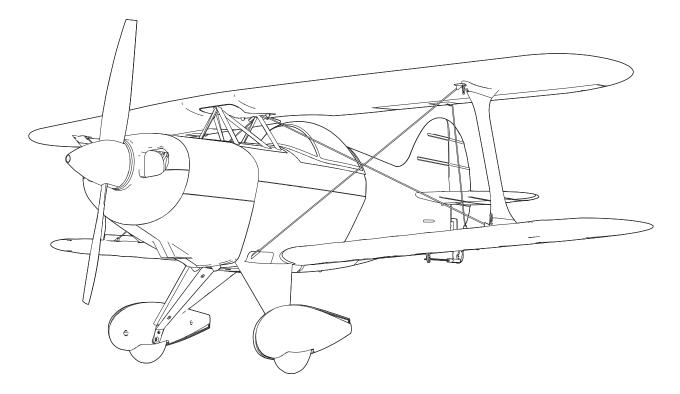


# Pitts S-1S



Instruction Manual Bedienungsanleitung Manuel d'utilisation Manuale di Istruzioni





#### **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 and click on the support 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:

<u>WARNING</u>: Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.

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.

 $\Lambda$ 

**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**

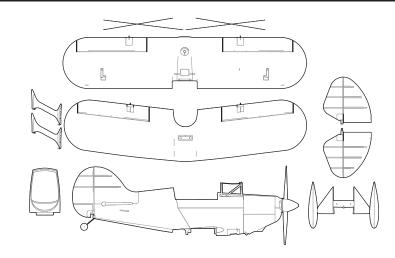
As the user of this product, you are solely responsible for operating in a manner that does not endanger yourself and others or result in damage to the product or the property of others.

- 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**

Qı	uick Start Information			
Transmitter Setup	Set up your transmitter using the transmitter setup chart			
	Hi Rate Low Rate			
Dual Rates	Ail	21mm	12mm	
	Ele	16mm	12mm	
	Rud	28mm	22mm	
Center of Gravity (CG)	86mm +/-3mm back from leading edge of the top wing.			
Flight Timer Setting	4 minutes			



## **Specifications**

		BASIC	PLUG-N-PLAY
	<b>Motor:</b> BL10 Brushless Outrunner 880Kv EFL8463	Installed	Installed
ESC	ESC: 40 AMP Brushless ESC (EFLA1140W)	Installed	Installed
$\bowtie$	9 gram servo (SPMSA330)	Installed	Installed
<b>2.</b>	Receiver: Spektrum™ AR636A 6-Channel Sport Receiver (SPMAR636A)	Installed	Required to Complete
	<b>Recommended Battery:</b> 11.1V 3S 2200 30C Li-Po (EFLB22003S30)	Required to Complete	Required to Complete
8	Recommended Battery Charger: 3 or 4 cell Li-Po battery balancing charger	Required to Complete	Required to Complete
<u>_</u>	Recommended Transmitter: Full-Range 6 channel (or more) 2.4GHz with Spektrum	Required to	Required to
ر ا	DSM2®/DSMX® technology with adjustable Dual Rates	Complete	Complete

## **Table of Contents**

SAFE® Select Technology	4
Preflight	
Transmitter Setup	4
Model Assembly	5
Model Assembly Continued	6
Transmitter and Receiver Binding	7
SAFE® Select Switch Designation	8
Control Horn and Servo Arm Settings	8
Battery Installation and ESC Arming	9
Center of Gravity (CG)	10
AS3X Control Direction Test	
In Flight Trimming	10
Flying Tips and Repairs	11
PNP Receiver Selection and Installation	
Post Flight	12
Motor Service	12
Troubleshooting Guide AS3X	12
Troubleshooting Guide	13
AMA National Model Aircraft Safety Code	14
Limited Warranty	15
Contact Information	16
Replacement Parts	58
Optional Parts	59

- 33.5 in (850 mm) -

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/.

46 oz (1304 g)

437 sq/in (28.2 sq/dm)

## **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.
- 2. Read this instruction manual thoroughly.
- 3. Charge the flight battery.
- 4. Setup Transmitter using transmitter setup chart.
- 5. Fully assemble the airplane.
- 6. Install the flight battery in the aircraft (once it has been fully charged).
- 7. Check the Center of Gravity (CG).
- 8. Bind the aircraft to your transmitter.

- 9. Make sure linkages move freely.
- 10. Perform the Control Direction Test with the transmitter.
- 11. Perform the AS3X Control Direction Test with the aircraft.
- 12. Adjust flight controls and transmitter.
- 13. Perform a radio system Range Test.
- 14. Find a safe open area to fly.
- 15. Plan flight for flying field conditions.

## **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 $^{\odot}$  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.

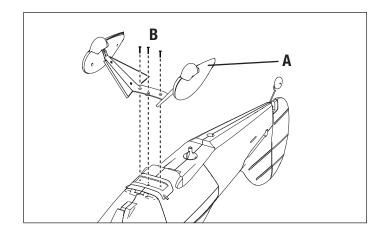
C	omputer	ized Transmitter Setup
Start all transr model reset), t		nming with a blank ACRO model (perform a e model.
Set Dual Rates to		HIGH 100% LOW 70%
Set Servo Trav	el to	100%
DXe	Refer to spek	trumrc.com for the appropriate download setup.
DX6i		SETUP LIST MENU L TYPE: ACRO
DX7S DX8		SYSTEM SETUP L TYPE: AIRPLANE TYPF: 1 AII
DX6e DX6 (Gen2) DX7 (Gen2) DX8 (Gen2) DX8e DX9 DX10t iX12 DX18 DX20	1. Go to the S 2. Set MODE 3. Set AIRCR	SYSTEM SETUP L TYPE: AIRPLANE

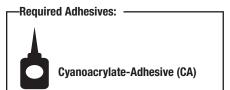
## **Model Assembly**

## **Landing Gear Installation**

- 1. Install the landing gear assembly **(A)** into the pocket located at the bottom of the fuselage as shown.
- 2. Secure the landing gear into place with the 3 included screws **(B)** (2 x 10mm self-tapping countersunk screws) as shown.

Disassemble in reverse order.

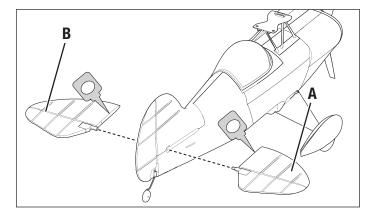


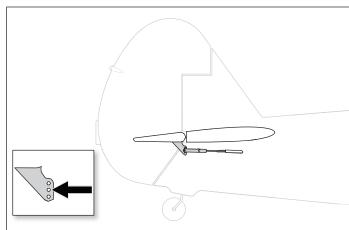


#### **Horizontal Tail Installation**

- 1. Slide the horizontal tail **(A)** and joiner **(B)** into the slot in the rear of the fuselage. Ensure the control horn faces down.
- 2. Secure each horizontal tail piece in place with a drop of CA.
- 3. Attach the pushrod to the elevator control horn using the included clevis

**Tip:** Use needle-nose pliers or ball link pliers (RV01005) to remove or install a link on a control horn





## **Model Assembly Continued**

### **Installing the Wings**

- Install the bottom wing (leading edge first) and connect the servo connectors from the wing to the servo extension.
- 2. Secure the bottom wing with the single body clip.
- Install the interplane struts by inserting the curved end into the plastic receptacles on the top of the bottom wing. Rotate the struts a few degrees toward vertical while pressing down to seat them in position.
- Place the top wing in position and insert the cabane and interplane struts into position.
- Insert the 4 retainer pins into the leading edge of the wing to lock the struts into position.
- 6. Secure the top wing with the two body clips.
- Connect the aileron linkage between the left top and bottom ailerons. Insert
  the Z bend into top connector first, then attach the clevis to the bottom
  connector. See clevis installation below for adjustments.
  Repeat for the right side.

