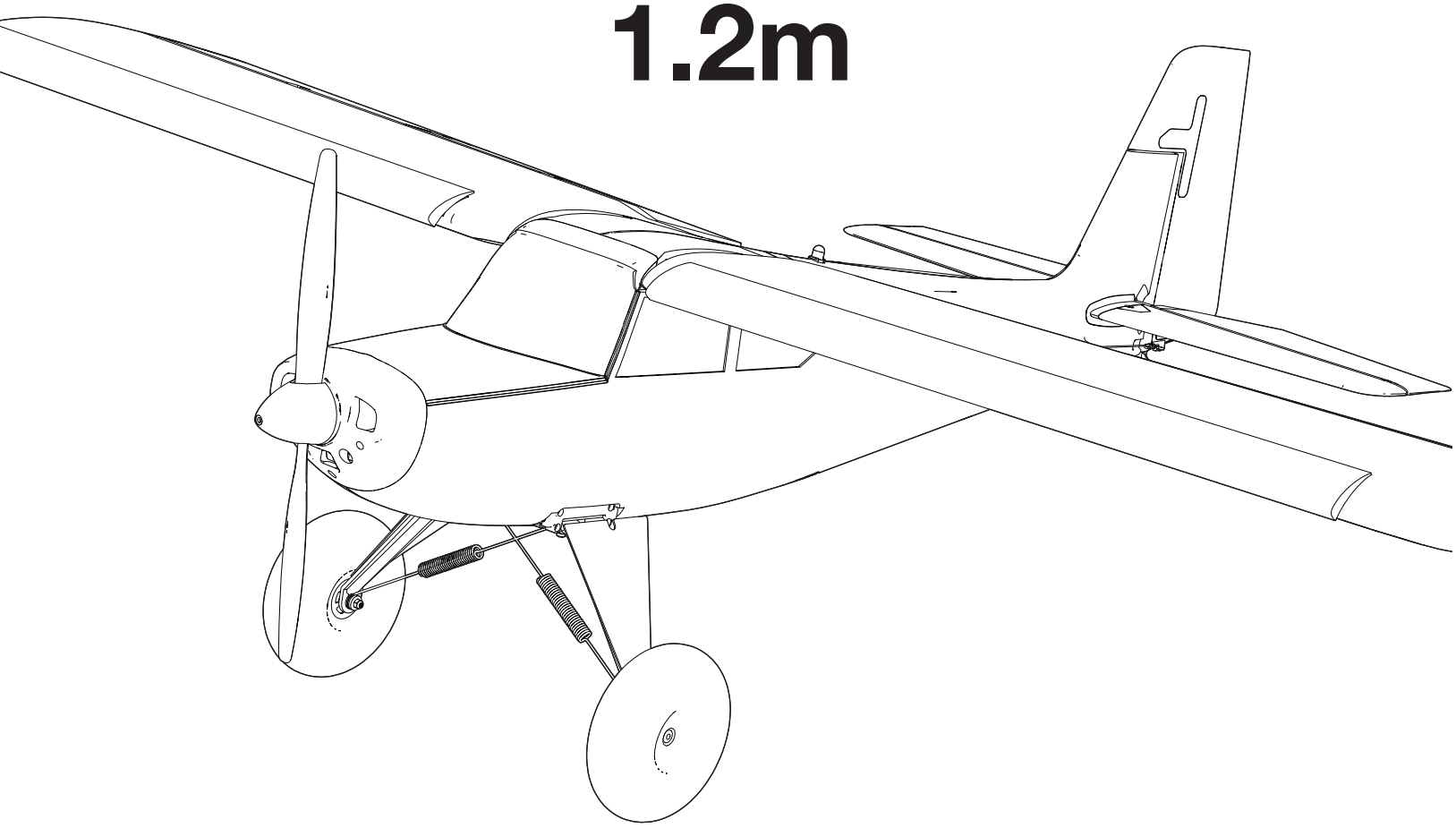
E-flite
ADVANCING ELECTRIC FLIGHT

Night Timber X Evolution 1.2m



Instruction Manual
Bedienungsanleitung
Manuel d'utilisation
Manuale di Istruzioni

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 — **EFL013850**

PNP PLUG-N-PLAY — **EFL013875**

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Created 12/24

HORIZON HOBBY

NOTICE

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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.

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Registration

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

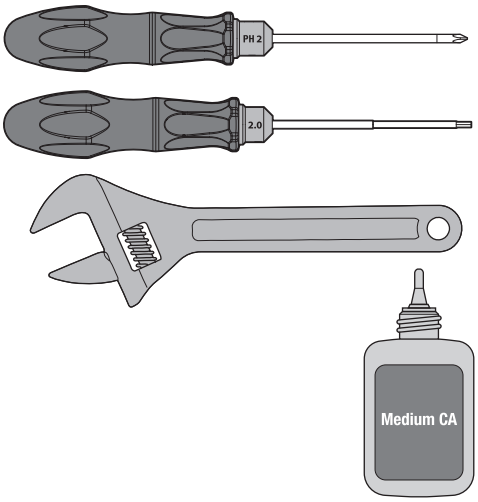
Table of Contents

Specifications	
Wingspan	47.5" (1206mm)
Length	41.5" (1054mm)
Weight	Without Battery: 54.7oz (1550g) With Recommended 4S 2200mAh 30C Battery: 63.9 oz (1810g)

Included Equipment	
Receiver	AR631+ DSMX 6-Channel AS3X+ & SAFE Receiver (SPM-1031) (BNF Only)
ESC	Avian™ 70-Amp Smart Lite Brushless ESC, 3S–6S with IC3 Connector (SPMXAE70E)
Motor	Brushless Outrunner Motor, 2815-900Kv 14-pole (SPMXAM0650)
Servos	**(2) Aileron:** 9g Sub-Micro MG Servo (SPMSA332) **(1) Elevator:** 9g Sub-Micro MG Servo (SPMSA332) **(1) Rudder:** 9g Sub-Micro MG Servo (SPMSA332) **(1) Right Flap:** 9g Sub-Micro MG Servo (SPMSA332) **(1) Left Flap:** 9g Sub-Micro MG Servo; Reversed (SPMSA332R)

Recommended Equipment	
Transmitter	Full range 5-7+Channel 2.4GHz w/ Spektrum DSM2/DSMX® Technology
Battery	4S 14.8V 2200mAh LiPo with IC3®™ or EC3™ Connector
Battery Charger	4-Cell Li-Po Battery Balancing Charger
Receiver	5+ Channel (AR631+ Recommended) (PNP Only)

Required Tools



- Phillips Screwdriver (PH#1)
- Hex Driver (2mm)
- Adjustable Wrench
- Medium CA Adhesive

SAFE® Select Technology (*BNF Basic*)

The BNF Basic version of this airplane includes SAFE Select technology which can offer an extra level of protection in flight. Use the following instructions to make the SAFE Select system active and assign it to a switch. When enabled, SAFE Select prevents the airplane from banking or pitching past predetermined limits, and automatic self-leveling keeps the airplane flying in a straight and level attitude when the aileron, elevator and rudder sticks are at neutral.

SAFE Select is enabled or disabled during the bind process. When the airplane is bound with SAFE Select enabled, a switch can be assigned to toggle between SAFE Select mode and AS3X+ mode. AS3X+ technology remains active with no bank angle limits or self leveling any time SAFE Select is disabled or OFF.

SAFE Select can be configured three ways;

- SAFE Select Off: Always in AS3X+ mode
- SAFE Select On with no switch assigned: Always in SAFE Select mode
- SAFE Select On with a switch assigned: Switch toggles between SAFE Select mode and AS3X+ mode

Auto Transmitter Setup

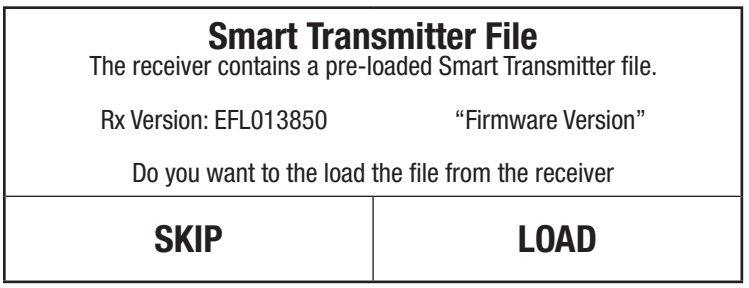
The AR631+ receiver, included with your Night Timber X Evolution, is programmed with a version of AS3X+/SAFE. This includes a Smart Transmitter File, with the setup developed specifically for the Night Timber X Evolution. This allows you to quickly import the settings for your transmitter, directly from 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:

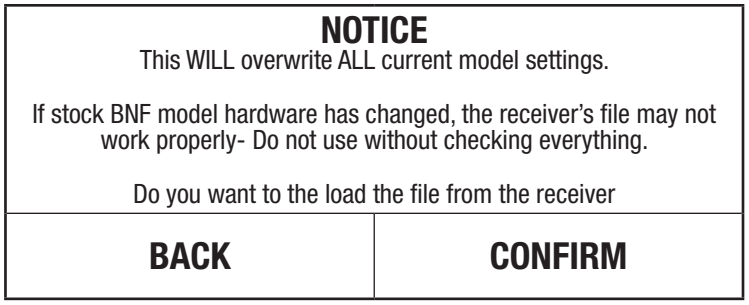
1. Power ON the transmitter.
2. Create a new blank model file on your transmitter.
3. Power ON the receiver.
4. Press the bind button on the receiver.
5. Put the transmitter into bind mode. The model will bind normally.
6. Once binding is complete the download screen will appear as shown at the right.
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 a new "blank" model it will simply populate the transmitter parameters of the Night Timber X Evolution into the selected model and rename it Night Timber X Evolution.

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 information will be loaded automatically.



Once loading is complete the radio will return to the home screen, and you will see "Night Timber X Evolution BNF-B EFL013850".

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

Pre-Loaded Transmitter File Operation Notes

Flight Modes Active with Flap System
The imported file activates Flight Modes, setting them to the Flap switch (**D**). It also changes the trim setting from Common, to Flight Mode. This allows aileron, elevator, and rudder trims to be separately adjusted for each flap setting. In-flight trim for all three axes is now independent, which provides the ability to precisely trim the model for each flap position.

Trim for each Flight Mode Switch (D) position:

POS 0: Trim all three axes for flaps up (normal)
POS 1: Trim all three axes for partial flaps (take-off)
POS 2: Trim all three axes for full flaps (landing)

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. This system only functions when using Smart batteries. If you are not using a Smart battery, set your flight timer to monitor your flight time.

Manual Transmitter Setup

IMPORTANT: After you set up your model, always rebind the transmitter and receiver to set the desired failsafe positions.

SAFE Select is best enabled via Forward Programming. SAFE® Select technology can be assigned to any open switch (2 or 3 position) controlling a channel (5–9) on your transmitter. Refer to the safe select designation section of this manual to assign safe select to your desired transmitter switch.

