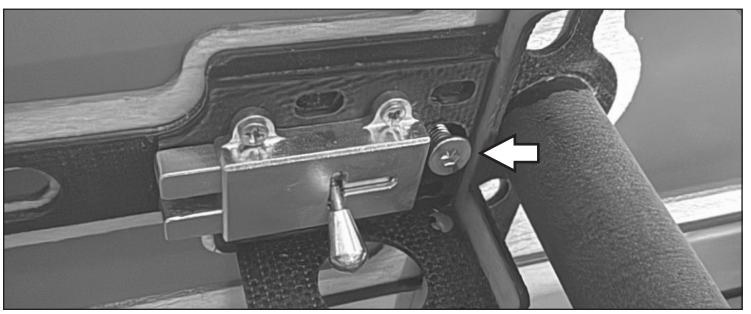


4. Guide the aileron servo wires through the hole on each side of the fuselage and route them to the receiver. Ensure the wiring does not get pinched between the wing and fuselage.



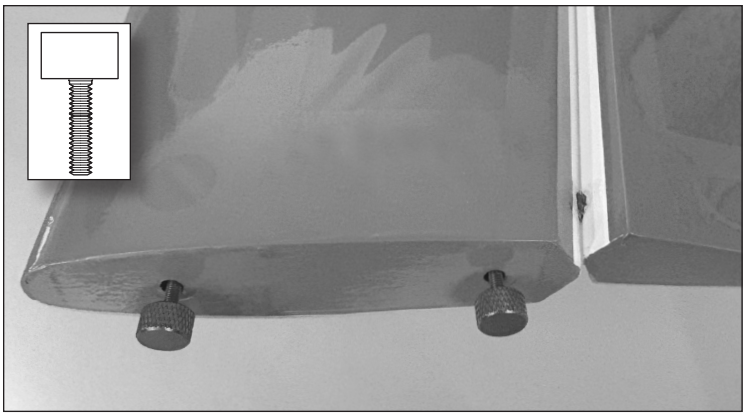
5. Secure each wing in place by moving the lever to align with the horizontal slot, and allowing it to slide forward. Ensure the lever is all the way forward in the slot.
6. The retaining screw in each wing root can be turned in or out to adjust the fit/ security of each panel against the fuselage. Shortening the length of the screw (by turning clockwise), will make the wing panel fit more tightly, and vice versa.

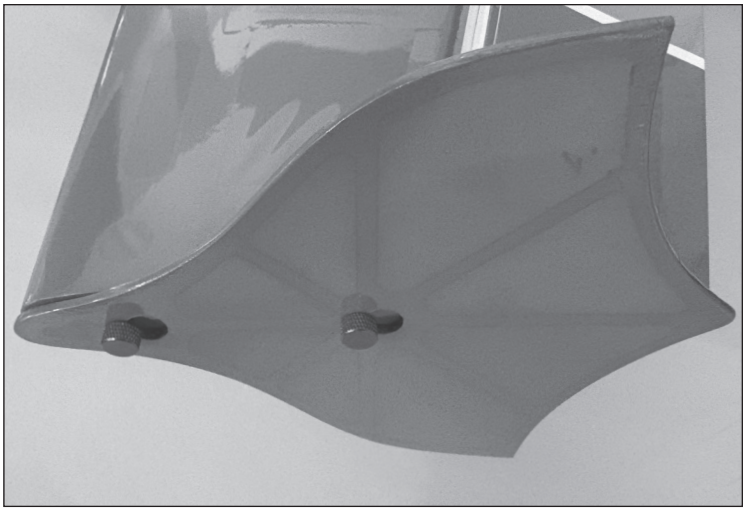




Side Force Generator (SFG) Installation *Optional*

1. Thread two thumb screws into each wing tip, leaving enough space for the thickness of the side force generator.
2. Align the large holes in the SFG over the thumb screws. Push the SFG against the wing tip, then slide rearward until the front of the SFG aligns with the wing leading edge. Tighten the thumb screws to secure the SFGs.





General Binding Tips and Failsafe *BNF-Basic*

- 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 Basic*

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.

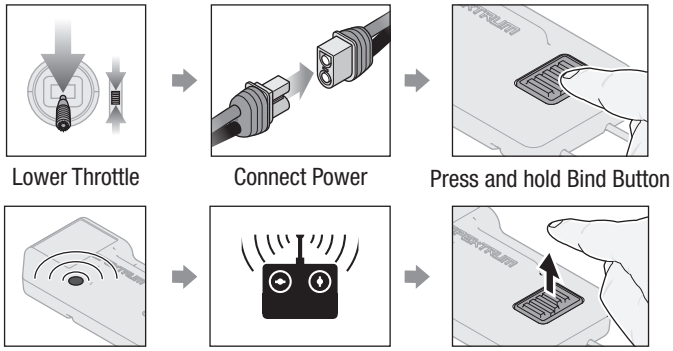
IMPORTANT: Move the transmitter flight controls (rudder, elevators, and ailerons) and the throttle trim to neutral. Move the throttle to low before and during binding. This process defines the failsafe settings.

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.

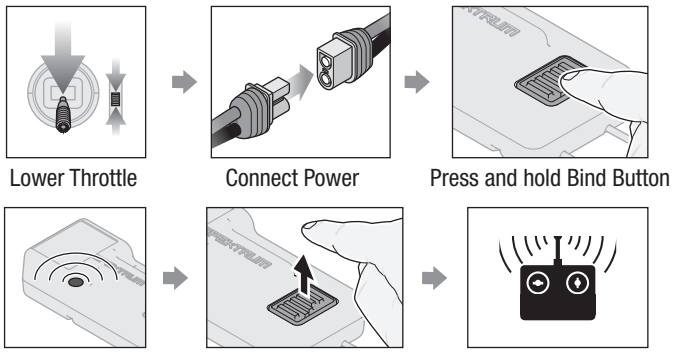
Using The Bind Button...

