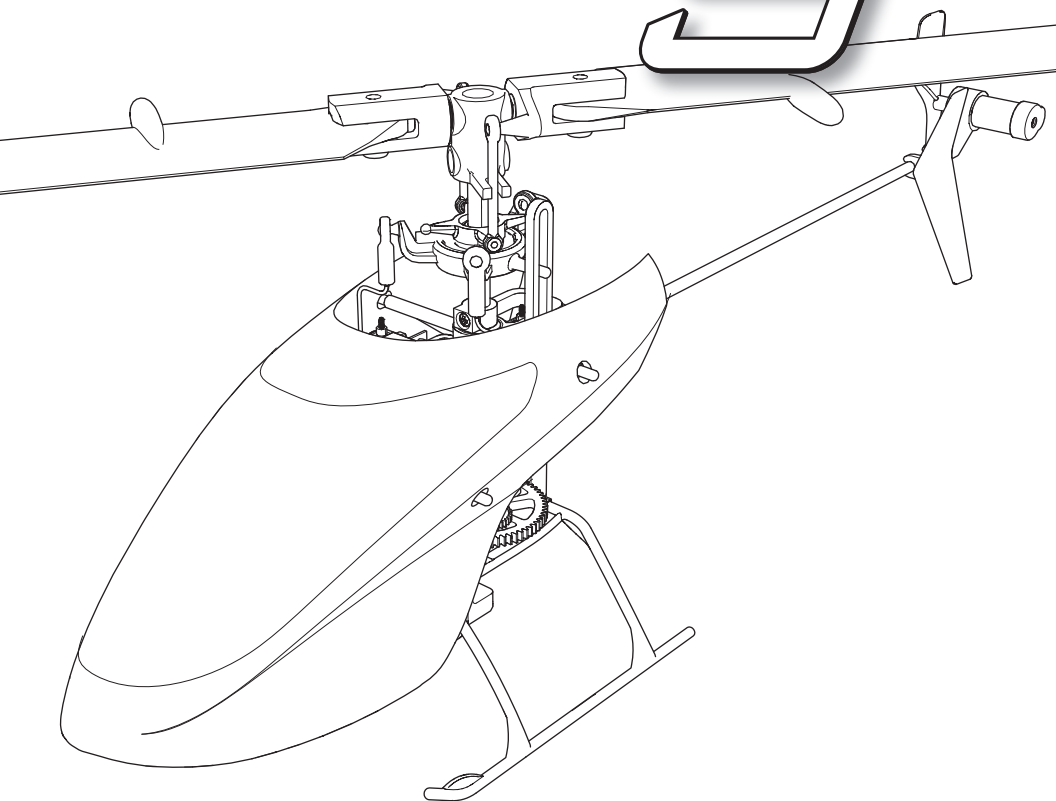


BLADE®

mCPS



**Instruction Manual
Bedienungsanleitung
Manuel d'utilisation
Manuale di Istruzioni**

SAFE® **RTF** **BNF®**

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 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:

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.

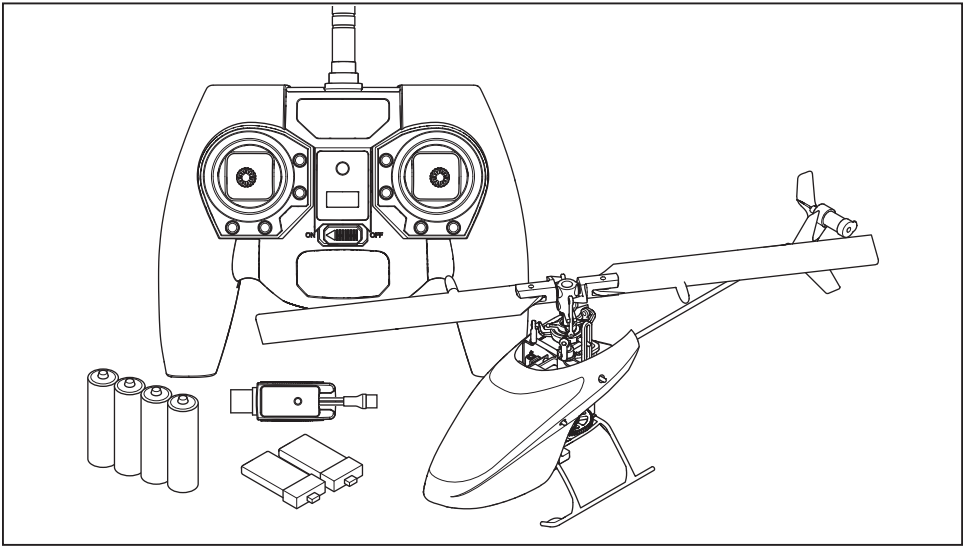
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Specifications			
Length	9.4 in (240mm)	Tail Rotor Diameter	1.5 in (40mm)
Height	3.5 in (90 mm)	Flying Weight	1.7 oz (49 g)
Main Rotor Diameter	9.4 in (240mm)		