To use the FLAP channel for the SAFE Select switch the values must be set to +100 and -100 and the speed set to 0 temporarily to assign the safe switch in the flap system menu. Then change the flap systems values back to the listing in the transmitter setup. See the SAFE Select Switch Designation section of this manual to assign the switch for SAFE Select.

For the first flight, set the flight timer to 4 minutes when using a 4S 2200mAh battery. Adjust the time after the initial flight.

Telemetry Settings	
Rx V : Min Rx V	4.2V
Smart ESC : Low Voltage Alarm	3.4V
Smart Battery : Startup Volt Minimum	4.0V
Motor Pole Count	14

Dual Rates

Attempt your first flights in low rate. For landings, use high rate elevator.

NOTICE: To ensure AS3X+ technology functions properly, do not lower rate values below 50%. If less control deflection is desired, manually adjust the position of the pushrods on the servo arm.

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

Exponential

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

NX Series Transmitter Setup

1. Power ON your transmitter, click on scroll wheel, roll to **System Setup** and click the scroll wheel. Select ***YES***.
2. Go to **Model Select** and choose ***Add New Model*** near the bottom of the list. Select ***Airplane Model Type*** by choosing airplane image, select ***Create***.
3. Set **Model Name:** Input a name for your model file.
4. Go to **Aircraft Type** and scroll to the wing selection, choose **Wing: *1 Ail 1 Flap*** **Tail: *Normal***
5. Select **Main Screen**, Click the scroll wheel to enter the **Function List**.
6. Go to **D/R (Dual Rate) and Expo** menu to set **D/R** and **Expo**.
7. Set **Rates and Expo: *Aileron***
   Set **Switch: *Switch F***
   Set **High Rates: *100%*, Expo *30%*** — **Low Rates: *70%*, Expo *20%***
8. Set **Rates and Expo: *Elevator***
   Set **Switch: *Switch C***
   High Rates: *100%,* Expo *30%* — **Low Rates *70%,* Expo *20%***
9. Set **D/R (Dual Rate) and Expo: *Rudder***
   Set **Switch**: ***Switch G***
   High Rates: *100%,* Expo *30%* — **Low Rates *70%,* Expo *20%***
10. Set **Throttle Cut**; **Switch: *Switch H,* Position: *-100%***
11. Select **Flap System**
    Set **Switch: *Switch D***
    Set **Flaps: POS 0: -100%, POS 1: 0%, POS 2: 100%**
    Set **Elev: POS 0: 0%, POS 1: 17%, POS 2: 26%**
    Set **Speed: 2.0**

DX Series Transmitter Setup

1. Power ON your transmitter, click on scroll wheel, roll to **System Setup** and click the scroll wheel. Select ***YES***.
2. Go to **Model Select** and choose ***Add New Model*** at the bottom of the list. The system asks if you want to create a new model, select ***Create***.
3. Set **Model Type:** Select ***Airplane Model Type*** by choosing the airplane. The system asks you to confirm model type, data will be reset. Select ***YES***.
4. Set **Model Name:** Input a name for your model file.
5. Go to **Aircraft Type** and scroll to the wing selection, choose **Wing: *1 Ail 1 Flap*** **Tail: *Normal***
6. Select **Main Screen**, Click the scroll wheel to enter the **Function List**.
7. Set **D/R (Dual Rate) and Expo: *Aileron***
   Set **Switch: *Switch F***
   Set **High Rates: *100%*, Expo *30%*** — **Low Rates: *70%*, Expo *20%***
8. Set **D/R (Dual Rate) and Expo: *Elevator***
   Set **Switch**: ***Switch C***
   High Rates: *100%,* Expo *30%* — **Low Rates *70%,* Expo *20%***
9. Set **D/R (Dual Rate) and Expo: *Rudder***
   Set **Switch**: ***Switch G***
   High Rates: *100%,* Expo *30%* — **Low Rates *70%,* Expo *20%***
10. Set **Throttle Cut**; **Switch: *Switch H,* Position: *-100%***
11. Select **Flaps**
    Set **Switch**: ***Switch D***
    Set **Flaps: POS 0: -100%, POS 1: 0%, POS 2: 100%**
    Set **Elev: POS 0: 0%, POS 1: 17%, POS 2: 26%**
    Set **Speed: 2.0**

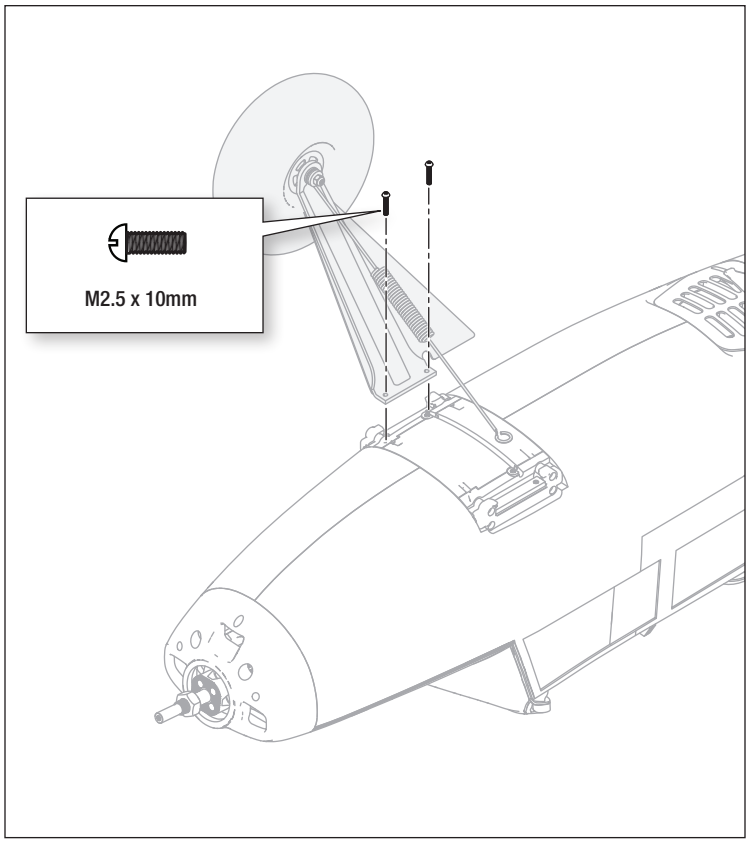
iX Series Transmitter Setup
1. Power ON your transmitter and begin once the Spektrum AirWare app is open. Select the orange pen icon in the screen's upper left corner, the system asks for permission to **Turn Off RF**, select ***PROCEED***.
2. Select the three dots in the upper right corner of the screen, select ***Add a New Model***.
3. Select **Model Option**, choose ***DEFAULT***, select ***Airplane***. The system asks if you want to create a new acro model, select ***Create***.
4. Select the last model on the list, named **Acro**. Tap on the word Acro and rename the file to a name of your choice.
5. Press and hold the back arrow icon in the upper left corner of the screen to return to the main screen.
6. Go to the **Model Setup** menu. Select **Aircraft Type**. The system asks for permission to **Turn Off RF**, select ***PROCEED***. Touch the screen to select wing. Select ***1 Ail 1 Flap***.
7. Press and hold the back arrow icon in the upper left corner of the screen to return to the main screen.

iX Series Transmitter Setup
8. Go to the **Model Adjust** menu.
9. Set **Dual Rates and Expo:** Select ***Aileron*** Set **Switch:** ***Switch F*** Set **High Rates:** ***100%*****, Expo** ***30%*** **— Low Rates:** ***70%*****, Expo** ***20%***
10. Set **Dual Rates and Expo:** Select ***Elevator*** Set **Switch:** ***Switch C*** **High Rates:** ***100%,*** **Expo** ***30%*** **— Low Rates** ***70%,*** **Expo** ***20%***
11. Set **D/R (Dual Rate) and Expo:** ***Rudder*** Set **Switch**: ***Switch G*** **High Rates:** ***100%,*** **Expo** ***30%*** **— Low Rates** ***70%,*** **Expo** ***20%***
12. Select **Flap System** Set **Switch:** ***Switch D*** Set **Flaps: POS 0: -100%, POS 1: 0%, POS 2: 100%** Set **Elev: POS 0: 0%, POS 1: 17%, POS 2: 26%** Set **Speed: 2.0**
13. Set **Throttle Cut**; **Switch:** ***Switch H,*** **Position:** ***-100%***

Model Assembly

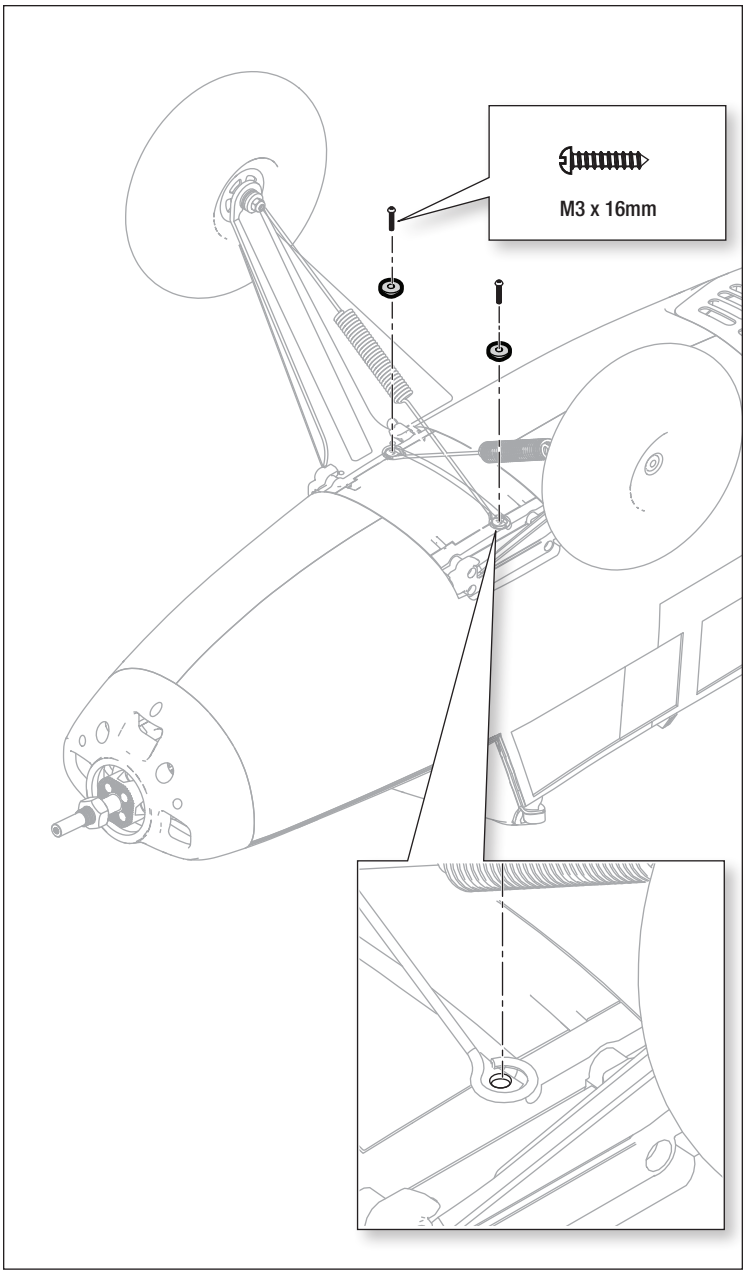
Landing Gear Installation

1. Insert the left landing gear assembly into the pocket on the side of the fuselage as shown. The landing gear legs mount to the aluminum block which can pivot in the pocket.
2. Thread the two M2.5 x 10mm machine screws through the landing gear leg into the threaded holes in the aluminum pivot block.
3. Repeat the process to install the right landing gear assembly.



