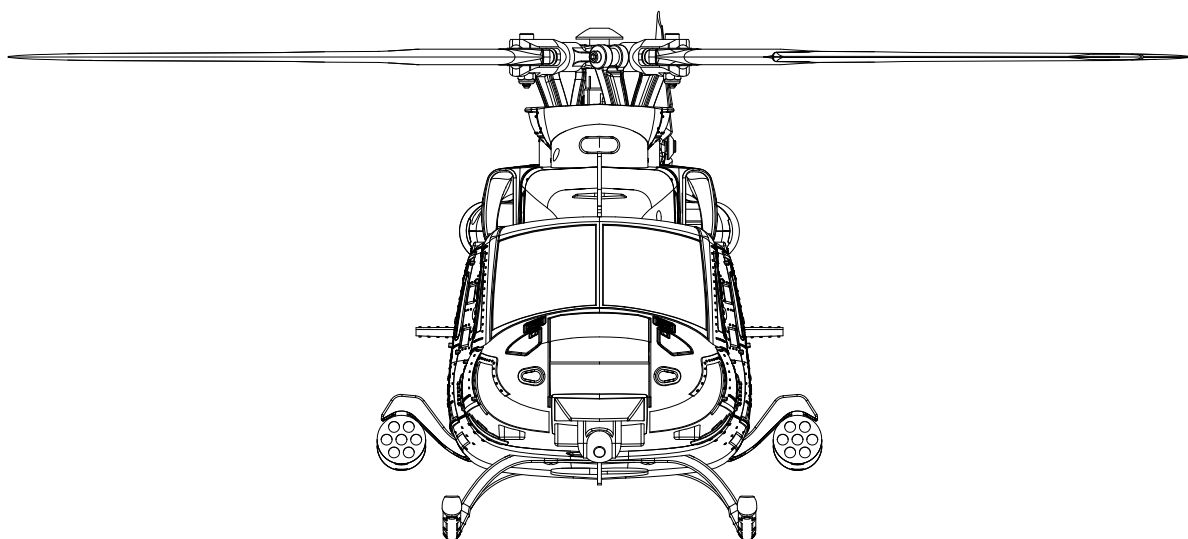




UH-1Y Venom GPS Stabilized Helicopter RTF User Guide

Please read this entire manual to learn about each of the functions of this model prior to attempting flight. Damage and personal injury may occur if this model is operated improperly. This is a sophisticated RC model helicopter; IT IS NOT A TOY. Any use by children under 14 years of age requires adult supervision. This manual includes instructions for safety, operation, and maintenance. In order to avoid serious property damage or injury, pay close attention to all instructions and warnings before attempting to fly your model.

1. This produce is not suitable for children under 14 years of age. Keep out of reach of small children. Small parts and electronic equipment is utilized in this product and can be harmful if used improperly.
2. Always operate in wide open spaces, away from traffic, people, buildings and other structures.
3. Obey all instructions and safety warnings contained in this manual.
4. Keep the product away from chemicals or household cleaners, as it can damage the product.
5. Do not swallow or place any parts of this model in your mouth.
6. This product is not waterproof. Keep away from water, including rain.
7. Do not operate the model if the transmitter's battery is low.
8. Do no look directly into the LED's or IR sensors directly.
9. The motor and electronic equipment will be hot after flight. Exercise care when picking up the helicopter after flying.
10. This product has two, high speed rotors. Keep hands and eyes away from any spinning rotor blades!



A LiPo battery is used in this product and can be very dangerous when not used in accordance with this manual. Please follow all guidelines to prevent the risk of fire, sparks and leaking.

Warning! Read these safety precautions. Improper use or handling of LiPo batteries can result in an explosion or fire!

1. DO NOT expose the battery or model to moisture, especially salt water. Never immerse battery in any liquid. Keep battery outside of model in cool place when not in use.
2. Keep all batteries out of reach of children. Consult a doctor immediately if a battery is swallowed, or suspected harm has occurred.
3. Do not use or leave the battery near a heat source such as fire or a heater.
4. Use the included battery charger and battery together when charging. Use a battery charger specific for charging LiPo batteries if you do not use the included charger.
5. Do not reverse the positive (+) and negative (-) terminals of the battery.
6. Do not connect the battery to an electrical outlet.
7. Do not dispose of the battery in fire or heat. Follow your local guidelines for disposal of LiPo batteries.
8. Do not short-circuit the battery by connecting the positive (+) and negative (-) terminals by metal objects such as wire.
9. Do not transport or store the battery together with metal objects such as necklaces, hairpins or other metallic objects.
10. Do not strike or throw the battery against hard or sharp surfaces.
11. Do not solder directly to the battery pack.
12. Do not pierce the battery with a nail or other sharp object.
13. Never disassemble the battery in any way.