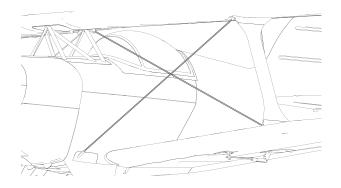
IMPORTANT: Make sure both ailerons are parallel to each other.

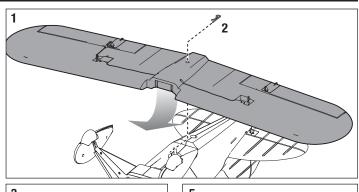
Disassemble in reverse order.

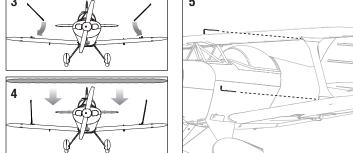
#### **OPTIONAL FLYING WIRES**

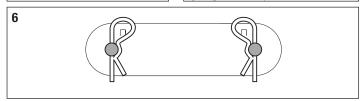
Flying wires are intended for static display and may dislodge from plane in flight. It is recommended that the wires be permanently glued into place.

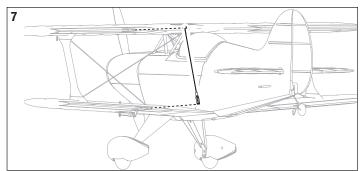
**IMPORTANT:** If you chose to glue the wires into the Pitts you will no longer be able to remove the wings.





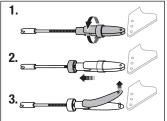


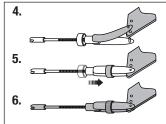




#### **Clevis Installation**

- 1. Rotate the clevis to the desired length and align the slot with the horn.
- 2. Pull the tube from the clevis to the linkage.
- 3. Carefully spread the clevis.
- 4. Insert the clevis pin into the desired hole in the control horn.
- 5. Move the tube to hold the clevis on the control horn.



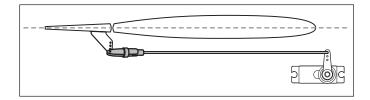


## **Control Surface Centering**

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.

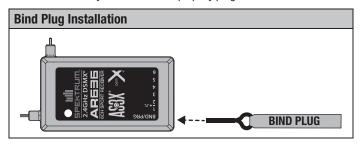


## Transmitter and Receiver Binding / Switching ON and OFF SAFE Select

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.



#### **Binding Procedure / Switching ON SAFE Select**

**IMPORTANT:** The included AR636A 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.
- 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 to 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.

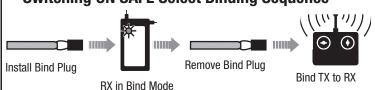
**IMPORTANT:** Once bound, the receiver will retain its bind and last setting until it has been intentionally changed, even when power is cycled ON and OFF. However, if you notice that bind has been lost, simply repeat the binding processs.

#### **SAFE Select ON Indication**

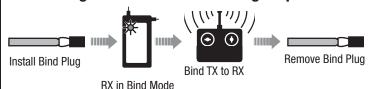
Every time the receiver is powered ON the surfaces will cycle back and forth **twice** with a slight pause at neutral position to indicate that SAFE Select is switched ON.

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.

## **Switching ON SAFE Select Binding Sequence**



### **Switching OFF SAFE Select Binding Sequence**



#### **Binding Procedure / Switching OFF SAFE Select**

**IMPORTANT:** The included AR636A 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 to 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 processs.

#### **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.

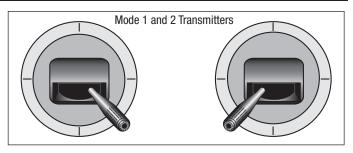
**IMPORTANT:** Before assigning your desired switch, ensure that the travel for that channel is set at 100% in both directions.

#### Assigning a switch

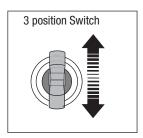
- Bind the aircraft correctly to activate SAFE Select. This will allow the system to be assigned to a switch.
- Hold both transmitter sticks to the inside bottom corners and toggle the desired switch 5 times (1 toggle = full up and down) to assign that switch. The control surfaces of the aircraft will move, indicating the switch has been selected.

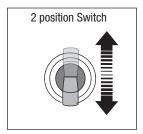
Repeat the process to assign a different switch if desired.

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 AR636A gain values may need to be adjusted. Refer to the Spektrum AR636A 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.

Elevator	000	
Ailerons	000	
Rudder	000	

3 \_\_\_\_\_ Pitts \_\_\_

## **Battery Installation and ESC Arming**

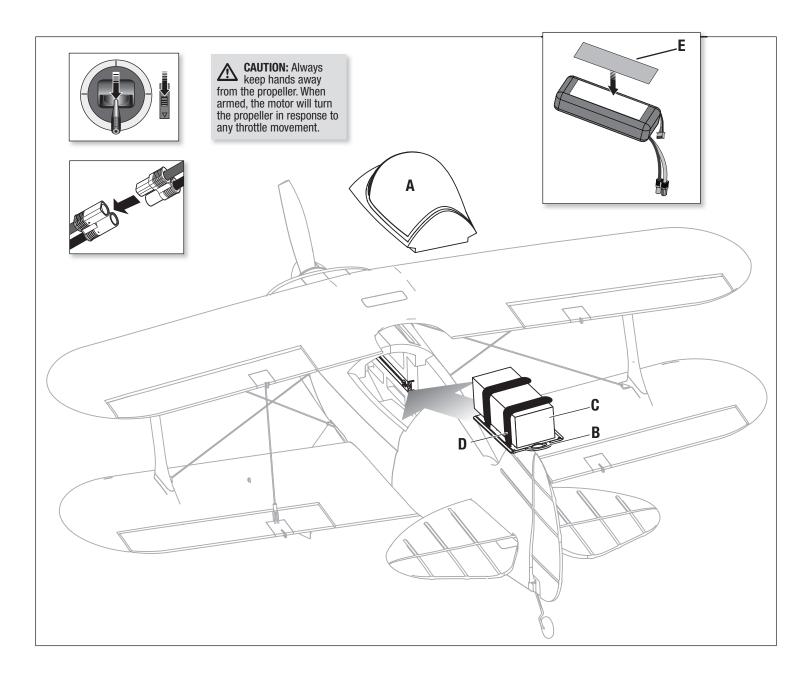
### **Battery Selection**

We recommend the E-flite® 2200mAh 11.1V 3S 30C Li-Po battery (EFLB22003S30). 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.