Mount the Spring Assemblies to the fuselage

1. The landing gear springs mount to the plastic bracket in the fuselage between the landing gear legs. Align the looped end of the spring with the mounting hole in the fuselage.
2. Install the two M3 x 16mm self tapping screws and 3mm x 6mm x 10mm brass stepped washers to secure the landing gear springs in place.

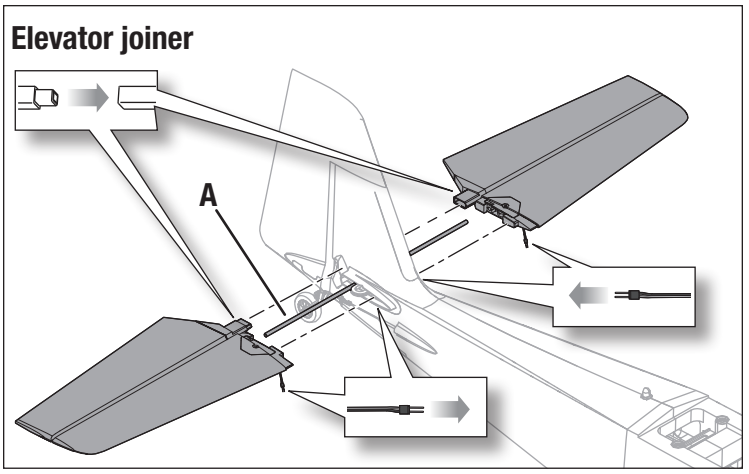


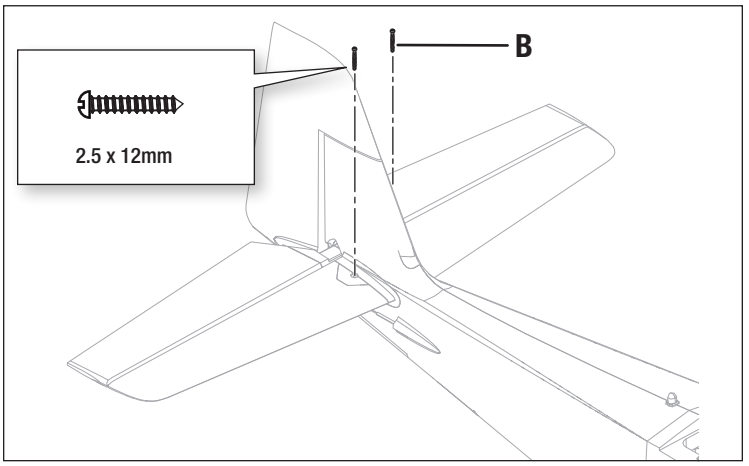
Light and Heavy Stabilizer Joiners

The Night Timber X Evolution includes two stabilizer joiners; a light composite joiner, and a heavier steel joiner. For sedate flying and maximum stability in general flight, use the light joiner to keep the center of gravity (CG) at the front of the recommended CG range. For maximum performance in high-alpha maneuvers, use the heavy joiner to shift the CG to the rear of the recommended range.

Horizontal Stabilizer Installation

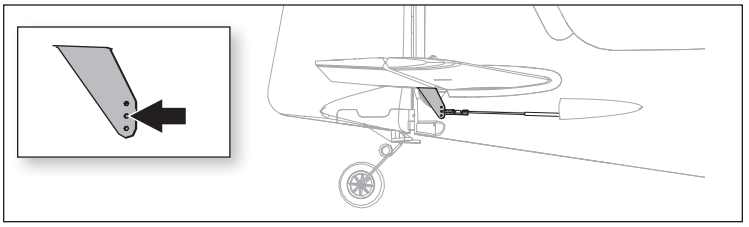
1. Slide the horizontal stabilizer joiner (**A**) into the hole in the rear of the fuselage.
2. Install the (left and right) horizontal stabilizer halves as shown. Ensure the control horn faces down, and the elevator joiner fully engages.
3. Connect the internal LED two-pin connector to the ports where the horizontal stabilizer meets the fuselage. Note the positive (+) and negative (-) polarity marks on the stabilizer socket.
4. Secure the horizontal stabilizer halves in place using the two included 2.5 x 12mm self tapping screws (**B**).

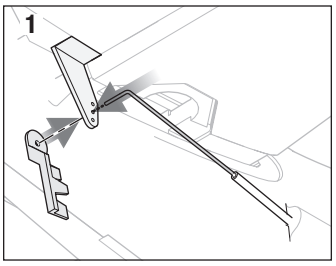


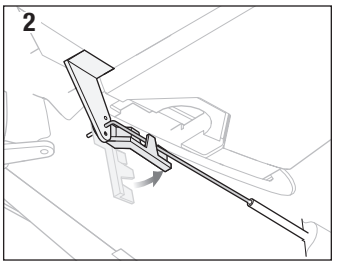


Elevator Pushrod Keeper Installation

1. Insert the end of the elevator pushrod with the 90° bend in the middle hole of the control horn and insert the pushrod into the hole of the pushrod keeper.
2. Rotate the pushrod keeper and press into place on the pushrod until it clicks into position.

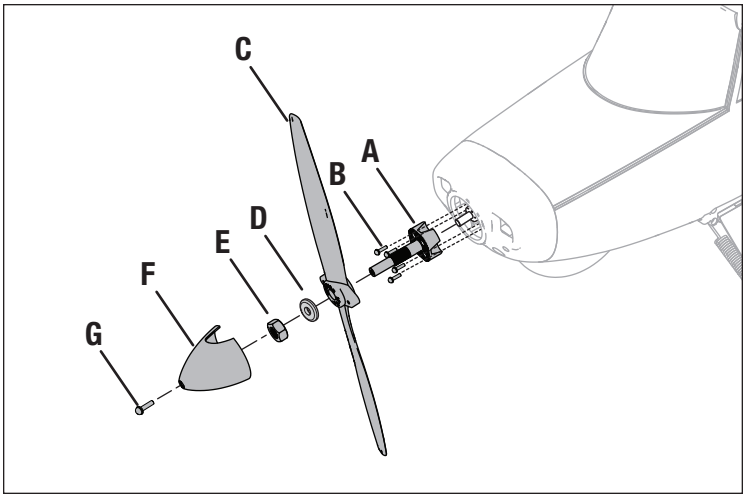






Propeller Installation

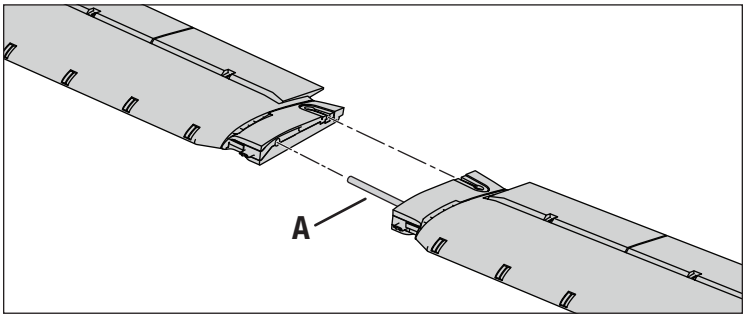
1. Slide the propeller adapter (**A**) onto the motorshaft, and secure using the four M2.5 x 8mm screws (**B**). Tighten the screws using a 2mm hex wrench.
2. Slide the propeller (**C**), propeller M6 washer (**D**), and propeller nut M6 (**E**) onto the propeller adapter.
3. Tighten the propeller nut using an adjustable wrench.
4. Slide the spinner (**F**) onto the shaft in front of the propeller.
5. Secure the spinner with the M3 x 8 spinner screw (**G**).



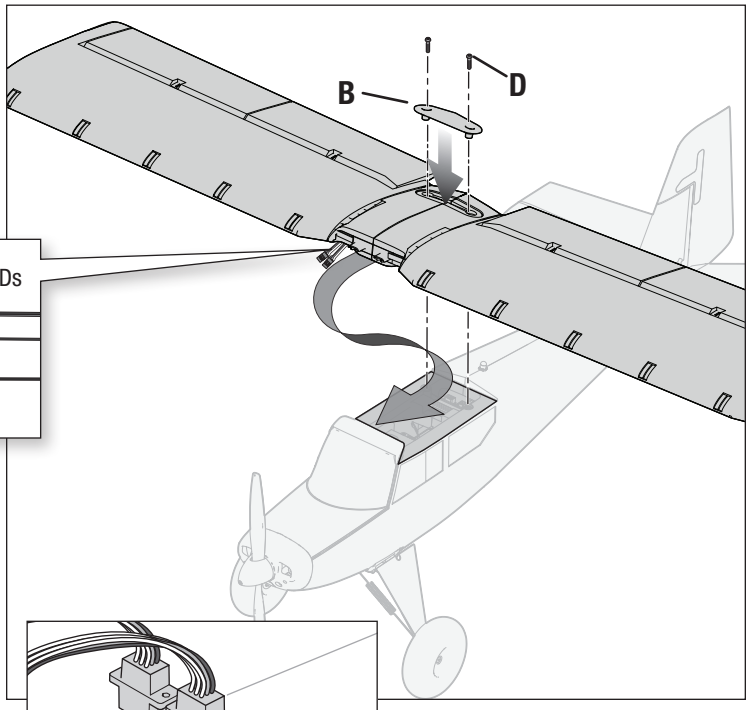
Wing Assembly

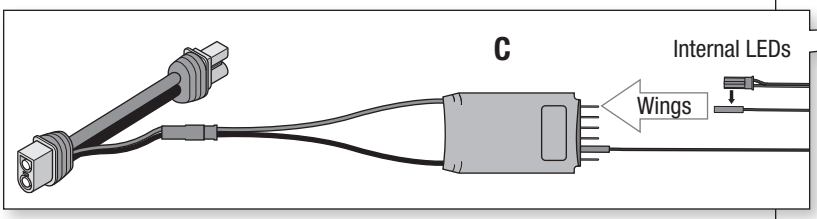
1. Insert the 10mm x 600mm wing joiner tube (**A**) and slide the left and right wing halves together, as shown.
2. Secure the wing together using the plastic wing bracket (**B**).