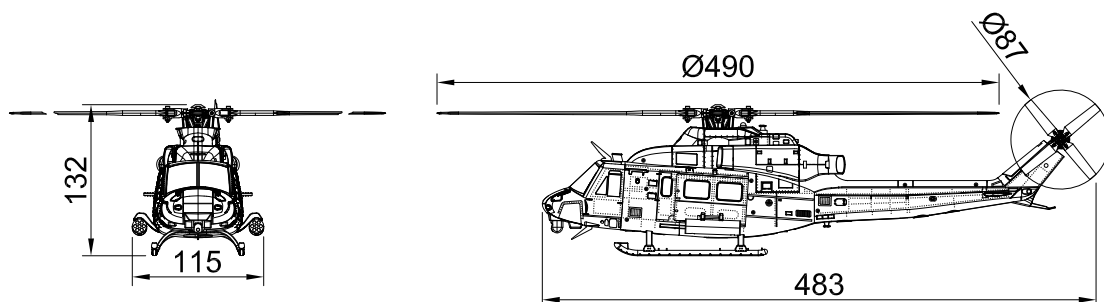
Note: The battery cannot be stored for long periods of time fully charged or fully discharged. Please charge the battery to a storage voltage of 11.5V, and place the battery in a cool, dry place for storage.

Helicopter Specifications

UH-1Y VENOM

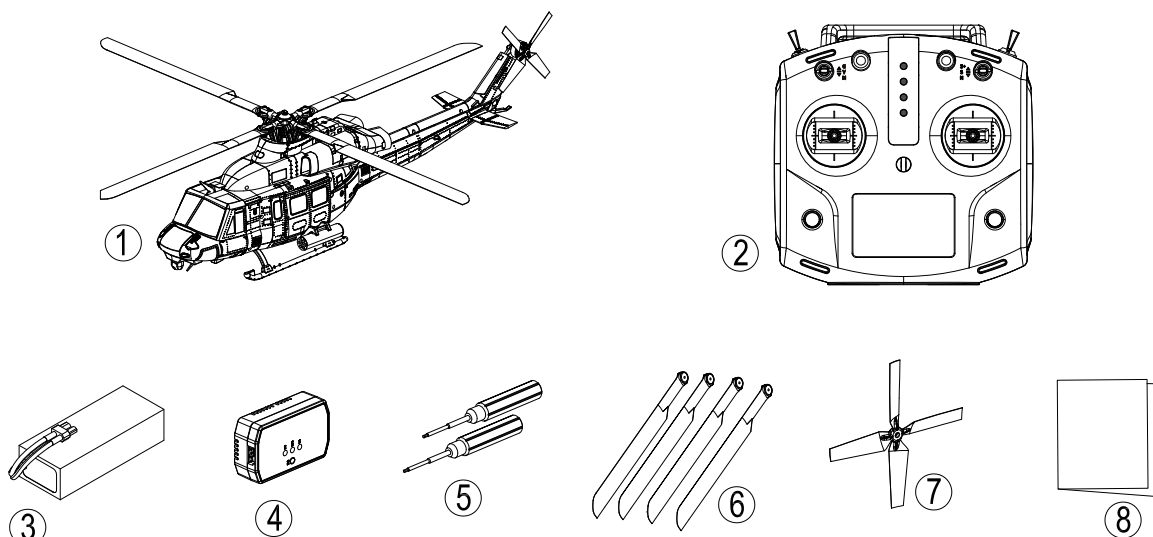


- Length: 483mm (19 inches)
- Height: 132mm(5.2 inches)
- Width: 80mm (3.2 inches)
- Main Rotor Diameter: 490mm (19.3 inches)
- Tail Rotor Diameter: 87mm(3.4 inches)
- Flying Weight: Approximately 556g (19.6 ounces)



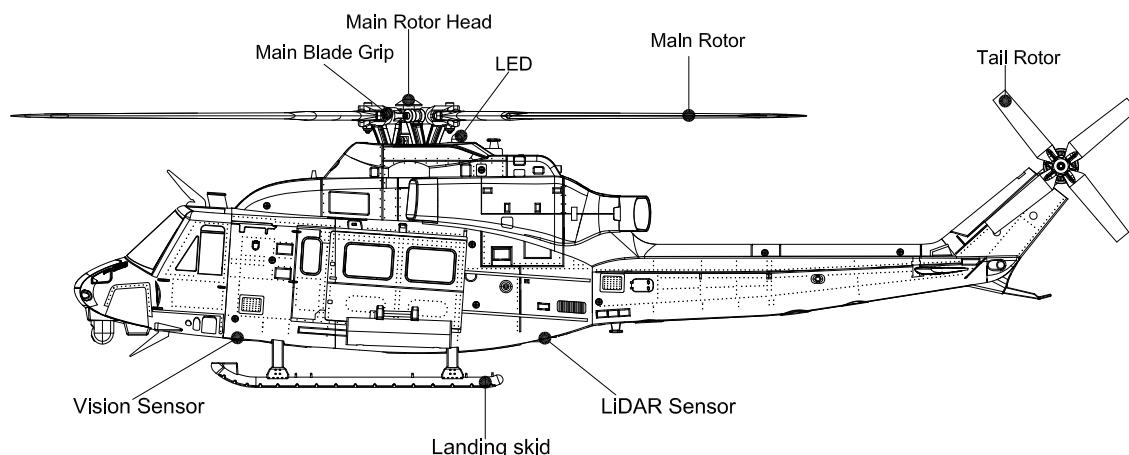
Packing List

UH-1Y VENOM



1: Helicopter 2: Remote Controller (Transmitter) 3: LiPo Battery 4: Charger

5: Phillips/Hex Screwdrivers 6: Main Rotor Blades 7: Tail Rotor Blade 8: Instruction Manual