- Lower the throttle and throttle trim to the lowest settings. Power on the Transmitter, then wait 5 seconds.
- 2. Remove canopy (A) from the aircraft.
- 3. Remove the battery tray by pulling the finger tab **(B)** toward the tail of the aircraft.
- 4. Install the fully charged battery (C) all the way forward on the battery tray. Secure using the hook and loop strap (D). For added security, apply the loop side (soft side) of the hook and loop tape (E) to the bottom of the battery and the hook side to the battery tray.

- 5. Insert the battery tray until it clicks into position.
- 6. Connect the battery to the ESC (the ESC is now armed).
- 7. Keep the aircraft immobile and away from wind upright and on flat surface or the system will not initialize.
  - The ESC will produce a series of sounds. 3 flat tones followed immediately by 2 ascending tones if you are switching ON SAFE Select.
  - An LED will light on the receiver.
- 8. Reinstall the battery hatch.

**IMPORTANT:** Due to the short nose of the aircraft, for first flights place the battery as far forward as possible. The front strap of the battery tray will be roughly in the middle of a 3-cell 2200mAh battery.

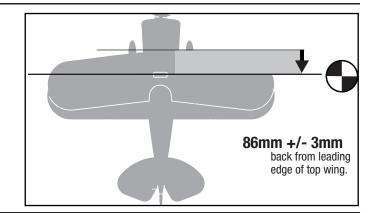


## **Center of Gravity (CG)**

The CG location is measured from the leading edge of the top wing at the root. This CG location has been determined with the recommended Li-Po battery (EFLB22003S300).

Tip: Measure the CG with the aircraft upright.

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



## **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.

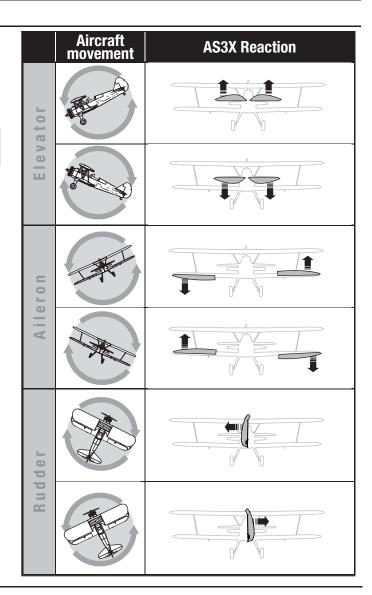
 Raise the throttle just above 25%, then lower the throttle to activate AS3X technology.



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

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.



## **In Flight Trimming**

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

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

Failure to do so could affect flight performance.



4.0

## **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. Gradually increase the throttle to ¾ and steer with the rudder. As the tail comes off the ground, pull back gently on the elevator. When airborne, climb to a comfortable altitude.

#### **Flying**

For your first flights with the recommended battery pack (EFLB22003S30), set your transmitter timer or a stopwatch to 5 minutes. After five 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 approximately 1/4.

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 nosing over.

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

## $\triangle$

**WARNING:** Always decrease throttle at propeller strike.

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

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

**NOTICE:** Crash damage is not covered under warranty.

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

#### **Low Voltage Cutoff (LVC)**

When a Li-Po battery is discharged below 3V per cell, it will not hold a charge. The ESC protects the flight battery from over-discharge using Low Voltage Cutoff (LVC). Before the battery charge decreases too much, LVC removes power supplied to the motor. Power to the motor 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 (EFLA111, 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.

## **PNP Receiver Selection and Installation**

The Spektrum™ AR636A receiver is recommended for ths airplane. If you choose to install another receiver, ensure that it is at least a 6-channel full range (sport) receiver. Refer to your receiver manual for correct installation and operation instructions.

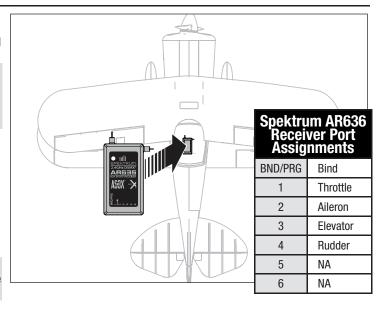
CAUTION: When using a Futaba® transmitter with a Spektrum DSM® module, you must reverse the throttle channel and rebind. Refer to your Spektrum module manual for binding and failsafe instructions. Refer to your Futaba transmitter manual for instructions on reversing the throttle channel. All flight surfaces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

Installation (Spektrum AR636 receiver installation shown)

- 1. Remove the canopy from the fuselage.
- Mount the receiver parallel to the length of the fuselage as shown. Use double-sided servo tape.
- 3. Insert the servo plugs into the appropriate ports on the receiver.
- Confirm control stick inputs and gyro response to aircraft movements results in proper control surface movement.

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

Always confirm proper control surface movement any time changes are made to the transmitter, receiver, or servos.



## **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.
- Recharge the flight battery.

- 5. 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.

#### **Motor Service**



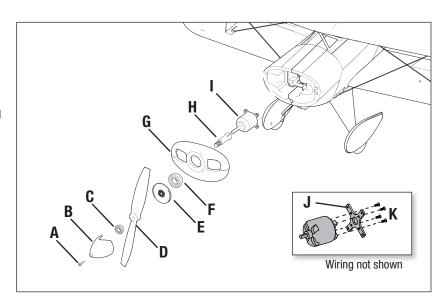
**CAUTION:** Always disconnect the flight battery before performing motor service.

## **Disassembly**

- 1. Remove screw (A) from spinner (B) to remove.
- 2. Use a tool to remove the propeller nut (C), and then remove the propeller (D), spinner backplate (E), prop washer (F), cowl (G) and prop adaptor (H), from the motor.
- 3. Remove the four screws and the motor (I) with the X-mount (J) from the fuselage.
- 4. Disconnect the motor wires from the ESC wires.
- 5. Remove the 4 screws (K) and motor from the X-mount.

### **Assembly**

- 6. Assemble in reverse order.
  - · Correctly align and connect the motor wire colors with the
  - Install the propeller with the size numbers (11 x 7) facing out from the motor.
  - Tighten the spinner nut to secure the propeller into place.



