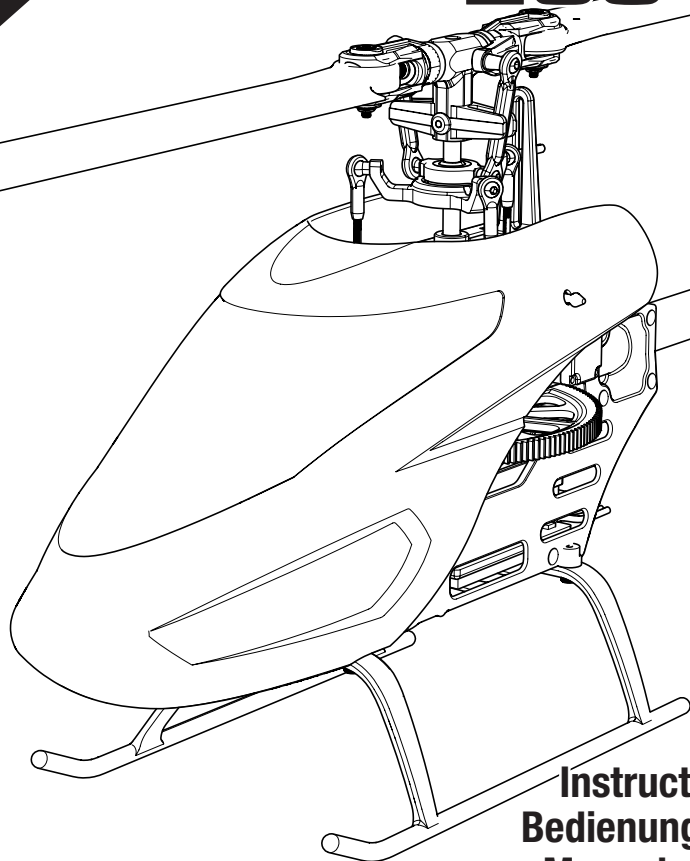


BLADE

BLH01400, BLH01450

REVOLUTION™ 235 CP



Instruction Manual Bedienungsanleitung Manuel d'utilisation Manuale di Istruzioni

Scan the QR code and select the Parts and Support tab from the product page for the most up-to-date manual information.

Scannen Sie den QR-Code und wählen Sie auf der Produktseite den Reiter „Parts and Support“ (Teile und Hilfre), um die aktuellste Bedienungsanleitung zu erhalten.

Scannez le code QR et sélectionnez l'onglet Parts and Support sur la page du produit pour obtenir les informations les plus récentes sur le manuel.

Leggere il codice QR e nella pagina del prodotto selezionare la scheda “parti e supporto” per ottenere le informazioni più aggiornate.



HORIZON
H O B B Y

Notice

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, LLC. For up-to-date product literature, visit horizonhobby.com or towerhobbies.com and click on the support or resources tab for this product.

Meaning of Special Language

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:

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

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

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



WARNING: Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision. Do not use with incompatible components or alter this product in any way outside of the instructions provided by Horizon Hobby, LLC. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

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

Safety Precautions and Warnings

- 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 move the throttle fully down at rotor strike.
- 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.
- Never operate aircraft with damaged wiring.
- Never touch moving parts.



WARNING AGAINST COUNTERFEIT PRODUCTS: If you ever need to replace your Spektrum receiver found in a Horizon Hobby product, always purchase from Horizon Hobby, LLC or a Horizon Hobby authorized dealer to ensure authentic high-quality Spektrum product. Horizon Hobby, LLC disclaims all support and warranty with regards, but not limited to, compatibility and performance of counterfeit products or products claiming compatibility with DSM or Spektrum technology.

Table of Contents

Safety Precautions and Warnings.....	2
First Flight Preparation.....	4
Flying Checklist.....	4
Charging Warnings.....	4
Battery Charging (RTF).....	4
Installing the DXS Transmitter Batteries (RTF).....	4
DXS Transmitter Control (RTF).....	5
NX and DX Series Transmitter Setup.....	6
IX Series Transmitter Setup.....	7
Installing the Flight Battery.....	9
LED Indicator on Flight Controller.....	9
Smart Throttle (BNF Only).....	10
Low Voltage Cutoff (LVC).....	10
Transmitter and Receiver Binding.....	10
SAFE Technology.....	11
Flight Mode and Rate Selection.....	11
Panic Recovery.....	11
Throttle Hold.....	12
Control Tests.....	12
Understanding the Primary Flight Controls.....	13
Flying the Revolution 235 CP.....	14
Advanced Tuning (Forward Programming).....	14
Advanced Tuning (Non-Forward Programming).....	15
Post-Flight Inspection and Maintenance Checklist.....	16
Troubleshooting Guide.....	17
Exploded View.....	19
Parts Listings.....	19
Optional Parts.....	20
Important Federal Aviation Administration (FAA) Information.....	20
AMA National Model Aircraft Safety Code.....	20
Limited Warranty.....	21
Warranty and Service Contact Information.....	22
FCC Information.....	22
IC Information.....	23
Compliance Information for the European Union.....	23

Specifications	
Length	18.5 in (470mm)
Height	6.6 in (168mm)
Main Rotor Diameter	21.93 in (557mm)
Tail Rotor Diameter	1.65 in (42.0mm)
Weight*	Without Battery: 11.82 oz (335g) With Recommended 3S 850mAh Flight Battery: 14.29 oz (405g)

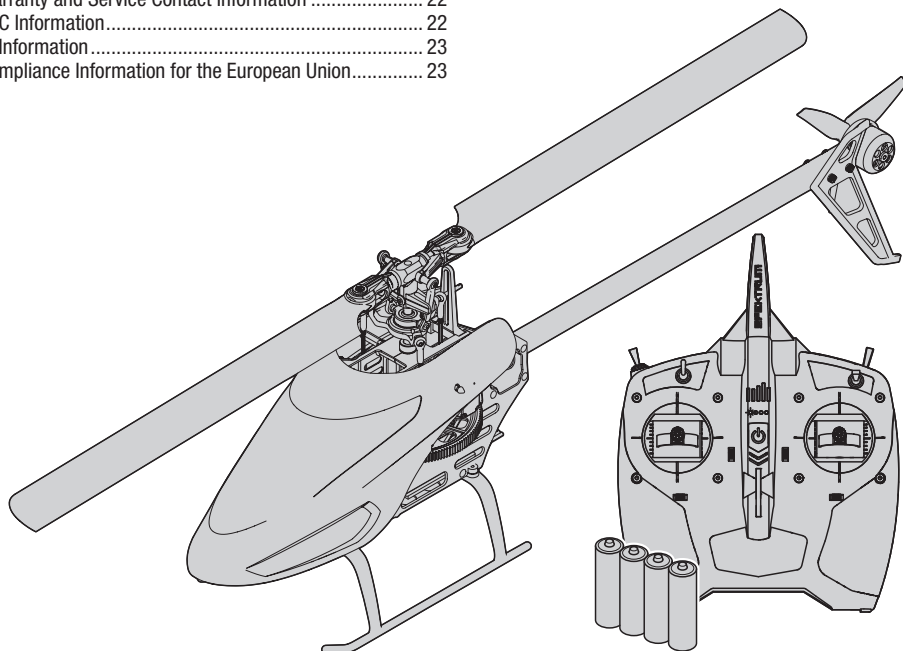
RTF Basic Included Equipment	
Main Motor	3400kv Brushless (SPMX-1083)
Tail Motor	3600Kv Brushless (BLH1515)
Receiver/Flight Control	Spektrum Smart AS3X®/ Smart® Receiver (SPMAR6250MHXD)
ESC	Brushless ESC (SPMXAE1020)
Transmitter	DSM2®/DSMX® Compatible Transmitter (SPMR1010)
Transmitter Batteries	4 AA Alkaline

Required Equipment	
Battery	850mAh 3S 11.1V 30C Li-Po (SPMX8503S30)
Charger	2-3 Cell S120 USB-C Smart Charger (SPMX1020)
Transmitter	DSM2®/DSMX® Compatible Transmitter (SPMR1010)
Adapter	IC2 to IC3 charge adapter (SPMXCA320)

*The weight provided is for the aircraft and flight control components. No additional payload is allowed. MTOM is weight with recommended battery.