Box Contents

- Blade® mCP S Helicopter
 - 2 210mAh 1S 3.7V 40C Li-Po Batteries
 - USB 1S Li-Po Charger (RTF Only)
- MLP6DSM Transmitter (RTF Only)
 - 4 AA Batteries (RTF Only)



To receive product updates, special offers and more, register your product at www.bladehelis.com.

First Flight Preparation

- Remove and inspect contents
- Begin charging the flight battery
- Program your computer transmitter (BNF only)
- Install the flight battery in the helicopter (once it has been fully charged)
- Bind your transmitter (BNF only)
- Familiarize yourself with the controls
- Find a suitable area for flying

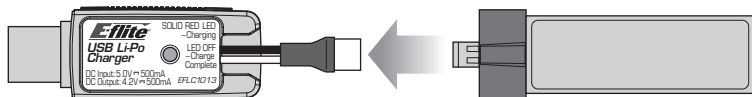
Charging Warnings



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



CAUTION: Only use chargers specifically designed to charge the included Li-Po battery. Failure to do so could result in fire, causing injury or property damage.



CAUTION: Never exceed the recommended charge rate.

The USB battery charger (EFLC1013) included with your aircraft has been designed to safely charge the 1S 3.7V 210mAh 40C Li-Po flight battery. Refer to the charging 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.

NOTICE: Inspect the battery to make sure it is not damaged e.g., swollen, bent, broken or punctured. Charge only batteries that are cool to the touch and are not damaged.

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.

1. Insert the charger into a USB port. The charger only uses power from the USB port. USB power supplies, such as those used to charge cellular phones, can also be used.
2. Connect the battery to the charger as shown in the illustration above. When you make the connection successfully, the LED on the charger turns solid red, indicating charging has begun. Charging a fully discharged (not over-discharged) 210mAh battery takes approximately 30 minutes. The LED goes out when the charge is complete.

CHARGING (Solid Red LED)

MAX CHARGE (LED OFF)

3. Always disconnect the flight battery from the charger immediately upon completion of charging.

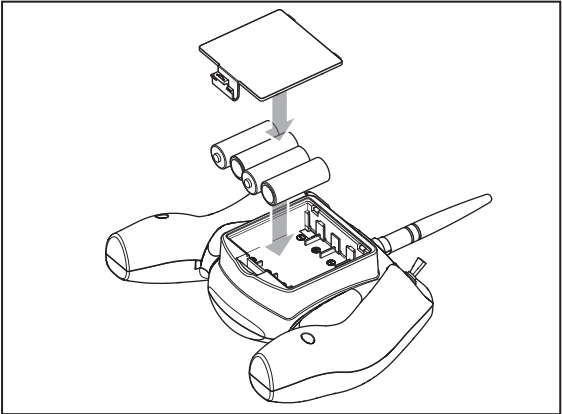


CAUTION: Once charging is complete, immediately remove the battery. Never leave a battery connected to the charger.

