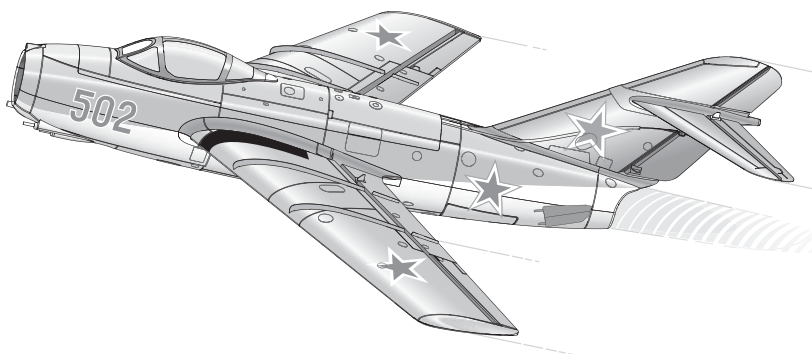




Bind-N-Fly.™ Ready to fly, redefined.

UMX™ MiG 15 DF



Instruction Manual
Bedienungsanleitung
Manuel d'utilisation
Manuale di Istruzioni

AS3X®

E-flite®
ADVANCING ELECTRIC FLIGHT

NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, Inc. 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:

NOTICE: Procedures, which if not properly followed, create a possibility of physical property damage AND little or no possibility of injury.

CAUTION: Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.

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.

 **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 attempt disassembly, use with incompatible components or augment product in any way without the approval of Horizon Hobby, Inc. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

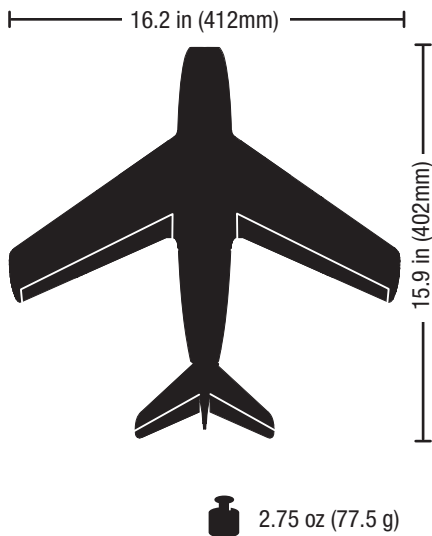
Age Recommendation: Not for children under 14 years. This is not a toy.

Thank you for purchasing the E-flite® UMX™ MiG 15 DF. A breakthrough in ultra micro electric ducted fan technology, your new E-flite jet is an accurate replica of the original Mikoyan-Gurevich design. Using modern manufacturing techniques and sophisticated components, E-flite is able to produce your new scale RC swept-wing jet fighter fully assembled out of the box with proportional 4-channel control. At its heart is inlet and exhaust ducting specially engineered to harness the full potential of the incredible 28mm Delta-V® 180m EDF system without the need of any unsightly cheater holes on the bottom of the model. And so that you also enjoy the most realistic jet flight experience possible, your UMX MiG 15 DF is also equipped with the amazing AS3X® System that's been specially tuned to provide smooth, natural feeling control over a wide speed range, plus rock solid flight performance, even in moderate wind.

Please be sure to read through this manual carefully so that you are equipped to successfully enjoy all the benefits this outstanding ultra micro model has to offer.

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Installed



Motor: BL180m Ducted Fan Motor, 11750Kv (EFLM30180mDFA)



Ducted Fan unit: Delta-V 180m 28mm EDF Unit (EFLDF180m)



Receiver: Spektrum DSMX® 6Ch AS3X® Receiver w/BL ESC (SPMAS6410NBL)



Servo: (2) 2.3-Gram Performance Linear Long Throw Servo (SPMSA2030L)
(2) 2.3-Gram Linear Long Throw Offset Servos (SPMSA2030LO)



Battery: 200mAh 2S 25C Li-Po (EFLB2002S25)



Battery Charger: 2S 7.4V Li-Po (EFLUC1007)

Needed to Complete



Recommended Transmitter: Spektrum™ DSM2™/DSMX® with dual-rates (DX4e and up)

Preflight Checklist

✓	
1.	Charge flight battery.
2.	Install flight battery in aircraft (once it has been fully charged).
3.	Bind aircraft to transmitter.
4.	Make sure linkages move freely.
5.	Perform Control Direction Test with transmitter.

✓	
6.	Set dual rates and exponential.
7.	Adjust center of gravity.
8.	Perform a radio system Range Check.
9.	Find a safe and open area.
10.	Plan flight for flying field conditions.

AS3X® System Delivers Breakthrough Performance

Horizon Hobby has always made RC sport, scale and unique aircraft with the kind of performance experts appreciate. Now the exclusive Artificial Stability – 3 aXis (AS3X) system helps take performance expectations in ultra micro aircraft a quantum leap higher.

Based on the successful use of MEMS sensor technology within the AS3X Stabilization System essential to Blade® ultra micro flybarless

helicopters, the specifically tuned AS3X System for airplanes helps invisibly correct for turbulence, torque and tip stalls when encountered. Furthermore, the outstanding control agility delivers an ultra smooth, locked-in feel that obeys your every command with performance that's natural feeling. It's so gratifying, in fact, that it's as though you're the RC pilot of an expertly tuned, giant-scale model.

AS3X will change the way you'll want to fly now and in the future. To see what we mean, go to www.E-fliteRC.com/AS3X.

Charging Warnings

The included battery charger (EFLUC1007) has been designed to safely charge the Li-Po battery.

⚠ CAUTION: All instructions and warnings must be followed exactly. Mishandling of Li-Po batteries can result in a fire, personal injury, and/or property damage.