## **Troubleshooting Guide AS3X**

Problem	Possible Cause	Solution	
	Damaged propeller or spinner	Replace propeller or spinner	
	Imbalanced propeller	Balance the propeller. For more information, view the propeller balancing video at www.horizonhobby.	
Oillatian	Motor vibration	Replace parts or correctly align all parts and tighten fasteners as needed	
Oscillation	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	
Trim is not at neutral If you adjust trim more than 8 clicks, adjust the clevis to remove trim		If you adjust trim more than 8 clicks, adjust the clevis to remove trim	
Inconsistent flight	Sub-Trim is not at neutral	No Sub-Trim is allowed. Adjust the servo linkage	
performance	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	

Pitts -

## **Troubleshooting Guide**

Aircraft will not connect (after binding) to transmitter    Bind plug left installed in bind port   Rebind transmitter to the aircraft and remove the bind plug before cycling power indings to transmitter   Select correct model memory on transmitter	Problem	Possible Cause	Solution
Spond to throttle but responds to other treatment of the put responds to other controls with the put responds to other the put responds to the put responds to the put responds to other the put responds to the	Aircraft will not re-	Throttle not at idle and/or throttle trim too high	Reset controls with throttle stick and throttle trim at lowest setting
Extra propeller noise or extra vibration		Throttle servo travel is lower than 100%	Make sure throttle servo travel is 100% or greater
Extra propeller noise or extra vibration or extra v		Throttle channel is reversed	Reverse throttle channel on transmitter
Propeller is out of balance   Prop nut is too loose   Tighten the prop nut	controls	Motor disconnected from ESC	Make sure motor is connected to the ESC
Properlies is out of balance — Bedance of replace physical Properlies	E 1	Damaged propeller and spinner, collet or motor	Replace damaged parts
Reduced flight time or aircraft under- powered  Flight battery charge is low  Propeller installed backwards  Flight battery damaged  Flight conditions may be too cold  Battery capacity too low for flight conditions  Aircraft will not Bind (during binding) to transmitter  Aircraft vill not Bind (during binding) to transmitter  Aircraft will not Bind (during binding) to transmitter  Aircraft will not Bind (during binding) to transmitter  Aircraft or transmitter to near aircraft during binding process  Aircraft or transmitter is too close to large metal object, wireless source or another transmitter  Aircraft will not connect (after binding) to transmitter  Aircraft will not good (ModelMatch <sup>TM</sup> cadios only)  Flight battery to incraft during connecting process  Aircraft or transmitter is too close to large metal object, wireless source or another transmitter  Aircraft binding) to transmitter  Aircraft binding) to transmitter  Aircraft will not connect (after binding) to transmitter  Aircraft will not connect (after binding) to transmitter  Aircraft binding) to transmitter  Aircraft binding) to transmitter is too close to large metal object, wireless source or another transmitter  Aircraft binding) to transmitter  Aircraft or transmitter is too close to large metal object, wireless source or another transmitter  Aircraft or transmitter bind bind port  Aircraft or transmitter bind bind port  Aircraft or transmitter is too close to large metal object, wireless source or another transmitter  Bind plug left installed in bind port  Aircraft or transmitter to near aircraft during connecting process  Aircraft or transmitter is too close to large metal object, wireless source or another transmitter  Bind plug left installed in bind port  Aircraft binding to transmitter to the aircraft and remove the bind plug before cycling pow dideled by the aircraft to transmitter to the aircraft and transmitter to the aircraft and remove the bind plug before cycling pow din aircraft to transmitter in transmitter  Control surface does no		Propeller is out of balance	Balance or replace propeller
Reduced flight time or aircraft underpowered  Propeller installed backwards Flight battery damaged Flight conditions may be too cold Battery capacity too low for flight conditions Battery capacity too low for flight conditions Battery capacity too low for flight conditions Replace battery or use a larger capacity battery  Move powered transmitter a few feet from aircraft, disconnect and reconnect flight battery to aircraft  Aircraft will not Bind (during binding) to transmitter  Aircraft will not Bind (during binding) to transmitter  Aircraft will not connect (after binding) to transmitter  Aircraft transmitter is too close to large metal object, wireless source or another transmitter  Aircraft bound to different model memory (ModelMatch <sup>Na</sup> radios only)  Flight battery/Transmitter battery charge is too low transmitter is too close to large metal object, wireless source or another transmitter  Aircraft transmitter to near aircraft during connecting process  Aircraft or transmitter is too close to large metal object, wireless source or another transmitter  Aircraft or transmitter is too close to large metal object, wireless source or another transmitter  Bind plug left installed in bind port  Aircraft bound to different model memory (ModelMatch <sup>Na</sup> radios only)  Flight battery/Transmitter battery charge is too low  Transmitter may have been bound to a different aircraft to transmitter  Control surface does not move  Control surface does not move  Control surface does not move  Flight battery charge is low  Fully recharge flight battery  Fully recharge flight battery  Flight battery charge is low	or CALIA VIDIALION	Prop nut is too loose	Tighten the prop nut
raircraft underpowered Flight battery damaged Flight conditions may be too cold Battery capacity too low for flight conditions  Replace flight battery is warm before use Replace battery or use a larger capacity battery  Transmitter too near aircraft during binding process Aircraft will not bind (during binding) to transmitter  Aircraft will not bind (during binding) to transmitter  Aircraft will not connect (after binding) to transmitter  Aircraft bound to different model memory (ModelMatch™ radios only)  Flight battery/Transmitter battery charge is too low  Transmitter may have been bound to a different aircraft to transmitter  Control surface does not move  Flight battery for aircraft and transmitter to another location and attempt binding again  Move aircraft and transmitter to another location and attempt binding again  Move powered transmitter and repeat bind process. Hold transmitter bind button or switch until receiver is bound  Move powered transmitter a few feet from aircraft, disconnect and reconnect flight battery to aircraft  Move aircraft and transmitter a few feet from aircraft, disconnect and reconnect flight battery to aircraft  Move aircraft and transmitter to another location and attempt connecting again  Move aircraft and transmitter to another location and attempt connecting again  Move aircraft and transmitter to another location and attempt connecting again  Move aircraft and transmitter to another location and attempt connecting again  Move aircraft and transmitter to another location and attempt connecting again  Move aircraft and transmitter to another location and attempt connecting again  Move aircraft and transmitter to another location and attempt bind process. Hold transmitter to another location and attempt bend process. Hold transmitter to another location and attempt bend process and location are flight bat		Flight battery charge is low	Completely recharge flight battery
Flight battery damaged Flight conditions may be too cold Battery capacity too low for flight conditions  Aircraft will not transmitter  Aircraft will not transmitter  Aircraft will not connect (after binding) to transmitter  Control surface does not move  Control surface does not move  Flight battery connections posses  Flight battery on aircraft during binding process  Aircraft or transmitter is too close to large metal object, wireless source or another transmitter  Flight battery/transmitter battery charge is too low Bind switch or button not held long enough during bind process  Aircraft or transmitter is too close to large metal object, wireless source or another transmitter  Aircraft will not connect (after binding) to transmitter is too close to large metal object, wireless source or another transmitter  Aircraft bound to different model memory  (ModelMatch™ radios only)  Flight battery/Transmitter battery charge is too low  Control surface does not move  Control surface does not move  Transmitter bound correctly or the incorrect airplanes was selected  Flight battery charge is low  Fully recharge flight battery  Flully recharge is flight battery  Flully recharge flight battery  Flully recharge if flight battery  Flully recharge flight battery  Flully recharge flight battery  Flully recharge is flight battery  Flully recharge flight battery  Flully recharge is flight battery  Flully recharge is flight battery  Flully recharge flight battery  Flully recharge flight battery  Flight battery charge is low  Flight battery charge is low  Fligh	Reduced flight time	Propeller installed backwards	Install propeller with numbers facing forward
Battery capacity too low for flight conditions  Replace battery or use a larger capacity battery  Transmitter too near aircraft during binding process  Aircraft will not Bind (during binding) to transmitter  Aircraft bind plug is not installed correctly in the bind port Flight battery/transmitter bind process  Bind switch or button not held long enough during binding to process  Aircraft will not connect (after binding) to transmitter  Aircraft binding) to transmitter  Aircraft will not connect (after binding) to transmitter  Aircraft will not connect (after binding) to transmitter  Aircraft will not transmitter  Aircraft or transmitter is too close to large metal object, wireless source or another transmiter  Aircraft will not connect (after binding) to transmitter  Aircraft binding) to transmitter is too close to large metal object, wireless source or another transmitter  Aircraft binding) to transmitter is too close to large metal object, wireless source or another transmitter  Aircraft binding) to transmitter is too close to large metal object, wireless source or another transmitter  Aircraft binding) to transmitter is too close to large metal object, wireless source or another transmitter  Aircraft bound to different model memory (ModelMatch™ radios only)  Flight battery/Transmitter battery charge is too low Transmitter may have been bound to a different aircraft using different DSM protocol  Control surface does not move  Control surface, control horn, linkage or servo damage  Nove powered transmitter to another location and attempt binding again Move aircraft and transmitter and repeat bind process. Hold transmitter betateries after and process. Hold transmitter betateries after and repeat bind process. Hold transmitter betateries after and repeat bind process. Hold transmitter betateries after and repeat bind process. Hold transmitter to another location and attempt binding again division of switch until receiver is bound.  Move powered transmitter to another location and transmitter betatery charge is	or aircraft under-	Flight battery damaged	Replace flight battery and follow flight battery instructions