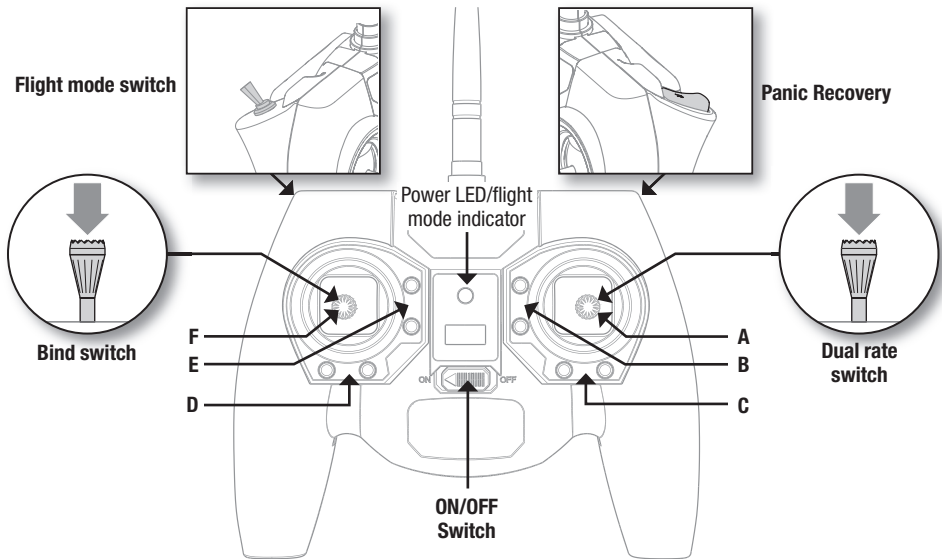
Installing the Transmitter Batteries (RTF)

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.



Transmitter Control (RTF)



Adjusting Flight Trims

When pressed down, trim buttons make a sound that increases or decreases in pitch at each pressing. The middle or neutral trim position is heard as a middle tone in the pitch range of the sounds. The end of the control range is sounded by a series of beeps.

Dual Rate Selection

The control sensitivity can be changed by pressing and releasing the right control stick. The LED on the transmitter will show solid for high sensitivity (default) and flashing for low sensitivity.

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

Transmitter Setup (BNF)

Program your transmitter before attempting to bind or fly the helicopter. Transmitter programming values are shown below for the Spektrum DX7s, DX6, DX7, DX8, DX9, DX18 and DX20.

The files for models using Spektrum™ transmitters with Spektrum AirWare™ software are also available for download online at www.spektrumrc.com.

DX7s, DX8

SETUP LIST	
Model Type	
HELI	
Swash Type	
1 servo Normal	
F-Mode Setup	
Flight Mode	F Mode
Hold	Hold
SW Select	
Trainer	Aux 2
F Mode	Gear
Gyro	INH
Mix	INH
Hold	INH
Knob	INH
Frame Rate	
11ms	
DSMX	

Panic Mode Operation

Trainer/Bind Button

Pressed = Panic Mode On

Released = Panic Mode Off

Flight Mode Operation

F MODE Sw: Pos 0 = Stability Mode

Pos 1 = Intermediate Mode

Pos 2 = Agility Mode

DXe

To use the Spektrum™ DXe transmitter, download the Blade® mCP S DXe model setup available at www.spektrumrc.com or use the appropriate programming cable and the PC or mobile app to program the transmitter.

FUNCTION LIST											
Servo Setup											
Chan		Travel		Reverse		Chan		Travel		Reverse	
THR		100/100		Normal		GER		100/100		Normal	
AIL		100/100		Normal		PIT		100/100		Normal	
ELE		100/100		Normal		AX2		100/100		Normal	
RUD		100/100		Normal							
D/R & Expo						Throttle Curve					
Chan	Switch Pos (All D/R)		D/R	Expo	Switch Pos (F Mode)		Pt 1	Pt 2	Pt 3	Pt 4	Pt 5
	DX7s	DX8			DX7s	DX8					
AILE		0	100/100	+25	N	N	0	25	50	75	100
		0	1	100/100	+25	1	1	100	80	75	80
		1	2	75/75	+25		2	100	100	100	100
ELEV		0	100/100	+25							
		0	1	100/100	+25						
		1	2	75/75	+25						
RUDD		0	100/100	+25							
		0	1	100/100	+25						
		1	2	75/75	+25						
Gyro											
INH						Throttle		0%			
Pitch Curve											
DX7s	DX8	Switch Pos (F Mode)		Pt 1	Pt 2	Pt 3	Pt 4	Pt 5			
N	N	30	40	50	75	100					
1	1	0	25	50	75	100					
	2	0	25	50	75	100					
HOLD	HOLD	25	37	50	75	100					
Timer											
Mode		Count Down									
Time		4:00 Tone									
Start		Throttle Out									
Over		25%									

DX6, DX6e

SETUP LIST	
Model Type	
HELI	
Swash Type	
1 servo Normal	
F-Mode Setup	
Flight Mode	F Mode
Hold	Hold
Channel Assign	
Channel Input Config	
1 Throttle	Throttle
2 Aileron	Aileron
3 Elevator	Elevator
4 Rudder	Rudder
5 Gear	Switch B
6 AUX 1	INH
Frame Rate	
11ms*	
DSMX	

* The DX6e operates at 22ms frame rate and cannot be changed.