- By handling, charging or using the included Li-Po battery, you assume all risks associated with lithium batteries.
- If at any time the battery begins to balloon or swell, discontinue use immediately. If charging or discharging, discontinue and disconnect. Continuing to use, charge or discharge a battery that is ballooning or swelling can result in fire.
- Always store the battery at room temperature in a dry area for best results.
- Always transport or temporarily store the battery in a temperature range of 40–120° F (4–49° C). Do not store battery or aircraft in a car or direct sunlight. If stored in a hot car, the battery can be damaged or even catch fire.
- Always charge batteries away from flammable materials.

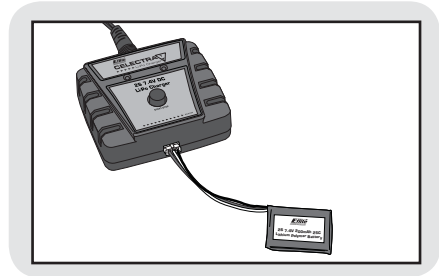
- Always inspect the battery before charging and never charge damaged batteries.
- Always disconnect the battery after charging, and let the charger cool between charges.
- Always constantly monitor the temperature of the battery pack while charging.
- **ONLY USE A CHARGER SPECIFICALLY DESIGNED TO CHARGE LI-PO BATTERIES.** Failure to charge the battery with a compatible charger may cause fire resulting in personal injury and/or property damage
- Never discharge Li-Po cells to below 3V under load.
- Never cover warning labels with hook and loop strips.
- Never leave charging batteries unattended.
- Never charge batteries outside recommended levels.
- Never attempt to dismantle or alter the charger.
- Never allow minors to charge battery packs.
- Never charge batteries in extremely hot or cold places (recommended between 40–120° F or 4–49° C) or place in direct sunlight.

Charging the Battery

Your aircraft comes with a 2-Cell 7.4V 200mAh 25C Li-Po battery and a Celectra™ 2S 7.4V DC Li-Po Charger that requires a 12V (11V–14V) DC power source.

Refer to the battery warnings. It is recommended to charge the battery pack while you are inspecting the aircraft. The flight battery will be required to confirm proper aircraft operation in future steps.

Please visit www.horizonhobby.com for optional battery adapters.



The Battery Charging Process

1. Charge only batteries that are cool to the touch and are not damaged. Inspect the battery to make sure it is not damaged e.g., swollen, bent, broken or punctured.
2. The connector of the battery is specifically designed to allow it to fit into the charge port one way to prevent reverse polarity connection. However, check for proper alignment and polarity before proceeding to the next step.
3. Gently press the battery connector into the charge port located on the front of the charger.
4. When you make the connection successfully, the green LED blinking on the charger slows, indicating proper connection.
5. Press the button on the charger. The red LED will illuminate, indicating charging has begun.
6. Charging a fully discharged (not over-discharged) 200mAh battery takes approximately 50–60 minutes at the charger's 300mA charge rate. The included battery can be charged at a rate of up to 3C (600mA).
7. When the battery is fully charged, the green LED will turn solid.
8. Always unplug the battery from the charger immediately upon completion of charging.

⚠ CAUTION: Overcharging a battery can cause a fire.

⚠ CAUTION: Only use a charger specifically designed to charge a Li-Po battery. Failure to do so could result in fire causing injury or property damage.

⚠ CAUTION: Never exceed the recommended charge rate.

LED Functions under normal operation

- | | |
|--|----------------------|
| 1. Green LED blinking with power connected but without battery | Standby |
| 2. Green LED blinking | Battery is connected |
| 3. Blinking Red LED at varying speeds | Charging |
| 4. Red and Green LED blinking simultaneously | Balancing |
| 5. Solid Green LED | Full Charge |
| 6. Red and Green LED flashing rapidly | Error |

Transmitter and Receiver Binding

Binding is the process of programming the receiver of the control unit to recognize the GUID (Globally Unique Identifier) code of a single specific transmitter. You need to 'bind' your chosen Spektrum™ DSM2®/DSMX® technology equipped aircraft transmitter to the receiver for proper operation.

Any JR® or Spektrum DSM2/DSMX transmitter can bind to the AS3X DSM® receiver. For best flight performance of the UMX™ MiG 15 DF, it is recommended that you use a transmitter with exponential and dual rates. Please visit www.bindnfly.com for a complete list of compatible transmitters.

NOTICE: When using a Futaba® transmitter with a Spektrum DSM module, reversing the throttle channel is required.

✓ Binding Procedure

1.	Refer to your transmitter's unique instructions for binding to a receiver.
2.	Make sure the flight battery is disconnected from the aircraft.
3.	Power off the transmitter.
4.	Connect the flight battery in the aircraft. The receiver LED will begin to flash rapidly (typically after 5 seconds).
5.	Make sure the transmitter controls are at neutral and the throttle and throttle trim are in the low position.
6.	Put your transmitter into bind mode. Refer to your transmitter's manual for binding button or switch instructions.
7.	After 5 to 10 seconds, the receiver status LED will become solid, indicating that the receiver is bound to the transmitter. If the LED does not turn solid, refer to the Troubleshooting Guide at the back of the manual.

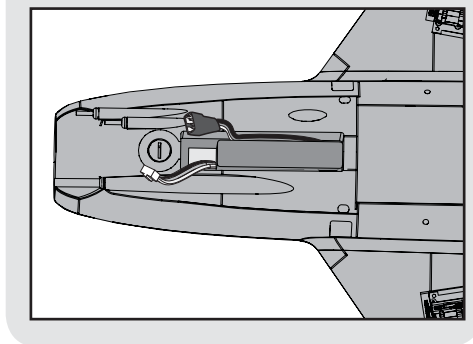
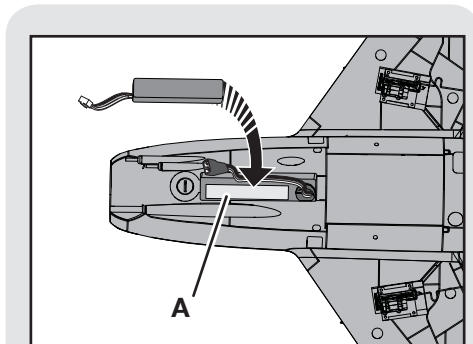
For subsequent flights, power on the transmitter for 5 seconds before connecting the flight battery.