This product is a class C4 UAS as defined by the European Union Aviation Safety Agency (EASA).



First Flight Preparation

- Remove and inspect contents
- Program the transmitter (BNF only)
- Charge the flight battery
- Install the flight battery
- Bind the transmitter (BNF only)
- Familiarize yourself with the controls
- Find a suitable area for flying

Charging Warnings



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.

- **NEVER LEAVE CHARGING BATTERIES UNATTENDED.**
- **NEVER CHARGE BATTERIES OVERNIGHT.**
- 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 (5–49° C).
- Do not store battery or model in a car or direct sunlight. If stored in a hot car, the battery can be damaged or even catch fire.

Battery Charging (RTF)

We recommend a 3S 850mAh 30C Smart Technology LiPo battery with an IC2™ connector (SPMX8503S30) and a IC2 to IC3 adapter (SPMXCA320).

Flying Checklist

- Always turn the transmitter ON first**
- Plug the flight battery into the lead from the ESC
- Allow the receiver and ESC to initialize and arm properly
- Fly the model
- Land the model
- Unplug the flight battery from the ESC
- Always turn the transmitter OFF last**

- Always charge batteries away from flammable materials.
- Always inspect the battery before charging
- 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 a 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 charge batteries outside recommended levels.
- Never charge damaged batteries.
- 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 (5–49° C) or place in direct sunlight.

The aircraft ESC is equipped with an IC2 device connector. Ensure any battery you choose is compatible. Balance the model to the recommended center of gravity (CG). Follow the battery and battery charger instructions.

Installing the DXS Transmitter Batteries (RTF)

The LED indicator flashes and the transmitter beeps progressively faster as the battery voltage drops.

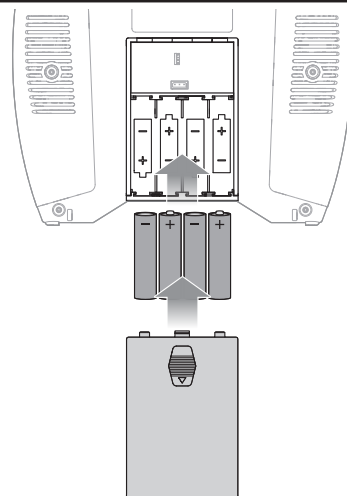
Replace the transmitter batteries when the transmitter begins to beep.



CAUTION: NEVER remove the transmitter batteries while the model is powered on. Loss of model control, damage or injury may occur.

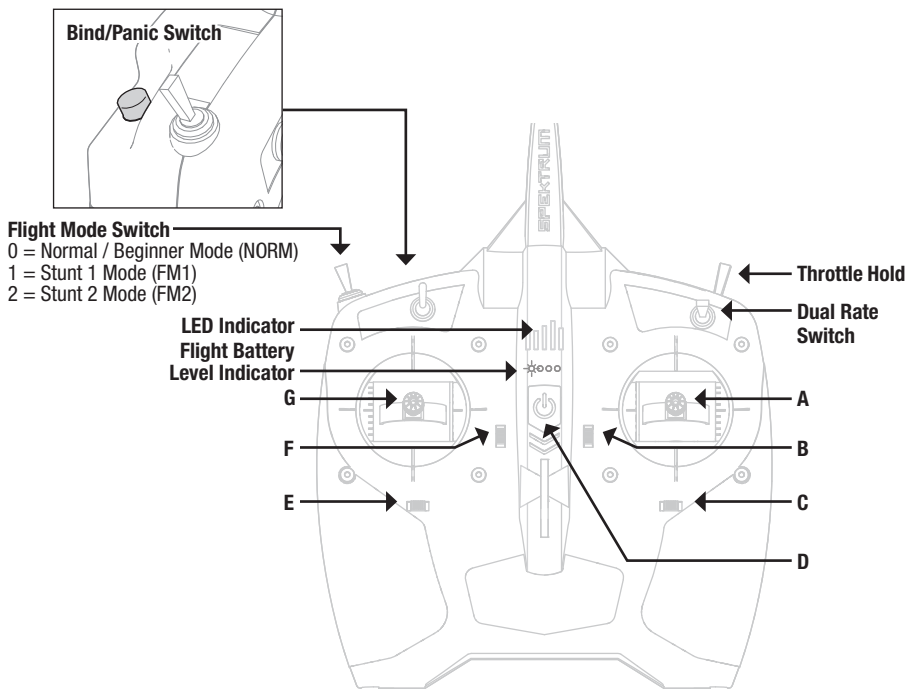


CAUTION: Risk of explosion if battery is replaced with an incorrect type. Dispose of used batteries according to national regulations.



DXS Transmitter Control (RTF)

	A	B	C	D	E	F	G
Mode 1	Aileron (Left/Right) Throttle (Up/Down)	Throttle Trim	Aileron Trim	ON/OFF Switch	Rudder Trim	Elevator Trim	Rudder (Left/Right) Elevator (Up/Down)
Mode 2	Aileron (Left/Right) Elevator (Up/Down)	Elevator Trim	Aileron Trim	ON/OFF Switch	Rudder Trim	Throttle Trim	Rudder (Left/Right) Throttle (Up/Down)



Battery Voltage Level

The included DXS transmitter includes a flight battery voltage level indicator.

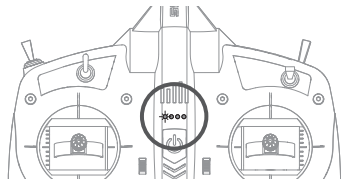
LED Smart battery voltage indication is based on current voltage and will change with throttle/power usage. When throttle is increased, voltage drops, causing the bars to indicate lower power (e.g., fewer LEDs solid or flashing.) When the throttle is lowered to idle/off, the bars recover (e.g., more LEDs solid or flashing). LED bars will rise and lower depending on throttle/power usage.

The Smart battery low voltage alarm sounds when the ESCs are close to reaching low voltage cutoff. The alarm will sound for 25 seconds. If the throttle is lowered to allow voltage recovery, the alarm will stop early. Land the aircraft when the alarm sounds.

After landing, reset the Smart battery low voltage warning:

1. Powering cycling the DXS transmitter, or
2. Disconnecting the battery from the aircraft for more than 15 seconds or until the LED voltage indication bars go out.

Connect a fully charged battery to the aircraft, which will ensure the Smart battery low voltage warning resets prior to the next flight.



NX and DX Series Transmitter Setup

1. Power ON your transmitter, click on scroll wheel, roll to **System Setup**, and click the scroll wheel. Select **YES**.
2. Go to **Model Select** and choose <Add New Model> at the bottom of the list. The system asks if you want to create a new model, select **Create**.
3. Set **Model Type**: Select Helicopter Model Type by choosing the Helicopter. The system asks you to confirm model type, data will be reset. Select **YES**.
4. Scroll down and select **Model Name**: Input a name for your model file Scroll up to **BACK**, and press the scroll wheel to return to **System Setup**.
5. Scroll down and select **F-Mode Setup**. Set to: Switch 1: Switch B Hold Switch: Switch H
Scroll up to **LIST**, and press the scroll wheel to return to **System Setup**.
6. Scroll down and select **Channel Assign**. Scroll down on the **Channel Input Config** screen, and set Ch 5 Gear to **F-Mode**. Scroll down to **Ch/Prt (Bold)**, **Aux 5** and select **B** as the input.
7. Select <Main Screen>. Click the scroll wheel to enter the **Function List**.
8. Scroll down to **Rates and Expo**, and press the scroll wheel. Scroll down to **Channel** and select **Aileron**.
Set Switch: **Switch F**
Move Switch F to the 0 position > Set High Rate %: 100 / 100; Expo %: 35 / 35
Move Switch F to the 1 position > Set High Rate %: 100 / 100; Expo %: 35 / 35
Move Switch F to the 2 position > Set Low Rate %: 75 / 75; Expo %: 35 / 35
9. Scroll up to **Channel** and select **Elevator**. Set Switch: **Switch F**
Move Switch F to the 0 position > Set High Rate %: 100 / 100; Expo %: 35 / 35
Move Switch F to the 1 position > Set High Rate %: 100 / 100; Expo %: 35 / 35
Move Switch F to the 2 position > Set Low Rate %: 75 / 75; Expo %: 35 / 35
10. Scroll up to **Channel** and select **Rudder**. Set Switch: **Switch F**
Move Switch F to the 0 position > Set High Rate %: 100 / 100; Expo %: 45 / 45
Move Switch F to the 1 position > Set High Rate %: 100 / 100; Expo %: 45 / 45
Move Switch F to the 2 position > Set Low Rate %: 75 / 75; Expo %: 45 / 45
11. Scroll up to **LIST**, and press the scroll wheel to return to the **Function List**.
12. Scroll down to **Throttle Curve**, and press the scroll wheel.
Scroll to the **N** box for curve selection, and press the scroll wheel to select the **Normal** curve.
Set the **Curve Values** to:

1	2	3	4	5
0	65	65	65	65
13. Scroll to the **#1** box for curve selection and press the scroll wheel to select the **Stunt #1** curve.
Set the **Curve Values** to:

1	2	3	4	5
80	80	80	80	80
14. Scroll to the **#2** box for curve selection, and press the scroll wheel to select the **Stunt #2** curve.
Set the **Curve Values** to:

1	2	3	4	5
100	100	100	100	100
15. Scroll to the **H** box for curve selection, and press the scroll wheel to select the **Hold** curve.
Set the **Curve Values** to:

1	2	3	4	5
0	0	0	0	0
16. Scroll up to **LIST**, and press the scroll wheel to return to the **Function List**.
17. Scroll down to **Pitch** curve, and press the scroll wheel. Scroll to the **N** box for curve selection, and press the scroll wheel to select the **Normal** curve. Set the **Curve Values** to:

1	2	3	4	5
25	37	50	75	100
18. Scroll to the **#1** box for curve selection and press the scroll wheel to select the **Stunt #1** curve.
Set the **Curve Values** to:

1	2	3	4	5
0	25	50	75	100

19. Scroll to the #2 box for curve selection, and press the scroll wheel to select the Stunt #2 curve. Set the Curve Values to:										
<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>0</td> <td>25</td> <td>50</td> <td>75</td> <td>100</td> </tr> </table>	1	2	3	4	5	0	25	50	75	100
1	2	3	4	5						
0	25	50	75	100						
20. Scroll to the H box for curve selection and press the scroll wheel to select the Hold curve. Set the Curve Values to:										
<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>25</td> <td>37</td> <td>50</td> <td>75</td> <td>100</td> </tr> </table>	1	2	3	4	5	25	37	50	75	100
1	2	3	4	5						
25	37	50	75	100						
21. Scroll up to LIST , and press the scroll wheel to return to the Function List .										
22. Scroll down to Mixing , and press the scroll wheel Select Mix 1 . Select Normal . Select the first INH , and select the I Switch . Select the second INH , and select A5 . Set the First Rate Value to: 0% the Second Rate Value to: -125% . Set the Offset to 100 . Set the Switch to the I button .										
23. Scroll up to Back , and press the scroll wheel to return to the Function List .										
24. Scroll down to Timer , and press the scroll wheel. Set to: Mode: Count Down Time: 5:00 Start: Throttle Out Over: 25% One Time: Inhibit										
25. Scroll up to LIST , and press the scroll wheel to return to the Function List .										
26. Scroll up to <Main Screen>, and press the scroll wheel.										

See the Smart Throttle section for information on telemetry setup.

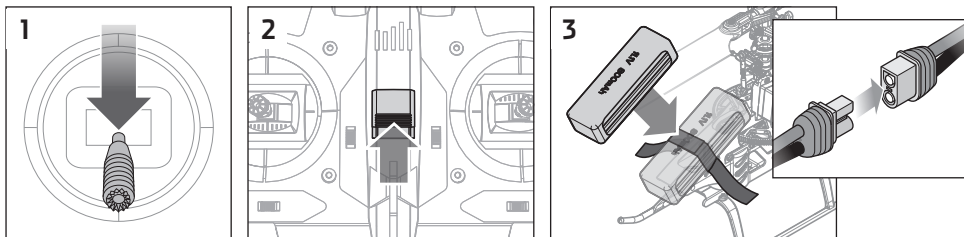
iX Series Transmitter Setup

1. Power ON your transmitter and begin once the Spektrum AirWare app is open. Tap the orange pen icon in the screen's upper left corner. The system asks for permission to Turn Off RF , select PROCEED .
2. Select the three dots in the upper right corner of the screen, select Add a New Model .
3. Select Model Option , choose DEFAULT , select Helicopter . The system asks if you want to create a new heli model, select Create .
4. Select the last model on the list: Heli . Tap on Heli , and rename the model to a name of your choice.
5. Tap and hold the back arrow icon in the upper left corner of the screen to return to the main screen.
6. Tap on the Model Setup button.
7. Set Flight Mode Setup. Switch 1: Switch B. Hold Switch: Switch H . Tap on the arrow in the upper left corner to return to the Model Setup menu.
8. Set Channel Assign . Set CH/Port 5 to Aux 5 for Output and Switch B for Input. Tap on the arrow in the upper left corner to return to the Model Setup menu. Tap on the arrow in the upper left corner to return to the main screen.
9. Tap on the Model Adjust button.
10. Tap on Dual Rates and Exponential . Tap on the pull down tab at Channel and select Aileron . Set Switch: Switch F Move Switch F to the 0 position > Set High Rate %: 100 / 100; Expo %: 35 / 35 Move Switch F to the 1 position > Set High Rate %: 100 / 100; Expo %: 35 / 35 Move Switch F to the 2 position > Set Low Rate %: 75 / 75; Expo %: 35 / 35
11. Tap on the pull down tab at Channel and select Elevator . Set Switch: Switch F Move Switch F to the 0 position > Set High Rate %: 100 / 100; Expo %: 35 / 35 Move Switch F to the 1 position > Set High Rate %: 100 / 100; Expo %: 35 / 35 Move Switch F to the 2 position > Set Low Rate %: 75 / 75; Expo %: 35 / 35
12. Tap on the pull down tab at Channel and select Rudder . Set Switch: Switch F Move Switch F to the 0 position > Set High Rate %: 100 / 100; Expo %: 45 / 45 Move Switch F to the 1 position > Set High Rate %: 100 / 100; Expo %: 45 / 45 Move Switch F to the 2 position > Set Low Rate %: 75 / 75; Expo %: 45 / 45
13. Tap on the arrow in the upper left corner to return to the Model Adjust menu.

14. Tap on **Throttle Curve**. Ensure **H Switch** is set to the 0 position. Set the **B Switch** to the 0 position to select the Normal Curve. Set the **Curve Values** to:
- | | | | | |
|---|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 |
| 0 | 65 | 65 | 65 | 65 |
15. Set the **B Switch** to the 1 position to select the Stunt #1 curve. Set the **Curve Values** to:
- | | | | | |
|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 |
| 80 | 80 | 80 | 80 | 80 |
16. Set the **B Switch** to the 2 position to select the Stunt #2 curve. Set the **Curve Values** to:
- | | | | | |
|-----|-----|-----|-----|-----|
| 1 | 2 | 3 | 4 | 5 |
| 100 | 100 | 100 | 100 | 100 |
17. Set the **H Switch** to the 1 position to select the Hold curve. Set the **Curve Values** to:
- | | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| 0 | 0 | 0 | 0 | 0 |
18. Tap on the **arrow** in the upper left corner to return to the Model Adjust menu.
19. Tap on Pitch Curve. Ensure Switch H is set to the 0 position.
Set the **B Switch** to the 0 position to select the Normal curve. Set the **Curve Values** to:
- | | | | | |
|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 |
| 25 | 37 | 50 | 75 | 100 |
20. Set the **B Switch** to the 1 position to select the Stunt #1 curve. Set the **Curve Values** to:
- | | | | | |
|---|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 |
| 0 | 25 | 50 | 75 | 100 |
21. Set the **B Switch** to the 2 position to select the Stunt #2 curve. Set the **Curve Values** to:
- | | | | | |
|---|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 |
| 0 | 25 | 50 | 75 | 100 |
22. Set the **H Switch** to the 1 position to select the Hold curve. Set the **Curve Values** to:
- | | | | | |
|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 |
| 25 | 37 | 50 | 75 | 100 |
23. Tap on the **arrow** in the upper left corner to return to the **Model Adjust** menu.
24. Tap on **Mixing**. Select **P-Mix 1**. Select **Normal**.
Select the first **INH**, and select the **I Switch**.
Select the second **INH**, and select **A5**.
Set the First Rate Value to: **0%** the Second Rate Value to: **-125%**.
Set the **Offset** to **100**. Set the **Switch** to the **I button**.
25. Tap on **Back** in the upper right corner to return to the **Mixing** menu.
26. Tap on the **arrow** in the upper left corner to return to the **Model Adjust** menu.
27. Tap on the **arrow** in the upper left corner to return to the main screen.
28. Tap on the **clock** icon in the **Timer 1** box. Set to:
Mode: Count Down
Time: 5:00
Switch: Throttle Out
Over Under Trigger: 25%
Over Under: Over
One Time: Toggle to activate
29. Tap on the **arrow** in the upper left corner to return to the main screen.