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.

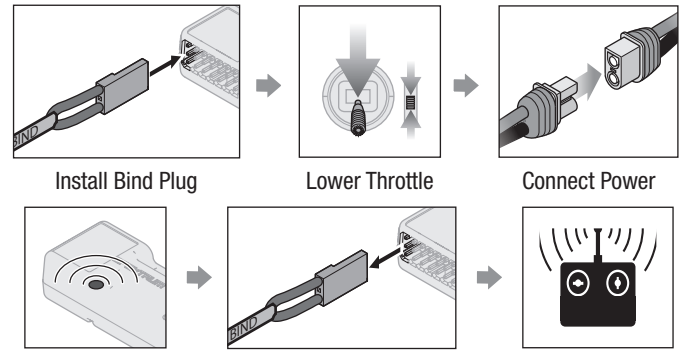
To Disable SAFE Select



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

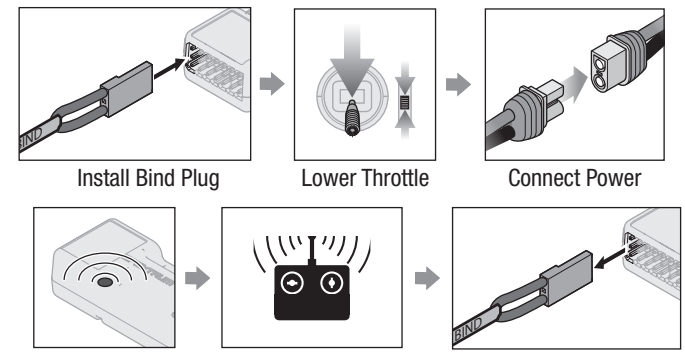
Using The Bind Plug...

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

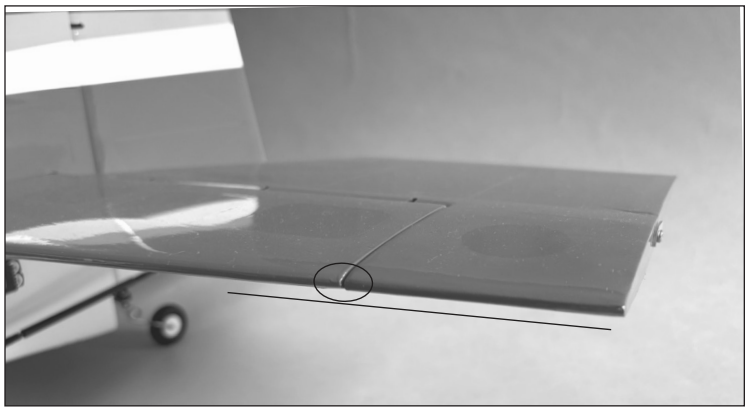


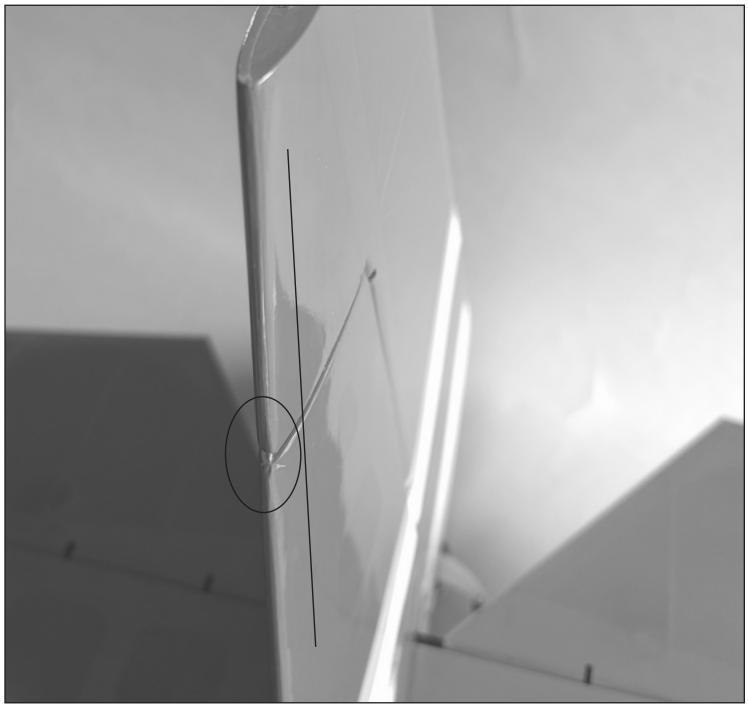
SAFE SELECT DISABLED: The control surfaces cycle back and forth **once** every time the receiver is powered on.

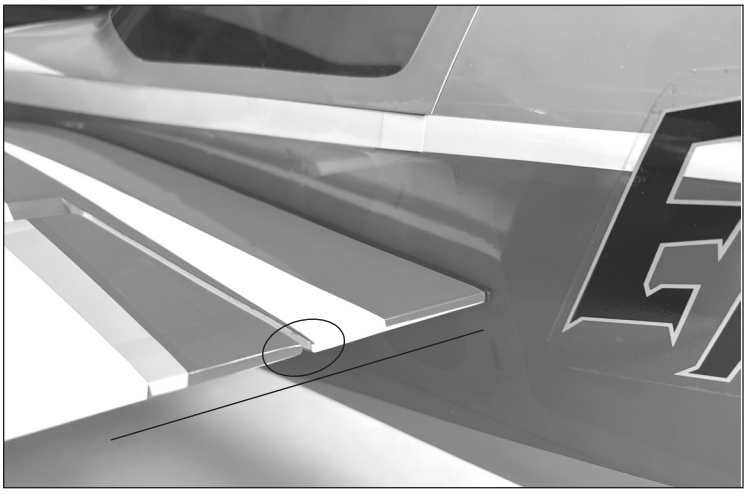
SAFE Select can also be activated via Forward Programming in compatible transmitters.