Installing the Flight Battery

1. Attach the flight battery to the hook and loop strip (A) on the battery tray. See the *Adjusting the Center of Gravity* instructions for the battery's position.
2. Place the aircraft on the ground out of the wind and connect a fully charged flight battery.
Ensure the aircraft is immobile for 5 seconds so the AS3X system can initialize correctly. See the *Arming the ESC* instructions for correct connection of the battery to the ESC.

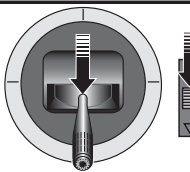
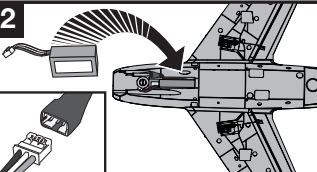

NOTICE: Always ensure that the battery is secured in the aircraft using hook and loop tape.

⚠ CAUTION: Always disconnect the Li-Po battery from the aircraft receiver when not flying to avoid over-discharging the battery. Batteries discharged to a voltage lower than the lowest approved voltage may become damaged, resulting in loss of performance and potential fire when batteries are charged.



Arming the ESC

Arming the ESC also occurs after binding as previously described, but subsequent connection of a flight battery requires the steps below.

		
<p>1</p> <p>Lower throttle and throttle trim to lowest settings.</p> <p>⚡ Power on the Transmitter then wait 5 seconds</p>	<p>2</p> <p>Install flight battery and connect it to the ESC.</p>	<p>3</p> <p>Keep plane immobile and away from wind for 5 seconds.</p> <p>🔊 Series of tones</p> <p>💡 Continuous LED</p>

If you accidentally connect the battery while the throttle is fully raised, the ESC will enter programming mode. Disconnect the battery immediately.

The AS3X system will not activate until the throttle stick or trim is increased for the first time. Once the AS3X is active, the control surfaces may move rapidly on the aircraft. This is normal.

AS3X will remain active until the battery is disconnected.

NOTICE: Always keep material or debris away from the intake. When armed, the rotor will turn in response to the throttle movement and could ingest in any loose objects.

Low Voltage Cutoff (LVC)

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

When the motor power pulses, land the aircraft immediately and recharge the flight battery.

Disconnect and remove the Li-Po battery from the aircraft after use to prevent trickle discharge. During storage, make sure the battery charge does not fall below 3V per cell.

Tip: Due to the quiet nature of the aircraft, you may not hear the pulsing of the motor.

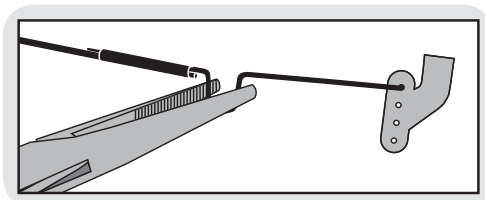
For your first flights, set your transmitter timer or a stopwatch to 3 minutes. Adjust your timer for longer or shorter flights once you have flown the aircraft. Flights of 4 minutes or more are achievable if using proper throttle management.

NOTICE: Repeated flying to LVC will damage the battery.

Control Centering

Before the first flights, or in the event of an accident, make sure the flight control surfaces are centered. Adjust the linkages mechanically if the control surfaces are not centered. Use of the transmitter sub-trims may not correctly center the aircraft control surfaces due to the mechanical limits of linear servos.

1. Make sure the control surfaces are neutral when the transmitter controls and trims are centered. The transmitter sub-trim must always be set to zero.
2. When needed, use a pair of pliers to carefully bend the metal linkage (see illustration).
3. Make the U-shape narrower to make the connector shorter. Make the U-shape wider to make the linkage longer.

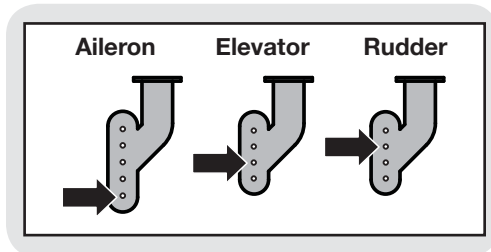


Centering Controls After First Flights

For best performance with AS3X, it is important that excessive trim is not used. If the model requires excessive transmitter trim (4 or more clicks of trim per channel), return the transmitter trim to zero and adjust the linkages mechanically so that the control surfaces are in the flight trimmed position.

Settings for Control Horns

The following illustration shows the factory settings for linkages on the control horns. After flying, carefully adjust the linkage positions for the desired control response.



Control Direction Test

You should bind your aircraft and transmitter before doing these tests. Move the controls on the transmitter to make sure aircraft control surfaces move correctly and in the proper direction.

Make sure tail linkages move freely and that paint or decals are not adhered to them.

Dual Rates and Expos

To obtain the best flight performance, we recommend using a DSM2/DSMX radio capable of Dual Rates. The suggested settings shown here are the recommended starting settings. Adjust according to the individual preferences after the initial flight.

If using the DX4e or DX5e transmitters, we recommend activating Expo for smoother control. For activation and deactivation of Expo in the DX4e and DX5e, see the next section.

NOTICE: Do not set your transmitter travel adjust over 100%. If the TRAVEL ADJUST is set over 100%, it will not result in more control movement, it will overdrive the servo and cause damage.