FUNCTION LIST									
Servo Setup									
Chan	Travel	Reverse		Chan	Travel	Reverse			
THR	100/100	Normal		RUD	100/100	Normal			
AIL	100/100	Normal		GER	100/100	Normal			
ELE	100/100	Normal		PIT	75/75	Normal			
D/R & Expo				Throttle Curve					
Chan	Switch (F) Pos	D/R	Expo	Switch (B) Pos	Pt 1	Pt 2	Pt 3	Pt 4	Pt 5
AILE	0	70/70	+30	N	0	40	60	80	100
	1	100/100	+30	1	100	90	80	90	100
ELEV	0	70/70	+30	2	100	100	100	100	100
	1	100/100	+30	HOLD	0	0	0	0	0
RUDD	0	100/100	0	Pitch Curve					
	1	100/100	0	Switch (B) Pos	Pt 1	Pt 2	Pt 3	Pt 4	Pt 5
Mixing				N	30	40	50	75	100
GER -> GER				1	0	25	50	75	100
Rate	100%		100%	2	0	25	50	75	100
Offset		20%		HOLD	0	25	50	75	100
Switch		Switch I		Timer					
Panic Mode Operation				Mode	Count Down				
Bind / I Button: Pressed = Panic Mode On				Time	4:00				
Released = Panic Mode Off				Start	Throttle Out				
Flight Mode Operation				Over	25%				
Sw B: Pos 0 = Stability Mode				One Time	Inhibit				

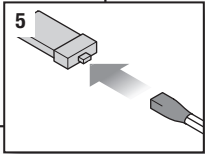
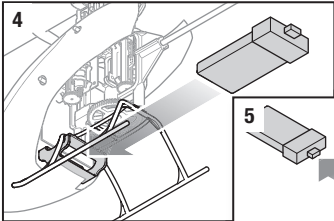
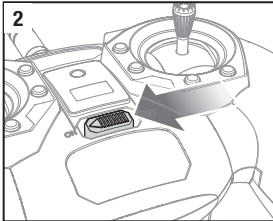
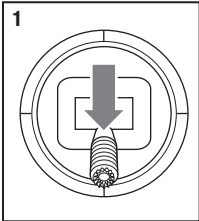
DX7G2, DX8G2, DX9, DX18, DX20

SYSTEM SETUP	
Model Type	
HELI	
Swash Type	
1 servo Normal	
F-Mode Setup	
Switch 1	Switch B
Switch 2	Inhibit
Hold Switch	Switch H
	0 1
Channel Assign	
Channel Input Config	
1 Throttle	Throttle
2 Aileron	Aileron
3 Elevator	Elevator
4 Rudder	Rudder
5 Gear	Switch B
6 AUX 1	INH
7 AUX 2	
Frame Rate	
11ms*	
DSMX	

Panic Mode Operation
Bind / I Button
Pressed = Panic Mode On
Released = Panic Mode Off

FUNCTION LIST																			
Servo Setup																			
Chan		Travel		Reverse		Chan		Travel		Reverse									
THR		100/100		Normal		PIT		75/75		Normal									
AIL		100/100		Normal		AX2		100/100		Normal									
ELE		100/100		Normal		AX3		100/100		Normal									
RUD		100/100		Normal		AX4		100/100		Normal									
GER		100/100		Normal															
D/R & Expo						Throttle Curve													
Chan		Switch (F) Pos		D/R		Expo		Switch (B) Pos		Pt 1		Pt 2		Pt 3		Pt 4		Pt 5	
AILE		0		70/70		+30		N		0		40		60		80		100	
		1		100/100		+30		1		100		90		80		90		100	
		2		100/100		+30		2		100		100		100		100		100	
ELEV		0		70/70		+30		HOLD		0		0		0		0		0	
		1		100/100		+30													
		2		100/100		+30													
RUDD		0		100/100		0													
		1		100/100		0													
		2		100/100		0													
Mixing						Pitch Curve													
						GER -> GER		Switch (B) Pos		Pt 1		Pt 2		Pt 3		Pt 4		Pt 5	
Rate		100%		100%		N		30		40		50		75		100			
Offset				20%		1		0		25		50		75		100			
Switch				Switch I		2		0		25		50		75		100			
						HOLD		0		25		50		75		100			
Flight Mode Operation						Timer													
Sw B: Pos 0 = Stability Mode						Mode		Count Down											
Sw B: Pos 1 = Intermediate Mode						Time		4:00											
Sw B: Pos 2 = Agility Mode						Start		Throttle Out											
						Over		25%											
						One Time		Inhibit											