Control Surface Centering

1. Be sure the model balances at the recommended CG before flying. After assembly and transmitter setup, confirm that the control surfaces are centered. The model must be powered, 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.
2. Verify the trims and subtrims on your transmitter are zero.
3. Power the model in AS3X+ mode and leave the throttle at zero.
4. Engage throttle cut.
5. The rudder and elevators are centered when the balance tab is aligned with the fixed portion of the stabilizers. Align the ailerons by matching the inboard end to the fixed section of the wing at the trailing edge.
6. If adjustment is required, check that the servo arms are installed as noted previously in the manual. Use subtrim to position the servo arms correctly before making changes to the pushrod lengths.
7. Because of the large control surface throws used on this model, pushrod length changes will affect how each surface travels. After centering the control surfaces, use your transmitter's travel adjustment feature to balance the travels.





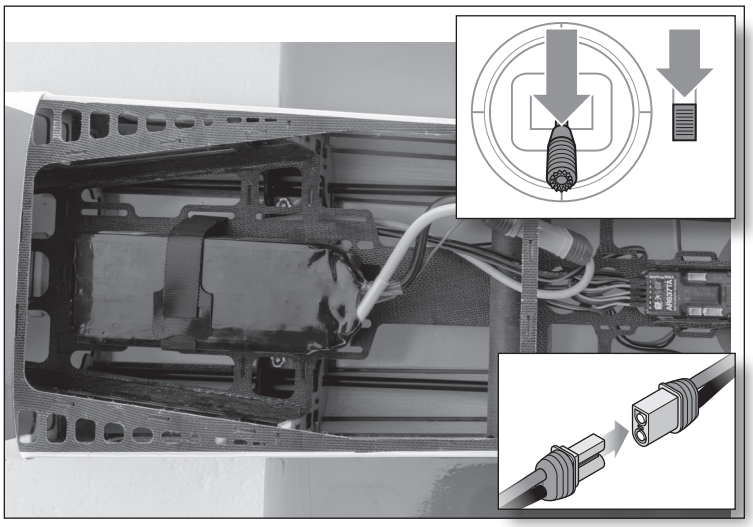


Battery Installation and ESC Arming *BNF-Basic*

The Spektrum™ 6S 4000mAh 50C G2 Smart Li-Po battery (SPMX46S50) is recommended. A 6S 3200-7000mAh LiPo battery with an IC5 or EC5 connector is required. Refer to the Optional Parts list for other suitable 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 pack to fit in the fuselage (approximately 530-1,000g).
Be sure the model balances at the recommended CG before flying.

⚠ **WARNING:** Always keep hands away from the propeller. When armed, the motor will turn the propeller in response to any throttle movement. Always engage throttle cut before approaching the aircraft any time a battery is connected.

1. Lower the throttle and throttle trim to the lowest settings. Power on the transmitter, then wait 5 seconds.
2. Pull back on the canopy latch.
3. Lift slightly up on the rear of the hatch and pull back to remove the hatch from the fuselage.
4. Install the fully charged battery in the middle of the battery compartment, as shown. Secure using the hook and loop strap.
5. Connect the battery to the ESC (the ESC is now armed).
6. Keep the aircraft immobile and away from wind or the system will not initialize.
   - The ESC will sound a series of tones.
   - An LED will light on the receiver.
   - If the ESC sounds a continuous double beep after the flight battery is connected, recharge or replace the battery.
7. Reinstall the hatch.



SAFE® Select Switch Designation *BNF Basic*

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.

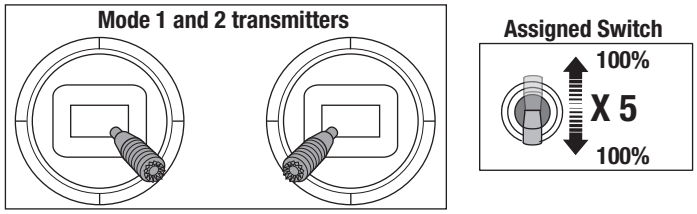
See your transmitter manual for more information about assigning a switch to a channel.

Assigning a Switch

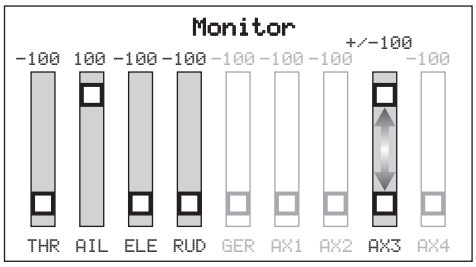
1. Power on the transmitter.
2. Power on the aircraft.
3. Hold both transmitter sticks to the inside bottom corners, and toggle the desired switch 5 times quickly (1 toggle = full up and down).
4. The control surfaces of the aircraft will move, indicating the switch has been selected.

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 *BNF Basic*

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.