It is normal for linear servos to make significant noise. The noise is not an indication of a faulty servo.

Dual Rates		High Rate	Low Rate
	Aileron	100%	70%
	Elevator	100%	70%
	Rudder	100%	70%

Tip: For the first flight, fly the model in low rate.

Tip: For landing, we recommend using high rate elevator.

DX4e and DX5e Expo Activation and Deactivation

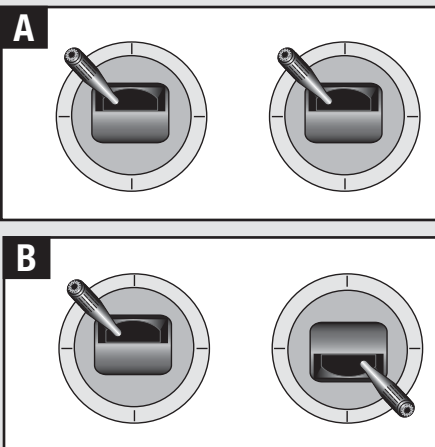
If you plan to fly your aircraft with a DX4e or DX5e, disconnect the battery from the aircraft before activating the Expo feature in your transmitter.

Once Expo is activated, it will remain activated for subsequent power cycles of the transmitter. Once Expo is deactivated, it will remain deactivated until it is activated again.

DX4e (Modes 1 and 2)

Activate and Deactivate Expo

- Put the ACT switch in the down position (ON) and the Rate switch in the down position (LO).
- Push and hold the trainer (bind) button and move and hold the two sticks (as shown here) for **activation (A)** or **deactivation (B)**, while powering on the transmitter.
- Release the trainer switch and the control sticks only after a series of tones sound (ascending tones for activation, descending tones for deactivation).



DX5e (Modes 1 and 2)

Activate Expo

- Hold the aileron trim switch to the right when powering on the transmitter.
- Release the aileron trim switch after a series of ascending tones to confirm that Expo is activated.

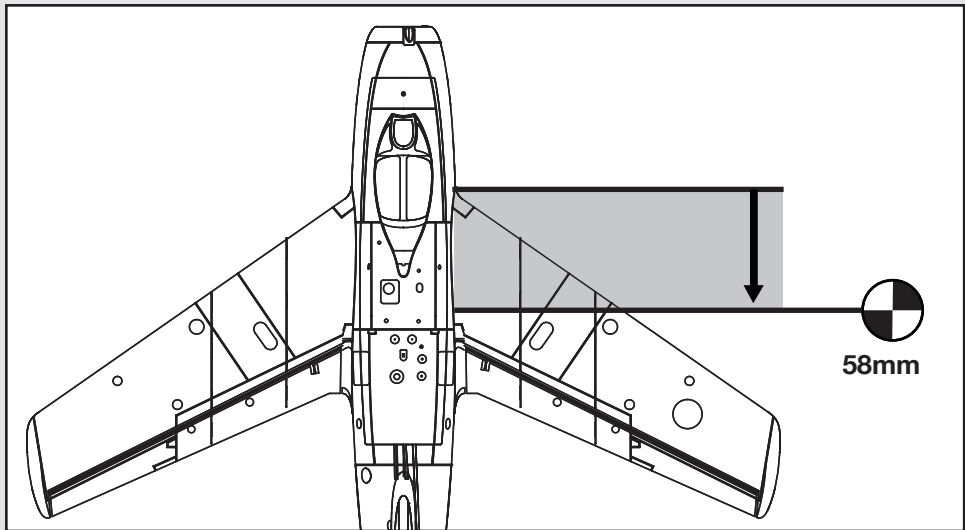
Deactivate Expo

- Hold the aileron trim switch to the left when powering on the transmitter.
- Release the aileron trim switch after a series of descending tones to confirm that Expo is deactivated.

Adjusting Center of Gravity (CG)

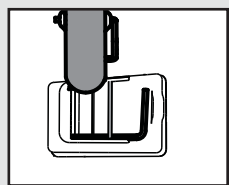
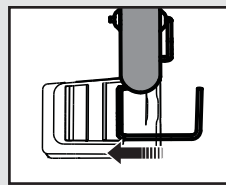
The CG location is **58mm** back from leading edge of the wing at the root. This CG location has been determined with the included 2S 200mAh 7.4V Li-Po battery.

The battery tray is oversized to allow for Center of Gravity adjustment. Start by placing the battery near the rear edge of the battery tray with the connector plug facing the front of the aircraft. Adjust as needed by sliding the battery forward or back.

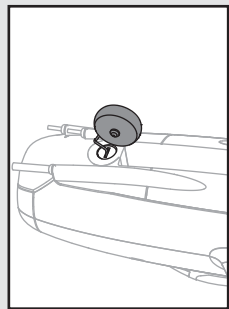
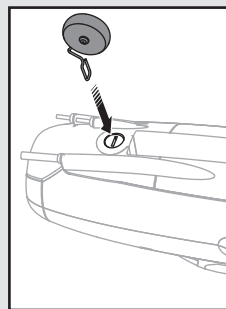


Installing the Optional Landing Gear

1. Gently slide the left and right main landing gear into the plastic mounting clips on the bottom of the wings as shown. The main gear are configured for a left and right side.



2. Carefully slide the nose gear into the plastic nose gear mount on the bottom of the fuselage.



Tip: The nose gear strut wire can be twisted a small amount to adjust the ground tracking. Always remove the nose gear from the aircraft before performing this adjustment.