Aircraft will not Bind (during binding) to transmitter  Aircraft will not transmitter  Aircraft will not connect (after binding) to transmitter  Aircraft will not transmitter  Aircraft will not connect (after binding) to transmitter  Aircraft bound to different model memory (ModelMatch™ radios only)  Flight battery/Transmitter battery charge is too low transmitter  Control surface does not move  Control surface does not move  Transmitter is not bound correctly or the incorrect airplanes was selected  Flight battery charge is low  Fully recharge flight battery  Fully recharge flight battery  Fully recharge flight battery  Fully recharge flight battery  Aircraft to another location and attempt binding again  Move aircraft and transmitter to another location and incorpance from the incorpance flight battery to aircraft and repeat bind process. Hold transmitter aftew feet from aircraft, disconnect and reconnect flight battery to aircraft and repeat bind process. Hold transmitter aftew feet from aircraft to the transmitter aftew feet from aircraft, disconnect and reconnect after and repeat bind process. Hold transmitter aftew feet from aircraft and remove the bind process are for fight battery on aircraft and remove from aircraft and remove the bind pr	powered		Make sure battery is warm before use
Aircraft will not Bind (during binding) to transmitter  Aircraft will not Bind (during binding) to transmitter  Aircraft will not connect (after binding) to transmitter  Aircraft will not connect (after binding) to transmitter  Aircraft bund to different model memory (ModelMatch™ radios only)  Flight battery/Transmitter battery charge is too low transmitter  Control surface does not move  Flight battery too close to large metal object, wireless source or another transmitter bind put in stall bind plug in bind port and bind the aircraft to the transmitter power off transmitter and repeat bind process. Hold transmitter bind button or switch until receiver is bound  Move powered transmitter and repeat bind process. Hold transmitter bind button or switch until receiver is bound  Aircraft or transmitter is too close to large metal object, wireless source or another transmitter  Aircraft or transmitter is too close to large metal object, wireless source or another transmitter  Bind plug left installed in bind port  Aircraft bound to different model memory  (ModelMatch™ radios only)  Flight battery/Transmitter battery charge is too low  Replace/recharge batteries  Bind aircraft to transmitter  Bind aircraft to transmitter  Control surface, control horn, linkage or servo damage  Wire damaged or connections loose  Transmitter is not bound correctly or the incorrect airplanes in transmitter  Fully recharge flight battery  Fully recharge flight battery  Fully recharge flight battery		Battery capacity too low for flight conditions	Replace battery or use a larger capacity battery
Aircraft will not Bind (during binding) to transmitter  Aircraft will not connect (after binding) to transmitter  Aircraft will not connect (after binding) to transmitter  Aircraft binding) to transmitter  Aircraft binding to transmitter  Aircraft will not connect (after binding) to transmitter  Control surface does not move  Control surface does not move  Aircraft condition and attempt on another transmitter  object, wireless source or another transmitter  Aircraft during connecting process  Bind switch or button not held long enough during bind process. Hold transmitter bind button or switch until receiver is bound  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  Bind plug left installed in bind port  Aircraft bind plug left installed in bind port  Aircraft binding) to transmitter  Bind plug left installed in bind port  Aircraft binding) to transmitter binding to transmitter  Bind plug left installed in bind port  Aircraft binding to process  Aircraft binding to process  Aircraft or transmitter is too close to large metal object, wireless source or another transmitter  Bind plug left installed in bind port  Aircraft binding to power off transmitter a few feet from aircraft, disconnect and reconnect flight battery to aircraft  Move aircraft and transmitter to another location and attempt connecting again  Move aircraft and transmitter to another location and attempt on the power off transmitter to the transmitter to another location and attempt on the power off transmitter a few feet from aircraft, disconnect and reconnect flight battery to aircraft and transmitter a few feet from aircraft during connections and attempt on the power off transmitter to another location and attempt on the power off transmitter and repeat bind process.  Aircraft vinil not connecting again  Move aircraft and transmitter and repeat bind process.  Aircraft von earcraft during con		Transmitter too near aircraft during binding process	
Transmitter    Flight battery/transmitter battery charge is too low   Replace/recharge batteries   Power off transmitter and repeat bind process. Hold transmitter bind   Dutton or switch until receiver is bound   Move powered transmitter a few feet from aircraft, disconnect and reconnect   Move powered transmitter a few feet from aircraft, disconnect and reconnect   flight battery to aircraft   Move aircraft and transmitter to another location and attempt connecting agair   Dutton or switch until receiver is bound   Move powered transmitter a few feet from aircraft, disconnect and reconnect   flight battery to aircraft   Move aircraft and transmitter to another location and attempt connecting agair   Move aircraft and transmitter to the aircraft and remove the bind plug before cycling pow   Aircraft bound to different model memory   Select correct model memory on transmitter   Move aircraft and remove the bind plug before cycling pow   Select correct model memory on transmitter   Select correct m			Move aircraft and transmitter to another location and attempt binding again
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Aircraft will not connect (after binding) to transmitter  Eind plug left installed in bind port  Aircraft bound to different model memory (ModelMatch™ radios only)  Flight battery/Transmitter battery charge is too low  Transmitter may have been bound to a different aircraft using different DSM protocol  Control surface does not move  Transmitter is not bound correctly or the incorrect airplanes was selected  Flight battery charge is low  Fully recharge flight battery  Fully recharge flight battery  flight battery to aircraft  Move aircraft and transmitter to another location and attempt connecting agair  Move aircraft and transmitter to another location and attempt connecting agair  Move aircraft and transmitter to another location and attempt connecting agair  Move aircraft and transmitter to another location and attempt connecting agair  Move aircraft and transmitter to another location and attempt connecting agair  Move aircraft and transmitter to another location and attempt connecting agair  Move aircraft and transmitter to another location and attempt connecting agair  Move aircraft and transmitter to the aircraft and remove the bind plug before cycling pown according pown and transmitter  Select correct model memory on transmitter  Replace/recharge batteries  Bind aircraft to transmitter  Replace or repair damaged parts and adjust controls  Wire damaged or connections loose  Transmitter is not bound correctly or the incorrect airplanes in transmitter  Re-bind or select correct airplanes in transmitter			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    Bind plug left installed in bind port			
connect (after binding) to transmitterBind plug left installed in bind portRebind transmitter to the aircraft and remove the bind plug before cycling power binding) to transmitterControl surface does not moveBind plug left installed in bind portRebind transmitter to the aircraft and remove the bind plug before cycling power and to the aircraft and remove the bind plug before cycling power and to the aircraft and remove the bind plug before cycling power and transmitterControl surface does not moveFlight battery/Transmitter battery charge is too lowReplace/recharge batteriesBind aircraft to transmitterBind aircraft to transmitterBind aircraft to transmitterReplace or repair damaged parts and adjust controlsDo a check of wires and connections, connect or replace as neededTransmitter is not bound correctly or the incorrect airplanes was selectedRe-bind or select correct airplanes in transmitterFlight battery charge is lowFully recharge flight battery	connect (after binding) to		Move aircraft and transmitter to another location and attempt connecting again
transmitter  (ModelMatch™ radios only)  Flight battery/Transmitter battery charge is too low Transmitter may have been bound to a different air- craft using different DSM protocol  Control surface, control horn, linkage or servo damage  Mire damaged or connections loose  Control surface does not move  Control surface does not move    Mire damaged or connections loose   Do a check of wires and connections, connect or replace as needed		Bind plug left installed in bind port	Rebind transmitter to the aircraft and remove the bind plug before cycling power
Transmitter may have been bound to a different air- craft using different DSM protocol  Control surface, control horn, linkage or servo damage  Wire damaged or connections loose  Transmitter is not bound correctly or the incorrect airplanes was selected  Flight battery charge is low  Bind aircraft to transmitter  Bind aircraft to transmitter  Beplace or repair damaged parts and adjust controls  Do a check of wires and connections, connect or replace as needed  Re-bind or select correct airplanes in transmitter			Select correct model memory on transmitter
craft using different DSM protocol  Control surface, control horn, linkage or servo damage  Control surface does not move  Control surface does not bound correctly or the incorrect airplanes was selected  Re-bind or select correct airplanes in transmitter  Fully recharge flight battery		Flight battery/Transmitter battery charge is too low	Replace/recharge batteries
Control surface does not move  Wire damaged or connections loose Transmitter is not bound correctly or the incorrect airplanes was selected  Flight battery charge is low  Wire damaged or connections loose Transmitter is not bound correctly or the incorrect airplanes in transmitter  Re-bind or select correct airplanes in transmitter  Fully recharge flight battery			Bind aircraft to transmitter
Control surface does not move  Transmitter is not bound correctly or the incorrect airplanes was selected  Re-bind or select correct airplanes in transmitter  Fully recharge flight battery		Control surface, control horn, linkage or servo damage	Replace or repair damaged parts and adjust controls
not move airplanes was selected Filight battery charge is low Fully recharge flight battery  Re-bind or select correct airplanes in transmitter  Fully recharge flight battery		Wire damaged or connections loose	Do a check of wires and connections, connect or replace as needed
Flight battery charge is low Fully recharge flight battery			Re-bind or select correct airplanes in transmitter
PEO (D. H Ell. ) . (I) . (II) . (III . E00 )		Flight battery charge is low	Fully recharge flight battery
BEC (Battery Elimination Circuit) of the ESC is damaged Replace ESC		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	Controls reversed	Transmitter settings are reversed	
ESC uses default soft Low Voltage Cutoff (LVC)  Recharge flight battery or replace battery that is no longer performing		ESC uses default soft Low Voltage Cutoff (LVC)	Recharge flight battery or replace battery that is no longer performing
Motor power pulses Weather conditions might be too cold Postpone flight until weather is warmer		Weather conditions might be too cold	Postpone flight until weather is warmer
then motor loses power  Battery is old, worn out, or damaged  Replace battery		Battery is old, worn out, or damaged	Replace battery
Battery C rating might be too small  Use recommended battery	Pottor	Battery C rating might be too small	Use recommended battery

