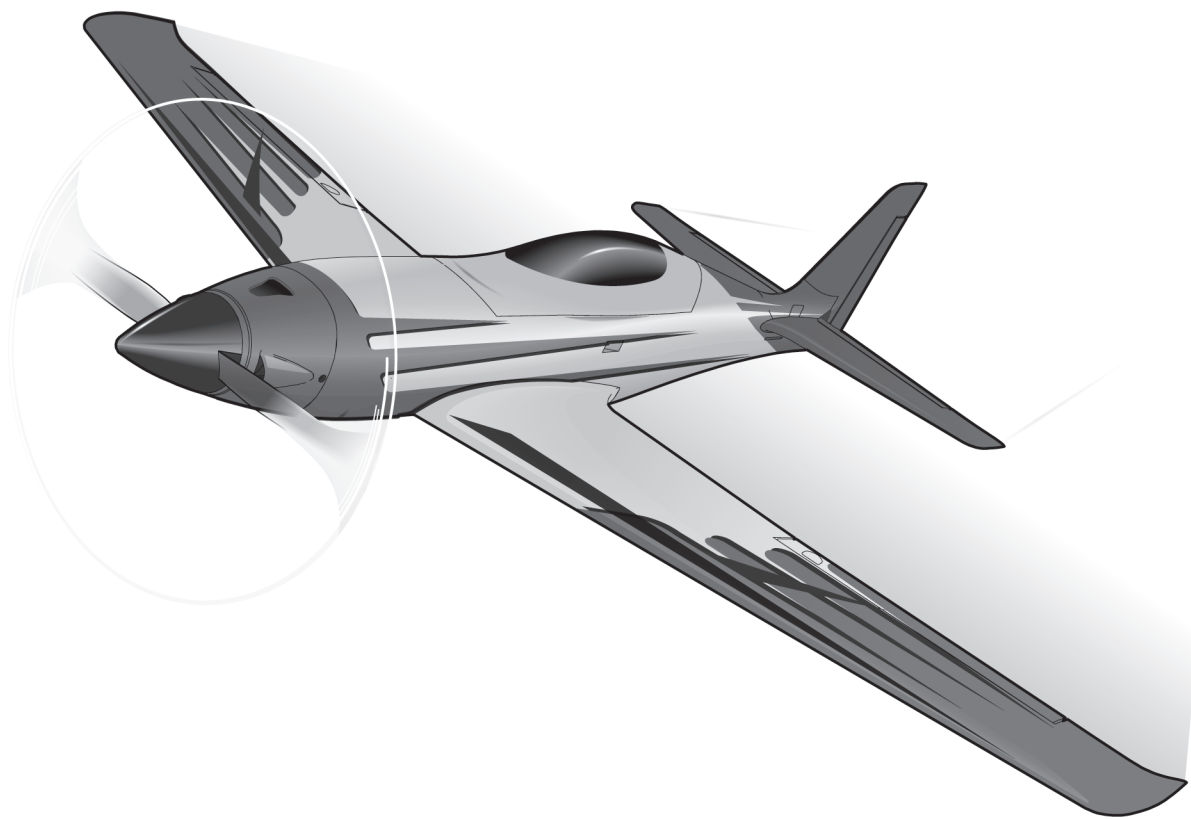


HORIZON[®]
H O B B Y

E-flite[®]
ADVANCING ELECTRIC FLIGHT

V900[™] Sport Airplane



Instruction Manual
Bedienungsanleitung
Manuel d'utilisation
Manuale di Istruzioni

SAFE[®] 

SAFE[®] Select Technology, Optional Flight Envelope Protection

Bind-N-Fly[®] Plug-N-Play[®]
BASIC

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 www.horizonhobby.com or www.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.

14+

AGE RECOMMENDATION:
Not for children under 14 years. This is not a toy.



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.

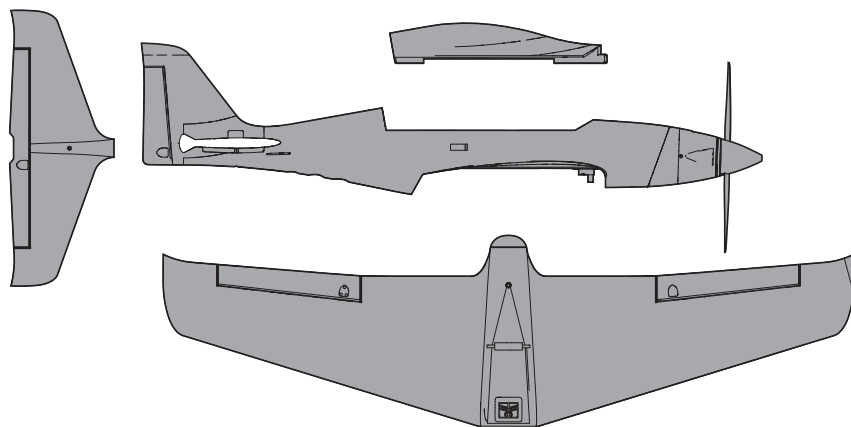
Safety Precautions and Warnings

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.