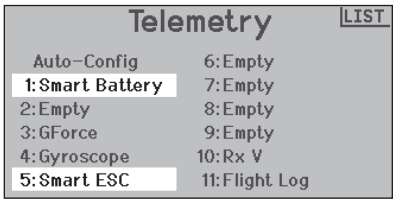
- RPM*
- Voltage
- Current
- Throttle
- FET Temperature
- BEC Temperature

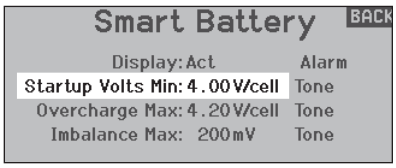
* During binding the transmitter will perform an auto configuration which will populate the telemetry page. You may need to change the telemetry values on those pages to suit this aircraft and your needs. If using the STF, these values are automatically applied.

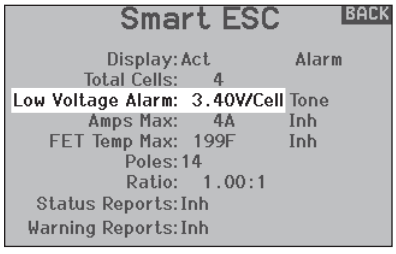
To enter the telemetry values:
(For iX series transmitters, you must select Save on each page)

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

Control Surface Direction

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

Elevator

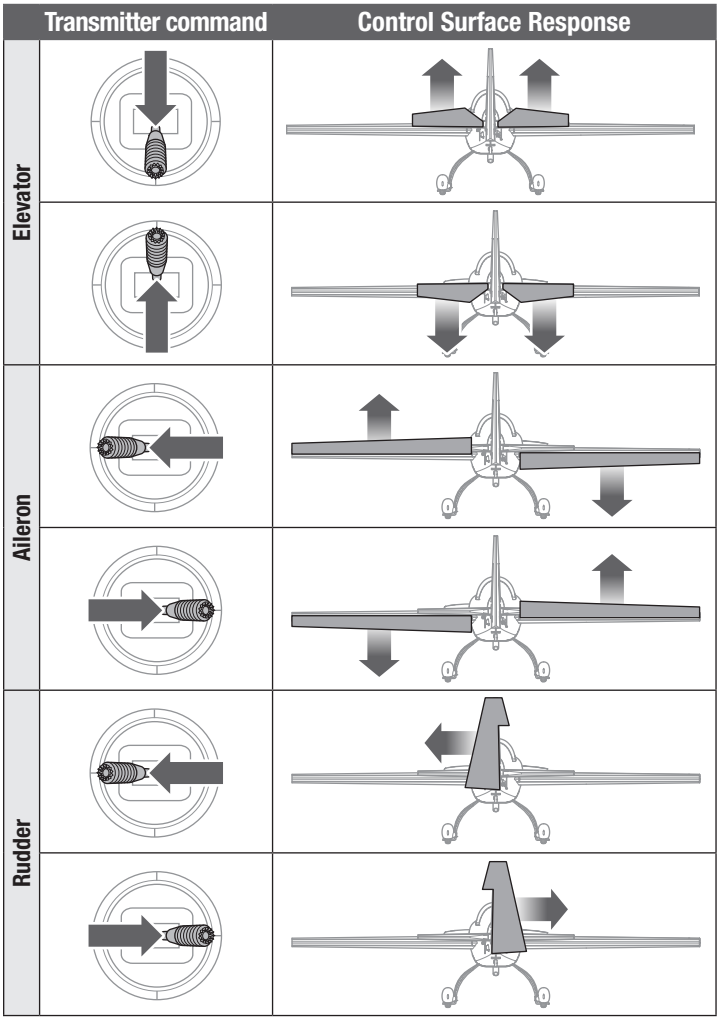
1. Pull the elevator stick back. The elevators should move up, which will cause the aircraft to pitch up.
2. Push the elevator stick forward. The elevators should move down, which will cause the aircraft to pitch down.

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.



AS3X+ Response Test

This test ensures that the AS3X+® control system is functioning properly. Assemble the aircraft and bind your transmitter to the receiver before performing this test.

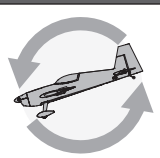
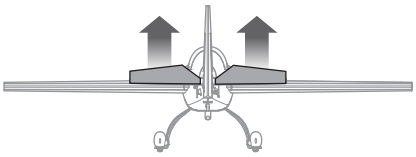
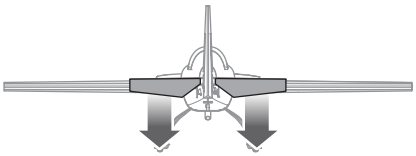
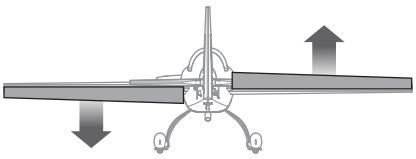
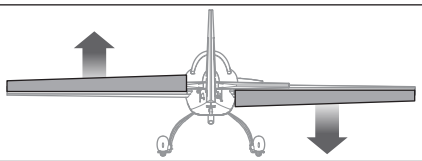
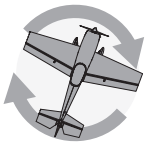
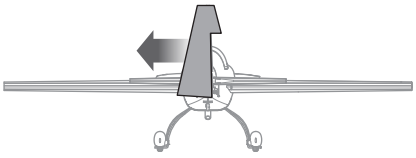
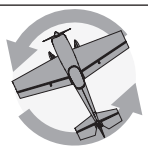
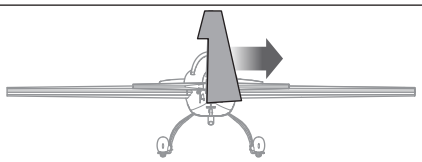
1. Raise the throttle just above 25%, then lower the throttle to activate AS3X+.