See the Smart Throttle section for information on telemetry setup.

Installing the Flight Battery



1. Lower the throttle stick to the lowest position.
2. Power ON the transmitter.
3. Center all trims. For the included Spektrum DXs transmitter (RTF only), the trims are centered when you hear a higher pitched beep while pressing the trim button. Move the trim in both directions until you hear the high-pitched beep.
4. Attach the hook material to the helicopter frame and the loop material to the flight battery.
5. Install the flight battery on the helicopter frame. Secure the flight battery with the hook and loop strap.

NOTICE: If the flight battery hook and loop strap is pulled too tight, it may result in a vibration or the tail rotor may drift to the right during flight. If you experience either of these issues, loosen the strap slightly and fly again.



CAUTION: Connecting the battery to the ESC with reversed polarity will cause damage to the ESC, the battery or both. Damage caused by incorrectly connecting the battery is not covered under warranty.

If you experience issues during initialization, refer to the Troubleshooting Guide at the back of the manual.



CAUTION: Always disconnect the Li-Po battery from the aircraft 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.



WARNING: Always activate throttle hold and wait until the main rotor blades and tail rotor stop spinning before handling the model.

The throttle trim on the transmitter must remain at the center position. Raising the throttle trim above center may cause the main and tail motors to begin spinning.

LED Indicator on Flight Controller

LED Indicator on FC	Indicator Description
Red Solid	AR6250MHXD waiting for receiver connection, system will not initialize until connected
Yellow Flashing	Calibrating
Slow Green Flashing	Ready to Fly
Slow Red Flashing	Failsafe Active
Red Solid and Yellow Flashing	Calibration Error, FC not level or is being moved during calibration

Smart Throttle (BNF Only)

Spektrum ESCs feature a telemetry function called Smart Throttle. Smart Throttle technology combines the throttle signal with telemetry data from the ESC on a single, three wire servo connector.

Smart Throttle ESCs can send current, voltage, ESC temp, and mAh consumed. They can also exchange battery data from compatible Spektrum Smart batteries. Smart Throttle telemetry data displays on your transmitter like any other telemetry sensor.

For Smart Throttle to function you must have a Smart Throttle ESC paired with a Smart Throttle telemetry receiver and a Spektrum DSMX transmitter with telemetry. Check your receiver and ESC manual for more information about Smart technology compatibility. To employ Smart features, you may have to update your transmitter.

Visit www.spektrumrc.com to register and update your transmitter.

To activate Smart Telemetry:

1. Keep the vehicle powered ON after binding the transmitter to the receiver.
2. Scroll to the Telemetry screen.
3. Scroll to Settings.
4. Select Auto Config.

To activate speed infomation using Smart Telemetry:

1. After the initial Smart telemetry configuration, keep the vehicle powered ON.
2. Scroll to the Telemetry screen.
3. Scroll to Smart ESC and double click.
4. Scroll to NEXT.
5. Enter the values for the motor magnetic pole count (14-pole) and the gear ratio (10.77).

When the radio is ON and connected to a receiver sending Smart Data, the Smart Logo appears near the battery logo on the home page. A signal bar appears in the screen's information bar along the top of the screen. Scroll past the servo monitor to the Smart screen. Select either ESC, battery or both to suit your preference.

Low Voltage Cutoff (LVC)

The ESC will continuously lower power to the motor until complete shutdown when the battery reaches 9V under load. This helps prevent over-discharge of the Li-Po battery. Land immediately when the ESC activates LVC. Continuing to fly after LVC can damage the battery, cause a crash or both. Crash damage and batteries damaged due to over-discharge are not covered under warranty.

Repeatedly flying the helicopter until LVC activates will damage the helicopter 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.

Transmitter and Receiver Binding



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

General Binding Procedure

- | |
|--|
| 1. Refer the Transmitter Setup Table to correctly set up your transmitter. |
| 2. Lower the throttle stick to the lowest position. Set all trims to the center position. |
| 3. Power off the transmitter and move all switches to the 0 position. |
| 4. Install the bind plug in the receiver BIND/PROG port. |
| 5. Connect the flight battery to the ESC. |
| 6. Put the transmitter into bind mode while powering on the transmitter. Flip the model upside down and hold for 15s. |
| 7. Release the bind button/switch after 2–3 seconds. The helicopter is bound when the LED on the receiver turns solid. |
| 8. Disconnect the flight battery and power the transmitter off. |

RTF Your RTF transmitter comes prebound to the model. If you need to re-bind, follow the directions below.

1. Lower the throttle stick to the lowest position. Set all trims to the center position.
2. Power off the transmitter.
3. Install the bind plug in the receiver BIND/PROG port (far left side of the receiver).
4. Connect the flight battery to the ESC.
5. Press and hold the Bind Switch while powering on the transmitter.
6. The transmitter will beep and the LED will blink. Release the Bind Switch.
7. The helicopter is bound when the LED on the receiver control unit is solid and the transmitter emits 3 rapid, high-pitch tones. If the transmitter emits 2 low-pitch tones, the binding procedure was not successful and should be attempted again.
8. Disconnect the flight battery and power the transmitter off.

If you encounter problems, obey binding instructions and refer to the troubleshooting guide for other instructions. If needed, contact the appropriate Horizon Product Support office.

SAFE Technology

Revolutionary SAFE® (Sensor Assisted Flight Envelope) technology uses an innovative combination of multi-axis sensors and software that allows model aircraft to perceive its position relative to the horizon. This spatial awareness is utilized to create a controlled flight envelope the aircraft can use to maintain a safe region of bank and pitch angles so you can fly more safely. Far beyond stability, this level of protection offers multiple modes so the pilot can choose to develop his or her skills with a greater degree of security and flight control that always feels crisp and responsive.

SAFE technology delivers:

- Flight envelope protection you can enable at the flip of a switch.
- Multiple modes let you adapt SAFE technology to your skill level instantly.

Best of all, sophisticated SAFE technology doesn't require any work to enjoy. Every aircraft with SAFE installed is ready to use and optimized to offer the best possible flight experience.

Flight Mode and Rate Selection

In **Normal/Beginner Mode** the bank angle is limited. When the cyclic stick is released the model will return to level.

In **Stunt 1 Mode** the bank angle is not limited. When the cyclic stick is released the model will not return to level. This mode is great for learning forward flight and basic aerobatics such as stall turns and loops.

In **Stunt 2 Mode** the bank angle is not limited. When the cyclic stick is released the model will not return to level.

This mode is great for 3D aerobatics such as stationary flips and tic tocs.

Change rates in any mode by moving the two-position dual rate switch.

- Low rate reduces the control rates, providing an easier to fly model. Beginners should use low rate for initial flights.
- High rate provides full control and should be used by intermediate and experience pilots.

Panic Recovery

If you encounter distress while flying in any mode, activate the Panic Recovery function. Move the control sticks to neutral (50%), press and hold the Bind/Panic button until the model is upright. SAFE technology will immediately return the aircraft to an upright level attitude, if the aircraft is at a sufficient height with no obstacles in its path. Return the collective stick to 50% and deactivate the Panic Recovery Function to return to the current flight mode.

NOTICE: Before deactivating Panic Recovery, make sure the collective stick has been returned to the 50% position. Once the Panic Recovery has been deactivated, full negative collective becomes available, which could cause the helicopter to descend rapidly.