Main Blade Assembly Guide

UH-1Y VENOM

**Notice:**

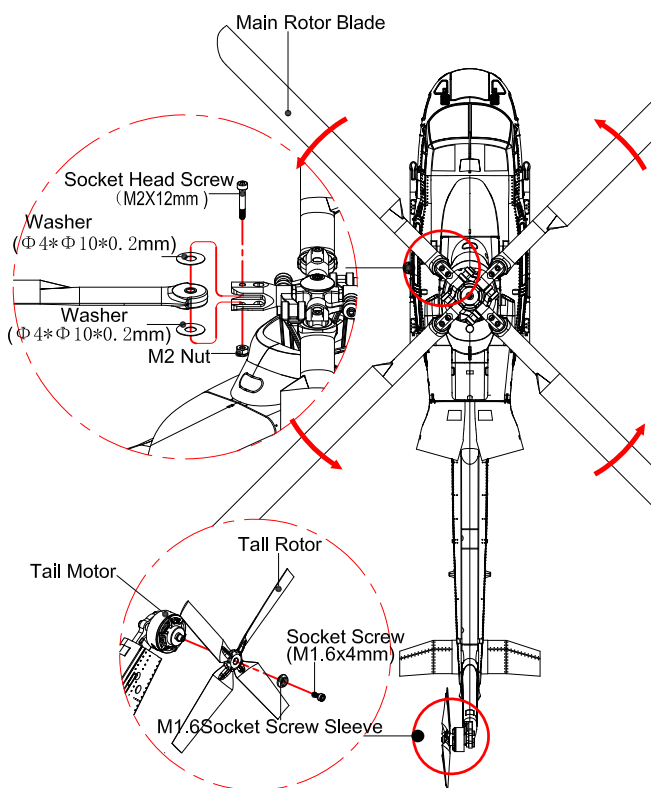
1. A 1.5 hex screwdriver is included in the box for assembly of the main blades and tail rotor.

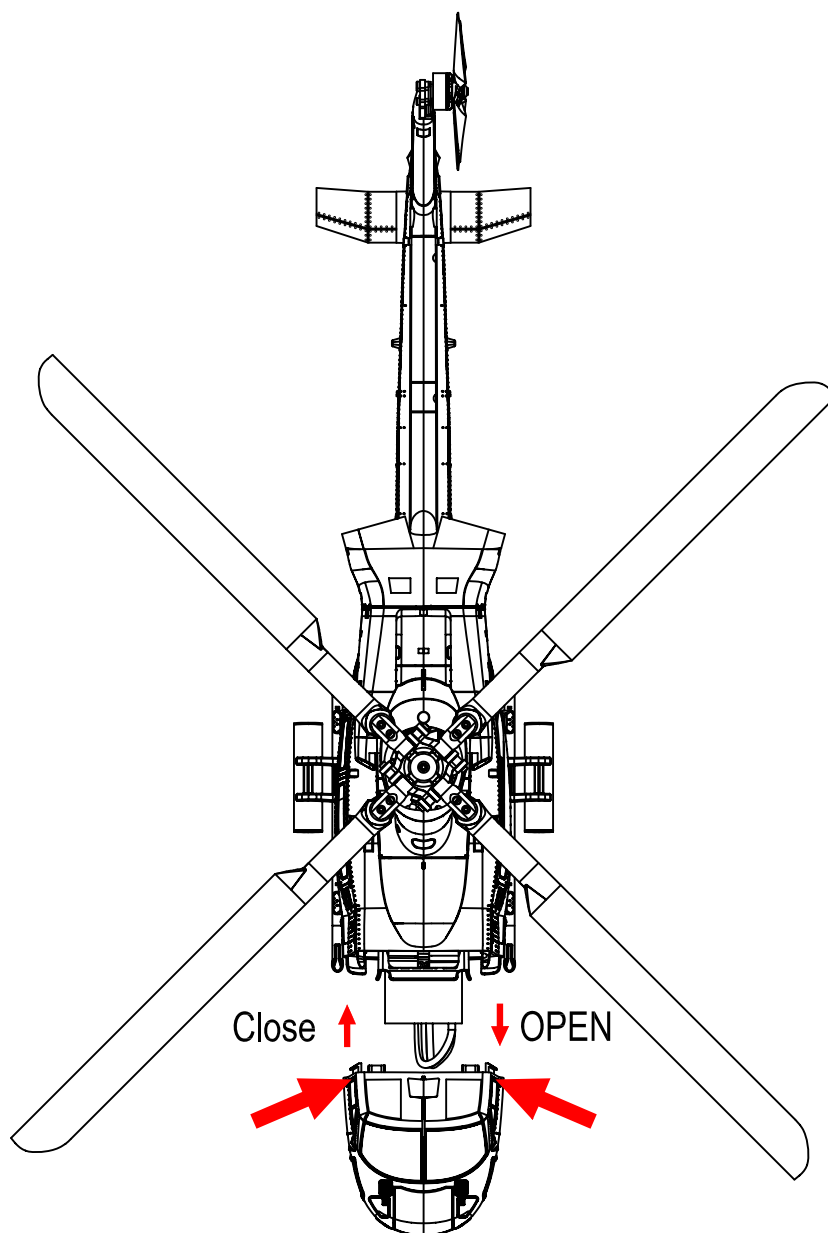
2. The main blades rotate counterclockwise when viewed from the top. Make sure to assemble the blades according to the diagram shown. The thicker, more rounded side goes toward the direction of travel, while the sharper, thinner side is oriented away from the direction of travel.