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 MLP6 transmitter (RTF only), the trims are centered when you hear a longer tone while pressing the trim button. Move the trim in both directions until you hear the long tone.
4. Install the flight battery in the battery holder on the bottom of the helicopter frame.
5. Connect the flight control power lead to the battery connector.

6. Place the helicopter on a flat surface and leave it still until the receiver LED glows solid, indicating initialization is complete. If you experience problems 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.

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

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.

If you purchased an RTF model, the transmitter is bound to the model at the factory.
If for any reason you need to re-bind your mCP S to the MLP6DSM, follow the directions below:

Binding Procedure for the MLP6DSM (RTF)	
1.	Disconnect the flight battery from the helicopter.
2.	Power off the transmitter and move all switches to the 0 position.
3.	Connect the flight battery to the helicopter. The 3-in-1 Control unit LED flashes after 5 seconds.
4.	Push and hold the "panic" trigger/button and hold the rudder control stick to full left while powering on the transmitter.
5.	Release the trainer switch/button. Continue to hold the rudder control stick to full left until the blue LED on the 3-in-1 control unit is solid.
6.	Release the rudder control stick.
7.	Push the trainer switch/button. The blue LED on the 3-in-1 control unit flashes to confirm the helicopter is in non-computer mode.
8.	Disconnect the flight battery and power the transmitter off.

NOTICE: If the swashplate moves up and down when the trainer switch is moved, the helicopter is in computer transmitter mode. Repeat the binding procedure.

This product requires an approved Spektrum DSM2®/DSMX® compatible transmitter.
To bind your mCP S to your chosen transmitter, follow the directions below:

Binding Procedure for Computer Radios (BNF)
1. Disconnect the flight battery from the helicopter.
2. If you are not using the transmitter included with the RTF version of the helicopter, refer to the Transmitter Setup Table to correctly program your transmitter.
3. Lower the throttle stick to the lowest position. Set all trims to the center position while the transmitter is on.
4. Power off the transmitter and move all switches to the 0 position. Move the throttle to the low/off position.
5. Connect the flight battery to the ESC. The receiver LED flashes, indicating it is in bind mode.
6. Power on the transmitter in bind mode.
7. Move the rudder control stick to full right. Continue to hold the rudder control stick to full right until the blue LED on the 3-in-1 control unit is solid. The helicopter is bound when the LED on the receiver turns solid.
8. Disconnect the flight battery and power the transmitter off.

NOTICE: The throttle will not arm if the transmitter's throttle control is not put at the lowest position and the stunt mode switch is not in the 0 position.

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

CAUTION: When using a Futaba® transmitter with a *Spektrum™ DSM2®* module, you must reverse the throttle channel and re-bind. Refer to your *Spektrum* module manual for binding and failsafe instructions. Refer to your Futaba transmitter manual for instructions on reversing the throttle channel.

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. Pitch and direction control is still maintained.

Stunt Mode

Stunt Mode (Flight Mode 1 or 2) allows the helicopter to fly inverted and perform aerobatics. The throttle runs continuously when Stunt Mode is ON, regardless of throttle stick position.

Turn Stunt Mode OFF (Flight Mode 0) to return full control to the throttle stick.

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.