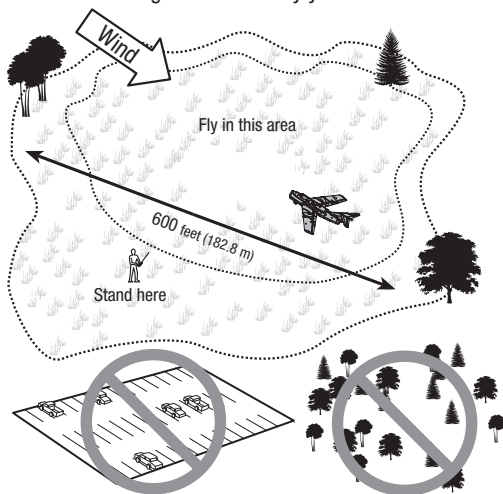
Flying Tips and Repairs

Range Check your Radio System

After final assembly, range check the radio system with the aircraft. Refer to your specific transmitter instruction manual for range test information.

Flying

We recommend flying your E-flite® UMX™ MiG 15 DF outside in no greater than moderate winds or inside in a large gymnasium. Always avoid flying near houses, trees, wires and buildings. You should also be careful to avoid flying in areas where there are many people, such as busy parks, schoolyards or soccer fields. Consult local laws and ordinances before choosing a location to fly your aircraft.



Hand Launching

To hand launch this model, hold the aircraft fuselage under the wings. Give a firm throw directly into the wind slightly up (5–10 degrees above the horizon) with full throttle. After the model gains altitude, decrease the throttle as you desire.

Tip: The electric ducted fan (EDF) acts like a jet aircraft, so control is generated by airspeed rather than air from a propeller moving over the control surfaces.

Takeoff

Taxi the aircraft in position for takeoff (facing into the wind if flying outdoors). Gradually increase the throttle to full power, holding a small amount of up elevator and steering with the rudder. Climb gently to check trim. Once the trim is adjusted, begin exploring the flight envelope of the aircraft.

Landing

Always land into the wind. Fly the landing pattern with a slightly nose high attitude. Use throttle management to control the decent rate of the aircraft.

During flare, keep the wings level and the airplane pointed into the wind. Gently lower the throttle while pulling back on the elevator to bring the aircraft down on the main wheels or to belly land without landing gear.

Tip: We recommend that you do not install the optional nose cannons for belly landings. Installation of this option could prevent smooth belly landings on grass and could cause damage to the aircraft.

NOTICE: Always fully lower the throttle when landing the aircraft to prevent intake of foreign objects, which can damage the ducted fan and motor.

Failure to lower the throttle stick and trim to the lowest possible positions during a crash could result in damage to the ESC in the receiver unit, which may require replacement.

Over Current Protection (OCP)

The MiG 15 DF is equipped with Over Current Protection. OCP protects the ESC from overheating and stops the motor when the transmitter throttle is set too high and the rotor cannot turn. OCP will only activate when the throttle is positioned just above 1/2 throttle. After the ESC stops the motor, fully lower the throttle to re-arm the ESC.

Repairs

Crash damage is not covered under warranty.

Repair this aircraft using foam-compatible CA glue or clear tape. Only use foam-compatible CA glue as other types of glue can damage the foam. When parts are not repairable, see the Replacement Parts List for ordering by item number.

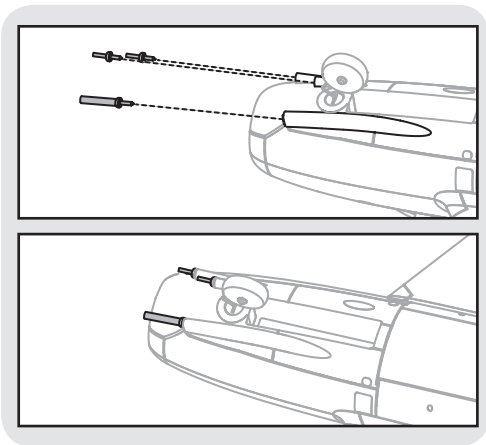
For a listing of all replacement and optional parts, refer to the list at the back of this manual.

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

Installing Optional Cannons

1. Install the cannons in the nose of your aircraft as shown. Use the sharp end of the cannons to make a hole in the foam of each location. The cannons can be glued in or flown with just a friction fit.

Tip: These cannon are for scale appearance. Installing them on your aircraft when belly landing may hinder safe and smooth landing and/or damage the aircraft.



Additional 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.

This aircraft is controlled by a radio signal subject to interference from many sources outside your control. This interference can cause momentary loss of control, so it is advisable to always keep a safe distance in all directions around your aircraft as this space will help avoid collisions or injury.

- Always keep a safe distance in all directions around your aircraft to avoid collisions or injury.
- Always operate your aircraft 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 aircraft in your mouth as it could cause serious injury or even death.
- Never operate your aircraft with low transmitter batteries.

Post Flight Checklist

✓	
1.	Disconnect flight battery from ESC (Required for Safety and battery life).
2.	Power off transmitter.
3.	Remove flight battery from aircraft.
4.	Recharge flight battery.

✓	
5.	Store flight battery apart from aircraft and monitor the battery charge.
6.	Make note of flight conditions and flight plan results, planning for future flights.