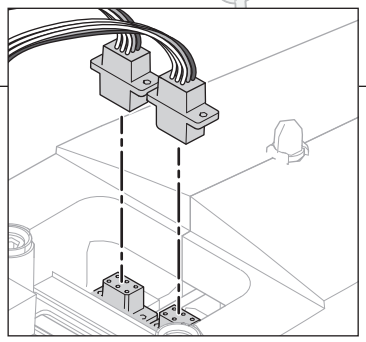
TIP: If it is necessary to remove the wing from the aircraft during transportation or storage, you can separate the wing panels, and store the wing tube in the storage clip between the motor connectors inside the fuselage. When inserting the wing tube in the clip, be careful not to damage any wiring with in the fuselage.



3. Insert the connectors from the wing servos into the sockets in the fuselage.
4. Connect the internal LED two-pin connectors from the wings to the LED regulator (**C**) as shown. The LED connectors can be installed in any port of the regulator.
5. Align the wing with the fuselage and secure in position using the included M6 x 30mm nylon wing bolts (**D**).







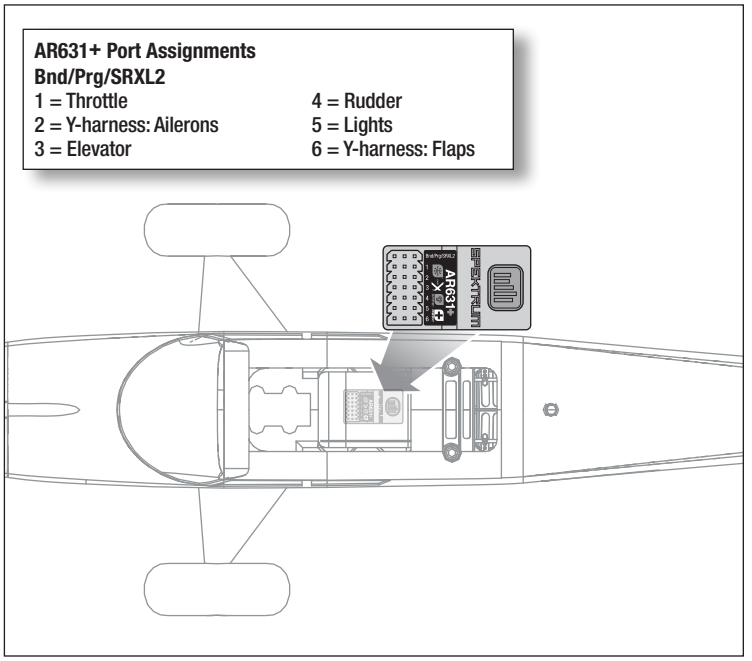
Receiver Installation PNP

The recommended receiver for this aircraft is the Spektrum AR631+. If you choose to install a different receiver, ensure that it is at least a 6-channel full range receiver. Refer to the manual of your chosen receiver for correct installation and operation instructions.

AR631+ Installation

1. Mount the receiver parallel to the length of the fuselage as shown. Use double-sided servo tape.
2. Attach the appropriate control surfaces to the their respective ports on the receiver using the chart in the illustration.

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



Center of Gravity (CG)

WARNING: Install the battery but do not connect it to the ESC while checking the CG. Personal injury may result.

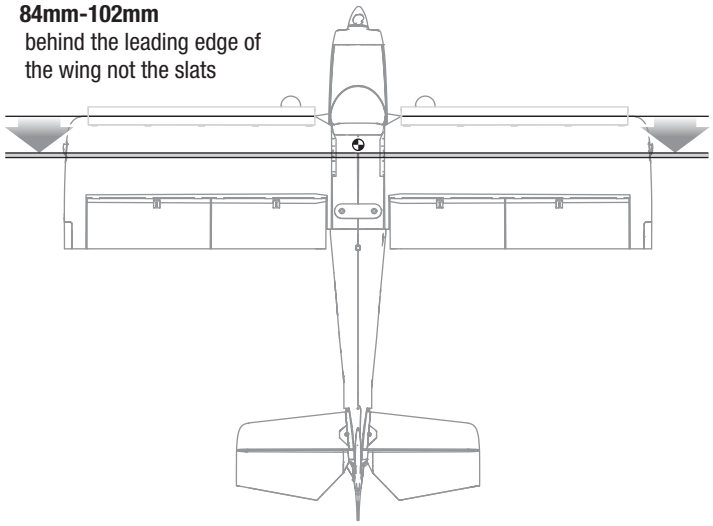
The CG range is 93mm +/- 9mm behind the leading edge of the wing not the slats. This CG location has been determined with the recommended 4S 2200mAh Li-Po battery SPMX224S30.

The CG location is adjusted by moving the battery pack forward or backward in the battery compartment.

A pocket in the rear of the fuselage under the horizontal stabilizer provides a space for extra tail weight for pilots wanting to push the 3D capabilities to the limit. Two pcs of 18g metal weights are included along with a 54mm x 14mm piece of tape to cover the weights after they are glued in place.

Forward CG Location: 89mm +/- 5mm back from the leading edge with the carbon horizontal stabilizer joiner

AFT CG Location: 97mm +/- 5mm back from the leading edge with the steel horizontal stabilizer joiner for maximum 3D performance.



Battery Installation and ESC Arming

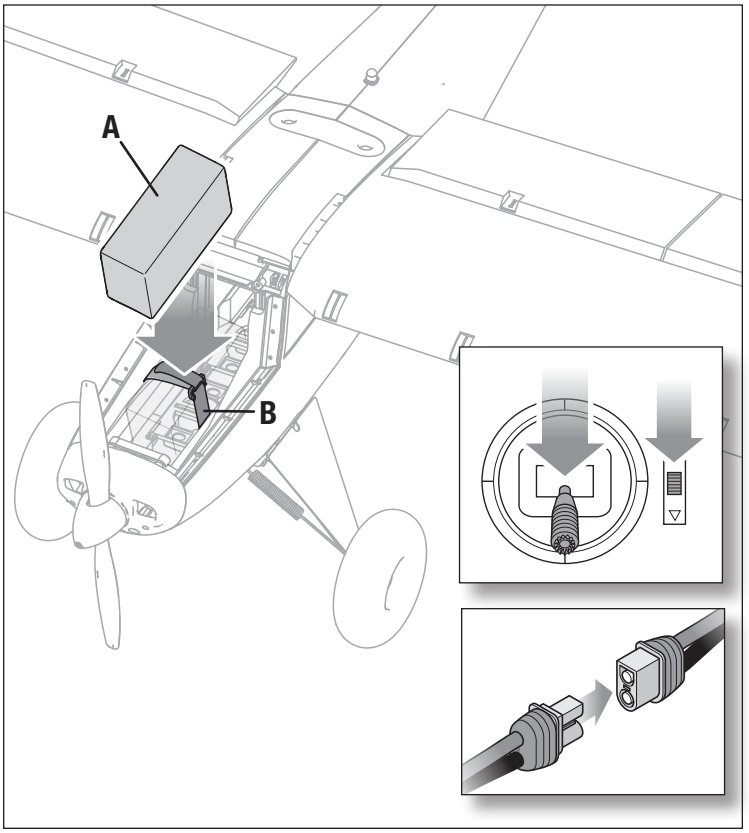
The Spektrum 2200mAh 14.8V 4S 30C Li-Po battery (SPMX224S30) is recommended. Refer to the Optional Parts List for other recommended batteries. If using a battery other than those listed, the battery should be within the range of capacity, dimensions and weight of the Spektrum Li-Po battery packs to fit in the fuselage. 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.

1. Lower the throttle and throttle trim to the lowest settings. Power on the transmitter, then wait 5 seconds.
2. Remove the battery hatch.
3. For added security, apply the loop side (soft side) of the optional hook and loop tape to the bottom of your battery, and the hook side to the battery tray.
4. Install the fully charged battery (**A**) in the center of the battery compartmant as shown. Position battery forward or aft for your desired CG. Secure using the hook and loop straps (**B**).
5. Connect the battery to the ESC.
6. Keep the aircraft immobile, upright, and away from wind or the system will not initialize and arm.
   - The Avian Smart ESC will sound a tone every two seconds until the receiver initializes. it will then sound either 3 or 4 tones in quick succession indicating the battery cell count, and a double tone indicating it is initialized.
   - An LED will illuminate on the receiver when it is initialized

If the ESC sounds a continuous beep after the receiver is initialized, recharge or replace the battery.

7. Reinstall the battery hatch.



General Binding Tips and Failsafe

- 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 red 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 / Enable or Disable SAFE Select

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.

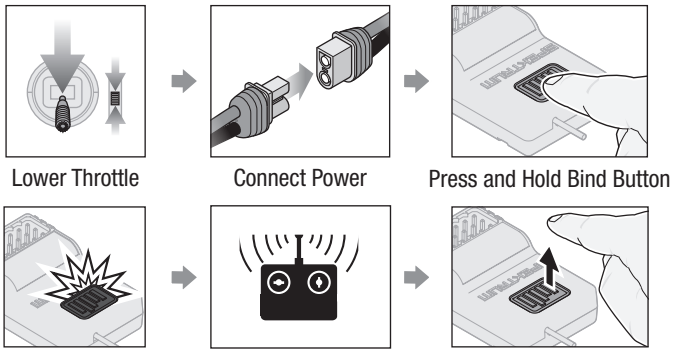
IMPORTANT: Move the transmitter flight controls (rudder, elevators, and ailerons) and the throttle trim to neutral. Move the throttle to low before and during binding. This process defines the failsafe settings.

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

SAFE Select can also be enabled via Forward Programming.

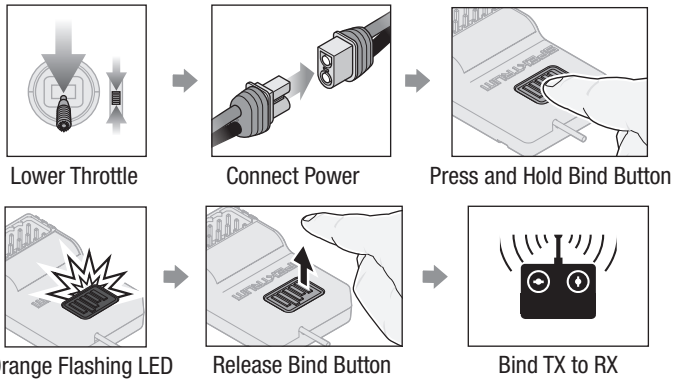
Using The Bind Button...

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.

