OPERATING MANUAL

ECO POWER

MOSQUITO NANO QUAD

Read this manual carefully before using this product.

Keep the manual safe for future review.

EcoPower
Mosquito Nano Quad
Operating Manual

Table of Contents

1 Foreword

Thank you for purchasing the EcoPower "Mosquito" Nano Quad-Copter. The EcoPower Mosquito is suitable for indoor and outdoor flying, as well as performing stunts, and utilizes the latest in nano R/C technology. Please read and understand this manual carefully before your first flight. This will help to ensure that your experience with this aircraft is enjoyable and rewarding. Additionally, keep this manual safe for future reference.

Warning Labels

⚠ **WARNING** Failure to follow these instructions can result in injury.

⚠ **CAUTION** Failure to follow these instructions can create a hazardous environment.

⊘ **FORBIDDEN** DO NOT attempt under any circumstances.

Important Notes

This is **NOT** a toy! This is a sophisticated hobby grade aircraft. Although small, the risks associated with operating this product that should not be overlooked. Please follow the safety and operation recommendations outlined in this manual to help ensure correct operation of the aircraft. Using this aircraft beyond its intended purpose, including modification, may create a hazardous environment and should be avoided.

Manufacturer and dealers assume no liability and accept no responsibility for any damage due to abnormal wear of parts, improper assembly or unsafe operation. This product is intended for users 14 years of age or older. It is the responsibility of the user to ensure the product is operated in a safe manner and environment.

If possible, we recommend that you seek the assistance of an experienced pilot before attempting to fly this product for the first time. A local expert can help you properly assemble, set up and fly your model for the first time. This model includes components that are subject to normal wear and tear. Any damage or dissatisfaction as a result of accidents or modifications are not covered by any warranty and cannot be returned for repair or replacement. Distributors are not responsible to honor any warranty in such cases if problems are experienced during operation or maintenance.

2 Precautions

⚠ Only fly in safe areas away from people. Do no operate the aircraft within the vicinity of crowds or people. Stunt aircraft are prone to accidents and failure. Responsibility for any damage or injury incurred due to pilot error, radio interference, or aircraft failure is the sole responsibility of the pilot.

⊘ Avoid Obstacles

This product is suitable for indoor and outdoor use but should not be flown in anything more than mild weather conditions. Choose a location without obstacles and operate in a safe distance from any crowds or pets. Do not fly near any heat source, overhead wires or electronic power source to avoid damage due to a collision, unexpected landing or entanglement, as this could lead to fire, electric shock and cause loss of lives and property.

Prevent Moisture

This aircraft is composed of a number of sophisticated electronic components. It is important to avoid any source of moisture or water vapor. Avoid use in any high moisture environment to prevent exposure to moisture. This could cause failure to the electronic components or an unexpected accident.

Proper Operation

DO NOT modify or upgrade the aircraft. To help avoid problems, ensure that you only use parts listed in the manual for replacement. This product is only intended for use within the boundaries listed in this manual. Do not increase the existing payload, or use for any illegal purposes.

Safety Note for AA Batteries

Make sure the batteries are installed based on the polarity indicated on the case. Do not mix batteries of different chemistries/specifications. Remove the batteries from the transmitter if it is going to be placed into long term storage. Please dispose of batteries according to local laws and ordinances. Do not dispose of batteries improperly.

Safety Note for LiPo Batteries

LiPo batteries pose a higher operational risk than other battery types. It is imperative that you follow the instructions and care guidelines outlined in this manual. The manufacturer and dealer assume no liability for any accident or damage caused by improper use. Do not use any charger other than the factory supplied unit to avoid potential fire and explosion. Do not crush, disassemble, burn or reverse the polarity of the battery. Avoid contact with any metallic object and the connector or battery wires, and do not puncture the battery as this will short circuit the battery and create a fire hazard. Do not leave the battery unsupervised while charging and always keep the battery out of reach of children. Immediately stop the charging and use of the battery if there is any swelling or the battery gets hot. Continued use of this battery may cause it to deform, explode or create a fire hazard. Please dispose of batteries according to local laws and ordinances. Do not dispose of batteries improperly.