## **AMA National Model Aircraft Safety Code**

Effective January 1, 2014

#### A. GENERAL

A model aircraft is a non-human-carrying aircraft capable of sustained flight in the atmosphere. It may not exceed limitations of this code and is intended exclusively for sport, recreation, education and/or competition. All model flights must be conducted in accordance with this safety code and any additional rules specific to the flying site.

- 1. Model aircraft will not be flown:
  - (a) In a careless or reckless manner.
  - (b) At a location where model aircraft activities are prohibited.
- 2. Model aircraft pilots will:
  - (a) Yield the right of way to all man carrying aircraft.
  - (b) See and avoid all aircraft and a spotter must be used when appropriate. (AMA Document #540-D.)
  - (c) Not fly higher than approximately 400 feet above ground level within three (3) miles of an airport, without notifying the airport operator.
  - (d) Not interfere with operations and traffic patterns at any airport, heliport or seaplane base except where there is a mixed use agreement.
  - (e) Not exceed a takeoff weight, including fuel, of 55 pounds unless in compliance with the AMA Large Model Aircraft program. (AMA Document 520-A.)
  - (f) Ensure the aircraft is identified with the name and address or AMA number of the owner on the inside or affixed to the outside of the model aircraft. (This does not apply to model aircraft flown indoors).
  - (g) Not operate aircraft with metal-blade propellers or with gaseous boosts except for helicopters operated under the provisions of AMA Document #555.
  - (h) Not operate model aircraft while under the influence of alcohol or while using any drug which could adversely affect the pilot's ability to safely control the model.
  - (i) Not operate model aircraft carrying pyrotechnic devices which explode or burn, or any device which propels a projectile or drops any object that creates a hazard to persons or property.

#### Exceptions:

- Free Flight fuses or devices that burn producing smoke and are securely attached to the model aircraft during flight.
- Rocket motors (using solid propellant) up to a G-series size may be used provided they remain attached to the model during flight. Model rockets may be flown in accordance with the National Model Rocketry Safety Code but may not be launched from model aircraft.
- Officially designated AMA Air Show Teams (AST) are authorized to use devices and practices as defined within the Team AMA Program Document (AMA Document #718).
- (j) Not operate a turbine-powered aircraft, unless in compliance with the AMA turbine regulations. (AMA Document #510-A).
- Model aircraft will not be flown in AMA sanctioned events, air shows or model demonstrations unless:
  - (a) The aircraft, control system and pilot skills have successfully demonstrated all maneuvers intended or anticipated prior to the specific event.
  - (b) An inexperienced pilot is assisted by an experienced pilot.
- When and where required by rule, helmets must be properly worn and fastened. They must be OSHA, DOT, ANSI, SNELL or NOCSAE approved or comply with comparable standards.