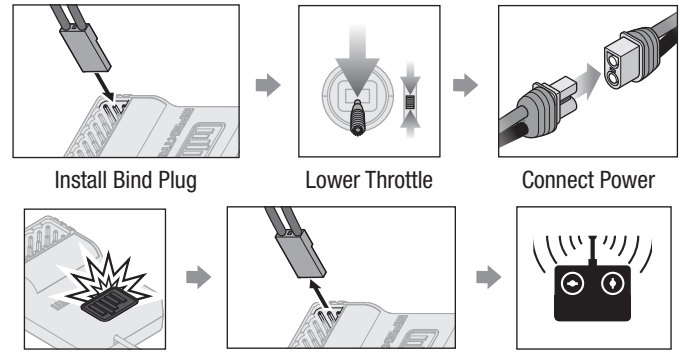
To Disable SAFE Select



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

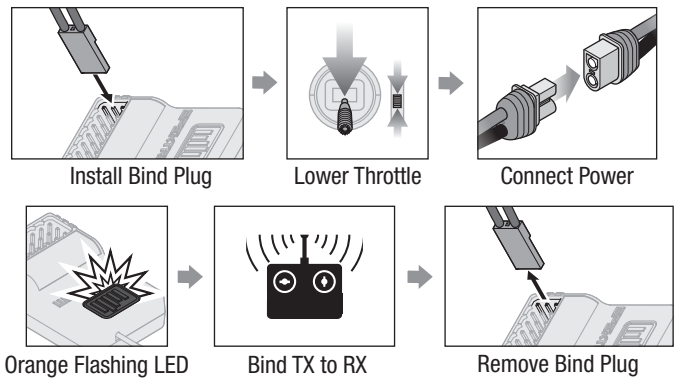
Using The Bind Plug...

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.

Differences Between SAFE 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

SAFE® Select Switch Designation

SAFE® Select technology can be easily assigned to any open switch (2 or 3 position) on your transmitter. With this feature, you have the flexibility to enable or disable the technology while in flight.

IMPORTANT: Before assigning your desired switch, ensure that the travel for that channel is set at 100% in both directions and the aileron, elevator, rudder and throttle are all on high rate with the travel at 100%. Turn throttle hold OFF if it is programmed in the transmitter.

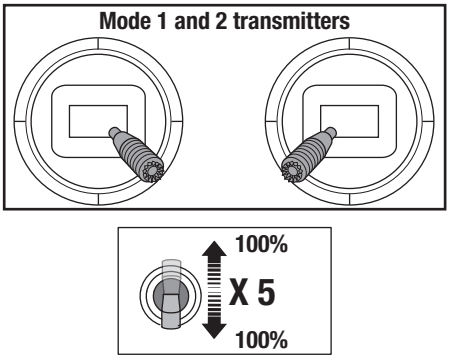
CAUTION: Keep all body parts well clear of the propeller, and keep the aircraft securely restrained in case of accidental throttle activation.

Assigning a switch

1. Bind the aircraft correctly to activate SAFE Select. This will allow the system to be assigned to a switch.
2. Hold both transmitter sticks to the inside bottom corners and toggle the desired switch 5 times (1 toggle = full up and down) to assign that switch. 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 if desired.

TIP: SAFE Select is assignable on any unused Channels 5–9.



Control Surface Direction Test

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

Elevator

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

Ailerons

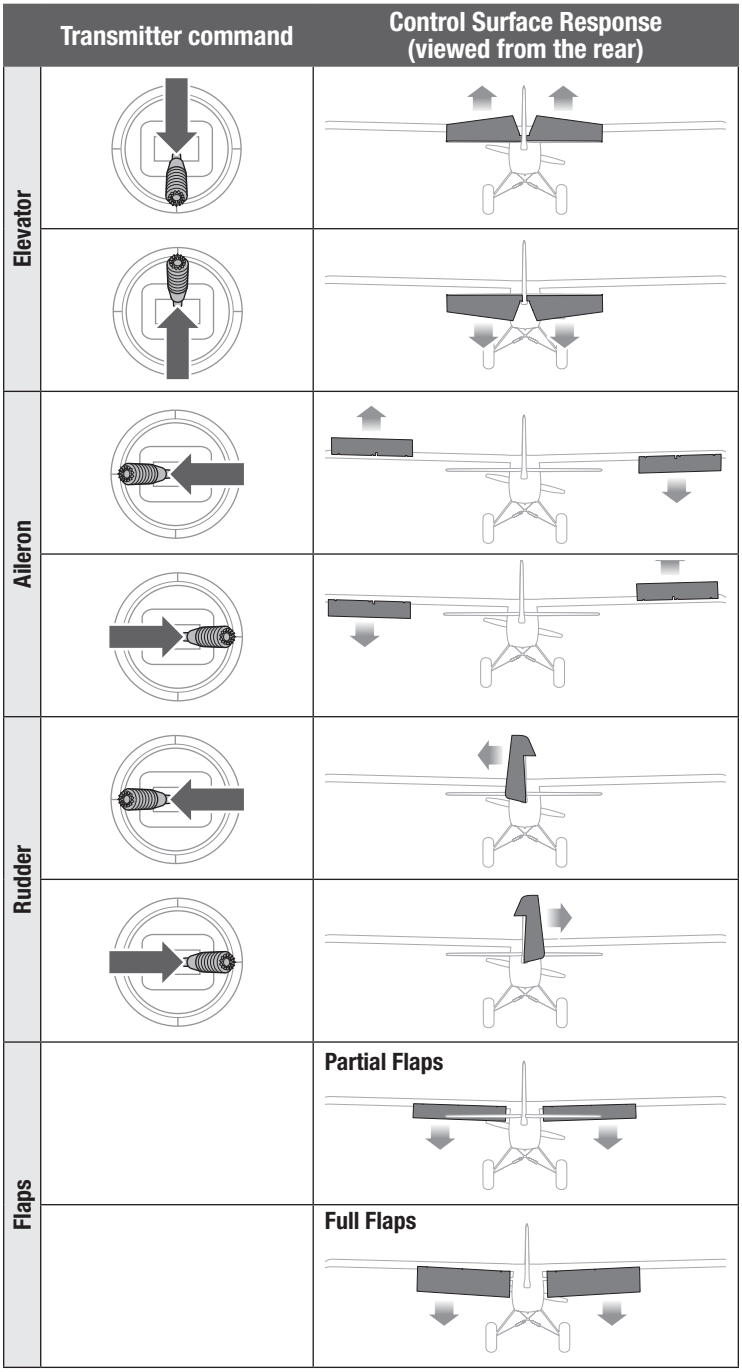
1. Move the aileron stick to the left. The left aileron should move up and the right aileron down, which will cause the aircraft to bank left.
2. Move the aileron stick to the right. The right aileron should move up and the left aileron down, which will cause the aircraft to bank right.

Rudder

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

Flaps

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



Control Surface Centering

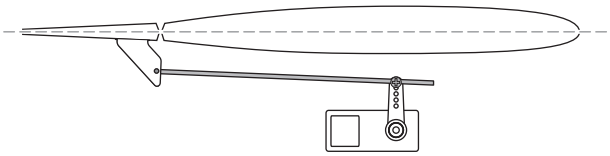
After assembly and transmitter setup, confirm that the control surfaces are centered. If the control surfaces are not centered, mechanically center the control surfaces before flying.

NOTICE: The model must be powered and bound to the transmitter in AS3X+ mode, with the throttle left at zero. When enabled, SAFE mode is active at power up. AS3X+ mode is activated when the throttle is raised above 25% for the first time after being powered on.

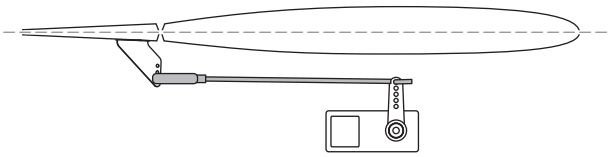
It is normal for the control surfaces to respond to aircraft movement if the aircraft is in AS3X+ or SAFE modes.

1. Verify the trims and subtrims on your transmitter are zero.
2. Power the model in AS3X+ mode and leave the throttle at zero.
3. **Rudder-** Align the rudder with the vertical stabilizer. If adjustment is required, loosen the screw lock connector to change the length between the z-bend and the servo arm for the rudder.
4. **Ailerons-** Center the ailerons by aligning the outboard end of the aileron with the trailing edge of the wing tip. If adjustment is required, rotate the clevis to change the length between the z-bend and the control horn.
5. **Flaps-** Center the flaps by aligning the outboard end of the flap with the inboard end of the aileron. If adjustment is required, rotate the clevis to change the length between the z-bend and the control horn.
6. **Elevator-** Center the elevator with the horizontal stabilizer. If adjustment is required, loosen the screw lock connector to change the length between the servo arm and control horn.

Rudder, Elevator



Ailerons, Flaps

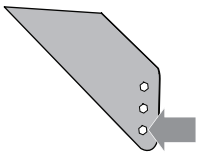
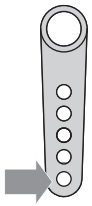
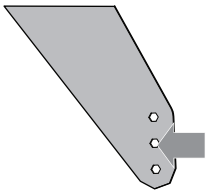
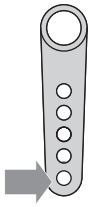
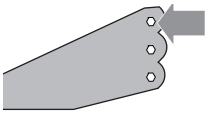
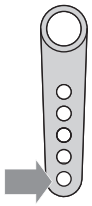
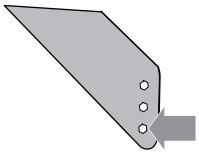
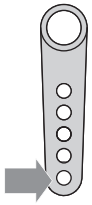


Control Horn and Servo Arm Settings

The table to the right shows the factory settings for the control horns and servo arms. Fly the aircraft at factory settings before making changes.

NOTICE: If control throws are changed from the factory settings, the AR631+ gain values may need to be adjusted. Refer to the Spektrum AR631+ manual for adjustment of gain values.

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

Factory Setting	Control Horns	Servo Arms
Aileron		
Elevator		
Rudder		
Flaps		

Dual Rates and Control Throws

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

CAUTION: Do not use flaps when the landing gear are not installed. Damage to the flaps and/or the flap servos may result.

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

	Low Rate	High Rate
Aileron	▲ = 35mm ▼ = 35mm	▲ = 45mm ▼ = 45mm
Elevator	▲ = 45mm ▼ = 45mm	▲ = 55mm ▼ = 55mm
Rudder	▶ = 40mm ◀ = 40mm	▶ = 55mm ◀ = 55mm
Flaps	Mid ▼ = 30mm	Full ▼ = 55mm

Low Voltage Cutoff (LVC)

When a Li-Po battery is discharged below 3V per cell, it will not hold a charge. The aircraft's ESC protects the flight battery from over-discharge using Low Voltage Cutoff (LVC). Once the battery discharges to 3V per cell, the LVC will reduce the power to the motor in order to leave adequate power to the receiver and servos to land the airplane.