Keep Away From Heat

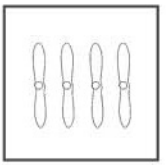
This aircraft is manufactured from various types of plastic and foam material. These materials are susceptible to damage or deformation when exposed to extreme hot and cold temperatures. Do not store the model near any source of heat, such as an oven or heater. It is recommended to store the model in a climate controlled, room temperature environment.

Fly With the Assistance of an Experienced Pilot

This product is intended for users 14 years of age or older. This model requires a certain level of skill to successfully operate/maintain. Please read instructions completely before operating. If possible, we recommend inexperienced users should seek the assistance of an experienced pilot before attempting to fly this product for the first time.

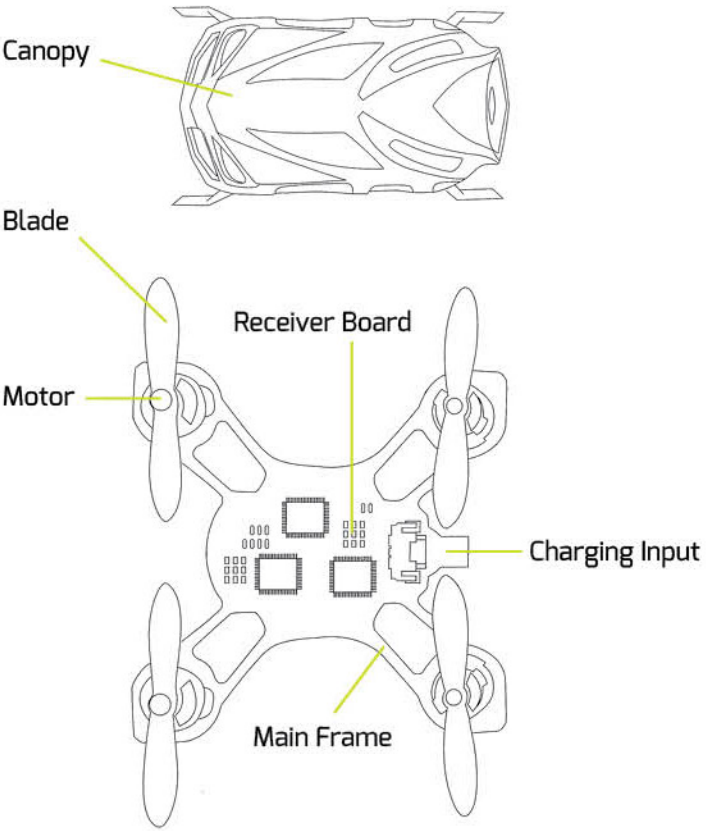
3 Included Accessories

Charger



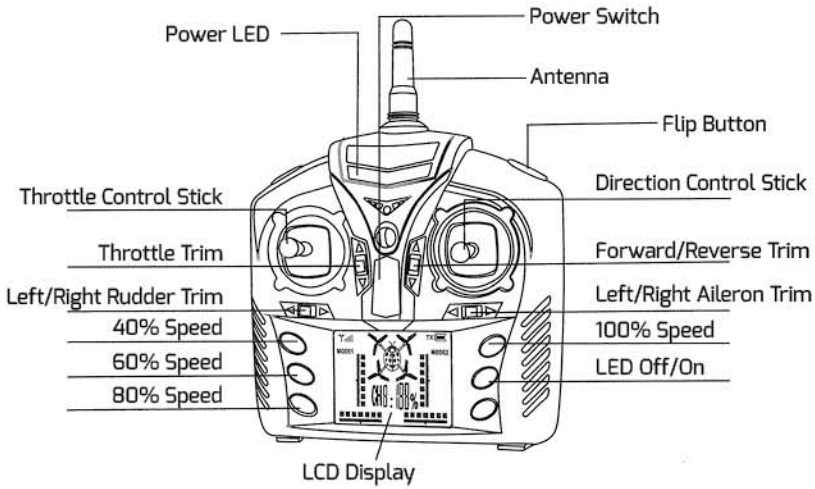
Blades x 4

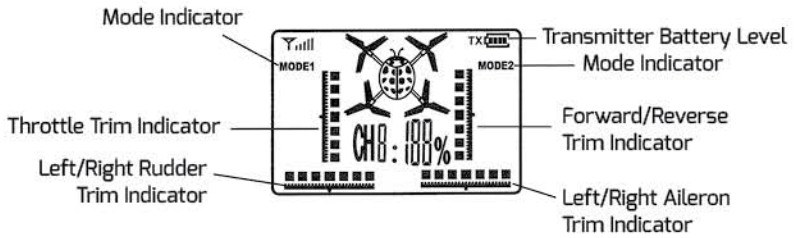