Service of Power Components

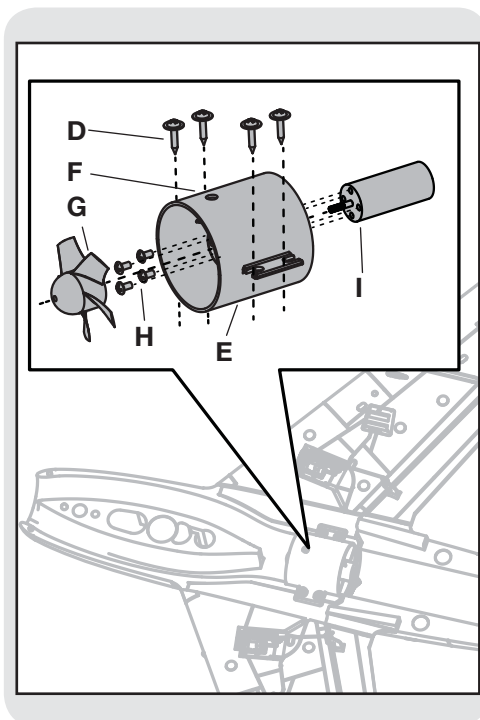
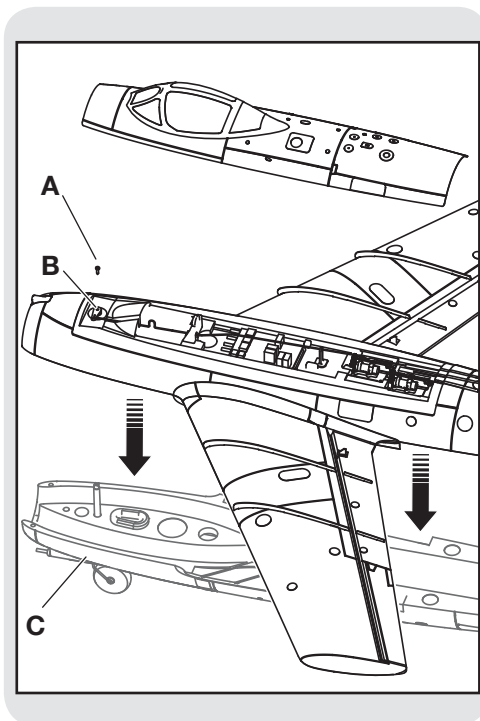
Disassembly

! **CAUTION:** DO NOT handle the rotor or motor while the flight battery is connected. Personal injury could result.

1. The canopy hatch is secured to the fuselage using double-sided tape under the outside edge. Carefully remove the canopy hatch, the screw (A) and nose gear arm (B); replacing the double-sided tape as needed.

NOTICE: Removing tape or decals can damage paint on your aircraft. Avoid pinching or otherwise damaging any wires when opening or closing the fuselage.

2. Disconnect the motor connector from the receiver.
3. Turn over the aircraft so that the landing gear faces up.
4. Cut the tape and decals on the fuselage and carefully remove the lower fuselage (C).
5. Remove the 4 screws (D) and fan unit (E) from the upper fuselage.
6. Put a small flat blade screwdriver in the motor mount hole (F) and carefully push the rotor (G) away from the motor shaft. Rotate the rotor while prying it away from the motor to avoid bending the motor shaft.
7. Remove the 4 screws (H) and motor (I) from the motor mount.



Assembly

Assemble in reverse order, connecting the top and bottom half of the fuselage with clear tape and the canopy hatch with double stick tape.

NOTICE: Always install the motor mount so that the rotor faces the front of the fuselage and the hole in the unit faces the bottom of the fuselage.

Troubleshooting Guide

AS3X

Problem	Possible Cause	Solution
Control surfaces not at neutral position when transmitter controls are at neutral	Control surfaces may not have been mechanically centered from factory	Center control surfaces mechanically by adjusting the U-bends on control linkages
	Aircraft was moved after the flight battery was connected and before sensors initialized	Disconnect and reconnect the flight battery while keeping the aircraft still for 5 seconds
Model flies inconsistently from flight to flight	Trims are moved too far from neutral position	Neutralize trims and mechanically adjust linkages to center control surfaces
Controls oscillate in flight (model rapidly jumps or moves)	Rotor is unbalanced, causing excessive vibration	Remove rotor and motor. Check motor shaft for straightness and replace rotor if damaged

Problem	Possible Cause	Solution
Aircraft will not respond to throttle but responds to other controls	Throttle stick and/or throttle trim too high	Reset controls with throttle stick and throttle trim at lowest setting
	Throttle channel is reversed	Reverse throttle channel on transmitter
	Motor disconnected from receiver	Open fuselage and make sure motor is connected to the receiver
Extra motor noise or extra vibration	Damaged rotor or motor	Replace damaged parts
	Rotor out of balance	Balance or replace the rotor
Reduced flight time or aircraft underpowered	Flight battery charge is low	Completely recharge flight battery
	Flight battery damaged	Replace flight battery and follow flight battery instructions
	Flight conditions may be too cold	Make sure battery is warm before use
	Battery capacity too low for flight conditions	Replace battery or use a larger capacity battery
LED on receiver flashes and aircraft will not bind to transmitter (during binding)	Transmitter too near aircraft during binding process	Power off transmitter, move transmitter a larger distance from aircraft, disconnect and reconnect flight battery to aircraft and follow binding instructions
	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
LED on receiver flashes rapidly and aircraft will not respond to transmitter (after binding)	Less than a 5-second wait between first powering on transmitter and connecting flight battery to aircraft	Leaving transmitter on, disconnect and reconnect flight battery to aircraft
	Aircraft bound to different model memory (ModelMatch™ radios only)	Select correct model memory on transmitter and disconnect and reconnect flight battery to aircraft
	Flight battery/transmitter battery charge is too low	Replace/recharge batteries

Troubleshooting Guide (Continued)

Problem	Possible Cause	Solution
Control surface does not move	Control surface, control horn, linkage or servo damage	Replace or repair damaged parts and adjust controls
	Wire damaged or connections loose	Do a check of wires and connections, connect or replace as needed
	Flight battery charge is low	Fully recharge flight battery
	Control linkage does not move freely	Make sure control linkage moves freely
Controls reversed	Transmitter settings reversed	Adjust controls on transmitter appropriately
Motor loses power	Damage to motor or power components	Do a check of motor and power components for damage (replace as needed)
Motor power quickly decreases and increases then motor loses power	Battery power is down to the point of receiver/ESC Low Voltage Cutoff (LVC)	Recharge flight battery or replace battery that is no longer performing
Motor/ESC is not armed after landing	Over Current Protection (OCP) stops the motor when the transmitter throttle is set high and the rotor cannot turn	Fully lower throttle and throttle trim to arm ESC
Servo locks or freezes at full travel	Travel adjust value is set above 100% overdriving the servo	Set Travel adjust to 100% or less and/or set sub-trims to zero and adjust linkages mechanically

Limited Warranty

What this Warranty Covers

Horizon Hobby, Inc. ("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.