When the motor power decreases, land the aircraft immediately and replace or recharge the flight battery.

Always disconnect and remove the Li-Po battery from the aircraft after each flight. Charge your Li-Po battery to about half capacity before storage. Make sure the battery charge does not fall below 3V per cell. Failure to unplug a connected battery will result in trickle discharge.

For your first flights, set your transmitter timer or a stopwatch to 4 minutes. Adjust your timer for longer or shorter flights once you have flown the model.

NOTICE: Repeated flying to LVC will damage the battery.

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.

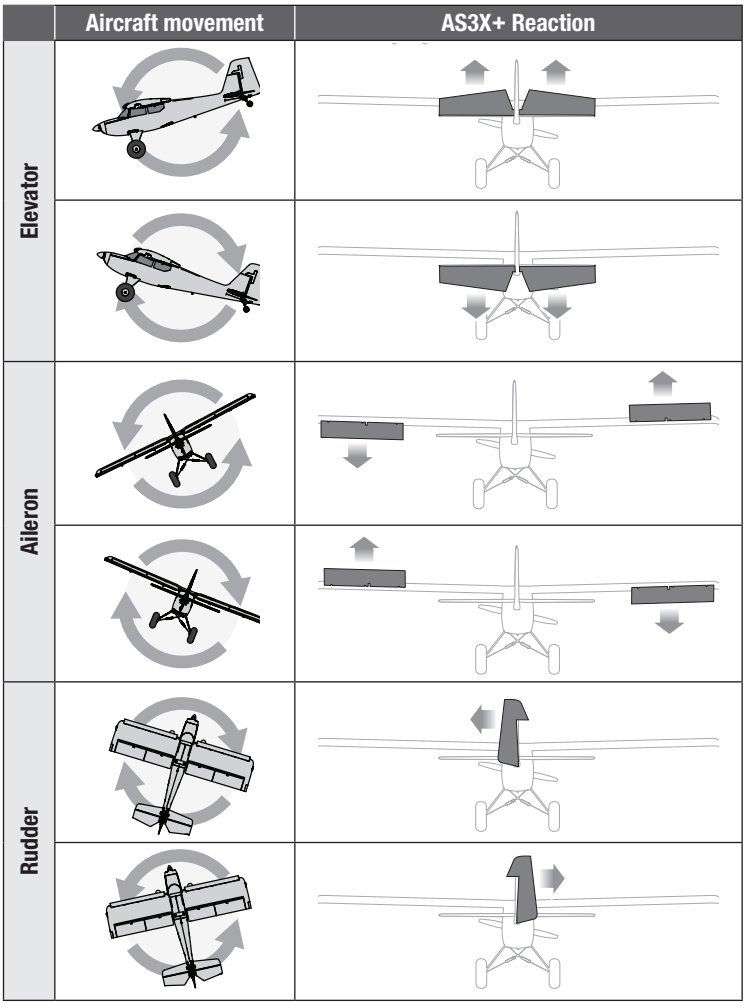
1. Raise the throttle just above 25%, then lower the throttle to activate AS3X+.

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

2. 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 are 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.

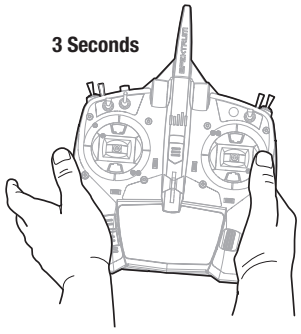


In Flight Trimming

During your first flight, trim the aircraft for level flight at 80-100% throttle with flaps up. 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.



Thrust Reversing (Optional)

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

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

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

IMPORTANT: Thrust reversing requires a Spektrum receiver with Smart Throttle (including the AR637TA+ and AR631+) and a Spektrum transmitter with a minimum of 7 channels. The Avian ESC is also backwards compatible with conventional receivers (PWM output signal) for normal operation, but reversing functions are only available with Smart Throttle technology.

Thrust Reversing Setup

Transmitter

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

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

ESC

Set up the transmitter according to the setup chart, and bind your transmitter to the airplane. The airplane must be powered on and bound to the transmitter to access the Smart ESC programming.

As an alternative, it is possible to program the ESC with the Smart ESC Programming Box (SPMXCA200, optional, not included).

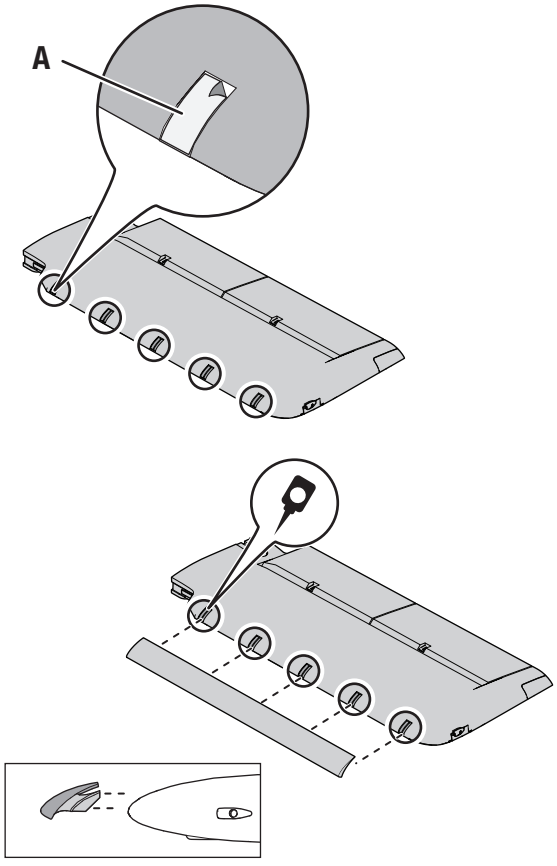
ESC Reversing Setup	
DX series, NX series, iX series	1. Begin with the transmitter bound to the receiver.
	2. Power ON the transmitter.
	3. Set switch H (throttle cut) to prevent accidental motor operation.
	4. Set elevator and aileron to high rate.
	5. Set Flight Mode to AS3X+ (The menu will not open if the Flight Mode is set to SAFE).
	6. Power ON the aircraft. A signal bar appears on the transmitter main screen when the telemetry information is being received.
	7. From the main screen navigate to the last screen past the telemetry screens, the Avian Programming menu (Avian Prog).
	8. Configuration in the Avian Programming menu is done by moving the elevator and aileron stick. Follow the on-screen prompts to access the menu. Move the stick up or down to move through the menu, left or right to change a setting.
	9. Set BRAKE TYPE: Reverse
	10. Set BRAKE FORCE: 7
	11. Set THRUST REV: Select the channel you designated for thrust reversing in your transmitter. CH7 is the selection by default, but do not use this default option if you are using Aux2/Ch7 for SAFE Select.
	12. Select EXIT W/ SAVE to save your selections

Slat Installation (Optional)

Required Adhesives

Slats are beneficial for STOL performance but can decrease roll authority and inverted flight performance. If your Night Timber X Evolution will be primarily flown in a STOL manner, rather than for aerobatics, you may want to install them.

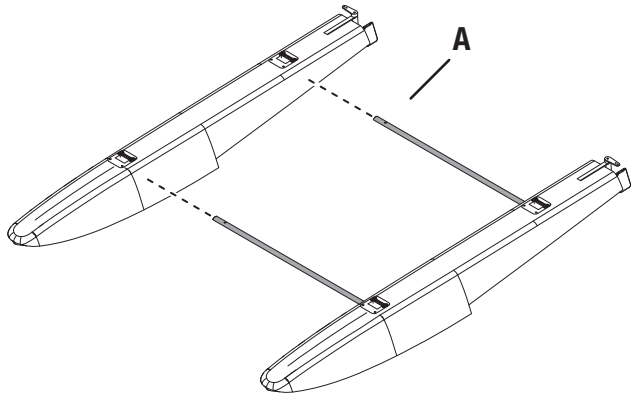
1. Carefully remove all the foam slat pocket covers (**A**) from the wing.
2. Once the pocket is exposed, carefully apply medium CA to each slat pocket.
3. Mount the slat onto the wing with the rounded edge facing forward. Ensure that the left and right slats are on the correct wing half. The slat and wing halves are labeled with “L” and “R” indicators.

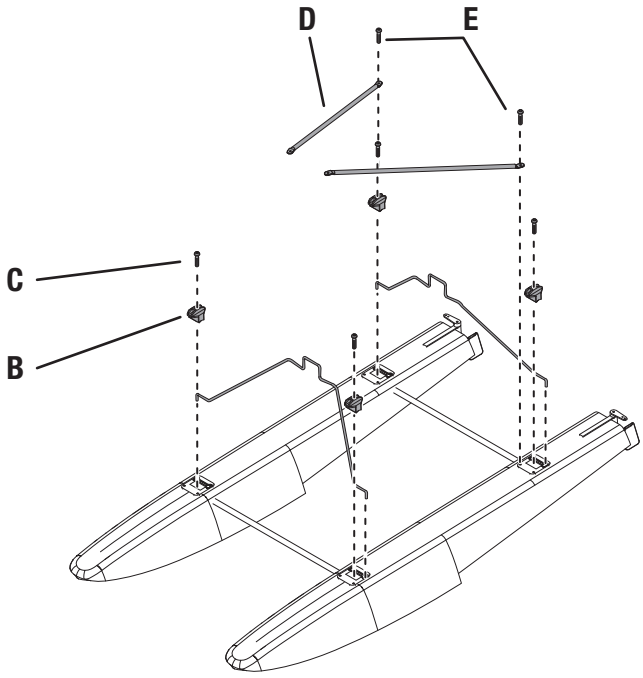


Float Installation (Optional)

Float Assembly (EFL5261)

1. Install the 2 spreader bars (**A**) to the left and right floats as shown.
2. Install the front and rear float struts to the floats and secure the assembly together using the included 4 float plates (**B**) and screws (**C**). The front strut has slightly more of an angle than the rear strut (Figure 1).
3. Install the front support members (**D**) as shown using the included screws (**E**).