4 Component Names

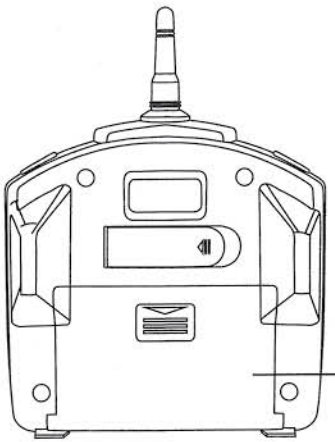


5 Transmitter Controls

DO NOT DISASSEMBLE

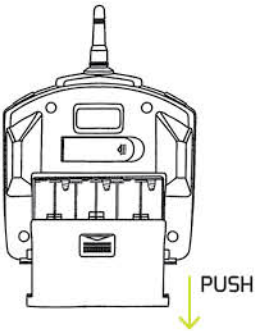


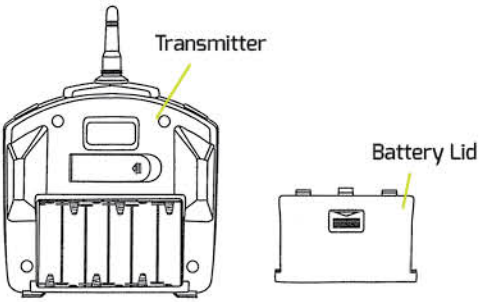




6 Transmitter Battery Installation

DO NOT DISASSEMBLE





Step 1

Slide the battery lid down to open.

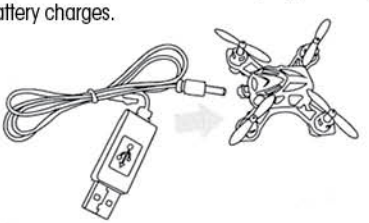
Step 2

Install six 1.5V Alkaline "AA" batteries inside the battery compartment. Ensure the polarity is correct! Slide the battery lid back into place. Do not mix old and new batteries and do not combine different types of batteries.

7 Charging

⚠ **USE ONLY** the included charger to charge the battery!

Plug the charger into a USB port; a red LED will remain lit. Now plug the charger into the Mosquito. The red LED will remain off while the battery charges.



⚠ **NEVER** leave the Mosquito unattended when charging.

⚠ **DO NOT** allow the USB port to power down when connected to the Mosquito.

⚠ **ALWAYS** unplug the Mosquito when charging is complete.