3. Each main blade set is factory-balanced and weighed together. Do not mix blades from different sets, as this can cause the helicopter to be unstable and/or vibrate abnormally which may cause a loss of control of the helicopter.

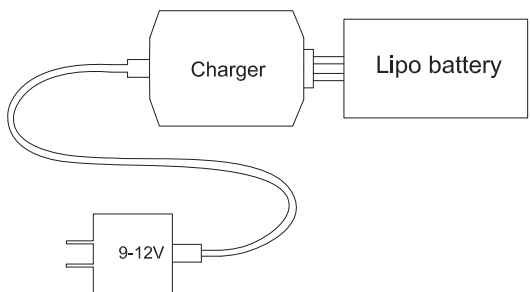
4. When assembling the main rotor blades, do not tighten the screws too much. The blades should be snug, but they should still be able to move by hand easily. Make sure all blades are similarly tightened to avoid vibrations and instability that may lead to loss of control.

5. Always double check the helicopter before each flight to ensure it is safe and operational. Establish a regular maintenance routine, regularly check and replace any items that wear over time.





There are plastic snaps on both sides of the canopy that retain it in place. To open, pinch both sides of the canopy inward with your hands, and pull away from the main fuselage. To close, pinch both sides of the canopy inward with your hands, and insert toward the fuselage.



Operating Instructions

1. Connect the charger to the power adapter, and to your power source. The red LED will light up, indicating it is in standby mode.
2. Connect the battery to the charger. The charger will automatically begin charging, indicated by a blinking green LED. Use the button to adjust the charging current. If the power adapter's output is not sufficient, the charger will automatically lower the charging current.

LED Indicators:

- Solid Red LED – Standby.
- Blinking Green LED – Charging.
- Solid Green LED – Charging Complete.
- Rapid Flashing Red LED – Error – Input voltage below 9V, or battery malfunction.

Safety Precautions

1. The charger requires a USB-C power adapter with a 9-12V DC input. Please ensure your power supply is within this range.
2. Do not use the charger in hot and/or humid environments.
3. Always supervise the product during use to prevent accidents.
4. Disconnect the power supply from the charger when the charger is not in use.
5. Ensure the battery is correctly inserted into the charging port. Never insert the battery incorrectly.

Charging Current Setting Standards	
Charger Power	Charging Current
≤18W	1A
≥25W	1.5A
≥30W	2A

Transmitter Functions(Mode 2 Shown) UH-1Y VENOM



Power LED:

Green (Fully Charged) Red (Low Power)

(MODE 2)

GPS Mode
Vision Position Mode
Manual Mode

Joystick
Up/Down (Heli
Up/Down)
Left/Right (Heli Spin
Left/Right)

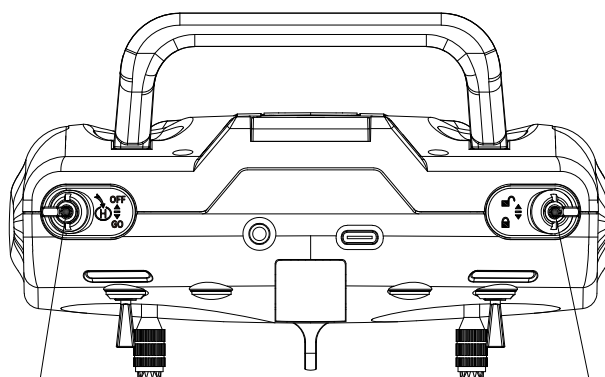
Flying Ring

Power Button 1
(A)