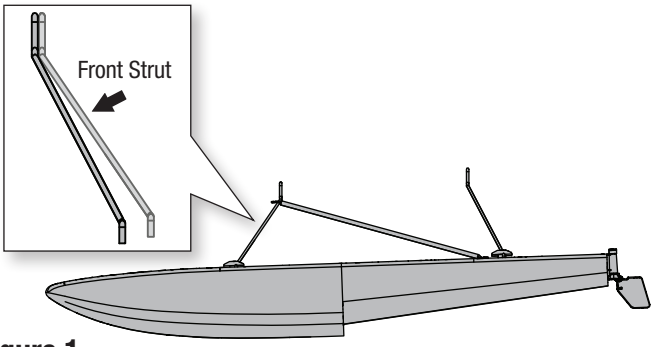
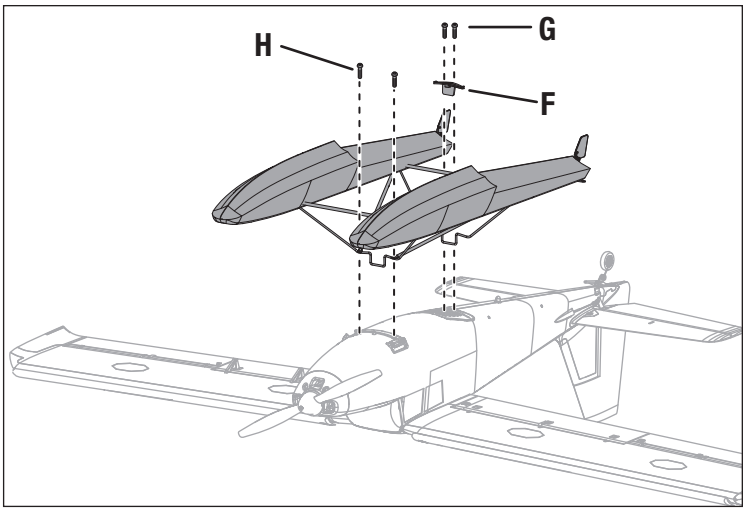


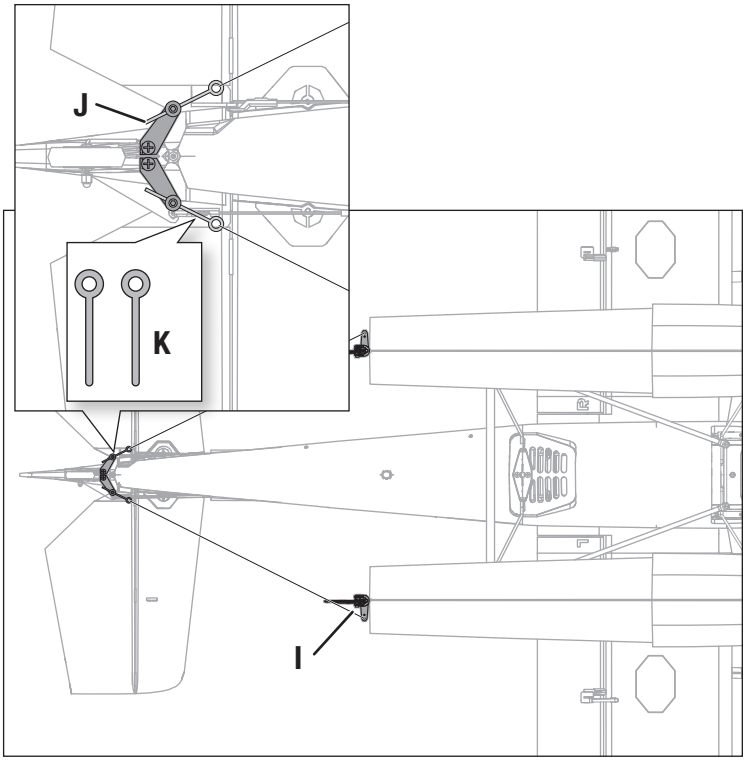
Figure 1

Float Installation

1. Align and mount the float set assembly to the bottom of the fuselage.
2. Secure the back section of the floats to the fuselage using the included bracket (**F**) and 2 screws (**G**).
3. Secure the front section of the floats using the two included screws (**H**) to secure the front support members to the bottom of the fuselage.
4. Attach the included wire from each float rudder (**I**) to the pull–pull horn (**J**) using the two included pins (**K**).

Disassemble in reverse order.





BNF Advanced Receiver Setup (Optional)

With the basic transmitter setup, the ailerons and flaps will operate separately. For increased aileron authority, the AR631+ receiver included in the BNF version may be configured so the flaps can operate as both flaps and ailerons.

Servo Plug Order Change

1. Remove the Y-harnessed lights from Ch-5 port on the AR631+
2. Remove the Y-harness plugged into the Ch-6 port on the AR631+.
3. Insert two servo extensions (SPMA3052) into the receiver ports; one in Ch-5 and one in Ch-6.
4. The left flap plugs into the Ch-5 extension. The right flap plugs into the Ch-6 extension. We recommend labeling the wires to help identify the correct ports when mounting the wing.
5. Insert the LED Y-harness into the BIND port. The lights plug into one side of the Y-harness, and the other side serves as a BIND port.

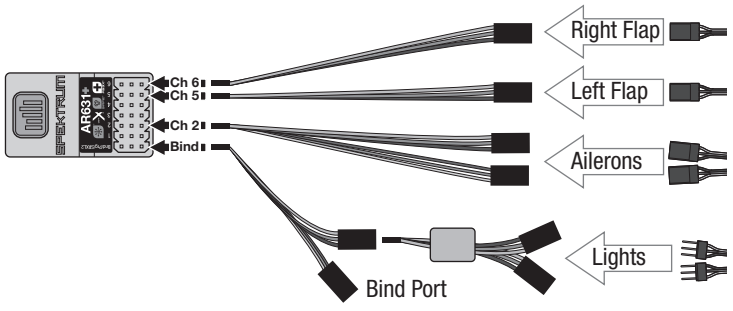
⚠ **CAUTION:** Connecting servos to the wrong port on the receiver could cause a crash.

IMPORTANT: A 7-channel or higher transmitter is required for the advanced BNF receiver setup plus the ability to select between AS3X+ and SAFE with SAFE Select. If using a 6 channel transmitter for the advanced receiver setup, only AS3X+ is available.

AR631+ advanced receiver setup port assignments

Bnd/Prg/SRXL2 = Y-Harness: Lights/BIND

1 = Throttle	**4 = Rudder**
2 = Y-harness: Ailerons	**5 = Left flap**
3 = Elevator	**6 = Right flap**



Flying Tips and Repairs

Consult local laws and ordinances before choosing a flying location.

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

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 may see oscillation (the aircraft rocks back and forth on one axis due to overcontrol). If oscillation occurs, refer to the Troubleshooting Guide for more information.

Takeoff
Place the aircraft facing into the wind. Set your transmitter in low rate and use your flaps switch to drop the flaps to takeoff or "half position". Gradually increase the throttle to ¾ and steer with the rudder. **Flaps make takeoffs shorter**. As the plane reaches flying speed, pull back gently on the elevator. When airborne, climb to a comfortable altitude and then flip your flaps switch to level the flaps.

Flying
For your first flights with the recommended battery pack (SPMX22004S30), set your transmitter timer or a stopwatch to 4 minutes. After four minutes, land the aircraft. Adjust your timer for longer or shorter flights once you have flown the model. If at any time the motor power reduces, land the aircraft immediately to recharge the flight battery. See the Low Voltage Cutoff (LVC) section for more details on maximizing battery health and run time.

Landing
Land the aircraft into the wind. Use a small amount of throttle for the entire descent. Lower the throttle to ¼ and flip your flaps switch to deploy the flaps to the landing or "full down position". **Flaps will make the landing approach steeper and slower, and allow for a smoother landing.**

Keep the throttle on until the aircraft is ready to flare. During flare, keep the wings level and the aircraft pointed into the wind. Gently lower the throttle while pulling back on the elevator to bring the aircraft down on its wheels.

If landing on grass, it is best to hold full up elevator after touchdown and when taxiing to prevent the aircraft from nosing over.

Once on the ground, avoid sharp turns until the plane has slowed enough to prevent scraping the wingtips.

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.

Water Takeoff and Landing Using the Optional Float Set
Only use the floats if you are comfortable flying your aircraft and have repeatedly taken off, flown and landed with success. Flying from water poses a higher risk to the airplane because the electronics can fail if fully immersed in water.

Always ensure the optional floats are secure on the fuselage and that the float dual rudder system is correctly connected and moves freely before putting the aircraft in water.

To take off on water, steer with the rudder and slowly increase the throttle. Keep the wings level on takeoff. Hold a small amount (1/4–1/3) of up elevator and the aircraft will lift off once flying speed is reached.

To land this aircraft on water, fly the aircraft to a couple of feet off the surface of the water. Reduce throttle and add up elevator to flare the aircraft.

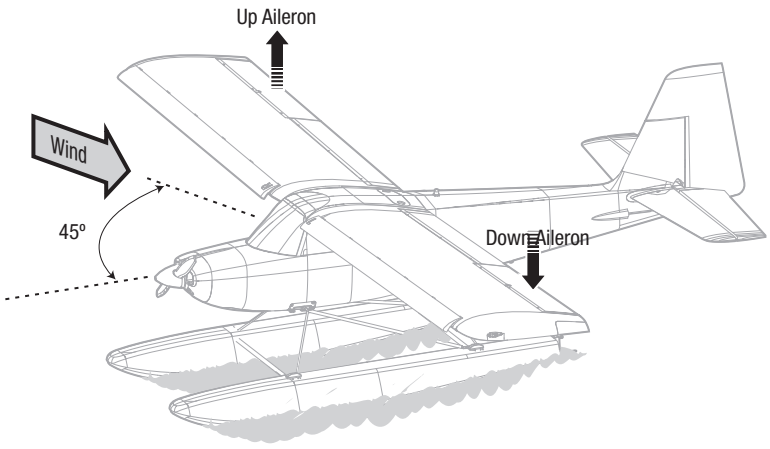
When taxiing, you must use throttle to move the aircraft forward, but steer with the rudder stick. The stick will turn both the aircraft rudder and the small rudders attached to the floats.

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

Always fully dry the aircraft after landing on water.

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

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



Taxi 45 degrees into the direction of the wind.

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 reduces, 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
Thanks to the EPO foam material in this aircraft, repairs to the foam can be made using virtually any adhesive (hot glue, regular CA, epoxy, etc). When parts are not repairable, see the Replacement Parts List for ordering by item number. For a listing of all replacement and optional parts, refer to the list at the end of this manual.

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

Post Flight

Disconnect the flight battery from the ESC (required for safety and battery life).
Power OFF the transmitter.
Remove the flight battery from the aircraft.
Recharge the flight battery to storage voltage level.

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

Power Components Service

CAUTION: Always disconnect the flight battery before performing service on any of the power system components.