Box Contents

Quick Start Information*			
Transmitter Setup	Set up your transmitter using the transmitter setup chart		
Dual Rates		Hi Rate	Low Rate
	Ail	▲12mm ▼8mm	▲8mm ▼6mm
	Ele	▲8mm ▼8mm	▲5mm ▼5mm
	Rud	7mm	5mm
Center of Gravity (CG)	78-82mm back from leading edge of wing at the fuselage.		
Flight Timer Setting	4 minutes		



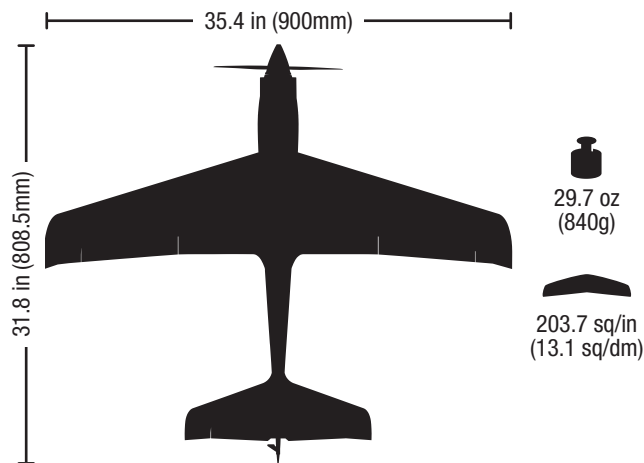
*Set control throws with SAFE Select disabled.

Specifications

		BNF BASIC	PNP PLUG-N-PLAY
	Motor: BL 15 1260 Kv (EFLM126015)	Installed	Installed
	ESC: 60A ESC (EFLA1060C)	Installed	Installed
	Servos: 9 gram servo (SPMSA370)	Installed	Installed
	Receiver: Spektrum™ AR631 6-Channel Sport Receiver (SPMAR631)	Installed	Required
	Battery: 11.1V 3S 2200mAh 30C Li-Po or 14.8V 4S 1800-2200mAh 30C Li-Po	Required	Required
	Recommended Battery Charger: 3-4 cell Li-Po battery balancing charger	Required	Required
	Recommended Transmitter: Full-Range 6 channel (or more) 2.4GHz with Spektrum DSM2®/DSMX® technology with adjustable Dual Rates	Required	Required

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If you own this product, you may be required to register with the FAA.

For up-to-date information on how to register with the FAA, visit <https://registermyuas.faa.gov/>.

For additional assistance on regulations and guidance on UAS usage, visit knowbeforeyoufly.org/.

To register your product online, visit www.horizonhobby.com/content/e-flite-rc

SAFE® Select Technology

The evolutionary SAFE® Select technology can offer an extra level of protection so you can perform the first flight with confidence. No complex transmitter programming is required. Just follow the simple bind process to make the SAFE Select system active. When activated, bank and pitch limitations keep you from over-controlling and automatic self-leveling makes recovery from risky or confusing attitudes as simple as releasing the sticks. In fact, with the aileron, elevator and rudder sticks in the neutral position, SAFE Select will automatically keep the airplane in a straight and level attitude.

Expand the advantage of what SAFE® Select technology offers by assigning it to a switch. No transmitter programming is required and you'll be able to turn the system ON and OFF with the flip of a switch. For example, turn SAFE select ON for takeoffs to counter the torque of the propeller. Turn it OFF in flight for unrestricted aerobatic performance, and turn it back ON when a buddy wants to try out your cool aircraft. Turn SAFE Select ON for landings. As you drop the flaps, SAFE Select reduces your workload by compensating for pitch changes automatically, regardless of throttle position. It will help keep the correct pitch attitude and wings level during the final approach. Whether you're a beginner or an expert, SAFE Select can make your flights a great experience.

When the normal bind process is followed, the SAFE Select system is disabled, leaving specially tuned AS3X® technology in place to deliver a pure, unrestricted flight experience.

Preflight

1. Remove and inspect contents.	9. Make sure linkages move freely.
2. Read this instruction manual thoroughly.	10. Perform the Control Direction Test with the transmitter.
3. Charge the flight battery.	11. Perform the AS3X Control Direction Test with the aircraft.
4. Setup Transmitter using transmitter setup chart.	12. Adjust flight controls and transmitter.
5. Fully assemble the airplane.	13. Perform a radio system Range Test.
6. Install the flight battery in the aircraft (once it has been fully charged).	14. Find a safe open area to fly.
7. Check the Center of Gravity (CG).	15. Plan flight for flying field conditions.
8. Bind the aircraft to your transmitter.	

Transmitter Setup

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

Dual Rates

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

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

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

Expo

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

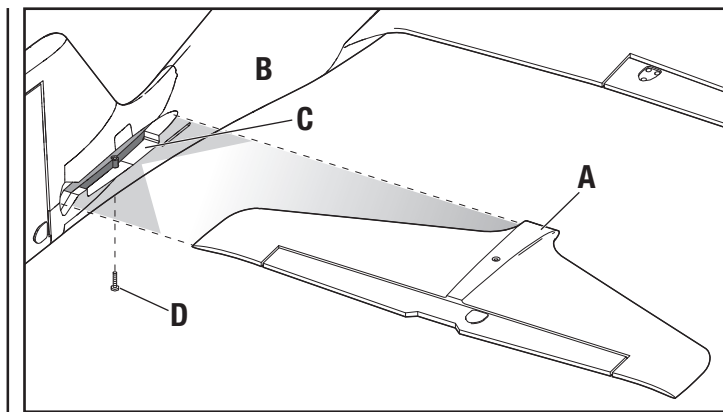
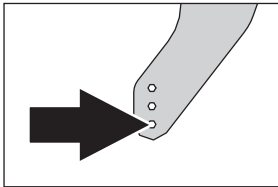
Computerized Transmitter Setup