- This mode is intended to provide the pilot with the confidence to continue to improve their flight skills.
- Move the collective stick to 50% and return all other transmitter controls to neutral for the quickest recovery.
- Once the model has reached a level upright attitude, the negative collective is reduced to prevent the user from pushing the model into the ground.

Throttle Hold

Throttle hold is used to prevent the motor from powering on inadvertently. For safety, turn throttle hold ON any time you need to touch the helicopter or check the direction controls.

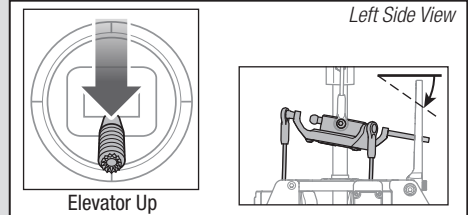
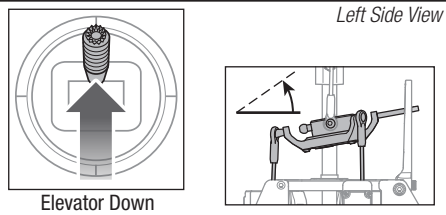
Throttle hold is also used to turn off the motor quickly if the helicopter is out of control, in danger of crashing, or both. The blades will continue to spin briefly when throttle hold is activated.

Control Tests

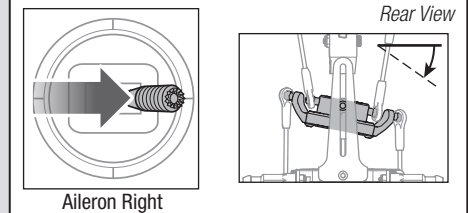
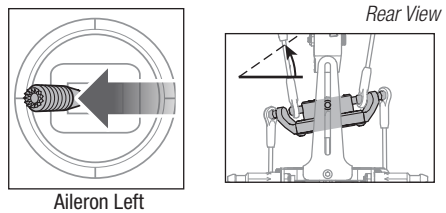
Ensure the throttle hold is ON when doing the direction control tests. Test the controls prior to the first flight to ensure the servos, linkages and parts operate correctly.

If the controls do not react as shown in the illustrations below, confirm the transmitter is programmed correctly before continuing on to the Motor test.

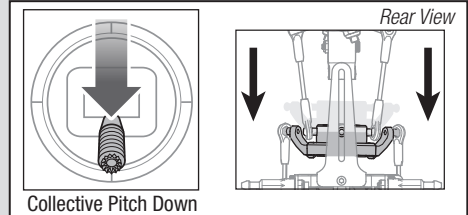
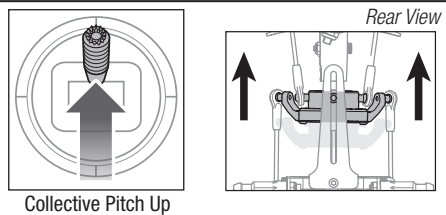
Elevator



Aileron



Collective Pitch



Motor

Place the helicopter outdoors on a clean, flat, level surface (concrete or asphalt) free from obstruction. Always stay clear of moving rotor blades.

CAUTION: Keep pets and other animals away from the helicopter. Animals may injure themselves if they attack or run toward the helicopter.

1. Confirm that throttle is at full low position.
2. Turn Throttle Hold OFF.

WARNING: Stay at least 30 feet (10 meters) away from the helicopter when the motor is running. Do not attempt to fly the helicopter at this time.

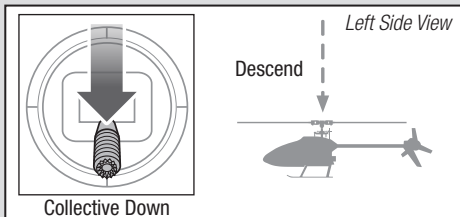
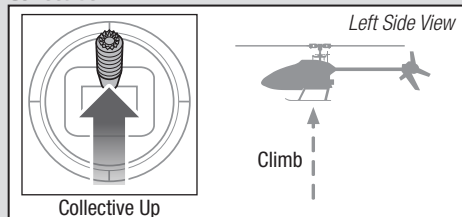
3. Slowly increase the throttle until the blades begin to spin. The main blades should spin clockwise when viewing the helicopter from the top. The tail rotor blades should spin counterclockwise when viewing the helicopter from the right side.

NOTICE: If the main blades are spinning counterclockwise, reduce the throttle to low immediately. Disconnect the battery from the helicopter and reverse any two motor wire connections to the ESC and repeat the motor control test.

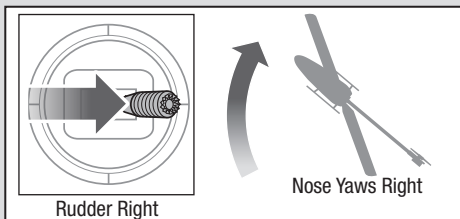
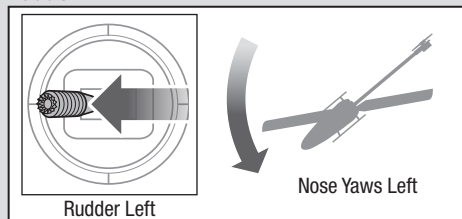
Understanding the Primary Flight Controls

If you are not familiar with the controls of your aircraft, take a few minutes to familiarize yourself with them before attempting your first flight.

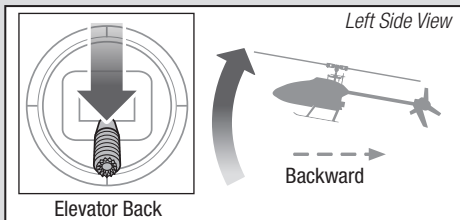
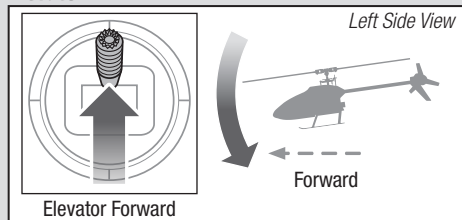
Collective



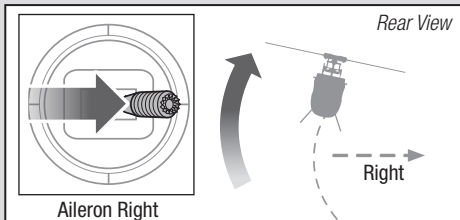
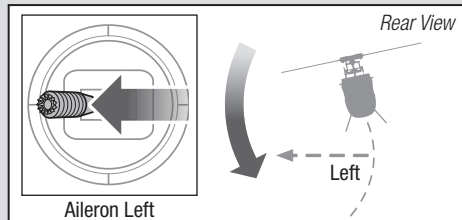
Rudder



Elevator



Aileron



Flying the Revolution 235 CP

Consult your local laws and ordinances before choosing a location to fly your aircraft.

We recommend flying your aircraft outside in calm winds or inside 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.

It is best to fly from a smooth flat surface as this will allow the model to slide without tipping over. Keep the helicopter approximately 2 ft (600mm) above the ground. Keep the tail pointed toward you during initial flights to keep the control orientation consistent. Releasing the stick in Stability Mode will allow the helicopter to level itself. Activating the Panic Recovery button will level the helicopter quickly. If you become disoriented while in Stability Mode, slowly lower the throttle stick to land softly.

During initial flights, only attempt takeoff, landing and hovering in one spot.

Takeoff

NOTICE: If the main motor or tail motor do not start up properly when throttle is first applied, immediately return the throttle to the low position and try again. If the problem persists, disconnect the flight battery, check for binding in the gear train and ensure no wires have become entangled within the gears.

Place the model onto a flat, level surface free of obstacles and walk back 30 feet (10 meters). Slowly increase the throttle until the model is approximately 2 ft. (600mm) off the ground and begin flying the model.

Advanced Tuning (Forward Programming)

Applies to forward programming capable Spektrum Transmitters including: DX6e, DX8e, DX6G2, DX7G2, DX8G2, DX9, iX12, DX18, iX20, DX20, NX6, NX8, NX10.

The Blade Revolution 235 CP default settings are appropriate for most users. We recommend flying with the default parameters before making any adjustments.

The Blade Revolution 235 CP BNF flight controller may be programmed from any compatible Spektrum transmitter (visit SpektrumRC.com for more information).