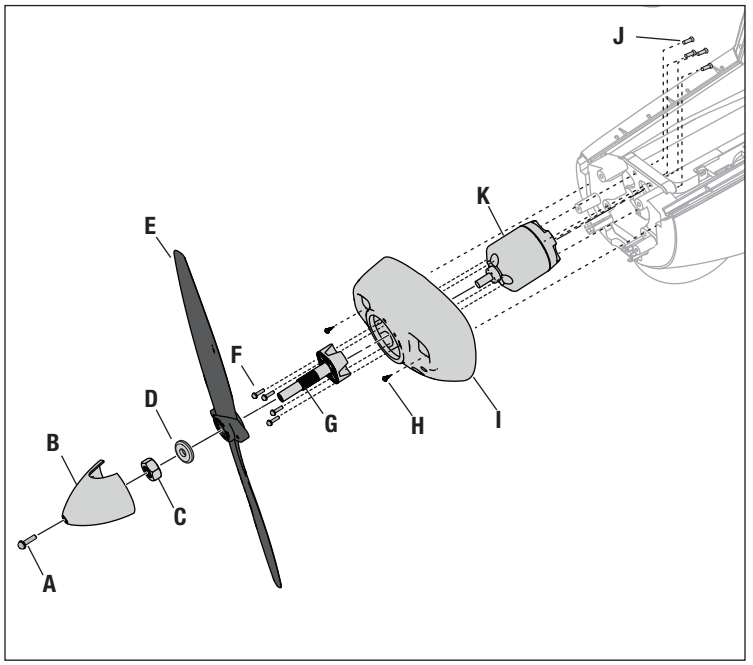
Disassembly

1. Remove the battery hatch to access all of the power system components.
2. Remove the spinner screw M3 x 8mm (**A**) and spinner (**B**) from the propeller adapter.
3. Remove the propeller nut 6mm (**C**) by using an adjustable wrench.
4. Remove the washer (**D**) and propeller (**E**) from the prop adapter.
5. Removed 4 screws M2.5 x 8mm (**F**) and the prop adapter (**G**) from the motor.
6. Remove 3 screws 2 x 10mm (**H**) from inside the front cowling (**I**) and remove the cowling from the fuselage.
7. Remove the 4 screws M3 x 6mm (**J**) and the motor (**K**) with the X-mount from the fuselage.
8. Disconnect the motor wires from the ESC wires.

Assembly

Assemble in reverse order.

- Correctly align and connect the motor wire colors with the ESC wires.
- Install the propeller with the size numbers (13 x 4) facing forward.
- Tighten the spinner nut to secure the propeller into place.



IMPORTANT: Allow the aircraft components to cool between flights.

Troubleshooting Guide AS3X+

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
Incorrect response to the AS3X+ Control Direction Test	Incorrect direction settings in the receiver, which can cause a crash	DO NOT fly. Correct the direction settings (refer to the receiver manual), then fly

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
	Propeller screw is loose	Tighten the propeller screw
Reduced flight time or aircraft underpowered	Flight battery charge is low	Completely recharge flight battery
	Flight battery damaged	Replace flight battery and follow flight battery instructions
	Flight conditions may be too cold	Make sure battery is warm before use
	Battery capacity too low for flight conditions	Replace battery or use a larger capacity battery
Aircraft will not Bind (during binding) to transmitter	Transmitter too near aircraft during binding process	Move powered transmitter a few feet from aircraft, disconnect and reconnect flight battery to aircraft
	Aircraft or transmitter is too close to large metal object, wireless source or another transmitter	Move aircraft and transmitter to another location and attempt binding again
	The bind plug is not installed correctly in the bind port	Install bind plug in bind port and bind the aircraft to the transmitter
	Flight battery/transmitter battery charge is too low	Replace/recharge batteries
	Bind switch or button not held long enough during bind process	Power off transmitter and repeat bind process. Hold transmitter bind button or switch until receiver is bound
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™ Transmitters only)	Select correct model memory on transmitter
	Flight battery/Transmitter battery charge is too low	Replace/recharge batteries
	Transmitter may have been bound to a different aircraft using different DSM protocol	Bind aircraft to transmitter
Control surface does not move	Control surface, control horn, linkage or servo damage	Replace or repair damaged parts and adjust controls
	Wire damaged or connections loose	Do a check of wires and connections, connect or replace as needed
	Transmitter is not bound correctly or the incorrect airplanes was selected	Re-bind or select correct airplanes in transmitter
	Flight battery charge is low	Fully recharge flight battery
	BEC (Battery Elimination Circuit) of the ESC is damaged	Replace ESC
Controls reversed	Transmitter settings are reversed	Perform the Control Direction Test and adjust the controls on transmitter appropriately
Motor power pulses then motor loses power	ESC uses default soft Low Voltage Cutoff (LVC)	Recharge flight battery or replace battery that is no longer performing
	Weather conditions might be too cold	Postpone flight until weather is warmer
	Battery is old, worn out, or damaged	Replace battery
	Battery C rating might be too small	Use recommended battery

Replacement Parts

Part Number	Description
EFL13854	LED Regulator : Night timber X, Night Timber X Evolution
EFLP1304E	13 x 4 Electric Propeller
EFL13853	Horizontal Stab: Night timber X, Night Timber X Evolution
EFLA521	LED Controller: Timber, Night Timber X Evolution
EFL17557	Pushrod Keepers (6): Timbers, Air Tractor, Night Timber X Evolution
EFL3854	Steel Stabilizer Joiner: Timber X, Night Timber X Evolution
EFL3855	Leading Edge Slat Set: Timber X, Night Timber X Evolution
EFL5265	Plastic Parts Set: Timbers
EFL5267	Landing Gear Retainer (pr): Timbers
EFL5269	Wing and Stab Tube: Timbers
EFL5262	Spinner (Black): Timbers
EFL5258	Tundra Wheel Set: Timbers
SPMSA332	A332 9g Sub-Micro MG Servo
SPMSA332R	A332 9g Sub-Micro MG Servo (Reverse)
SPMXAE70E	Avian 70-Amp Smart Lite Brushless ESC, 3S-6S: IC3 Ver. E
SPM-1031	AR631+ 6 Channel AS3X+ & SAFE Receiver
SPMXAM0650	Avian 2815-900Kv Brushless Motor 14-Pole

Part Number	Description
EFL013851	Fuselage: Night Timber X Evolution 1.2m
EFL013852	Wing Set: Night Timber X Evolution 1.2m
EFL013853	Battery Hatch: Night Timber X Evolution 1.2m
EFL013854	Cowl: Night Timber X Evolution 1.2m
EFL013855	Decal Set: Night Timber X Evolution 1.2m
EFL013856	Hardware Set: Night Timber X Evolution 1.2m
EFL013857	Prop Adapter: Night Timber X Evolution 1.2m
EFL013858	Motor Mount: Night Timber X Evolution 1.2m
EFL013859	Pushrod Set: Night Timber X Evolution 1.2m
EFL013860	Servo Arm Set: Night Timber X Evolution 1.2m
EFL013861	Landing Gear Set: Night Timber X Evolution 1.2m
EFL013862	Landing Gear Spring Set: Night Timber X Evolution 1.2m
EFL013863	Wing Wiring Harness (Fuselage side): Night Timber Evolution 1.2m
EFL013864	Wing Wiring Harness (Wing side): Night Timber X Evolution 1.2m
EFL013865	Battery Lighting Tap: Night Timber X Evolution 1.2m

Recommended Parts

Part Number	Description
SPMR7110	NX7e+ 14-Channel DSMX Transmitter Only
SPM-1031	AR631+ 6 Channel AS3X+ & SAFE Receiver
SPMX224S30	2200mAh 4S 14.8V Smart G2 LiPo 30C; IC3
SPMX324S50	3200mAh 4S 14.8V Smart G2 LiPo 50C; IC3

Part Number	Description
SPMX224S50	14.8V 2200mAh 4S 50C Smart G2 LiPo Battery: IC3
SPMXC2020	Smart S1200 G2 AC Charger, 1x200W
SPMXC2050	Smart S155 G2 AC Charger, 55W

Optional Parts

Part Number	Description
SPMR8210	NX8+ 20-Channel DSMX Transmitter Only
SPMX324S50	14.8V 3200mAh 4S 50C Smart LiPo G2: IC3
SPMX-1067	14.8V 2900mAh 4S 120C Smart LiPo Battery; IC3
SPMXBC100	XBC100 Smart LiPo Battery Checker & Servo Driver
SPMXC2040	S1400 G2 AC 1x400W Smart Charger
SPMXC2010	S2200 G2 AC 2x200W Smart Charger
BLH100	Deluxe Ball Link Pliers
DYN1405	LiPo Charge Protection Bag, Large

Part Number	Description
SPMXBC100	XBC100 SMART Battery Checker & Servo Driver
ONXT1000	Ultimate Air/Surface Startup Tool Set
SPM6708	Spektrum Single Stand Up Transmitter Case

Hardware List

Description	Quantity
Wing Mounting Nylon Screws M6 x 30mm	2
Landing Gear Strut Screws M2.5 x 10mm	4
Spring Securing Screws M3 x 16mm	2
Landing Gear Pivot Mount Screws M2.5 x 16mm	8
Main Wheel Axles	2
Locknuts M3	4
Axle Washers M3	4
Brass Spacers 3mm	4
Tailwheel Securing Nylon Nut	1
Motor-to-Mount Screws M3 x 30mm	4

Description	Quantity
Motor Mount-to-Fuselage Screws M3 x 6mm	4
Motor Mount-to-Fuselage Washers M3	4
Prop Adapter Screws M2.5 x 8	4
Prop Nut M6	1
Prop Washer M6	1
Spinner Cone Screw M2 x 10mm	1
Stab Securing Screws M2.5 x 12mm	2
Servo Cover Screws M2 x 8mm	12
Rudder Tiller Screws M2 x 10mm	3
Rudder/Elevator EZ Connector Screws M2.5 x 5mm	2

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 aircraft using 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, (vi) Product not compliant with applicable technical regulations, or (vii) use that violates any applicable laws, rules, or regulations.

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

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

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

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

WARRANTY SERVICES

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

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

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

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

Non-Warranty Service—Should your service not be covered by warranty, service will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting the item for service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service. Non-warranty service estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashier's checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to Horizon's Terms and Conditions found on our website http://www.horizonhobby.com/content/service-center_render-service-center.

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

10/15

Warranty and Service 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, IL 61822
	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.eu	Hanskampring 9 D 22885 Barsbüttel, Germany
	Sales: Horizon Hobby GmbH	+49 (0) 4121 2655 100	

FCC Information

Contains: FCC ID: BRWSPMSR6200A
Supplier's Declaration of Conformity
EFL Night Timber X Evolution BNF-Basic (EFL013850) and EFL Night Timber X Evolution PNP (EFL013875)
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: CAN ICES-3 (B)/NMB-3(B)
Contains: IC: 6157A-SPMSR6200A
This device contains license-exempt transmitter(s)/receivers(s) that comply with Innovation, Science, and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following 2 conditions:

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

Compliance Information for the European Union

EU Compliance Statement:
EFL Night Timber X Evolution PNP (EFL013875): Hereby, Horizon Hobby, LLC declares that the device is in compliance with the following: EU EMC Directive 2014/30/EU. RoHS 2 Directive 2011/65/EU, RoHS 3 Directive - Amending 2011/65/EU Annex II 2015/863

EFL Night Timber X Evolution BNF-Basic (EFL013850) 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:
2404-2476MHz
5.58dBm

E328

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

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

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