▲ Sport Mode
■ Normal Mode
▼ Novice Mode

Joystick
Forward/Backward
(Heli
Forward/Backward)
Left/Right (Heli
Left/Right)

Power Button 2 (B)



Return to Home Deactivated ▲
Return to Home Activated ▼

▲ Throttle Cut Released
▼ Throttle Cut Engaged

LED Status Lights

UH-1Y VENOM



Flight Controller Startup and Self-Test	
GPS Mode	
Vision Mode	
Manual Mode	
Low Battery Warning – Level 1	
Low Battery Warning – Level 2	
Signal Lost (Auto Return to Home Engaged)	
Attitude Calibration	

Flight Mode

UH-1Y VENOM



GPS Mode: This mode is the easiest mode to fly in, and most suited for beginner pilots. This mode enables automatic position hold in open areas. Geofencing is active and restricts flight to less than 100m (328ft) in altitude, and less than 300m (984ft) radius.

LED:

Visual Positioning Mode: This mode activates when GPS is unavailable, or when selected by the pilot via the transmitter mode switch. This mode utilizes the LiDAR system and vision sensors for precise positioning. Maximum altitude in this mode is 3m (9.8ft).

LED:

Note:

Positioning performance can degrade in the following environments:

1. Solid-color surfaces. For example, solid black, white or green surfaces.
2. Highly reflective or mirrored surfaces.
3. Over water and other transparent bases.

Manual Mode:

In this mode, both the GPS positioning and visual/LiDAR positioning is disabled. The helicopter may drift due to environmental factors like wind, requiring the pilot to actively compensate. However, there are pitch and roll limits in place to assist during flight.

LED:

First Flight Preparation

UH-1Y VENOM

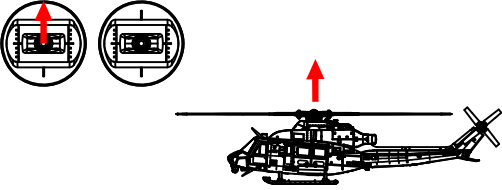
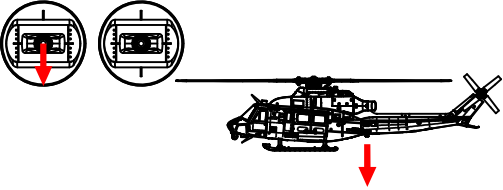
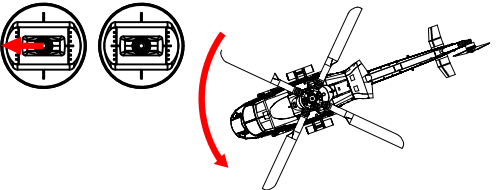
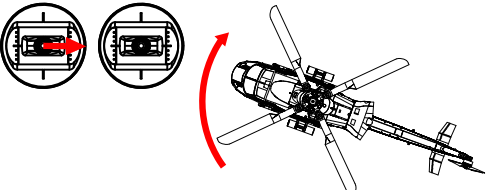
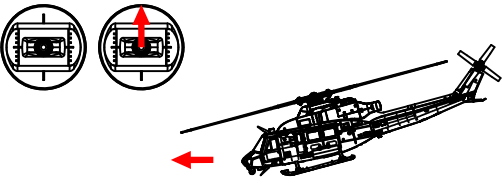
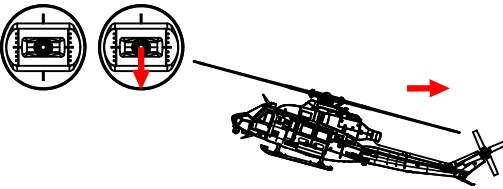
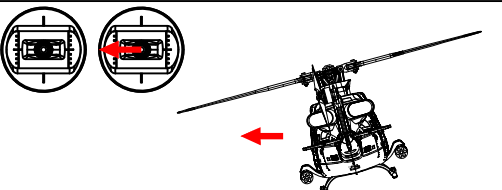
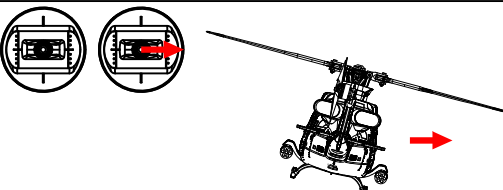


1. Ensure your transmitter battery and flight battery are fully charged.
2. Select a flying area that is open, with no people, traffic, structures or other objects.
3. Ensure the main blades are snug, but still move easily by hand.
4. In case of an in flight emergency, use the Throttle Cut switch to immediately shut power down to the helicopter. Note that using this in flight will cause the helicopter to abruptly fall to the ground.