Start all transmitter programming with a blank ACRO model (perform a model reset), then name the model.	
Set Dual Rates to	HIGH 100% LOW 70%
Set Servo Travel to	100%
Set Throttle Cut to	-130%
DXe	Refer to spektrumrc.com for the appropriate download setup.
DX6i	1. Go to the SETUP LIST MENU 2. Set MODEL TYPE: ACRO
DX7S	1. Go to the SYSTEM SETUP 2. Set MODEL TYPE: AIRPLANE
DX8	3. Set WING TYPE: NORMAL
DX6e, DX8e DX6, DX7, DX8 (Gen2) DX9 DX10t DX18 DX20 iX12, iX20 NX6, NX8 NX10	1. Go to the SYSTEM SETUP (Model Utilities) [†] 2. Set MODEL TYPE: AIRPLANE 3. Set AIRCRAFT TYPE (Model Setup, Aircraft Type) [†] : WING: NORMAL

Model Assembly

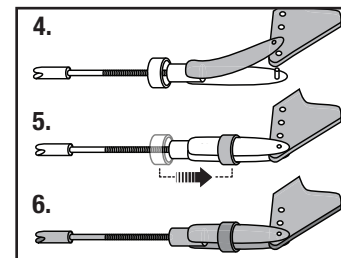
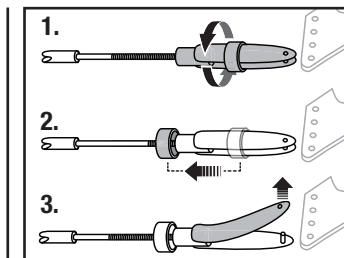
Horizontal Tail Installation

1. Insert the horizontal tail (A) through the right side of the fuselage (B) as shown until the tail contacts the built in alignment stop (C).
2. Secure the horizontal tail in place using the included screw (D). Use care to avoid over-tightening the screw.
3. Attach the pushrod to the elevator control horn using the included clevis.



Clevis Installation

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

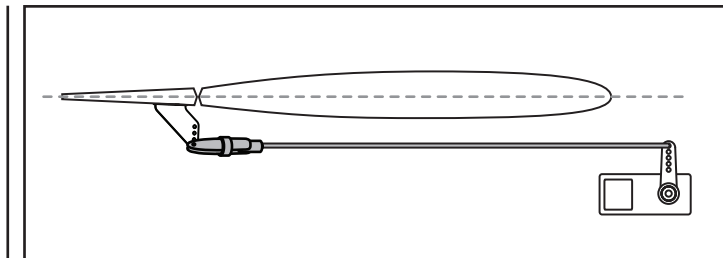


Control Surface Centering

After assembly and transmitter setup, confirm that the control surfaces are centered. If the control surfaces are not centered, mechanically center the control surfaces by adjusting the linkages.

If adjustment is required, turn the clevis on the linkage to change the length of the linkage between the servo arm and the control horn.

After binding a transmitter to the aircraft receiver, set the trims and sub-trims to 0, then adjust the clevises to center the control surfaces.



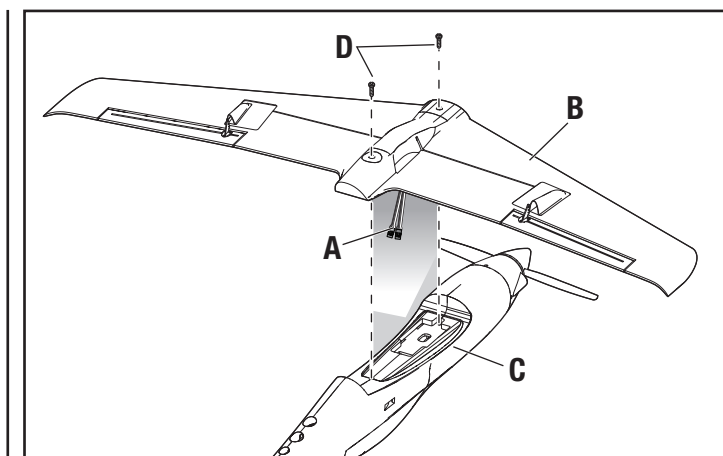
Wing Installation

1. Connect the Aileron connectors (A) to respective Y-harnesses connected to the receiver. The left and right servos can be connected to either side of a Y-harness.
IMPORTANT: The ailerons must be connected to the receiver's AILE (#2 channel) with a Y-harness (included) for the AS3X® system to function properly.
2. Align the wing (B) with the fuselage (C) and secure it into position using the included 2 screws (D).



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

Disassemble in reverse order.



Battery Installation and ESC Arming

Battery Selection

The E-flite® V900™ aircraft is 3S and 4S capable. Choose the battery that fits your flying style.

3S = Fast



4S = Crazy Fast



1800mAh 11.1V 3S 30C+ Li-Po battery is recommended for good speed and longer flight times.

The Spektrum 2200mAh 14.8V 4S 50C Li-Po battery (SPMX22004S50) is recommended for top speeds.

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 E-flite Li-Po battery packs to fit in the fuselage.