#### **B. RADIO CONTROL**

- All pilots shall avoid flying directly over unprotected people, vessels, vehicles or structures and shall avoid endangerment of life and property of others.
- A successful radio equipment ground-range check in accordance with manufacturer's recommendations will be completed before the first flight of a new or repaired model aircraft.
- At all flying sites a safety line(s) must be established in front of which all flying takes place (AMA Document #706.)
  - (a) Only personnel associated with flying the model aircraft are allowed at or in front of the safety line.
  - (b) At air shows or demonstrations, a straight safety line must be established.
  - (c) An area away from the safety line must be maintained for spectators.
  - (d) Intentional flying behind the safety line is prohibited.
- 4. RC model aircraft must use the radio-control frequencies currently allowed by the Federal Communications Commission (FCC). Only individuals properly licensed by the FCC are authorized to operate equipment on Amateur Band frequencies.
- RC model aircraft will not operate within three (3) miles of any pre-existing flying site without a frequency-management agreement (AMA Documents #922 and #923.)
- With the exception of events flown under official AMA Competition Regulations, excluding takeoff and landing, no powered model may be flown outdoors closer than 25 feet to any individual, except for the pilot and the pilot's helper(s) located at the flight line.
- Under no circumstances may a pilot or other person touch a model aircraft in flight while it is still under power, except to divert it from striking an individual.
- RC night flying requires a lighting system providing the pilot with a clear view of the model's attitude and orientation at all times. Hand-held illumination systems are inadequate for night flying operations.
- 9. The pilot of a RC model aircraft shall:
  - (a) Maintain control during the entire flight, maintaining visual contact without enhancement other than by corrective lenses prescribed for the pilot.
  - (b) Fly using the assistance of a camera or First-Person View (FPV) only in accordance with the procedures outlined in AMA Document #550.
  - (C) Fly using the assistance of autopilot or stabilization system only in accordance with the procedures outlined in AMA Document #560.

Please see your local or regional modeling association's guidelines for proper, safe operation of your model aircraft.

## **Limited Warranty**

#### **What this Warranty Covers**

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

#### **What is Not Covered**

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

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

#### **Purchaser's Remedy**

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

#### **Limitation of Liability**

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

#### Law

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

#### **WARRANTY SERVICES**

#### Questions, Assistance, and Services

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

#### **Inspection or Services**

If this Product needs to be inspected or serviced and is compliant in the country you live and use the Product in, please use the Horizon Online Service Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional

protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. An Online Service Request is available at http://www.horizonhobby.com/content/\_service-center\_render-service-center. If you do not have internet access, please contact Horizon Product Support to obtain a RMA number along with instructions for submitting your product for service. When calling Horizon, you will be asked to provide your complete name, street address, email address and phone number where you can be reached during business hours. When sending product into Horizon, please include your RMA number, a list of the included items, and a brief summary of the problem. A copy of your original sales receipt must be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

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

#### **Warranty Requirements**

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

#### **Non-Warranty Service**

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

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

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## **Contact Information**

Country of Purchase	Horizon Hobby	Contact Information	Address	
	Horizon Service Center (Repairs and Repair Requests)	servicecenter.horizonhobby.com/ RequestForm/		
United States of America	Horizon Product Support (Product Technical Assistance)	productsupport@horizonhobby.com 877-504-0233	2904 Research Rd Champaign, Illinois, 61822 USA	
	Sales	websales@horizonhobby.com		
	Calco	800-338-4639		
European Union	Horizon Technischer Service	service@horizonhobby.eu	Hanskampring 9	
20.0000	Sales: Horizon Hobby GmbH	+49 (0) 4121 2655 100	D 22885 Barsbüttel, Germany	

## **FCC Information**

#### CONTAINS FCC ID: BRWDASRX15 CONTAINS IC: 6157A-AMRX15

**FCC Information:** This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



**CAUTION:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This product contains a radio transmitter with wireless technology which has been tested and found to be compliant with the applicable regulations governing a radio transmitter in the 2.400GHz to 2.4835GHz frequency range.



#### Supplier's Declaration of Conformity EFL Pitts S-1S BNF Basic | EFLU3550

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.

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**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@horizonhobbv.com

Web: HorizonHobby.com

## **IC** Information

**IC:** CAN ICES-3 (B)/NMB-3(B) This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference,

and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

## **Compliance Information for the European Union**

C EU Compliance Statement:

EFL3550: Horizon Hobby, LLC hereby declares that this product is in compliance with the essential requirements and other relevant provisions of the RED and EMC Directives.

EFL3575: Horizon Hobby, LLC hereby declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive.

A copy of the EU Declaration of Conformity is available online at: http://www.horizon-hobby.com/content/support-render-compliance.

Instructions for disposal of WEEE by users in the European Union
This product must not be disposed of with other waste. Instead, it is the
user's responsibility to dispose of their waste equipment by handing it
over to a designated collections point for the recycling of waste electrical and
electronic equipment. The separate collection and recycling of your waste
equipment at the time of disposal will help to conserve natural resources and
ensure that it is recycled in a manner that protects human health and the
environment.

For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.