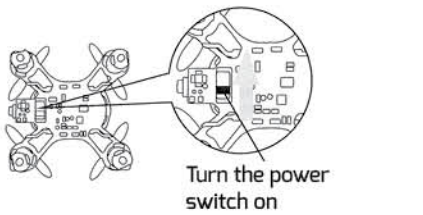
LED Indicator	
Red Light On	Charge Complete
Red Light Off	Charging

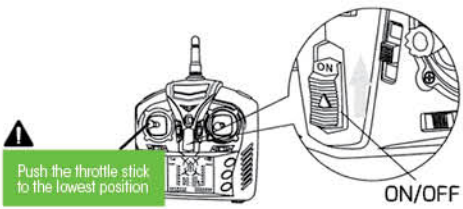
Charger Specifications	
Input	5V
Charging Current	200mAh
Full Voltage	4.2 ± 0.03V

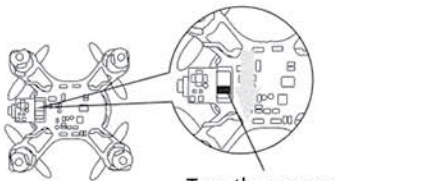
8 Battery Specifications

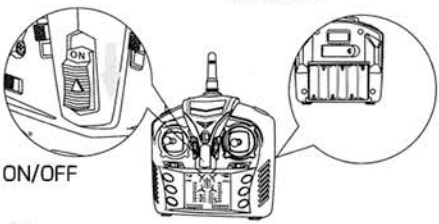
Battery Specifications				
	Battery Type	Battery Specification	Usage Duration	Charge Time
Mosquito	Li-Po Battery	3.7V 110mAh	Approx. 4 Minutes	Approx. 30 Minutes (Charging Current Approx. 0.2A)
Transmitter	Alkaline	AA 1.5V (GP 15G R6P)	18 Hours	Non Rechargeable

9 Binding Transmitter & Receiver









Step 1

Turn on the power switch underneath the Mosquito and place it on a flat level surface. Be sure not to bump or move the Mosquito while the gyroscope neutralizes! The LED on the Mosquito will start to flash quickly.

Step 2

Make sure the throttle stick is in the full down position and turn on the transmitter. Once the transmitter has been turned on, the LED on the Mosquito will flash slowly. To bind to the Mosquito, move the throttle stick to the full throttle position and back to the full down position. When the lights on the Mosquito stop flashing and remain lit, the Mosquito is calibrated to the radio and ready to fly.

Step 3

At the end of the flight, immediately turn the switch below the Mosquito to the off position. If the battery is not unplugged, it will over discharge the battery.

⚠ This could create a dangerous condition, risking fire, injury and loss of property.

Step 4

Shut off the transmitter. If the transmitter is being put away for long term storage, remove the batteries.

⚠ If the batteries are left in the transmitter for a long period of time, they may leak, which could damage the transmitter.

10 Flight Adjustments & Settings

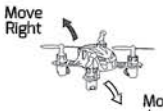
Familiarize yourself with these transmitter inputs and simulate a flight before attempting to fly the aircraft.

Read these instructions carefully, and familiarize yourself with the aircraft and transmitter before flying. Be aware of the effect each movement of the control sticks will have on the aircraft.

Place the aircraft in a clear open space with the tail of the aircraft pointing towards you.

Practice applying Throttle high/low, Aileron left/right, Rudder left/right, and Forward/Reverse. Use the illustration below to take note of the effect each input will have on the aircraft.

This simulation/flight practice is very important. Practice these inputs with the help of a friend until your fingers move naturally. Have your friend call out "move right, move left, turn left, turn right, etc" and perform the required inputs on the transmitter. Once you are comfortable with these inputs, it is time for your first flight.

Mode	Illustration	Mode	Illustration
 Aileron		 Throttle	
 Forward/Reverse		 Rudder	

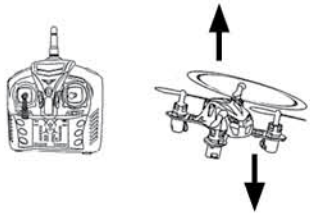
Flight Adjustment & Notice for Beginners Before Flying

- Make sure all screws, blades or motors are firmly secured or tightened.
- Make sure transmitter and flight batteries are fully charged.
- ⚠ Make sure there are no people in the vicinity and that you have a clear, unobstructed view of the aircraft once it's airborne.
- You must first practice and master hovering. Hovering is when you keep the aircraft airborne, controlled in a fixed position. This is a basic skill required for successful flight.
- Please maintain a safety zone approximately 13 feet (4 meters) behind the aircraft in a diagonal position.