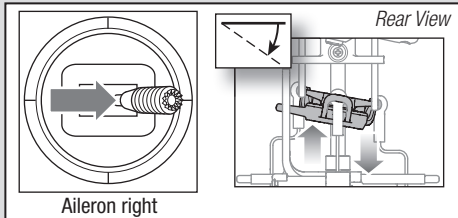
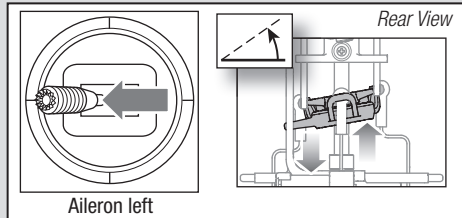
If the controls do not react as shown in the illustrations below, confirm the transmitter is programmed correctly before continuing on to the Motor test.

Elevator

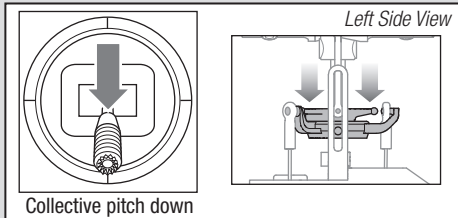
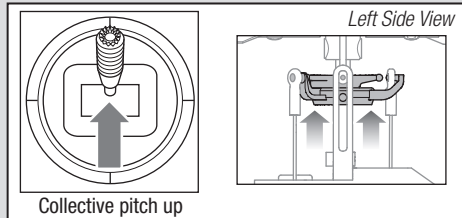
Elevator down

Elevator up

Aileron



Collective Pitch



Motor

Place the helicopter outdoors on a clean, flat and level surface (concrete or asphalt) free of obstructions. 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.

2. Turn Throttle Hold OFF.



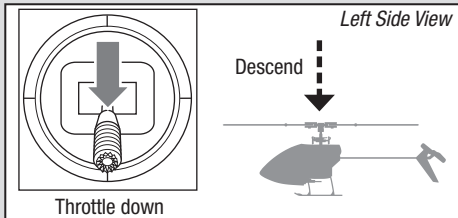
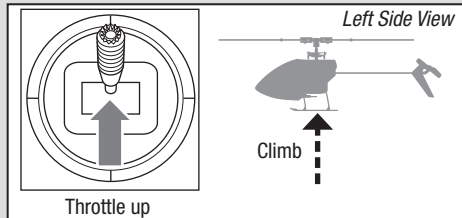
WARNING: Stay at least 30 feet (10 meters) away from the helicopter when the motor is running. Do not attempt to fly the helicopter at this time.

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.

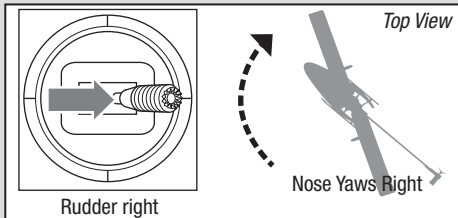
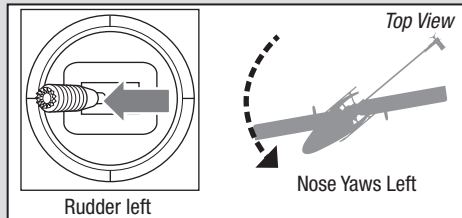
Understanding the Primary Flight Controls

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

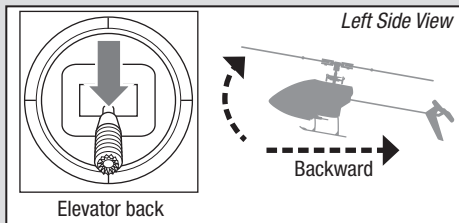
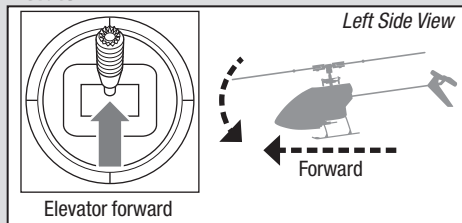
Collective



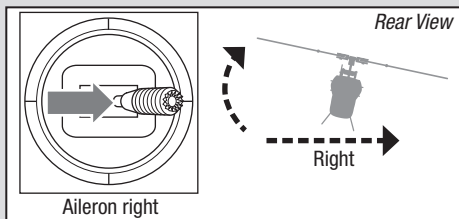
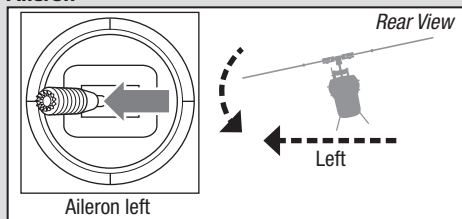
Rudder



Elevator



Aileron



Flight Mode Description

In **Stability Mode** the helicopter flies similarly to a fixed-pitch helicopter (the bank angle is limited). When the cyclic stick is released, the model will return to level.