CAUTION: Keep all body parts, hair and loose clothing away from a moving propeller, as these items could become entangled.

2. Engage throttle cut.
3. Move the entire aircraft as shown and ensure the control surfaces move in the direction indicated in the graphic. If the control surfaces do not respond as shown, do not fly the aircraft. Refer to the receiver manual for more information.

Once the AS3X+ system is active, control surfaces may move rapidly. This is normal. AS3X+ remains active until the battery is disconnected.

Due to different effects of torque, lift, and drag some aircraft require trim changes with different speeds and throttle settings. Mixes may be preloaded into the receiver to compensate for these changes. The mixes become active the first time the throttle is raised above 25%. The control surfaces may be offset slightly at different throttle settings after the first time throttle is raised. In-flight trimming should be done at 80-100% throttle for best results.

	Aircraft movement	AS3X+ Reaction
Elevator		
		
Aileron		
		
Rudder		
		

Motor Direction *BNF Basic*

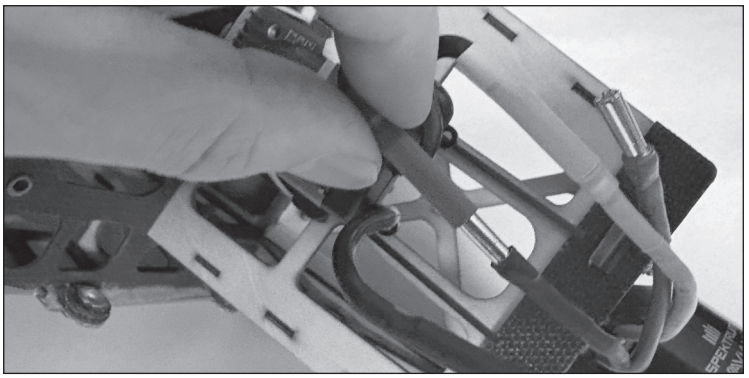
After installing your electronics, verify the motor is rotating the correct direction. It should rotate clockwise (viewed in the direction of flight).

If you need to reverse the motor direction, disconnect the battery first.

Reverse the motor direction by swapping any two of the three motor wires.

Secure the motor wires so they are out of the way, and not contacting the motor.

Motor direction can also be changed through the ESC setup screen in compatible Spektrum transmitters.



Propeller and Spinner 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.

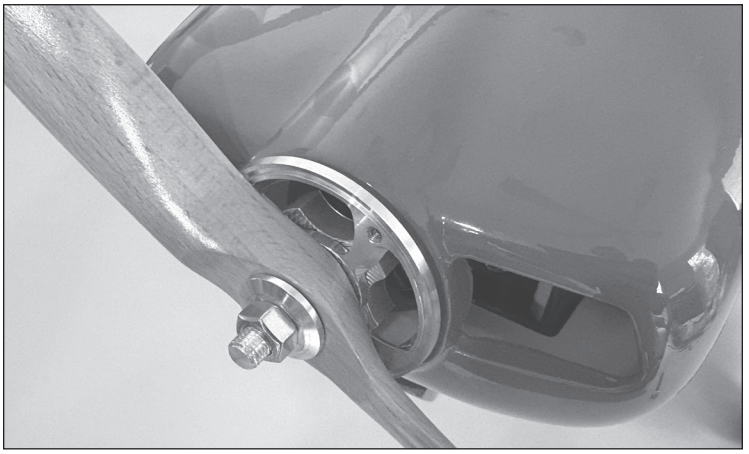
1. Install the spinner backplate on the prop adapter.
2. Install the propeller.
3. Install the washer, but do not tighten the propeller nut. The spinner locates to the backplate in a specific position, and the propeller must be oriented accordingly. Test fit the spinner and ensure the propeller blades are centered in the spinner cutouts. Allowing the spinner to contact the propeller may cause damage to the propeller, and could lead to failure of the propeller.
4. Tighten the nut using an adjustable or 1/2-inch wrench. Do not overtighten the prop nut as damage to the propeller or threads may result.
5. Install the spinner and secure with two M3 x 6mm screws using a Phillips screwdriver (PH1).

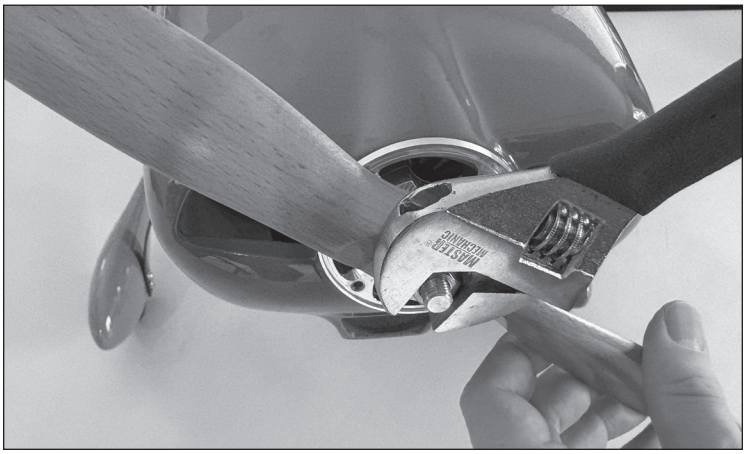
IMPORTANT: Tighten until secure, but avoid over tightening the spinner screws. The spinner cone may become deformed and not spin truly if over-tightened.