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 serve 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 877.504.0233 toll free to speak to 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 Horizon Hobby 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 Horizon Hobby Service Center.

NOTICE: Horizon service is limited to Product compliant in the country of use and ownership. If non-compliant product is received by Horizon for service, it will be returned unserviced at the sole expense of the purchaser.

Warranty and Service Information

Country of Purchase	Horizon Hobby	Address	Phone Number/Email Address
United States of America	Horizon Service Center (Electronics and engines)	4105 Fieldstone Rd Champaign, Illinois 61822 USA	877-504-0233 Online Repair Request visit: www.horizonhobby.com/service
	Horizon Product Support (All other products)	4105 Fieldstone Rd Champaign, Illinois 61822 USA	877-504-0233 productsupport@horizonhobby.com
United Kingdom	Horizon Hobby Limited	Units 1-4 Ployters Rd Staple Tye Harlow, Essex CM18 7NS United Kingdom	+44 (0) 1279 641 097 sales@horizonhobby.co.uk
Germany	Horizon Technischer Service	Christian-Junge-Straße 1 25337 Elmshorn, Germany	+49 (0) 4121 2655 100 service@horizonhobby.de
France	Horizon Hobby SAS	14 Rue Gustave Eiffel Zone d'Activité du Réveil Matin 91230 Montgeron	+33 (0) 1 60 47 44 70 infofrance@horizonhobby.com
China	Horizon Hobby – China	Room 506, No. 97 Changshou Rd. Shanghai, China, 200060	+86 (021) 5180 9868 info@horizonhobby.com.cn

Compliance Information for the European Union

Declaration of Conformity

(in accordance with ISO/IEC 17050-1)
No. HH2012030803

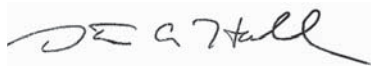
	Product(s):	EFL UMX Mig 15 EDF BNF
	Item Number(s):	EFLU1680
	Equipment class:	1

The object of declaration described above is in conformity with the requirements of the specifications listed below, following the provisions of the European R&TTE directive 1999/5/EC and EMC Directive 2004/108/EC:

EN 301 489-1 V1.7.1: 2006
EN 301 489-17 V1.3.2: 2008

EN55022: 2006,
EN55024: 1998+A1: 2001+A2: 2003
EN61000-3-2:2006+A1:2009+A2:2009
EN61000-3-3:2008

Signed for and on behalf of:
Horizon Hobby, Inc.
Champaign, IL USA
Mar 8, 2012



Steven A. Hall
Vice President
International Operations and Risk Management
Horizon Hobby, Inc.

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.

Replacement Parts – Ersatzteile Pièces de rechange – Recapiti per i ricambi

Part # • Nummer Numéro • Codice	Description	Beschreibung	Description	Descrizione
EFLU1646	Pushrod Linkage Set: UMX MiG 15 BNF	E-flite UMX MiG 15 BNF: Gestänge Set	UMX MiG 15 BNF -Set de tringleries	Set comandi: UMX MiG 15 BNF
EFLU1647	Gun Set: UMX MiG 15 BNF	E-flite UMX MiG 15 BNF: Waffen Set	UMX MiG 15 BNF -Set de canons	Set cannone: UMX MiG 15 BNF
EFLU1655	Landing Gear Set: UMX MiG 15 BNF	E-flite UMX MiG 15 BNF: Fahrwerk Set	UMX MiG 15 BNF -Set de train d'atterrissage	Set carrello: UMX MiG 15 BNF
EFLU1658	Fuse Set w/Acc: UMX MiG 15 BNF	E-flite UMX MiG 15 BNF: Rumpf Set mit Zubehör	UMX MiG 15 BNF -Fuselage avec accessoires	Set fusibile/Acc: UMX MiG 15 BNF
EFLU1659	Wing: UMX MiG 15 BNF	E-flite UMX MiG 15 BNF: Tragflächen	UMX MiG 15 BNF -Aile	Ala: UMX MiG 15 BNF
EFLU1660	Tail Set w/Acc: UMX MiG 15 BNF	E-flite UMX MiG 15 BNF: Leitwerk Set mit Zubehör	UMX MiG 15 BNF -Set d'empennage	Set coda c/Acc: UMX MiG 15 BNF
EFLU1663	Canopy/Hatch: UMX MiG 15 BNF	E-flite UMX MiG 15 BNF: Kabinenhaube mit Klappe	UMX MiG 15 BNF -Verrière	Sportello/Capottina: UMX MiG 15 BNF
EFLU1665	Decal Sheet: UMX MiG 15 BNF	E-flite UMX MiG 15 BNF: Dekorbogen	UMX MiG 15 BNF -Set de stickers	Foglio adesivi: UMX MiG 15 BNF
EFLDF180m	Delta-V 180m 28mm EDF Unit	E-flite Delta-V 180m 28mm Impellereinheit	UMX MiG 15 BNF -Turbine Delta-V 180m 28mm	Gruppo Delta-V 180m 28mm EDF
EFLDF180m1	Rotor: Delta-V 180m	E-flite Rotor: Delta-V 180m	UMX MiG 15 BNF -Rotor 180m	Rotore: Delta-V 180m
EFLM30180mDFA	BL180m Ducted Fan Motor, 11750Kv	E-flite BL180m Impeller Motor: 11750Kv	UMX MiG 15 BNF -Moteur 180m 11750Kv	Ventola intubata BL180m con motore, 11750Kv
EFLB2002S25	200mAh 2s 7.4V DC Li-Po, 26AWG	200mAh 2S 7.4V 25C Li-Po Akku	200mAh 2S 7.4V 25C Li-Po, 26AWG	200mAh 2S 7.4V 25C Li-Po, 26AWG
EFLUC1007	Celectra 2S 7,4 V DC Li-Po Charger	Celectra 2S 7,4 V DC Li-Po Ladegerät	Chargeur Celectra DC 7,4 V 2S	Celectra 2S 7,4 V DC Caricabatterie Li-Po
EFLUC1008	Power Cord for EFLUC1007	Anschlußstecker mit Krokodilklemmen für EFLUC1007	Câble d'alimentation EFLUC1007	Cavo alimentazione per EFLUC1007
SPMAS6410NBL	DSMX 6Ch AS3X Receiver w/BL ESC	DSMX 6 Kanal AS3X Empfänger BL-ESC	Récepteur 6voies DSMX a avec contrôleur brushless intégré	DSMX 6 Ch AS3X Ricevitore BL-ESC
SPMSA2030L	2.3-Gram Performance Linear Long Throw Servo	2,3 Gramm Servo m. langen Ruderweg (Klappen)	Servo linéaire de performance course longue 2,3 g (volets)	Servo corsa lunga lineari a prestazioni elevate da 2,3 grammi (Alette)
SPMSA2030LO	2.3-Gram Linear Long Throw Offset Servo (Ailerons)	2,3 Gramm Linear Offset Servo (Querruder)	Servo linéaire offset course longue 2,3 g (Ailerons)	Servo di offset corsa lunga lineari a prestazioni elevate da 2,3 grammi (Alettoni)
SPM6836	Replacement Servo Mechanics: 2.3- Gram 2030Li	Ersatzservomechanik 2,3 Gramm 2030L	Pièces de rechange mécaniques servo : 2,3 g 2030 L	Componenti meccanici di ricambio del servo: 2030L da 2,3 grammi
EFLH1067	Servo Retaining Collars: BMCX/2/ MSR, FHX, MH-35	Ersatz Stellringe BMCX/2/MSR, FHX, MH-35	Colliers de servo: BMCX/2/MSR, FHX, MH-35	Collari di fissaggio per servo: BMCX/2/MSR, FHX, MH-35