Flight Demo-(MODE 2)

UH-1Y VENOM



 <p>Throttle Up – Climb</p>	 <p>Throttle Down – Descend</p>
 <p>Left Stick Left – Helicopter Yaw (Spin) Left</p>	 <p>Left Stick Right – Helicopter Yaw (Spin) Right</p>
 <p>Right Stick Forward – Helicopter Moves Forward</p>	 <p>Right Stick Aft – Helicopter Moves Aft</p>
 <p>Right Stick Left – Helicopter Moves Left</p>	 <p>Right Stick Right – Helicopter Moves Right</p>

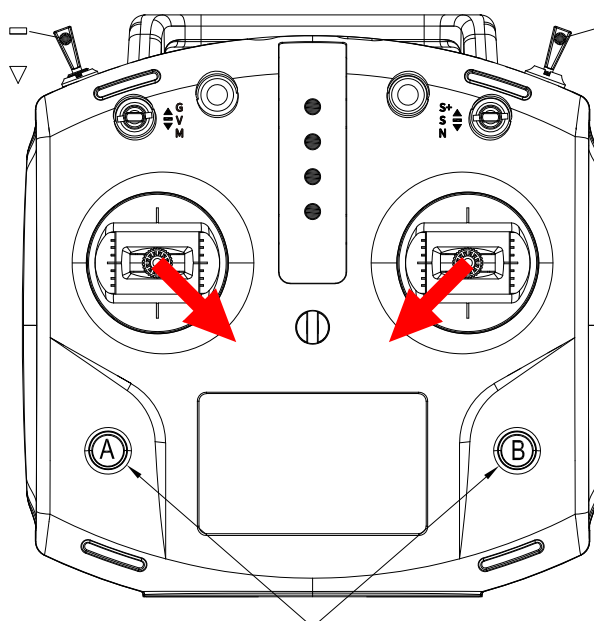


Return to Home
Deactivated ▲

Return to Home
Activated ▼

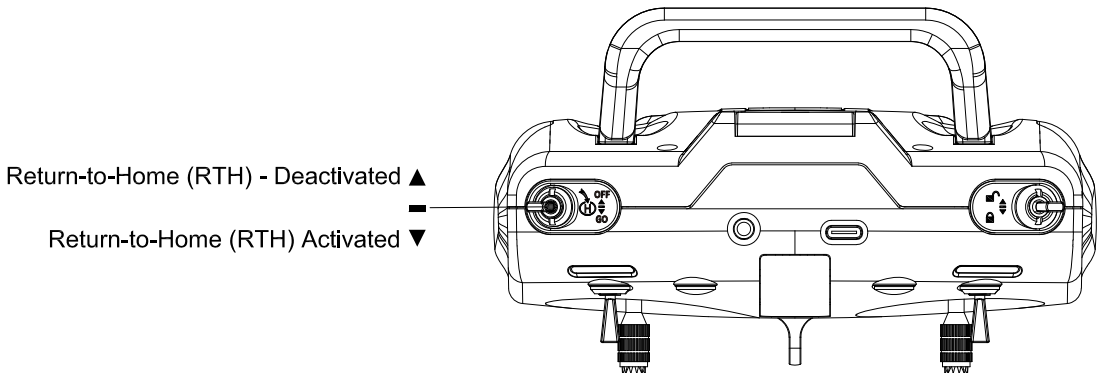
Throttle Cut
Released ▲

Throttle Cut
Engaged ▼



Power on by simultaneous press

1. Confirm the battery for the transmitter and helicopter are fully charged.
2. Set all switches to their default positions.
3. Power on the transmitter by pressing both A and B power buttons simultaneously.
4. Connect the helicopter battery.
5. Wait for the helicopter to acquire satellites.
6. Unlock the throttle by moving the throttle cut switch to the throttle cut released position.
7. Move the control sticks down and inward as shown in the image above. The rotor will begin to start.
8. Once the main rotor reaches a consistent speed, move the throttle stick forward/up to lift off.



Smart Return Home

In GPS mode, and when the home point is greater than 10 meters (33ft), toggle the return switch to the “Go” or Activated position. The helicopter will automatically climb to 15m (50ft), fly in a straight line to the home point, and once over the home point, descend vertically and land.

Fail-Safe Return Home

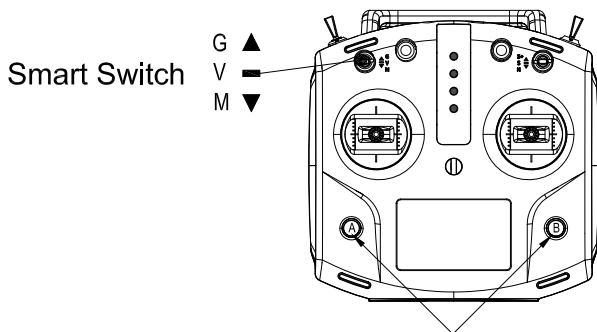
In the event that the transmitter loses connection with the helicopter, the smart return home feature will be triggered, and the helicopter will automatically return home.

Low Battery Return Home

1. When the first-level voltage protection is triggered and the helicopter is more than 10m (33ft) away from the home point in GPS mode, return to home will be initiated.
2. When the second-level voltage protection is triggered, the helicopter will land at its current position.