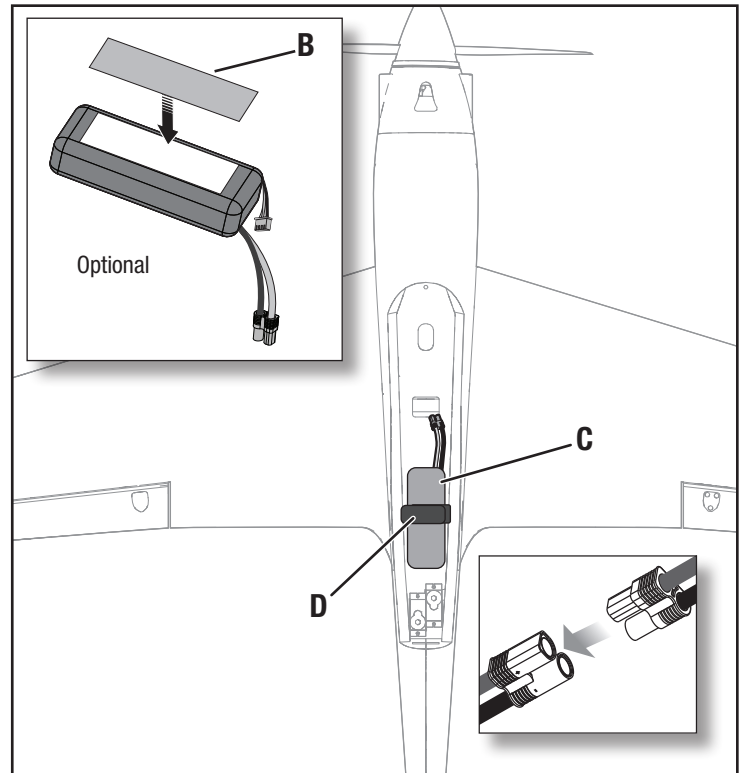
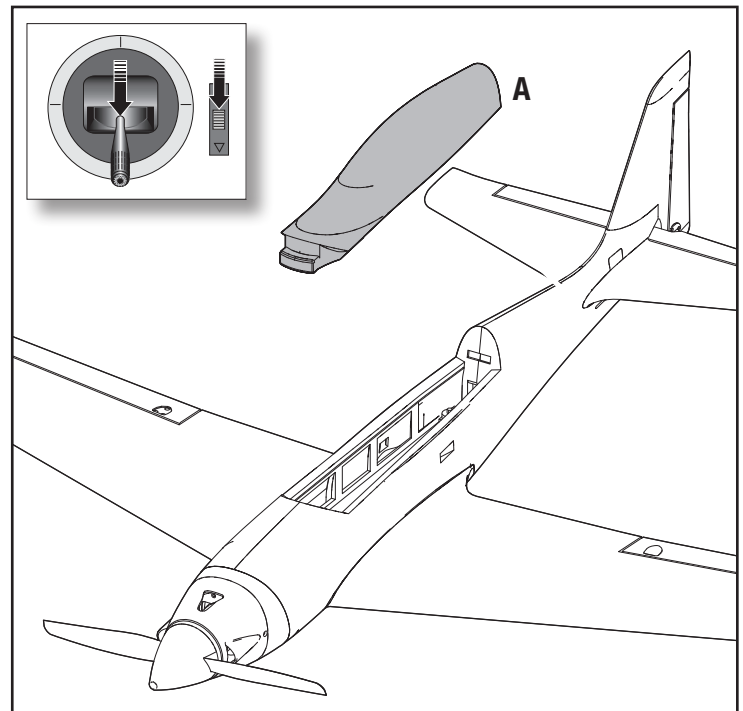
Be sure the model balances at the recommended CG before flying.



CAUTION: 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. Lift the hatch (A) from the back to remove.
3. For added security, apply the loop side (soft side) of the optional hook and loop tape (B) to the bottom of your battery and the hook side to the battery tray.
4. Install the fully charged battery (C) in the middle of the battery compartment, as shown. Secure using the hook and loop strap (D).
5. Connect the battery to the ESC (the ESC is now armed).
6. Keep the aircraft immobile and away from wind, upright and on a flat surface or the system will not initialize.
 - The ESC will produce a series of sounds. 3 or 4 flat tones indicating cell count, followed immediately by a single tone indicating the ESC is armed.
 - An LED will light on the receiver.
7. Reinstall the battery hatch.

NOTICE: The ESC has the motor brake enabled to prevent damage to the propeller during landing.



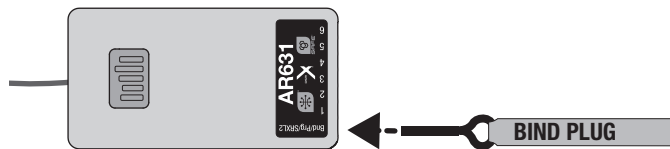
Transmitter and Receiver Binding / Switching ON and OFF SAFE Select

This product requires an approved Spektrum™ DSM2®/DSMX® compatible transmitter. Visit www.bindnfly.com for a complete list of approved transmitters.

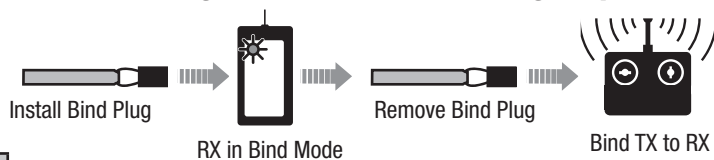
The aircraft has an optional SAFE Select feature, which can be switched ON or OFF easily by binding in a specific manner as described below.

IMPORTANT: Before binding a transmitter, read the Transmitter Setup section of this manual to ensure that your transmitter is properly programmed for this aircraft.

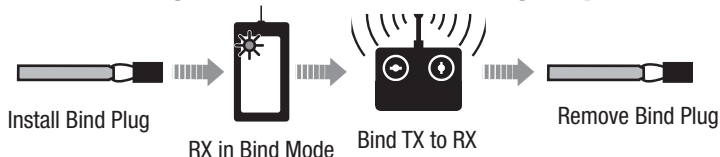
Bind Plug Installation



Switching ON SAFE Select Binding Sequence



Switching OFF SAFE Select Binding Sequence



Binding Procedure / Switching ON SAFE Select

IMPORTANT: The included AR631 receiver has been programmed for operation specifically for this aircraft. Refer to the receiver manual for correct setup if the receiver is replaced or is used in another aircraft.