Optional Parts and Accessories Optionale Bauteile und Zubehörteile Pièces optionnelles et accessoires – Parti opzionali e accessori

Part # • Nummer Numéro • Codice	Description	Beschreibung	Description	Descrizione
EFLA700UM	Charger Plug Adapter: EFL	Ladekabel Adapter EFL	Prise d'adaptation chargeur: EFL	Adattatore per la carica: EFL
EFLA7001UM	Charger Plug Adapter: TP	Ladekabel Adapter TP	Prise d'adaptation chargeur: TP	Adattatore per la carica: TP
EFLC4000/AU/ EU/UK	AC to 12V DC, 1.5 Amp Power Supply (Based upon your sales Region)	AC zu 12V DC 1,5 Ampere Netzstecker (Basierend nach Vertriebsregion)	Alimentation CA vers 12 V CC, 1,5 A (En fonction de votre région)	Alimentatore da CA a 12 V CC, 1,5 Amp (in base al Paese di vendita)
	DX4e DSMX 4-channel Transmitter	Spektrum DX4e DSMX 4 Kanalsender ohne Empfänger	Emetteur DX4e DSMX 4 voies	DX4e DSMX Trasmettitore 4 canali
	DX5e DSMX 5-channel Transmitter	Spektrum DX5e DSMX 5 Kanalsender ohne Empfänger	Emetteur DX5e DSMX 5 voies	DX5e DSMX Trasmettitore 5 canali
	DX6i DSMX 6-Channel Transmitter	DX6i DSMX 6-Kanal Sender	Emetteur DX6i DSMX 6 voies	DX6i DSMX Trasmettitore 6 canali
	DX7s DSMX 7-Channel Transmitter	Spektrum DX7s 7 Kanal Sender	Emetteur DX7s DSMX 7 voies	DX7s DSMX Trasmettitore 7 canali
	DX8 DSMX Transmitter	Spektrum DX8 nur Sender	Emetteur DX8 DSMX 8 voies	DX8 DSMX Solo trasmettitore

– Parts Contact Information – – Intaktinformationen für Ersatzteile – – Coordonnés pour obtenir de pièces détachées – – Recapiti per i ricambi –

Country of Purchase	Horizon Hobby	Address	Phone Number/Email Address
United States	Sales	4105 Fieldstone Rd Champaign, Illinois, 61822 USA	800-338-4639 sales@horizonhobby.com
United Kingdom	Horizon Hobby Limited	Units 1-4 Ployters Rd Staple Tye Harlow, Essex CM18 7NS, United Kingdom	+44 (0) 1279 641 097 sales@horizonhobby.co.uk
Germany	Horizon Hobby GmbH	Christian-Junge-Straße 1 25337 Elmshorn, Germany	+49 (0) 4121 2655 100 service@horizonhobby.de
France	Horizon Hobby SAS	14 Rue Gustave Eiffel Zone d'Activité du Réveil Matin 91230 Montgeron	+33 (0) 1 60 47 44 70 infofrance@horizonhobby.com
China	Horizon Hobby – China	Room 506, No. 97 Changshou Rd. Shanghai, China, 200060	+86 (021) 5180 9868 info@horizonhobby.com.cn

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US D578,146. PRC ZL 200720069025.2. US 7,898,130. Other patents pending.

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