Step 1: Throttle Control Practice

1 Verify that the Speed Switch on the transmitter is set to 40% mode.

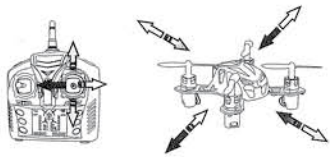
2 Apply the throttle slowly. When the aircraft begins to lift off the ground, slowly reduce the throttle, allowing the aircraft to land. Keep practicing this action allowing the aircraft to gain more altitude with each attempt until you can remain airborne and control the throttle, maintaining a smooth and controlled hover, and land in the position where the flight began.



Step 2: Directional Control Practice

1 Apply the throttle slowly and maintain a hover at a low height.

2 Slowly move the elevator and aileron stick as needed to move the aircraft forward, back, left and right. Keep practicing this action until you can control the movement of the aircraft smoothly in any direction and land in the position where the flight began.

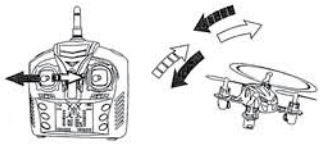


⚠ Ensure that you maintain a safe position at least 13 feet (4 meters) behind the aircraft, at a diagonal angle. If the aircraft flies too close or too far from you, land the aircraft. Change your position as needed to maintain the recommended safety zone and continue practicing.

Step 3: Rudder Control Practice

1 Apply the throttle slowly and maintain a hover at a low height.

2 Slowly move the rudder stick left or right to turn the aircraft. Keep practicing this action until you can control the movement of the aircraft smoothly in any direction and land in the position where the flight began.

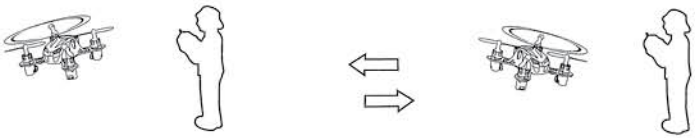


Step 4

Once you have mastered the actions performed in steps 1 through 3, draw a circle on the ground and practice the same maneuvers within the boundaries of that circle to increase your accuracy. As your reflexes and control skills improve, you can reduce the size of the circle.

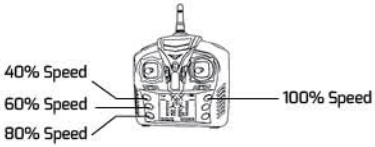
Step 5: Practice Direction & Orientation Change

After you have mastered the actions performed in steps 1 through 4, stand at the side of the aircraft and practice steps 1 through 4. Then repeat steps 1 through 4 standing in front of the vehicle. This is done to learn aircraft orientation and learn how the aircraft will respond to your inputs when you are standing to the side or in front. When standing in front, the movement of the aircraft will be the exact opposite of the input on the transmitter. So, when you move the Aileron Stick to the left, the aircraft will roll right. When you move the Elevator Stick forward the aircraft will move towards you.



Step 6

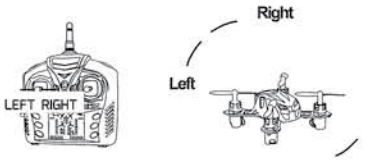
Once you feel comfortable flying the Mosquito at 40% Speed try increasing the setting to 60% Speed to increase movement speed and agility. The Mosquito has four speed settings 40% to 100%, keep in mind everytime the Mosquito is powered on it will start up at the 40% speed.



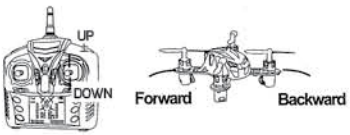
Trim Adjustment

Slowly apply the throttle to hover the vehicle and use the different trim buttons as needed if the aircraft will not maintain a steady hover.