CAUTION: When using a Futaba® transmitter with a Spektrum DSM® module, you must reverse the throttle channel and rebind. Refer to your Spektrum module manual for binding and failsafe instructions. Refer to your Futaba transmitter manual for instructions on reversing the throttle channel.

1. Make sure the transmitter is powered off.
2. Move the transmitter controls to neutral (flight controls: rudder, elevators and ailerons) or to low positions (throttle, throttle trim).*
3. Install a bind plug in the receiver bind port.
4. Place the aircraft level on the ground, connect the flight battery to the ESC. The ESC will produce a series of sounds. 3 or 4 flat tones to indicate cell count, followed immediately by 1 tone confirming that the ESC is armed. The orange bind LED on the receiver will begin to flash rapidly.
5. **Remove the bind plug from the bind port.**
6. Take 3 steps away from the aircraft /receiver and then power ON the transmitter while holding the transmitter bind button or switch. Refer to your transmitter's manual for specific binding instructions.
IMPORTANT: Do not point the transmitter's antenna directly at the receiver while binding.
IMPORTANT: Keep away from large metal objects while binding.
7. The receiver is bound to the transmitter when the orange bind light on the receiver stays orange. The ESC will produce a series of sounds; 3 flat tones followed immediately by 2 ascending tones. The tones indicate the ESC is armed, provided the throttle stick and throttle trim are low enough to trigger arming.

IMPORTANT: Once bound, the receiver will retain its bind and last setting until it has been intentionally changed, even when power is cycled ON and OFF. However, if you notice that bind has been lost, simply repeat the binding process.

SAFE Select ON Indication

Every time the receiver is powered ON the surfaces will cycle back and forth **twice** with a slight pause at neutral position to indicate that SAFE Select is switched ON.

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

Binding Procedure / Switching OFF SAFE Select

IMPORTANT: The included AR631 receiver has been programmed for operation specifically for this aircraft. Refer to the receiver manual for correct setup if the receiver is replaced or is used in another aircraft.

CAUTION: When using a Futaba® transmitter with a Spektrum DSM® module, you must reverse the throttle channel and rebind. Refer to your Spektrum module manual for binding and failsafe instructions. Refer to your Futaba transmitter manual for instructions on reversing the throttle channel.

1. Make sure the transmitter is powered off.
2. Move the transmitter controls to neutral (flight controls: rudder, elevators and ailerons) or to low positions (throttle, throttle trim).*
3. Install a bind plug in the receiver bind port.
4. Place the aircraft level on the ground, connect the flight battery to the ESC. The ESC will produce a series of sounds. 3 or 4 flat tones to indicate cell count, followed immediately by 1 tone confirming that the ESC is armed. The orange bind LED on the receiver will begin to flash rapidly.
The orange bind LED on the receiver will begin to flash rapidly. DO NOT remove the bind plug at this time.
5. Take 3 steps away from the aircraft /receiver and then power ON the transmitter while holding the transmitter bind button or switch. Refer to your transmitter's manual for specific binding instructions.
IMPORTANT: Do not point the transmitter's antenna directly at the receiver while binding.
IMPORTANT: Keep away from large metal objects while binding.
6. The receiver is bound to the transmitter when the orange bind light on the receiver stays orange. The ESC will produce a series of sounds; 3 flat tones followed immediately by 2 ascending tones. The tones indicate the ESC is armed, provided the throttle stick and throttle trim are low enough to trigger arming.
7. **Remove the bind plug from the bind port.**

IMPORTANT: Once bound, the receiver will retain its bind and last setting until it has been intentionally changed, even when power is cycled ON and OFF. However, if you notice that bind has been lost, simply repeat the binding process.

SAFE Select OFF Indication

Every time the receiver is powered ON the surfaces will cycle back and forth **once** to indicate that SAFE Select has been switched OFF.

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

*Failsafe

If the receiver loses transmitter communication, the failsafe will activate. When activated, failsafe moves the throttle channel to its preset failsafe position (low throttle) that was set during binding. All other channels move to actively level the aircraft in flight.

SAFE® Select Switch Designation

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

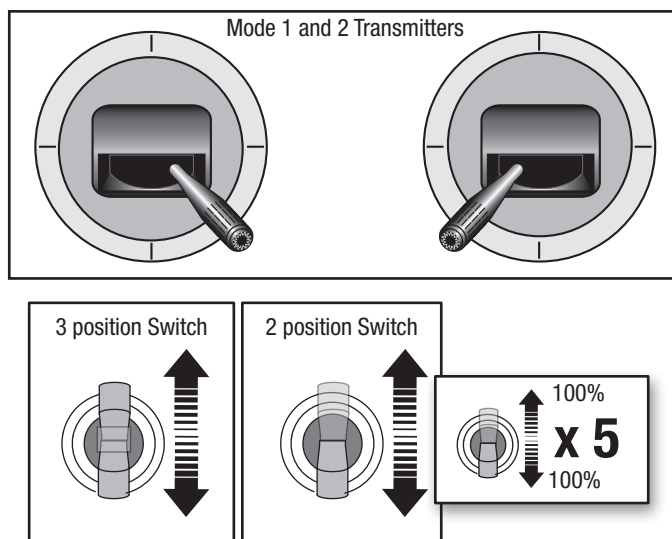
IMPORTANT: Before assigning your desired switch, ensure that the travel for that channel is set at 100% in both directions and the aileron, elevator, rudder and throttle are all on high rate with the travel at 100%. Turn throttle hold OFF if it is programmed in the transmitter.