In **Intermediate Mode** the bank angle is not limited. When the cyclic stick is released the model will not return to level. The head speed is slightly lower and the controls have a "softer" feel. This mode is great for learning forward flight and basic aerobatics, such as stall turns and loops.

In **Agility Mode** the bank angle is not limited. When the cyclic stick is released the model will not return to level. The head speed is also higher. This mode is great for 3D aerobatics, such as stationary flips and tic tocs.

Panic Recovery

If you get into distress while flying in any mode, push and hold the Bind/Panic Switch and move the control sticks to their neutral position. 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.

NOTICE: Do not activate Panic Recovery if the helicopter does not have sufficient altitude for a successful recovery.

Return the collective stick to 50% and release the Panic Switch to turn off Panic Recovery and return to the current flight mode.

NOTICE: Before releasing the panic switch, make sure the collective stick has been returned to the 50% position. Once the panic switch has been released, full negative collective becomes available, which could cause the mCP S to descend rapidly.

- Panic Recovery 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.

Flying the mCP S

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

If this is your first collective pitch helicopter, we suggest getting assistance from an experienced helicopter pilot or flying club until you are comfortable flying alone.

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

IMPORTANT: If the main motor or tail motor do not startup properly when throttle is first applied, immediately return the throttle to idle 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 check the trim so the model flies as desired. Once the trim is adjusted, begin flying the model.

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.

The average flight time of the helicopter using the recommended battery is approximately 4 minutes, depending on how aggressively the aircraft is flown.

Low Voltage Cutoff (LVC)

LVC decreases the power to the motors when the battery voltage gets low. When the motor power decreases and the 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 may 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. Fully charge your battery before storing it. During storage, make sure the battery charge does not fall below 3V per cell.

Post-Flight Inspection and Maintenance Checklist

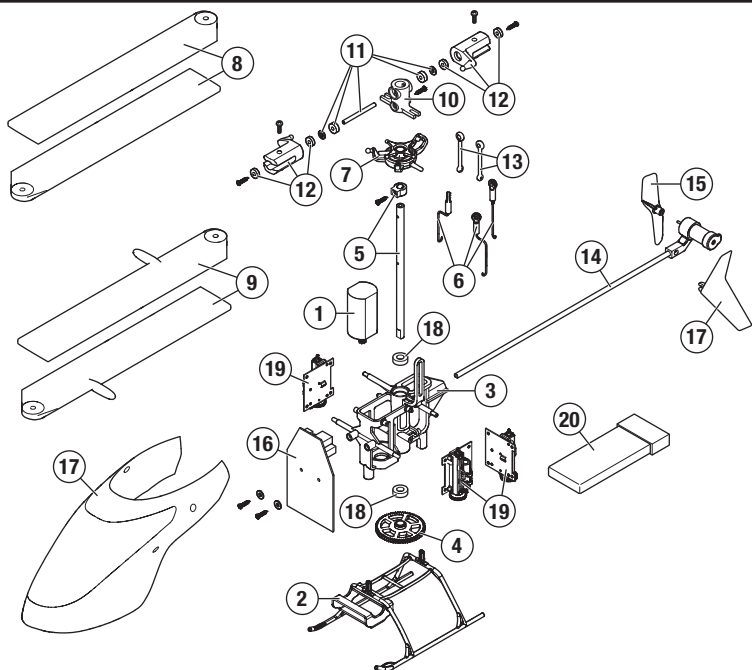
Ball Links	Make sure the plastic ball link holds the control ball, but is not tight (binding) on the ball. When a link is too loose on the ball, it can separate from the ball during flight and cause a crash. Replace worn ball links before they fail.
Cleaning	Make sure the battery is not connected before 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. 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. Verify that the main gear mesh is correct and that no tight spots exist in the 360 degree rotation. Inspect all wires for damage. Replace components 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
	Throttle too high and/or throttle trim is too high	Disconnect the flight battery, place the throttle stick in the lowest position and lower the throttle trim a few clicks. Connect the flight battery and allow the model to initialize
Helicopter will not respond to throttle	Helicopter moved during initialization	Disconnect the flight battery and re-initialize the helicopter while keeping the helicopter from moving