Note:

1. Once the first level voltage protection return home is activated, the return home cannot be canceled.
2. In Visual and Manual modes, the return home feature will not be activated.



Power on by simultaneous press

1. Turn on the transmitter and connect the helicopter battery. Place the helicopter on the ground and wait for the flight control system to initialize.
2. As shown in figure 1, quickly toggle the smart switch up and down 3 times. The LED will flash red and blue rapidly.
3. Rotate the helicopter clockwise as shown in the figure below until the LED flashes red and green slowly.
4. Point the nose up toward the sky, and wait for the LED to flash red and green rapidly. As shown in figure 3, rotate the helicopter clockwise until the LED flashes green slowly, indicating the calibration is complete.
5. Disconnect and reconnect the battery to resume flight operations.

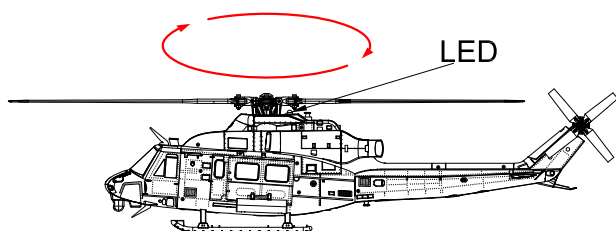


Figure 2 Horizontal Rotation

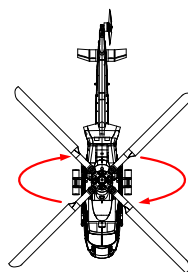
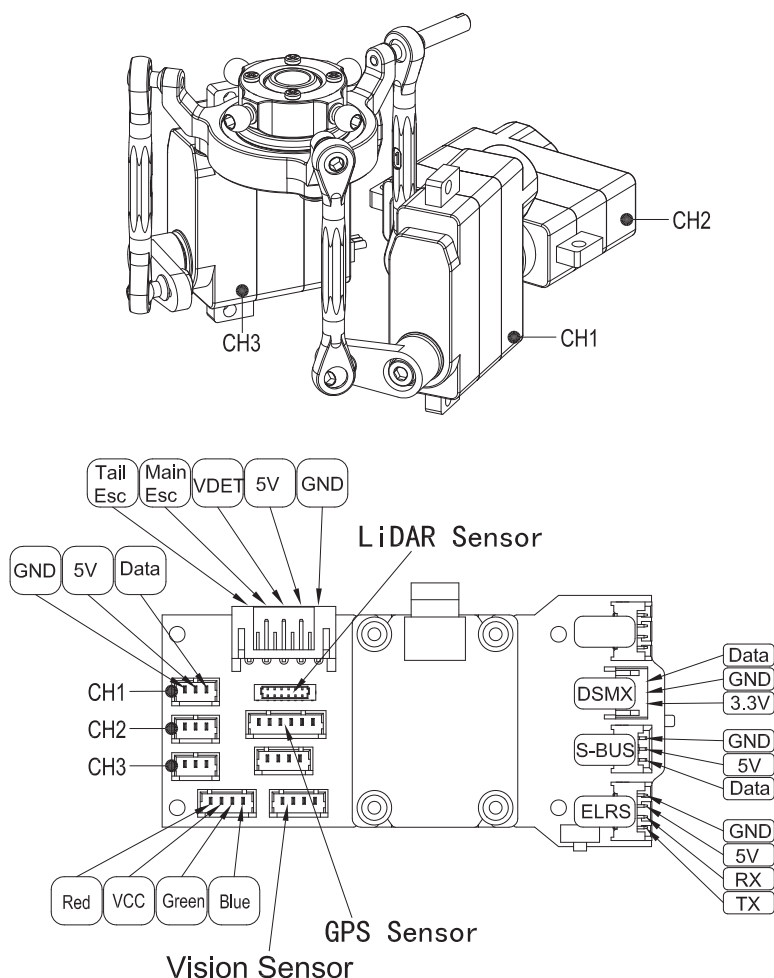


Figure 3 Vertical Rotation

Notes:

1. If you change the flying location or experience abnormal direction or attitude conditions, the compass may need to be recalibrated.
2. During calibration, it is best to keep the helicopter about 1 meter (3 ft) above the ground, and away from strong magnetic fields, such as rebar, buildings or other areas with high magnetic interference.



1. Servos – CH1, CH2, CH3.

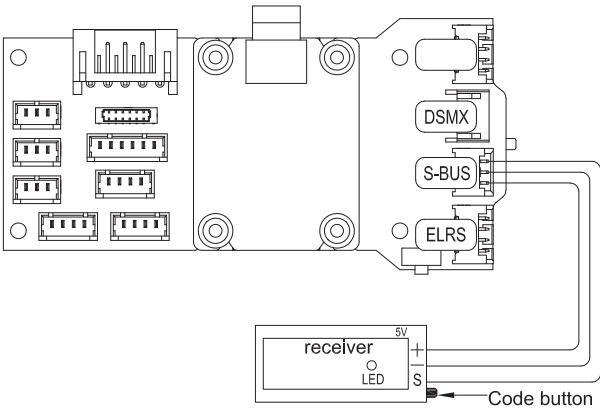
2. DSMX: Supports DSM2, DSM and DSMX. The port is compatible with a HX 1.5mm Pitch, 3-pin connector.