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 if desired.

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



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. See the table to the right.

	Horns	Arms
Elevator		
Ailerons		
Rudder		

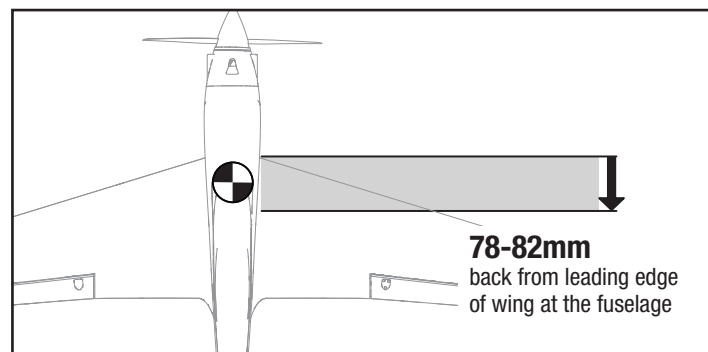
More control throw	Less control throw

Center of Gravity (CG)

The CG location is measured from the leading edge of the wing at the root. This CG location has been determined with the recommended Li-Po battery (SPMX22003S50).

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

Tip: Measure the CG with the aircraft inverted.



AS3X Control Direction 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 technology.

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.

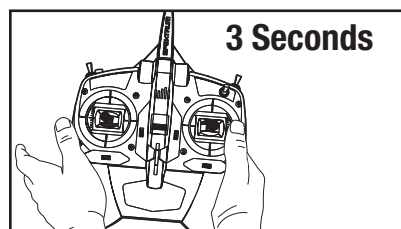
Once the AS3X system is active, control surfaces may move rapidly. This is normal. AS3X remains active until the battery is disconnected.

	Aircraft movement	AS3X Reaction
Elevator		
Aileron		
Rudder		

In Flight Trimming

During your first flight, trim the aircraft for level flight at 3/4 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.



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.

Hand Launching

Use the "handle" to hold the aircraft in one hand and the transmitter in the other. Apply 1/3 - 1/2 throttle and throw the aircraft directly into the wind, angled slightly up (5 to 10 degrees above the horizon). Climb to a safe altitude and check the trim.

Flying

For your first flights with the recommended battery pack (SPMX22003S50), set your transmitter timer or a stopwatch to 4 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 high rate Elevator for landings. Use a small amount of throttle for the entire descent.

Keep the throttle on until the aircraft is ready to flare. During flare, keep the wings level and the aircraft pointed into the wind. Gently lower the throttle while pulling back on the elevator to bring the aircraft down on its belly. Using a grass landing area will lesson the chance of damage to the aircraft.

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

NOTICE: 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.

NOTICE: Always decrease throttle at propeller strike.



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 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.

PNP Receiver Selection and Installation

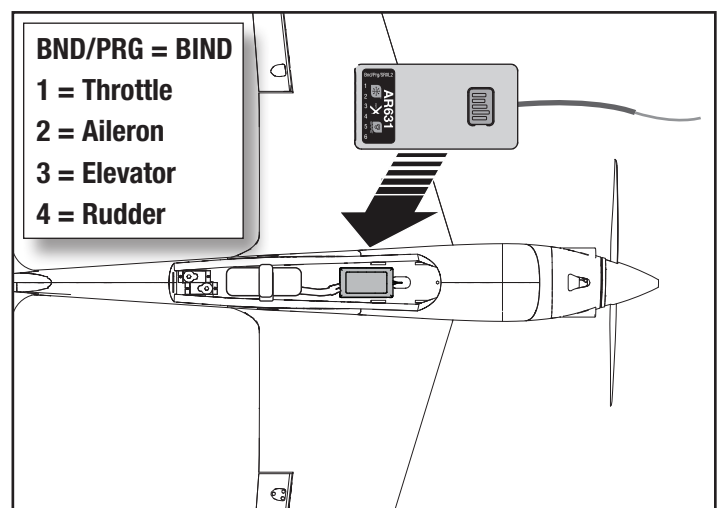
The Spektrum™ AR631 receiver is recommended for this airplane. If you choose to install another receiver, ensure that it is at least a 4-channel full range (sport) receiver. Refer to your receiver manual for correct installation and operation instructions.

CAUTION: When using a Futaba® transmitter with a Spektrum DSM® module, you must reverse the throttle channel and rebind. Refer to your Spektrum module manual for binding and failsafe instructions. Refer to your Futaba transmitter manual for instructions on reversing the throttle channel. All flight surfaces must also be checked for the correct direction.

Installation (AR631 shown)

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

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



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.

Motor Service

CAUTION: Always disconnect the flight battery before performing motor service.

Disassembly

1. Remove screw (A) and spinner (B).
2. Remove the propeller nut (C), washer (D), propeller (E), backplate (F) and prop adapter (G) from the motor shaft (I).
3. Remove 3 screws (I) from the cowl (H) and remove from the fuselage.
4. Remove 4 screws from the motor mount and the fuselage.
5. 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 (8 x 8) facing out from the motor.