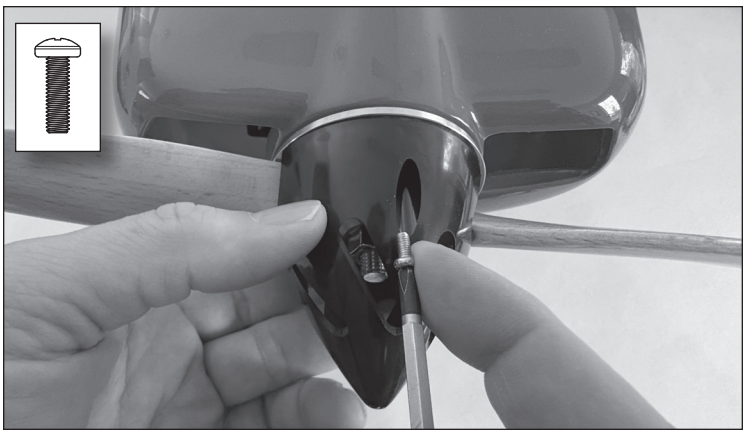
IMPORTANT: The 16 x 8E propeller is for 3D-style flying, with limited sustained use of full throttle. The optional 15 x 8E propeller (EFL-13362) is recommended for extended flying at high throttle settings.

⚠ **WARNING:** After installation, thoroughly test the propeller 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.

⚠ **WARNING:** Wooden propellers are subject to compression, and dimensional changes due to variations in environment. To avoid injury, check the security of the propeller regularly.







Dual Rates and Control Throws

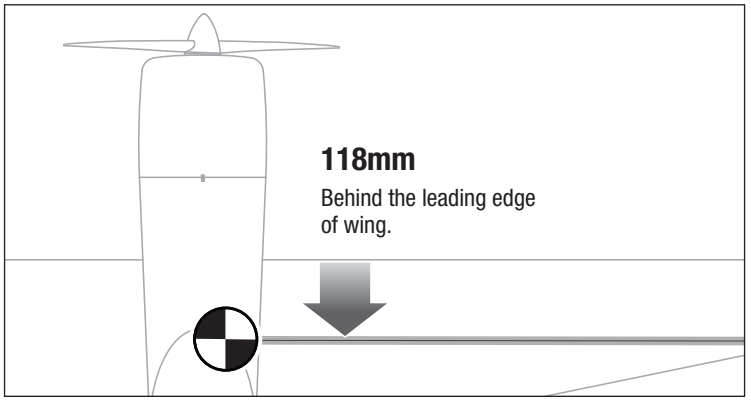
Program your transmitter to set the rates and control throws to the values given. These values have been tested and are a good starting point to achieve successful flight.

	High Rate	Low Rate
Aileron	▲ = 130mm (5.1 in) ▼ = 120mm (4.7 in)	▲ = 80mm (3.1 in) ▼ = 100mm (3.9 in)
Elevator	▲ = 130mm (5.1 in) ▼ = 130mm (5.1 in)	▲ = 100mm (3.9 in) ▼ = 100mm (3.9 in)
Rudder	▶ = 155mm (6.1 in) ◀ = 155mm (6.1 in)	▶ = 110mm (4.3 in) ◀ = 110mm (4.3 in)

Center of Gravity (CG)

The CG location is measured from the leading edge of the wing. The range is 104mm to 126mm behind the leading edge of the wing. We recommend setting the CG at 118mm for first flights.

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



Flying Tips and Repairs

Consult local laws and ordinances before choosing a flying location.

Flying Field

It is recommended 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

For your first flights, set your transmitter timer or a stopwatch to 5 minutes. Adjust your timer for longer or shorter flights once you have flown the model.

Place the aircraft in position for takeoff (facing into the wind). Select low rates for first takeoff and gradually increase the throttle to 3/4 to full and steer with the rudder. Pull back gently on the elevator and climb to a comfortable altitude.

Flying

Fly the airplane and trim it for level flight at 3/4 throttle. After landing, adjust the linkages mechanically to account for trim changes and then reset the trims to neutral. Ensure the aircraft will fly straight and level with no trim or sub-trim.

Landing

To land the aircraft, reduce the throttle to 1/4 and fly the airplane to about a foot above the ground. Reduce power and add back pressure on the elevator to flare the airplane. Avoid holding too much elevator after touchdown to prevent the plane from becoming airborne again. Gently steer with the rudder until the plane has slowed. Avoid sharp turns on the ground until the plane has slowed enough to prevent scraping the wing tips.

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 aircraft in direct sunlight or in a hot, enclosed area such as a car. Doing so can damage the aircraft.

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

Li-Po Cell Voltage Checker (SPMXBC100, sold separately).

Repairs

This model is constructed of a blend of materials, repairs should be made with adhesives suited to the location.

Use CA or epoxy on bare, carbon-reinforced wood, and fiberglass. Contact adhesive works best on foam panels.

The carbon-fiber landing gear is not easily repaired. If damaged, replacement is the best solution.

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.

SAFE Select Flying Tips *BNF Basic*

When flying in SAFE Select mode the aircraft will return to level flight any time the aileron and elevator controls are at neutral. Applying aileron or elevator control will cause the airplane to bank, climb or dive. The amount the stick is moved will determine the attitude the airplane flies. Holding full control will push the aircraft to the pre-determined bank and roll limits, but it will not go past those angles.

When flying with SAFE Select, it is normal to hold the control stick deflected with moderate aileron input when flying through a turn. To fly smoothly with SAFE Select, avoid making frequent control changes and don't attempt to correct for minor deviations. Holding deliberate control inputs will command the aircraft to fly at a specific angle, and the model will make all corrections to maintain that flight attitude.

When flying with SAFE Select, throttle will make the aircraft climb or descend. Full throttle will cause the aircraft to pitch up and climb slightly. Mid throttle will keep the airplane flying level. Low throttle will cause the airplane to descend slightly nose-down.