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

Part #   Nummer Numéro   Codice	Description	Beschreibung	Description	Descrizione
EFL3551	Painted Fuse: Pitts 850mm	Lackierte Sicherung: Pitts 850 mm	Fuselage peint : Pitts 850 mm	Fusibile verniciato: Pitts 850 mm
EFL3552	Painted Top Wing: Pitts 850mm	Lackierter oberer Flügel: Pitts 850 mm	Aile supérieure peinte : Pitts 850 mm	Ala superiore verniciata: Pitts 850 mm
EFL3553	Painted Bottom Wing: Pitts 850mm	Lackierter unterer Flügel: Pitts 850 mm	Aile inférieure peinte : Pitts 850 mm	Ala inferiore verniciata: Pitts 850 mm
EFL3554	Horizontal Stabilizer: Pitts 850mm	Höhenleitwerk: Pitts 850 mm	Stabilisateur horizontal : Pitts 850 mm	Stabilizzatore orizzontale: Pitts 850 mm
EFL3555	Wing Struts: Pitts 850mm	Flügelstreben: Pitts 850 mm	Haubans de l'aile : Pitts 850 mm	Montanti ala: Pitts 850 mm
EFL3556	Cowl: Pitts 850mm	Motorhaube: Pitts 850 mm	Capot : Pitts 850 mm	Cappottatura: Pitts 850 mm
EFL3557	Hatch w/ Canopy: Pitts 850mm	Abdeckung mit Kanzel: Pitts 850 mm	Trappe avec verrière : Pitts 850 mm	Sportello con capottina: Pitts 850 mm
EFL3558	Wheel Pants: Pitts 850mm	Radverkleidungen: Pitts 850 mm	Carénages de roues : Pitts 850 mm	Copri ruote: Pitts 850 mm
EFL3559	Pushrod Set: Pitts 850mm	Gestängesatz: Pitts 850 mm	Ensemble de barres de liaisons : Pitts 850 mm	Set aste di comando: Pitts 850 mm
EFL3560	Decal Set: Pitts 850mm	Decal-Satz: Pitts 850 mm	Lot d'autocollants : Pitts 850 mm	Set decalcomanie: Pitts 850 mm
EFL3561	Hardware Set: Pitts 850mm	Hardwaresatz: Pitts 850 mm	Ensemble de matériel : Pitts 850 mm	Set bulloneria: Pitts 850 mm
EFL3562	Wing Pins: Pitts 850mm	Flügelbolzen: Pitts 850 mm	Broches des ailes : Pitts 850 mm	Perni ala: Pitts 850 mm
EFL3563	Wheel Set: Pitts 850mm	Reifensatz: Pitts 850 mm	Jeu de roues : Pitts 850 mm	Set ruote: Pitts 850 mm
EFL8463	10BL 880Kv Motor: Pitts 850mm	10BL 880Kv-Motor: Pitts 850 mm	Moteur 10BL 880Kv : Pitts 850 mm	Motore 10BL 880Kv: Pitts 850 mm
EFL3565	Motor Mount: Pitts 850mm	Motorhalterung: Pitts 850 mm	Support moteur : Pitts 850 mm	Montante motore: Pitts 850 mm
EFL3566	Spinner: Pitts 850mm	Spinner: Pitts 850 mm	Cône : Pitts 850 mm	Ogiva: Pitts 850 mm
EFL3567	Battery Tray: Pitts 850mm	Akkuhalterung: Pitts 850 mm	Support de batterie : Pitts 850 mm	Vassoio portabatteria: Pitts 850 mm
EFL3568	Prop Adapter: Pitts 850mm	Propeller-Adapter: Pitts 850 mm	Adaptateur d'hélice : Pitts 850 mm	Adattatore elica: Pitts 850 mm
EFL3569	Landing Gear Set: Pitts 850mm	Fahrwerksatz: Pitts 850 mm	Ensemble de train d'atterrissage : Pitts 850 mm	Set carrello d'atterraggio: Pitts 850 mm
EFLA1140W	40 AMP BL ESC:	40 AMP BL ESC:	40 AMP BL ESC :	40 AMP BL ESC:
EFLP11070	11 x 7 Propeller	11 x 7 Propeller	Hélice 11 x 7	11 x 7 mm elica
SPMSA330	9 Gram Servo	9 Gramm Servo	Servo 9 grammes	Servo 9 grammi

## 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"
DYNC2010CA	ProphetSport Plus 50W AC/DC Char	ProphetSport Plus 50W Wechsel-/ Gleichstrom-Ladegerät	Chargeur de batterie CA/CC 50 W Prophet Sport Plus	Caricabatterie Prophet Sport Plus 50 W AC/DC
DYNC2040	Prophet Sport4X50W AC/DC Charge	Prophet Sport 4X50W Wechsel-/ Gleichstrom-Ladegerät	Chargeur de batterie CA/CC 4 X 50 W Prophet Sport	Caricabatterie Prophet Sport 4 X 50 W AC/DC
EFLA111	LiPo Cell Voltage Checker	LiPo-Zellspannungsprüfer	Contrôleur de tension pour batterie Li-Po	Tester di tensione per batterie LiPo
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."
EFLAEC301	EC3 Device Connector (2)	EC3 Gerät-Steckverbinder (2)	Connecteur du dispositif EC3 (2)	Connettore dispositivo EC3 (2)
EFLAEC302	EC3 Battery Connector (2)	EC3 Akku-Steckverbinder (2)	Connecteur de la batterie EC3 (2)	Connettore batteria EC3 (2)
EFLB22003S30	2200mAh3S11.1V30C LiPo13AWG EC3	2200mAh3S11.1V30C LiPo13AWG EC3	Batterie Li-Po 2200 mAh 3S 11,1 V 30C, 13AWG EC3	EC3 13 AWG per batteria LiPo 2200 mAh 3S 11,1 V 30C
EFLB22003S40	Thrust VSI 2200mAh 3S 40CLiPo	Schubkraft VSI 2200mAh 3S 40CLiPo	Batterie Li-Po Thrust VSI 2200 mAh 3S 40C	Batteria LiPo Thrust VSI 2200 mAh 3S 40C
EFLB22003S50	"2200mAh 3S11.1V50CLi- Po,13AWG EC"	"2200mAh 3S11.1V50CLiPo, 13AWG EC"	« Batterie Li-Po 2200 mAh 3S 11,1 V 50C, 13AWG EC »	"EC 13 AWG per batteria LiPo 2200 mAh 3S 11,1 V 50C"
EFLB24003S40	Thrust VSI11.1V2400mAh3S 40CLiPo	Schubkraft VSI11.1V2400mAh3S 40CLiPo	Batterie Li-Po Thrust VSI 2400 mAh 3S 11,1 V 40C	Batteria LiPo VSI 11,1 V 2400 mAh 3S 40C
EFLB30003S30	"3000mAh 3S 11.1V 30C LiPo, EC3"	"3000mAh 3S 11.1V 30C LiPo, EC3"	« Batterie Li-Po de 3000 mAh 3S 11,1 V 30C, EC3 »	"Batteria LiPo 3000 mAh 3S 11,1 V 30C, EC3"
DYN1400	Li-Po Charge Protection Bag, Small	Li-Po Ladeschutzbeutel, klein	Sac de protection du chargeur de batterie Li-Po, petit	"Sacchetto di protezione per batteria LiPo, piccolo"
	DXe DSMX 6-Channel Transmitter	Spektrum DXe DSMX 6-Kanal Sender	Emetteur DXe DSMX 6 voies	DXe DSMX Trasmettitore 6 canali
	DX6eDSMX 6-Channel Transmitter	Spektrum DX6e DSMX 6-Kanal Sender	Emetteur DX6e DSMX 6 voies	DX6e DSMX Trasmettitore 6 canali
	DX6 DSMX 6-Channel Transmitter	Spektrum DX6 DSMX 6-Kanal Sender	Emetteur DX6 DSMX 6 voies	DX6 DSMX Trasmettitore 6 canali
	DX7G2 DSMX 7-Channel Transmitter	Spektrum DX7 DSMX 7 Kanal Sender	Emetteur DX7 DSMX 7 voies	DX7 DSMX Trasmettitore 7 canali
	DX8G2 DSMX 8-Channel Transmitter	Spektrum DX8G2 DSMX 8 Kanal Sender	Emetteur DX8G2 DSMX 8 voies	DX8G2 DSMX Trasmettitore 8 canali
	DX9 DSMX 9-Channel Transmitter	Spektrum DX9 DSMX 9 Kanal Sender	Emetteur DX9 DSMX 9 voies	DX9 DSMX Trasmettitore 9 canali
	DX18 DSMX 18-Channel Transmitter	Spektrum DX18 DSMX 18 Kanal Sender	Emetteur DX18 DSMX 18 voies	DX18 DSMX Trasmettitore 18 canali
	DX20 DSMX 20-Channel Transmitter	Spektrum DX 20 DSMX 20 Kanal Sender	Emetteur DX20 DSMX 20 voies	DX 20 DSMX Trasmettitore 20 canali



Pitts 850

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