Entering the Advanced Parameters Menu

With the helicopter bound to the transmitter and powered on, enter the Function List and select Forward Programming. A list of adjustable parameters and the range of values available for tuning have been tailored for this

Hovering

Making small corrections on the transmitter, try to hold the helicopter in one spot. If flying in calm winds, the model should require almost no corrective inputs. After moving the cyclic stick and returning it to center, the model should level itself. The model may continue to move due to inertia. Move the cycle stick in the opposite direction to stop the movement.

After you become comfortable hovering, you can progress into flying the model to different locations, keeping the tail pointed towards you at all times. You can also ascend and descend using the throttle stick. Once you're comfortable with these maneuvers, you can attempt flying with the tail in different orientations. It is important to keep in mind that the flight control inputs will rotate with the helicopter, so always try to picture the control inputs relative to the nose of the helicopter. For example, forward will always drop the nose of the helicopter.

Low Voltage Cutoff (LVC)

LVC decreases the power to the motors when the battery voltage gets low. When the motor power decreases and the red LED on the ESC flashes, land the aircraft immediately and recharge the flight battery.

LVC does not prevent the battery from over-discharge during storage.

NOTICE: Repeated flying to LVC will damage the battery.

Landing

To land, slowly decrease the throttle while in a low-level hover. After landing, disconnect and remove the battery from the aircraft after use to prevent trickle discharge. Review your manufacturers provided LiPo guidelines for charging and storage information.

The flight controller shipped with BNF models has a range of adjustable parameters suitable for the Revolution 235 helicopter and is not intended for use in other aircraft.

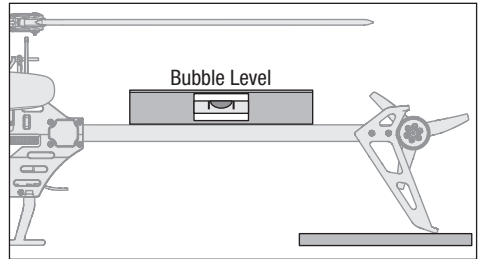
It is important to use the included servos with the BNF flight controller because the adjustable parameters available for the SPMAR6250MHXD are designed around the recommended servos. It is possible there may not be enough range for the helicopter to be tuned when using alternative servos.

helicopter. Make small changes to one parameter at a time, and test fly the changes before modifying those parameters further.

Calibration Procedure

If the helicopter is experiencing drift, perform the following calibration. The calibration procedure may also be needed following crash repairs.

1. Ensure the calibration surface is level.
2. Power ON the transmitter and activate throttle hold.
3. Connect the flight battery to the ESC and allowing the model to initialize.
4. Turn Throttle Hold ON.
5. Using a bubble level (as shown), place a shim under the landing skid level to the helicopter.
6. Enter the Function List on your transmitter.
7. Select Forward Programming.
8. Select System Setup.
9. Select Calibration.
10. Select Apply, and the calibration will begin. The LED flashes yellow, indicating the calibration is proceeding normally. If the LED flashes red, the model is not level or the model was moved. In this case, calibration restarts.



11. When calibration is complete, the receiver LED slowly flashes green.
12. Proceed to the pre-flight check list before flying your model.

Factory Reset

If the process of tuning the Blade Revolution 235 CP helicopter results in undesirable flight performance, you can reset to factory defaults by selecting the Factory Reset option in Forward Programming.

1. Enter the Function List.
2. Select Forward Programming.
3. Select System Setup.

4. Select Factory Reset.
5. Select Apply.
6. Perform the Setup > Swashplate > Sub Trim function, and ensure the servos are properly trimmed.
7. Proceed with the pre-flight check list before flying the model.

Advanced Tuning (Non-Forward Programming)

Applies to Spektrum transmitters not capable of forward programming including DX6i, DX6e, DX7s DX8, and DX8e.

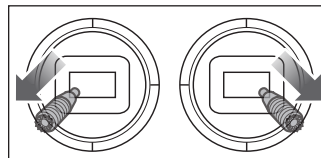
The Blade Revolution 235 CP was programmed and test flown at the factory. Servo adjustment might be necessary after a crash or after servo / linkage replacement.

For pilots flying with a non-forward programming transmitter, follow these steps to make servo adjustments and calibrate the helicopter.

The advanced tuning options must be entered within 30 seconds after initialization completes. In addition, the combination of dual rates and travel adjustments must result in a throw greater than 65% in order to enter the tuning modes.

Entering Servo Adjustment Mode

1. Lower the throttle stick to the lowest position.
2. Power ON the transmitter, and activate throttle hold.
3. Install the flight battery, securing it with the hook and loop strap.
4. Connect the battery to the ESC.
5. After initialization is complete (indicated by a slow green flash), hold the left stick to the bottom left corner and the right stick to the bottom right corner as shown.



- Servo Adjustment Mode is indicated by the swashplate servos jumping and then slowly moving back to center.
6. Release the sticks, and proceed to the next step.

Adjusting the Servo Neutral Position

With the model in Servo Adjustment Mode, the control stick and gyro inputs are disabled and the servos are held in the neutral position. Check the position of the servo arms to verify they are perpendicular to the servos.

- If the arms are perpendicular to the servos, no adjustment is necessary. Exit Servo Adjustment Mode.
- If one or more servo arm is not perpendicular to the servos, continue the servo adjustment process.

While watching the swashplate servos, apply fore or aft cyclic and release. One of the servos will jump, indicating the selected servo. Apply fore or aft cyclic and release until the servo that needs to be adjusted is selected.

Once the servo you wish to adjust is selected, move the cyclic stick left or right to adjust the servo neutral position in the desired direction.

To reset the current servo to the default neutral position, hold the rudder stick full right for two seconds.

The range of adjustment is limited. If you are unable to adjust the servo arm perpendicular to the servo, you must reset the servo to the default, neutral position, remove the servo arm, and place it back onto the servo as close to perpendicular as possible. You can then adjust the servo neutral position using left or right cyclic stick.

Swashplate Leveling

Before saving your adjustments and exiting Servo Adjustment Mode, verify the swashplate is level and both main rotor blades are at 0 degrees pitch.

If they are not, make linkage adjustments as necessary.

Saving the Servo Adjustments

1. Lower the throttle stick to the lowest position and release the sticks.
2. Move the tail rotor stick to the left and hold for four seconds to exit Servo Adjustment Mode. The servos will jump indicating a return to normal operation.
3. Release the tail rotor stick.
4. Perform the pre-flight checklist procedure before flying your model.

Control Input in Servo Adjustment Mode	Action in Servo Adjustment Mode
Fore/Aft Cyclic	Select Previous or Next Servo
Right/Left Cyclic	Increase or Decrease Sub Trim Adjustment
Right Tailrotor	Hold for Two Seconds; Neutral Position is Reset on Selected Servo
Left Tailrotor and Low Throttle	Hold for Four Seconds; Exit Servo Adjustment Mode

Post-Flight Inspection and Maintenance Checklist

✓	
Ball Links	Make sure the plastic ball link holds the control ball, but is not tight (binding) on the ball. When a link is too loose on the ball, it can separate from the ball during flight and cause a crash. Replace worn ball links before they fail.
Cleaning	Make sure the battery is not connected before cleaning. Remove dust and debris with a soft brush or a dry, lint-free cloth.
Bearings	Replace bearings when they become notchy (sticky in places when turning) or draggy.
Wiring	Make sure the wiring does not contact moving parts. Replace damaged wiring and loose connectors.
Fasteners	Make sure there are no loose screws, other fasteners or connectors. Do not over-tighten metal screws in plastic parts. Tighten screws so the parts are mated together, then turn the screw only 1/8th of a turn more.
Rotors	Make sure there is no damage to rotor blades and other parts which move at high speed. Damage to these parts includes cracks, burrs, chips or scratches. Replace damaged parts before flying. Verify both main rotor blades have the correct and equal tension in the blade grips. When the helicopter is held up sideways, the main blades should support their own weight. When the helicopter is shaken lightly, the blades should fall.
Tail	Inspect the tail rotor for damage and replace if necessary. Verify the tail motor bolts, tail rotor adapter bolts and tail motor mount bolts are properly tightened. Inspect the tail boom for any damage and replace if necessary.
Mechanics	Inspect the main frame and landing gear for damage and replace if necessary. Check the mainshaft for vertical play and adjust the locking collar if necessary. Verify that the main gear mesh is correct and that no tight spots exist in the 360 degree rotation. Inspect all wires for damage and replace as necessary.