Return the elevator and aileron controls to neutral before switching from SAFE Select mode to AS3X+ mode. If you do not neutralize controls when switching into AS3X+ mode, the control inputs used for SAFE Select mode will be excessive for AS3X+ mode and the aircraft will react immediately.

Differences between SAFE Select and AS3X+ modes

This section is generally accurate but does not take into account flight speed, battery charge status, and other limiting factors.

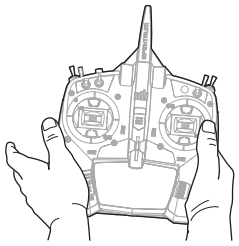
		SAFE Select	AS3X+
Control Input	Control stick is neutralized	Aircraft will self level	Aircraft will continue to fly at its present attitude
	Holding a small amount of control	Aircraft will bank or pitch to a moderate angle and maintain the attitude	Aircraft will continue to pitch or roll slowly
	Holding full control	Aircraft will bank or pitch to the predetermined limits and maintain the attitude	Aircraft will continue to roll or pitch rapidly
	Throttle	Full throttle: Climb Neutral: Level flight Low throttle: Descend	Throttle will not affect flight response.

In Flight Trimming *BNF Basic*

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 the 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.



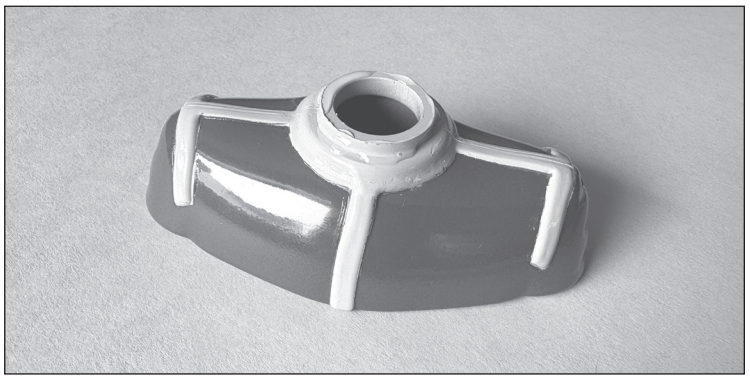
3 Seconds

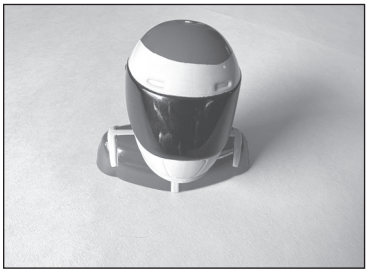
Post Flight

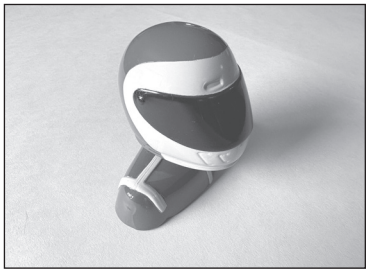
1. Disconnect the flight battery from the ESC (required for safety and battery life).
2. Power OFF the transmitter.
3. Remove the flight battery from the aircraft.
4. Recharge the flight battery.
5. Repair or replace all damaged parts.
6. Store the flight battery apart from the aircraft and monitor the battery charge.
7. Make note of the flight conditions and flight plan results, planning for future flights.

Optional Pilot Installation

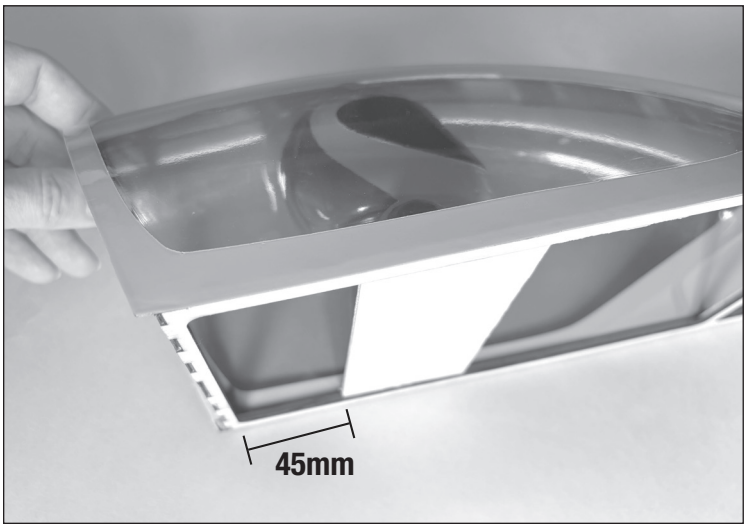
1. Apply medium CA or flexible adhesive to the neck of the pilot and secure the head in place.
2. Apply flexible adhesive to the base of the pilot and secure the pilot to the provided mounting base.

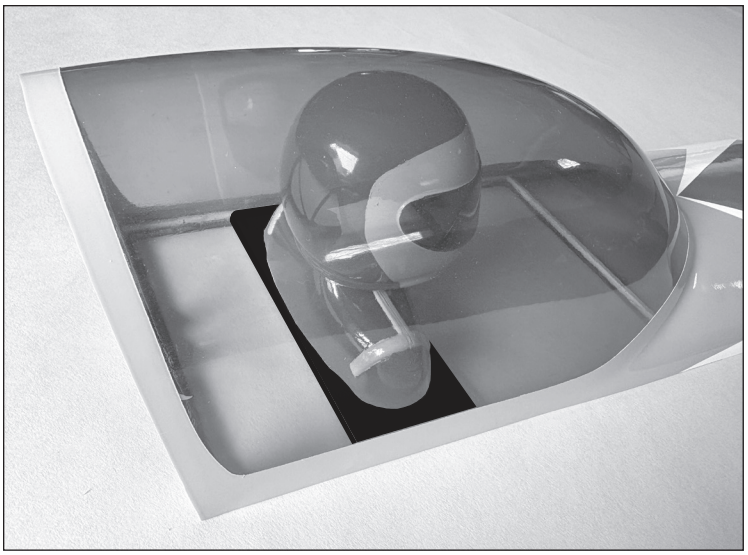






3. Measure 45mm from the edge of the back of the canopy, and secure the pilot assembly to inside of the canopy hatch lower frame. Use medium CA, or flexible adhesive. Adjust the position of the pilot so the base is fully engaged with the hatch bottom, but not deforming the hatch sides.