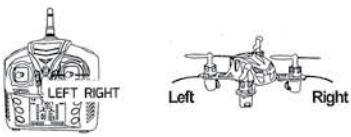
1 **Adjusting Left/Right (Rudder) Trim**
If the aircraft turns to the left, press the right rudder trim button until the aircraft stops turning. If the aircraft turns to the right, press the left rudder trim button until the aircraft stops spinning.



2 **Adjusting Forward/Reverse Trim**
If the aircraft flies backward while hovering, press the forward trim button until a steady hover is achieved.
If the aircraft flies forward while hovering, press the backward trim button until a steady hover is achieved.



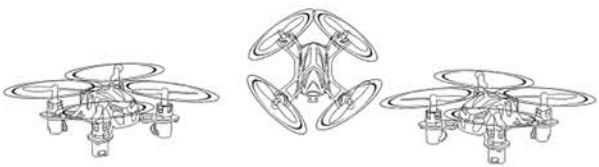
3 **Adjusting Left/Right (Aileron) Trim**
If the aircraft leans to the left while hovering, press the right aileron trim button until a steady hover is achieved.
If the aircraft leans to the right while hovering, press the right aileron trim button until a steady hover is achieved.



Performing 360° Rolls & Flips

Once you are familiar with the basic controls and can successfully operate the aircraft, you can then learn to perform 360° rolls and flips.

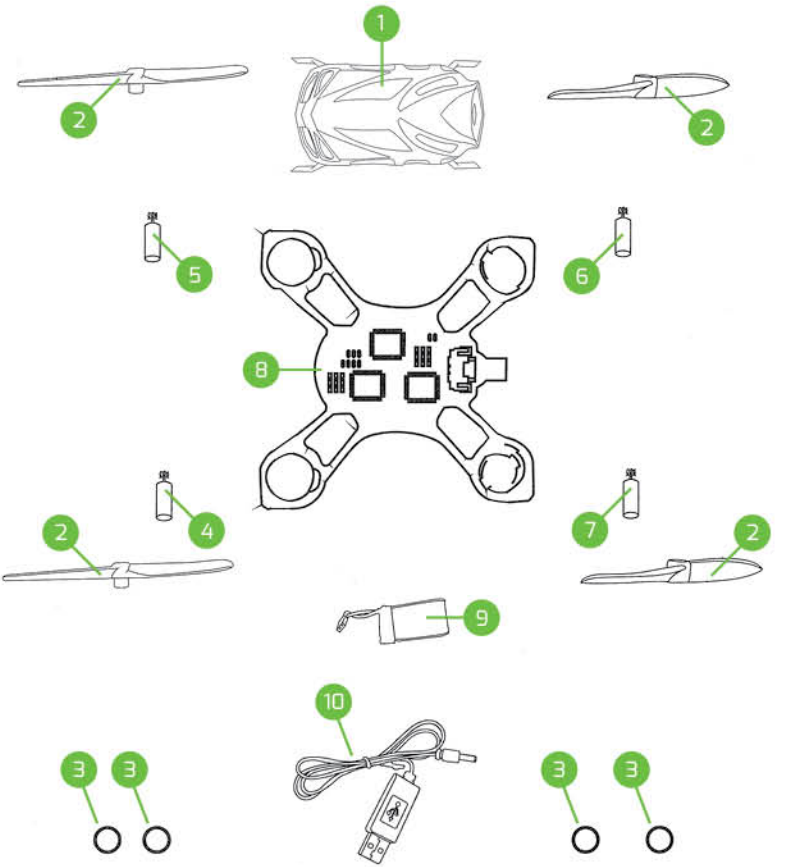
Begin by flying the aircraft to a minimum height of 12 feet (3.6 meters) and press the flip button. When you push the flip button the transmitter will emit beeping sounds, move the directional control sticks in any direction to perform the flip action.