Troubleshooting Guide

Problem	Possible Cause	Solution
Helicopter control response is inconsistent or requires extra trim to neutralize movement	Aircraft was not initialized properly or a vibration is interfering with the sensor operation	Disconnect the flight battery, center the control trim and re-initialize the helicopter
Helicopter will not respond to throttle	Throttle too high and/or throttle trim is too high	Disconnect the flight battery, place the throttle stick in the lowest position and move the throttle trim to the center position. Connect the flight battery and allow the model to initialize
	Helicopter moved during initialization	Disconnect the flight battery and re-initialize the helicopter while keeping the helicopter from moving
Helicopter has reduced flight time or is underpowered	Flight battery charge is low	Completely recharge the flight battery
	Flight battery is damaged	Replace the flight battery and follow the flight battery instructions
	Flight conditions might be too cold	Make sure the battery is warm (room temperature) before use
LED on receiver flashes rapidly and aircraft will not respond to transmitter (during binding)	Transmitter too near aircraft during binding process	Power off the transmitter. Move the transmitter a larger distance from the aircraft. Disconnect and reconnect the flight battery to the aircraft. Follow the binding instructions
	Bind switch or button was not held while transmitter was powered on	Power off transmitter and repeat bind process
	Aircraft or transmitter is too close to large metal object, wireless source or another transmitter	Move aircraft and transmitter to another location and attempt binding again
LED on the receiver flashes rapidly and the helicopter will not respond to the transmitter (after binding)	The bind plug was not removed from the receiver after binding	Disconnect the flight battery, remove the bind plug from the receiver and reconnect the flight battery.
	Less than a 5-second wait between first powering on the transmitter and connecting the flight battery to the helicopter	Leave the transmitter powered on. Disconnect and reconnect the flight battery to the helicopter
	The helicopter is bound to a different model memory (ModelMatch™ transmitters only)	Select the correct model memory on the transmitter. Disconnect and reconnect the flight battery to the helicopter
	Flight battery or transmitter battery charge is too low	Replace or recharge batteries
	Aircraft or transmitter is too close to large metal object, wireless source or another transmitter	Move aircraft and transmitter to another location and attempt connecting again
Helicopter vibrates or shakes in flight	Damaged rotor blades, spindle or blade grips	Check main rotor blades and blade grips for cracks or chips. Replace damaged parts. Replace bent spindle
Random movements in flight	Vibration	Verify the receiver is properly attached to the helicopter. Inspect mounting tape for damage. Verify that no wires are contacting the receiver. Inspect and balance all rotating components. Verify the main shaft and tail rotor adapter are not damaged or bent. Inspect mechanics for broken or damaged parts and replace as necessary

Problem	Possible Cause	Solution
Tail oscillation/wag or poor performance	Damaged tail rotor, main gear mesh, loose bolts, vibration	Verify that the boom support bolts are tight and the plastic boom support ends are properly adhered to the boom support rods. Inspect the tail rotor for damage. Verify that all bolts on the tail assembly are properly tightened. Verify main gear mesh and ensure no tight spots in the mesh through full rotation. Replace any damaged or worn components
Drift in calm winds	Vibration, damaged linkage, damaged servo	Under normal operation the transmitter trims should not require adjustment and the center positions are memorized during initialization. If you find that trim adjustments are necessary after take off, verify the balance of all rotating components, ensure the linkages are not damaged and make sure the servos are in proper working condition
Drift in wind	Normal	The model will drift with the wind but should remain level in flight. Simply hold the cyclic stick in the necessary position to keep the model stationary. The model must lean into the wind to remain stationary, if the model remains level then it will drift with the wind
Panic Recovery or Return to Level does not level the model	Model was not initialized on a level, still surface	Re-initialize the model on a level and still surface
	Model was not taken off of a level surface	Always lift off from a level surface
Severe vibration	Battery strapped too tightly to the model	Loosen the battery strap
	Rotating component out of balance	Check the main shaft, tail rotor, main rotor blades, main frame and adapter for damage, replace as necessary. Vibration must be minimized for Panic Recovery and Return to Level functions to work properly

Optional Parts

Part #	Description	Part #	Description
BLH-1784	Pinion Gear: 12T	BLH-1866	Complete Night Light Kit Upgrade, White Blades
BLH-1786	Pinion Gear: 14T	BLH1403	Tail Rotor, Orange
BLH-1789	Aluminum Blade Grip Set	BLH1576	Main Rotor Blade Set, Green
BLH-1790	Night Blade Set 235mm	BLH1577	Main Rotor Blade Set, Orange
BLH-1791	Night Kit, Black Blades	EFLH1502	Landing Gear, Black
BLH-1792	Aluminum Tail Motor Mount	SPMR7110	NX7e+ 7 Channel Transmitter Only
BLH-1794	Aluminum Motor Mount		
BLH-1795	Night LED Set		

Important Federal Aviation Administration (FAA) Information

Use the QR code below to learn more about the Recreational UAS Safety Test (TRUST), as was introduced by the 2018 FAA Reauthorization Bill. This free test is required by the FAA for all recreational flyers in the United States. The completed certificate must be presented upon request by any FAA or law enforcement official.



Recreational UAS
Safety Test

If your model aircraft weighs more than .55lbs or 250 grams, you are required by the FAA to register as a recreational flyer and apply your registration number to the outside of your aircraft. To learn more about registering with the FAA, use the QR code below.



FAA DroneZone

AMA National Model Aircraft Safety Code

Effective January 1, 2018

A model aircraft is a non-human-carrying device capable of sustained flight within visual line of sight of the pilot or spotter(s). It may not exceed limitations of this code and is intended exclusively for sport, recreation, education and/or competition. All model flights must be conducted in accordance with this safety code and related AMA guidelines, any additional rules specific to the flying site, as well as all applicable laws and regulations.

As an AMA member I agree:

- I will not fly a model aircraft in a careless or reckless manner.
- I will not interfere with and will yield the right of way to all human-carrying aircraft using AMA's See and Avoid Guidance and a spotter when appropriate.
- I will not operate any model aircraft while I am under the influence of alcohol or any drug that could adversely affect my ability to safely control the model.
- I will avoid flying directly over unprotected people, moving vehicles, and occupied structures.
- I will fly Free Flight (FF) and Control Line (CL) models in compliance with AMA's safety programming.
- I will maintain visual contact of an RC model aircraft without enhancement other than corrective lenses prescribed to me. When using an advanced flight system, such as an autopilot, or flying First-Person View (FPV), I will comply with AMA's Advanced Flight System programming.
- I will only fly models weighing more than 55 pounds, including fuel, if certified through AMA's Large Model Airplane Program.
- I will only fly a turbine-powered model aircraft in compliance with AMA's Gas Turbine Program.
- I will not fly a powered model outdoors closer than 25 feet to any individual, except for myself or my helper(s) located at the flightline, unless I am taking off and landing, or as otherwise provided in AMA's Competition Regulation.
- I will use an established safety line to separate all model aircraft operations from spectators and bystanders.

Limited Warranty

What this Warranty Covers

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

What is Not Covered

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

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

Purchaser's Remedy

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

Limitation of Liability

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF HORIZON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability. If you as the purchaser or user are not prepared to accept the liability associated with the use of the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

Law

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

WARRANTY SERVICES

Questions, Assistance, and Services

Your local hobby store and/or place of purchase cannot provide warranty support or service. Once assembly, setup or use of the Product has been started, you must contact your local distributor or Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please

visit our website at www.horizonhobby.com, submit a Product Support Inquiry, or call the toll free telephone number referenced in the Warranty and Service Contact Information section to speak with a Product Support representative.

Inspection or Services

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

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

Warranty Requirements

For Warranty consideration, you must include your original sales receipt verifying the proof-of-purchase date.

Provided warranty conditions have been met, your Product will be serviced or replaced free of charge. Service or replacement decisions are at the sole discretion of Horizon.

Non-Warranty Service

Should your service not be covered by warranty, service will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost.

By submitting the item for service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service. Non-warranty service estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashier's checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to Horizon's Terms and Conditions found on our website http://www.horizonhobby.com/content/service-center_render-service-center.