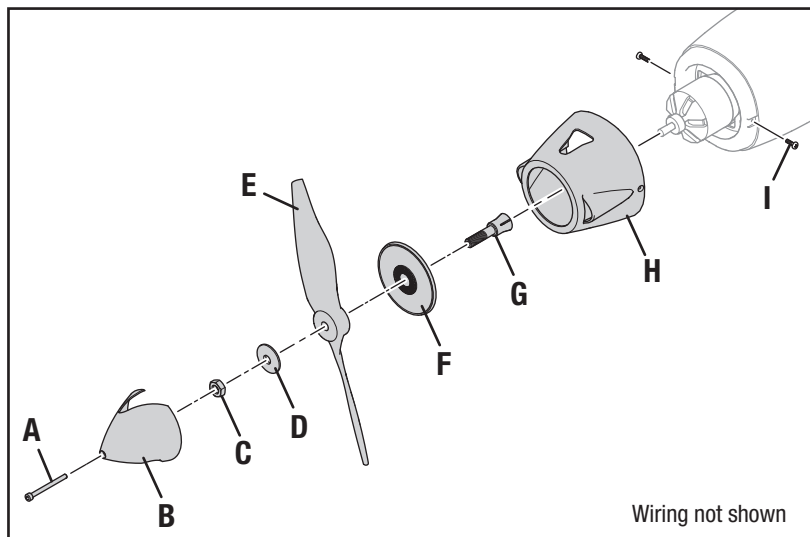
The propeller may require balancing.

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.

For more information, view our propeller balancing video on Horizon Hobby's YouTube channel:

<https://www.youtube.com/watch?v=0XuNnYQ02s4>

- Tighten the collet by using a small screw driver or hex wrench inserted into the small hole.



Wiring not shown

NOTICE: Do not fly the aircraft when powered by a 4S battery with a plastic spinner installed. The plastic spinner may cause severe airframe vibration. This vibration may result in airframe component failure and possibly a crash. Crash damage is not covered under warranty. Always install the machined aluminum spinner (EFLSP200).

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
	Prop nut is too loose	Tighten the prop nut
Reduced flight time or aircraft under-powered	Flight battery charge is low	Completely recharge flight battery
	Propeller installed backwards	Install propeller with numbers facing forward
	Flight battery damaged	Replace flight battery and follow flight battery instructions
	Flight conditions may be too cold	Make sure battery is warm before use
	Battery capacity too low for flight conditions	Replace battery or use a larger capacity battery
Aircraft will not Bind (during binding) to transmitter	Transmitter too near aircraft during binding process	Move powered transmitter a few feet from aircraft, disconnect and reconnect flight battery to aircraft
	Aircraft or transmitter is too close to large metal object, wireless source or another transmitter	Move aircraft and transmitter to another location and attempt binding again
	The bind plug is not installed correctly in the bind port	Install bind plug in bind port and bind the aircraft to the transmitter
	Flight battery/transmitter battery charge is too low	Replace/recharge batteries
Aircraft will not connect (after binding) to transmitter	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
	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
Control surface does not move	Transmitter may have been bound to a different aircraft using different DSM protocol	Bind aircraft to transmitter
	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
Controls reversed	BEC (Battery Elimination Circuit) of the ESC is damaged	Replace ESC
	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

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.

For a complete copy of AMA's Safety Handbook please visit:

www.modelaircraft.org/files/100.pdf

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.

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

FCC Information

FCC ID: BRWSPMSR6200A

Supplier's Declaration of Conformity

V900 BNF BASIC (EFL74500)

FC 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

CAN ICES-3 (B)/NMB-3(B)

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:

V900 BNF BASIC (EFL74500); Hereby, Horizon Hobby, LLC declares that the device is in compliance with the following: EU Radio Equipment Directive 2014/53/EU.

V900 PNP (EFL7475); Hereby, Horizon Hobby, LLC declares that the device is in compliance with the following: EU EMC Directive 2014/30/EU.

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 – 2476 MHz
5.58 dBm

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.

Recommended Receivers • Empfohlene Empfänger Récepteurs Recommandés • Ricevitori Raccomandati

PNP Only • Nur PNP • PNP Uniquement • Solo PNP

Part # Nummer Numéro Codice	Description	Beschreibung	Description	Descrizione
	Telemetry Equipped Receivers	Empfänger mit Telemetrie	Récepteurs avec télémétrie	Riceventi con telemetria
SPMAR620	AR620 6-Channel Air Integrated Telemetry Receiver	AR620-6-Kanal-Flugzeugempfänger mit integrierter Telemetrie	Récepteur aérien avec télémétrie intégrée 6 canaux AR620	Ricevente aereo AR620 6 canali con telemetria integrata
SPMAR6610T	AR6610T 6-Channel Carbon Fuse Integrated Telemetry Receiver	AR6610T-6-Kanal-Karbon-Sicherungempfänger mit integrierter Telemetrie	Récepteur à fusibles en carbone avec télémétrie intégrée 6 canaux AR6610T	Ricevente AR6610T 6 canali con telemetria integrata per fusoliera in carbonio
	AS3X Equipped Receivers	AS3X-Empfänger	Récepteurs avec AS3X	Riceventi con AS3X
SPMAR631	AR631 6-Channel AS3X Sport Receiver	AR631-6-Kanal-AS3X-Sportempfänger	Récepteur AS3X sport 6 canaux AR631	AR631 ricevitore sportivo a 6 canali AS3X
SPMAR637T	AR637T 6-Channel AS3X Sport Receiver	AR637T-6-Kanal-AS3X-Sportempfänger	Récepteur AS3X sport 6 canaux AR637T	AR637T ricevitore sportivo a 6 canali AS3X