Troubleshooting Guide AS3X+ *BNF Basic*

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 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 low	Use recommended battery

Replacement Parts

Part #	Description
EFL-13351	Fuselage: Eratix 3D SWS 1.6m (64”)
EFL-13352	Left Wing: Eratix 3D SWS 1.6m (64”)
EFL-13353	Right Wing: Eratix 3D SWS 1.6m (64”)
EFL-13354	Canopy Hatch: Eratix 3D SWS 1.6m (64”)
EFL-13355	Stabilizer and Elevator: Eratix 3D SWS 1.6m (64”)
EFL-13356	Rudder: Eratix 3D SWS 1.6m (64”)
EFL-13357	Cowling: Eratix 3D SWS 1.6m (64”)
EFL-13358	Landing Gear: Eratix 3D SWS 1.6m (64”)
EFL-13359	Tailwheel Assembly: Eratix 3D SWS 1.6m (64”)
EFL-13360	Hardware Set: Eratix 3D SWS 1.6m (64”)
EFL-13361	Spinner: Eratix 3D SWS 1.6m (64”)
EFL-13363	Wheel Set: Eratix 3D SWS 1.6m (64”)
EFL-13364	Wing Latch Set: Eratix 3D SWS 1.6m (64”)
EFL-13365	Hinge Pin Set: Eratix 3D SWS 1.6m (64”)
EFL-13366	Pushrod Set: Eratix 3D SWS 1.6m (64”)
EFL-13367	Servo Arm Set: Eratix 3D SWS 1.6m (64”)
EFL-13368	Side Force Generators: Eratix 3D SWS 1.6m (64”)
EFL-13369	Wing and Stabilizer Tubes: Eratix 3D SWS 1.6m (64”)
EFL-13370	Wheel Pants Set: Eratix 3D SWS 1.6m (64”)
EFL-13371	Landing Gear Intersection Fairings: Eratix 3D SWS 1.6m (64”)
EFL-13372	Decal Sheet: Eratix 3D SWS 1.6m (64”)
EFL-13374	16 x 8E Propeller: Eratix 3D SWS 1.6m (64”)
EFL-13375	Wing Bags: Eratix 3D SWS 1.6m (64”)
SPMSA179	A179 42g High Voltage Metal-Geared Digital Servo
SPMSA180	A180 42g High Voltage Metal-Geared Digital Servo
SPMXAE1100	Avian 100A Smart Brushless ESC:
SPMXAM4740	Avian 5055-500Kv Brushless Outrunner Motor
SPM-1032	AR637T+ AS3X+ and SAFE Receiver

Recommended Items

Part #	Description
SPMR7110	DX7e+ 14-Channel Transmitter Only
SPMX46S50	6S 4000mAh 22.2V Smart G2 50C Battery; IC5
SPMXC2080	Spektrum S1100 AC Smart Charger, 1x100W

Optional Items

Part #	Description
EFL-13362	15 x 8E Wood Propeller: Eratix 3D SWS 1.6m (64”)
APC16080E	16 x 8E Propeller
APC15080E	15 x 8E Propeller
EFL-13373	Pilot Figure: Eratix 3D SWS 1.6m (64”)
SPM6730	Smart Charger Case
SPMXBC100	Smart Battery & Servo Tester
SPMXCA300	Smart Li-Po Bag, 16 x7.5 x 6.5 cm
SPMXC2020	S1200 G2 AC 1x200W Smart Charger
SPMX32006S50	3200mAh 6S 22.2V Smart 50C; IC5
SPMX40006S50	4000mAh 6S 22.2V Smart 50C; IC5
SPMX50006S50	5000mAh 6S 22.2V Smart 50C; IC5
SPMX76S30	7000mAh 6S 22.2V Smart 30C; IC5

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.

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.

According to FAA regulation, all unmanned aircraft over .55lbs (250 grams) flying in United States airspace are required to either fly within an FAA-Recognized Identification Area (FRIA) or continually transmit an FAA-registered remote identification from a Remote ID broadcast module, such as the Spektrum™ Sky™ Remote ID module (SPMA9500). Use the QR code to learn more about the FAA Remote ID regulations.

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.

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.

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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	

FCC Information

Contains FCC ID: BRWTIARLGTNG1

Supplier's Declaration of Conformity

Eratix 3D SWS 1.6m 64" (EFL-13350/EFL-13380)

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-TIARLGTNG1
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.

E328

Compliance Information for the European Union

EU Compliance Statement:
Eratix 3D SWS 1.6m 64" ARF (EFL-13380); Hereby, Horizon Hobby, LLC declares that the device is in compliance with the following: RoHS 2 Directive 2011/65/EU; RoHS 3 Directive - Amending 2011/65/EU Annex II 2015/863.

Eratix 3D SWS 1.6m 64" BNF Basic (EFL-13350); 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:
2402-2478 MHz/ 19.95dBm

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.