Problem	Possible Cause	Solution
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 the flight control board 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 flight control board flashes rapidly and the helicopter will not respond to the transmitter (after binding)	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 and balance all rotating components. Verify the main shaft and tail rotor are not damaged or bent. Inspect mechanics for broken or damaged parts and replace as necessary
Tail oscillation/wag or poor performance	Damaged tail rotor, tailboom, main gear mesh, main shaft, loose bolts, vibration	Inspect the tail rotor for damage. Inspect the tail boom and main shaft for cracks. 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	Main shaft cracked	Check the main shaft for cracks and replace if necessary
	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

Exploded View



Parts Listings

Part #	Description
1	BLH3503 Main Motor with Pinion
2	BLH3504 Landing Skid & Batt Mount
3	BLH3505 Main Frame with Hardware
4	BLH3506 Main Gear
5	BLH3507 Main Shaft w/Collar & Hardware
6	BLH3508 Pushrod Set w/Ball Link:3pcs
7	BLH3509 Complete Precision Swashplate
8	BLH3510 Hi-Performance Main Rotor Blades w/Hardware
9	BLH3511 Fast Flight Main Rotor Blades w/Hdwe
10	BLH3512 Main Rotor Hub w/Hdwe
11	BLH3513 Feathering Spindle w/o-ring, Bushing, & Hardware

Part #	Description
12	BLH3514 MnBlade Grips with Bearings
13	BLH3522 Rotor Head Linkage Set (8)
14	BLH3602 Tailboom Assembly
15	BLH3603 Tail Rotor
16	BLH5101 3 n 1 Flybareless Control Unit
17	BLH5103 Red Canopy w/Vertical Fin
18	EFLH2215 OuterShaft Bearing 3x6x2mm(2)
19	SPMSH2025L 2.0-Gram Performance Linear Long Throw Servo, 15mm Lead
20	EFLB2101S40 210mAh 1S 3.7V 40C LiPo Battery
	EFLC1013 1S USB Li-Po Charger, 500mAh
	EFLRMLP6 MLP6DSM 6CH SAFE Tx (RTF Only)

Optional Parts

Part #	Description
BLH3519	ComplGrCanopyw/VertFin
BLH3602L	Long TailBoomAssy
BLH3603GR	Green Tail Rotor (1)
BLH3603OR	Orange Tail Rotor (1)
BLH3603YE	Yellow Tail Rotor (1)
EFLA7002UM	1s HiCurrentUM Batt Adptr Lead
EFLB2001S30	200mAh 1S 3.7V 30C LiPo Battery
EFLC1004	Celctra4Port1C 3.7V.0.3ADCLiPoChar

Part #	Description
EFLH3023	CarbnFibrTrainingGearSet
SPM20000	DX20 20 CH System w/ AR9020 M2
SPM6650	DX6e 6CH System w/ AR610 RX
SPM6750	DX6 System MD2
SPMR1000	DXe Transmitter Only
SPMR8000	DX8 Transmitter Only MD2
SPMR9910	DX9 Black Transmitter Only MD2

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.

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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/	4105 Fieldstone Rd Champaign, Illinois, 61822 USA
	Horizon Product Support (Product Technical Assistance)	productsupport@horizonhobby.com	
		877-504-0233	
	Sales	websales@horizonhobby.com	
European Union		800-338-4639	Hanskampring 9 D 22885 Barsbüttel, Germany
	Horizon Technischer Service	service@horizonhobby.eu	
	Sales: Horizon Hobby GmbH	+49 (0) 4121 2655 100	

FCC Information

RTF Transmitter FCC ID: BRWDXMTX10

Helicopter FCC ID: BRWBLH5100

This equipment has been tested and found to comply with the limits for 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 to an outlet on a circuit different from that to which the receiver is connected.

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.

NOTICE: Modifications to this product will void the user's authority to operate this equipment.

IC Information

RTF Transmitter IC: 6157A-BRWDXMT

Helicopter IC: 6157A-BLH5100

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device."

Compliance Information for the European Union



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

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

Instructions for disposal of WEEE by users in the European Union



This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collections point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the

time of disposal will help to conserve natural resources and make sure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

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Patents pending.

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