11 Troubleshooting

	Symptom	Cause	Solution
1	The receiver light will not stop flashing.	Unable to bind to transmitter.	Repeat power up and initializing process.
2	The aircraft will not react to transmitter.	1 – Check power to transmitter & receiver. 2 – Check transmitter & receiver voltage. 3 – Poor contact to battery terminals.	1 – Turn on transmitter and make sure aircraft battery is installed properly. 2 – Use fully charged batteries. 3 – Re-connect the battery and ensure good connection between the battery contacts.
3	Motor does not respond to throttle stick, receiver LED flashes.	Aircraft battery voltage is low.	Fully charge battery, or replace with a fully charged battery.
4	Blades spin but unable to take off.	1 – Deformed main blades. 2 – Aircraft battery voltage is low. 3 – Horizontal point has not been detected.	1 – Replace main blades. 2 – Charge or replace with fully charged battery. 3 – Place on flat/level ground and reboot.
5	Uncontrollable vibration	Deformed main blades	Replace main blades.
6	Rudder trim off after adjustment or inconsistent speed during left/right pirouette.	1 – Damaged tail rotor blades. 2 – Damaged tail drive motor. 3 – Horizontal point has not been detected.	1 – Replace tail rotor blades. 2 – Replace tail drive motors. 3 – Place on flat/level ground and reboot.
7	Aircraft wanders forward after trim adjustment and will not hover.	Gyroscope midpoint not detected.	Place on flat/level ground and reboot.

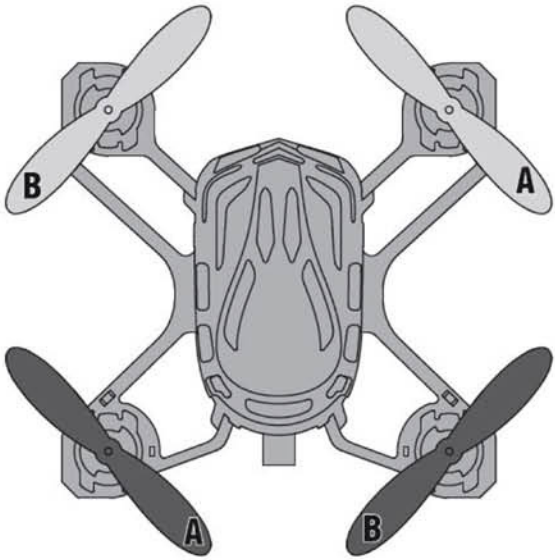
12 Parts List



Part #	Name	Quantity
1	ECP-6711 Canopy	1
2	ECP-6712 Blades	4
3	ECP-6713 Landing Skids	4
4	ECP-6714 Front Left Clockwise Motor	1
5	ECP-6715 Front Right Counter Clockwise Motor	1
6	ECP-6716 Rear Right Clockwise Motor	1
7	ECP-6717 Rear Left Counter Clockwise Motor	1
8	ECP-6718 Receiver Board/Mainframe	1
9	ECP-6719 Replacement LiPo Battery (110mAh)	1
10	ECP-6720 USB Charger	1

Replacement Blades

FRONT: Red Blades, Red LEDs
REAR: Black Blades, White LEDs



⚠ **Warning:** This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

STOP THIS PRODUCT IS NOT A TOY! NOT FOR CHILDREN UNDER 14 YEARS. For proper operation and to avoid risk of damage and injury, read and follow all instructions before operating this product. Failure to comply may result in excessive heat, fire, property damage and serious injury.

Warranty

EcoPower guarantees this item to be free of defects in materials and workmanship for 90 days after original purchase date. The warranty only applies to material or operational defects that are present at the time of purchase; EcoPower reserves the right to repair or replace the item. Warranty will not cover items that have been modified, disassembled, crashed or otherwise misused according to the item's instructions. Proof of purchase is required to submit a warranty claim. EcoPower is not responsible for bodily injury and/or property damage that may occur from the use of, or caused by, this item.

www.AMain.com/EcoPower