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

Part # Nummer Numéro Codice	Description	Beschreibung	Description	Descrizione
EFL7451	Painted Fuselage	Lackierter Rumpf	Fuselage peint	Fus olera verniciata
EFL7452	Painted Wing	Lackierte Tragfläche	Aile peinte	Ala verniciata
EFL7453	Horizontal Stab	Höhenleitwerk	Stabilisateur horizontal	Stabilizzatore orizzontale
EFL7455	Battery Hatch	Akku-Abdeckung	Trappe de la batterie	Sportello batteria
EFL7456	Hardware and Pushrods	Hardware und Gestänge	Matériel et barres de liaison	Bulloneria e aste
EFL7457	Decal Sheet	Decalsatz	Feuillelet d'autocollants	Set decalcomanie
EFLSP200	E-flite 2.00 Aluminum Spinner w/4mm & 5mm Collets	E-flite 2.00 Aluminium-Spinner mit 4 mm und 5 mm Klemmbuchsen	Cône en aluminium E-flite 2.00 avec bagues de serrage 4 x 5 mm	E-flite 2.00 ogiva in alluminio con collari da 4 e 5 mm
EFL7459	Painted Cowl	Lackierte Motorhaube	Capot peint	Supporto verniciato
EFL7460	Motor Mount	Motorhalterung	Support moteur	Montante motore
EFLA1060C	60-AMP 60 AMP Brushless ESC	60 A 60 A bürstenloser Geschwindigkeitsregler	Variateur ESC sans balais 60 AMP 60-AMP	ESC 60-AMP 60 AMP BL
EFLM126015	15 BL Outrunner motor, 1260Kv	15 BL Outrunner motor, 1260Kv	15 BL Outrunner motor, 1260Kv	15 BL Outrunner motor, 1260Kv
SPMSA370	9 gram metal gear digital servo	9 g digitaler Metallgetriebe-Servo	mini servo numérique à engrenages métalliques de 9 g	Servo digitale con ingranaggi in metallo 9 grammi
SPMAR631	Spektrum AR631 6-Channel Sport Receiver	Spektrum AR631 Sportempfänger mit 6 Kanälen	Récepteur sport Spektrum 6 canaux AR631	Ricevitore Spektrum AR631 6 canali sport
APC08080E	APC 8x8 Thin Electric Propeller	APC 8 x 8 dünner, elektrischer Propeller	Hélice électrique fine 8x8 APC	APC 8x8 Elica elettrica sottile

Optional Parts • Optionale Bauteile • Pièces optionnelles • Pezzi opzionali

Part # Nummer Numéro Codice	Description	Beschreibung	Description	Descrizione
DYN1400	LiPo Charge Protection Bag, Small	LiPo Ladeschutzbeutel, klein	Sac de protection du chargeur de batterie Li-Po, petit	Sacchetto di protezione per batteria LiPo, piccolo
DYN1405	LiPo Charge Protection Bag, Large	LiPo Ladeschutzbeutel, groß	Sac de protection du chargeur de batterie Li-Po, large	Sacchetto di protezione per batteria LiPo, grande
EFLA250	Park Flyer Tool Asst, 5 pc	Parkflyer-Tool Asst, 5 pc	Assortiment d'outils Park Flyer 5 pièces	Assort. utensili Park Flyer, 5 pz.
SPMX22003S50	11.1V 3S 50C 2200mAh Li-Po	11.1V 3S 50C 2200mAh LiPo	Li-Po 3S 11,1V 2200mA 50C	11.1V 3S 50C 2200MAH Li-Po
SPMX22004S50	14.4V 4S 50C 2200mAh Li-Po	14.4V 4S 50C 2200mAh LiPo	Li-Po 4S 14,4V 2200mA 50C	14.4V 4S 50C 2200MAH Li-Po
SPMXC1000	Smart S1200 DC Charger, 1x200W	Smart S1200 DC Charger, 1x200W	Smart S1200 DC Charger, 1x200W	Smart S1200 DC Charger, 1x200W
SPMXC1010	Smart S2100 AC Charger, 2x100W	Smart S2100 AC Charger, 2x100W	Smart S2100 AC Charger, 2x100W	Smart S2100 AC Charger, 2x100W
SPMXBC100	Li-Po Cell Voltage Checker	Li-Po Cell Voltage Checker	Testeur de tension d'éléments Li-Po	Voltmetro verifica batterie LiPo
SPM6775	NX6 DSMX 6-Channel Transmitter	Spektrum NX6 DSMX 6-Kanal Sender	Emetteur NX6 DSMX 6 voies	NX6 DSMX Trasmettitore 6 canali
SPMR6775	NX8 DSMX 8-Channel Transmitter	Spektrum NX8 DSMX 8-Kanal Sender	Emetteur NX8 DSMX 8 voies	NX8 DSMX Trasmettitore 8 canali
SPMR10100	NX10 DSMX 10-Channel Transmitter	Spektrum NX10 DSMX 10 Kanal Sender	Emetteur NX10 DSMX 10 voies	NX10 DSMX Trasmettitore 10 canali
SPMR12000	iX12 DSMX 12-Channel Transmitter	Spektrum iX12 DSMX 12 Kanal Sender	Emetteur iX12 DSMX 12 voies	iX12 DSMX Trasmettitore 12 canali
SPMR20100	iX20 DSMX 20-Channel Transmitter	Spektrum iX 20 DSMX 20 Kanal Sender	Emetteur iX20 DSMX 20 voies	iX 20 DSMX Trasmettitore 20 canali



V900™ Sport Airplane

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E-flite, V900, DSM, DSM2, DSMX, Bind-N-Fly, BNF, the BNF logo, Plug-N-Play, AS3X, SAFE, the SAFE logo, ModelMatch, Thrust, Prophet, EC3, and the Horizon Hobby logo are trademarks or registered trademarks of Horizon Hobby, LLC.

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US 8,672,726. US 9,930,567. US 10,419,970. US 9,056,667. US 9,753,457. US 10,078,329. Other patents pending.

<https://www.horizonhobby.com/content/e-flite-rc>