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

10/15

Warranty and Service Contact Information

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

FCC Information

Contains FCC ID: BRWKATY1T

Contains FCC ID: BRWWACO1T

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and/or antenna and your body (excluding fingers, hands, wrists, ankles and feet). This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Supplier's Declaration of Conformity

BLH Revolution 235 CP RTF Basic (BLH01400) and BNF Basic (BLH01450)

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



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

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular

installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Horizon Hobby, LLC
2904 Research Rd.,
Champaign, IL 61822
Email: compliance@horizonhobby.com
Web: HorizonHobby.com

IC Information

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

Contains IC: 6157A-KATY1T

Contains IC: 6157A-WAC01T

This device contains license-exempt transmitter(s)/ receivers(s) that comply with Innovation, Science, and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following 2 conditions:

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

Compliance Information for the European Union



EU Compliance Statement:

BLH Revolution 235 CP RTF (BLH01400):

Hereby, Horizon Hobby, LLC declares that the device is in compliance with the following:

EU Low Voltage Directive 2014/35/EU, EU EMC Directive 2014/30/EU, EU Radio Equipment Directive 2014/53/EU, RoHS 2 Directive 2011/65/EU, RoHS 3 Directive - Amending 2011/65/EU Annex II 2015/863.

BLH Revolution 235 CP BNF Basic (BLH01450): Hereby, Horizon Hobby, LLC declares that the device is in compliance with the following: EU Radio Equipment Directive 2014/53/EU, RoHS 2 Directive 2011/65/EU, RoHS 3 Directive - Amending 2011/65/EU Annex II 2015/863.

NOTE: This product contains batteries that are covered under the 2006/66/EC European Directive, which cannot be disposed of with normal household waste. Please follow local regulations.

The full text of the EU declaration of conformity is available at the following internet address: <https://www.horizonhobby.com/content/support-render-compliance>.

Wireless Frequency Range and Wireless Output Power:

6157A-KATY1T:

2402 – 2478 MHz
17.7dBm

6157A-WAC01T:

2402 – 2478 MHz
1.43dBm

EU Manufacturer of Record:

Horizon Hobby, LLC
2904 Research Road
Champaign, IL 61822 USA

EU Importer of Record:

Horizon Hobby, GmbH
Hanskampring 9
22885 Barsbüttel Germany

WEEE NOTICE:



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



Hinweis

Allen Anweisungen, Garantien und anderen zugehörigen Dokumenten sind Änderungen nach Ermessen von Horizon Hobby, LLC vorbehalten. Aktuelle Produktliteratur finden Sie unter www.horizonhobby.com oder www.towerhobbies.com im Support-Abschnitt für das Produkt.

Begriffserklärung

Die folgenden Begriffe werden in der gesamten Produktliteratur verwendet, um auf unterschiedlich hohe Gefahrenrisiken beim Betrieb dieses Produkts hinzuweisen:

WARNUNG: Wenn diese Verfahren nicht korrekt befolgt werden, ergeben sich wahrscheinlich Sachschäden, Kollateralschäden und schwere Verletzungen ODER mit hoher Wahrscheinlichkeit oberflächliche Verletzungen.

ACHTUNG: Wenn diese Verfahren nicht korrekt befolgt werden, ergeben sich wahrscheinlich Sachschäden UND die Gefahr von schweren Verletzungen.

HINWEIS: Wenn diese Verfahren nicht korrekt befolgt werden, können sich möglicherweise Sachschäden UND geringe oder keine Gefahr von Verletzungen ergeben.



WARNUNG: Lesen Sie die GESAMTE Bedienungsanleitung, um sich vor dem Betrieb mit den Produktfunktionen vertraut zu machen. Wird das Produkt nicht korrekt betrieben, kann dies zu Schäden am Produkt oder persönlichem Eigentum führen oder schwere Verletzungen verursachen.

Dies ist ein hochentwickeltes Hobby-Produkt. Es muss mit Vorsicht und gesundem Menschenverstand betrieben werden und benötigt gewisse mechanische Grundfähigkeiten. Wird dieses Produkt nicht auf eine sichere und verantwortungsvolle Weise betrieben, kann dies zu Verletzungen oder Schäden am Produkt oder anderen Sachwerten führen. Dieses Produkt eignet sich nicht für die Verwendung durch Kinder ohne direkte Überwachung eines Erwachsenen. Versuchen Sie nicht ohne Genehmigung durch Horizon Hobby, LLC das Produkt zu zerlegen, es mit inkompatiblen Komponenten zu verwenden oder auf jegliche Weise zu erweitern. Diese Bedienungsanleitung enthält Anweisungen für Sicherheit, Betrieb und Wartung. Es ist unbedingt notwendig, vor Zusammenbau, Einrichtung oder Verwendung alle Anweisungen und Warnhinweise im Handbuch zu lesen und zu befolgen, damit es bestimmungsgemäß betrieben werden kann und Schäden oder schwere Verletzungen vermieden werden.

Nicht geeignet für Kinder unter 14 Jahren. Dies ist kein Spielzeug.

Sicherheitsvorkehrungen und Warnhinweise

- Halten Sie stets in allen Richtungen einen Sicherheitsabstand um Ihr Modell, um Zusammenstöße oder Verletzungen zu vermeiden. Dieses Modell wird von einem Funksignal gesteuert, das Interferenzen von vielen Quellen außerhalb Ihres Einflussbereiches unterliegt. Diese Interferenzen können einen augenblicklichen Steuerungsverlust verursachen.
- Betreiben Sie Ihr Modell immer auf einer Freifläche ohne Fahrzeuge in voller Größe, Verkehr oder Menschen.
- Befolgen Sie stets sorgfältig die Anweisungen und Warnhinweise für das Modell und jegliche optionalen Hilfsgeräte (Ladegeräte, Akkupacks usw.).
- Bewahren Sie alle Chemikalien, Klein- und Elektroteile stets außerhalb der Reichweite von Kindern auf.
- Setzen Sie Geräte, die für diesen Zweck nicht speziell ausgelegt und geschützt sind, niemals Wasser aus. Feuchtigkeit kann die Elektronik beschädigen.
- Stecken Sie keinen Teil des Modells in den Mund, da dies zu schweren Verletzungen oder sogar zum Tod führen kann.
- Betreiben Sie Ihr Modell nie mit fast leeren Senderakkus.
- Halten Sie das Fluggerät immer in Sicht und unter Kontrolle.
- Gehen Sie sofort auf Motor Aus bei Rotorberührung.
- Verwenden Sie immer vollständig geladene Akkus.
- Lassen Sie immer den Sender eingeschaltet wenn das Fluggerät eingeschaltet ist.
- Nehmen Sie vor der Demontage des Fluggerätes die Akkus heraus.
- Halten Sie bewegliche Teile immer sauber.
- Halten Sie die Teile immer trocken.
- Lassen Sie Teile immer erst abkühlen bevor Sie sie anfassen.
- Nehmen Sie die Akkus/Batterien nach Gebrauch heraus.
- Betreiben Sie Ihr Fluggerät niemals mit beschädigter Verkabelung.
- Fassen Sie niemals bewegte Teile an.



WARNUNG GEGEN GEFÄLSCHTE PRODUKTE: Sollten Sie jemals eine Spektrum Komponente ersetzen wollen, kaufen Sie die benötigten Ersatzteile immer bei Horizon Hobby oder einem von Horizon Hobby autorisiertem Händler um die hohe Qualität des Produktes zu gewährleisten. Horizon Hobby LLC lehnt jedwede Haftung, Garantie oder Unterstützung sowie Kompatibilitäts- oder Leistungsansprüche zu DSM oder Spektrum in Zusammenhang mit gefälschten Produkten ab.



©2024 Horizon Hobby, LLC.

Blade, the Blade logo, E-flite, BNF, the BNF logo, DSM, DSM2, DSMX, SAFE, the SAFE logo, Spektrum AirWare and ModelMatch are trademarks or registered trademarks of Horizon Hobby, LLC.

The Spektrum trademark is used with permission of Bachmann Industries, Inc.

All other trademarks, service marks and logos are property of their respective owners.

US 9,930,567. US 10,419,970. Other patents pending.

Created 12/24

704544

BLH1400, BLH1450