3. S-BUS: Supports S-BUS and PPM. The Port is compatible with a JST 1.25mm Pitch, 3-pin connector.

4. ELRS port is compatible with JST 1.25mm pitch, 4-pin connector.

Flight Controller Binding

Note: The factory setup has already been bound.



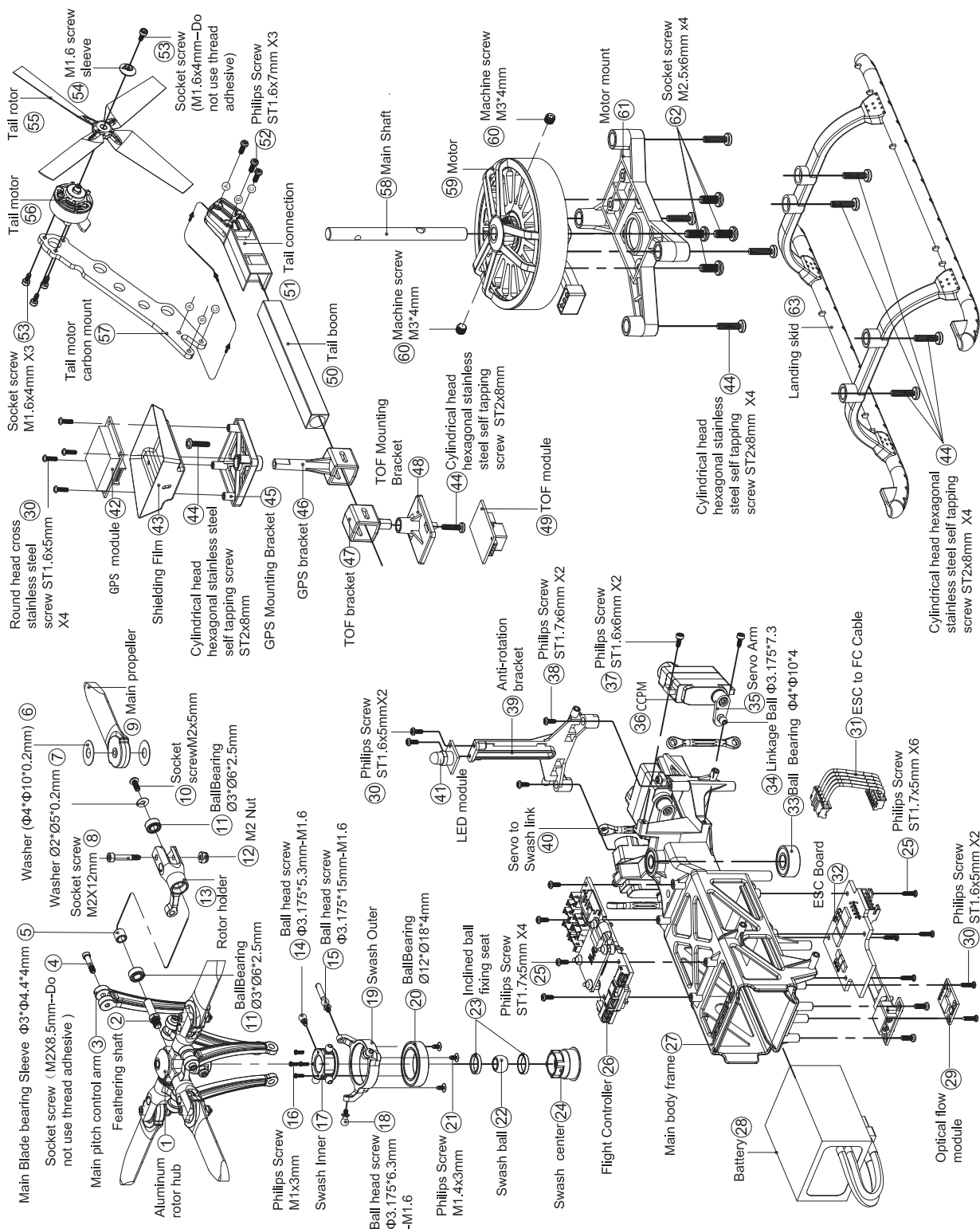
- 1. Insert the receiver cable into the flight controller’s SBUS port.
- 2. Turn on the transmitter, and place it within 1 meter (6ft) of the receiver.
- 3. Power on the helicopter with the flight battery.
- 4. Press and hold the receiver’s binding button. The receiver’s LED will change from slow blue flashing to fast blue flashing, indicating it has entered the binding state. Wait for the receiver’s blue light to go to solid on, indicating a successfully bound setup.

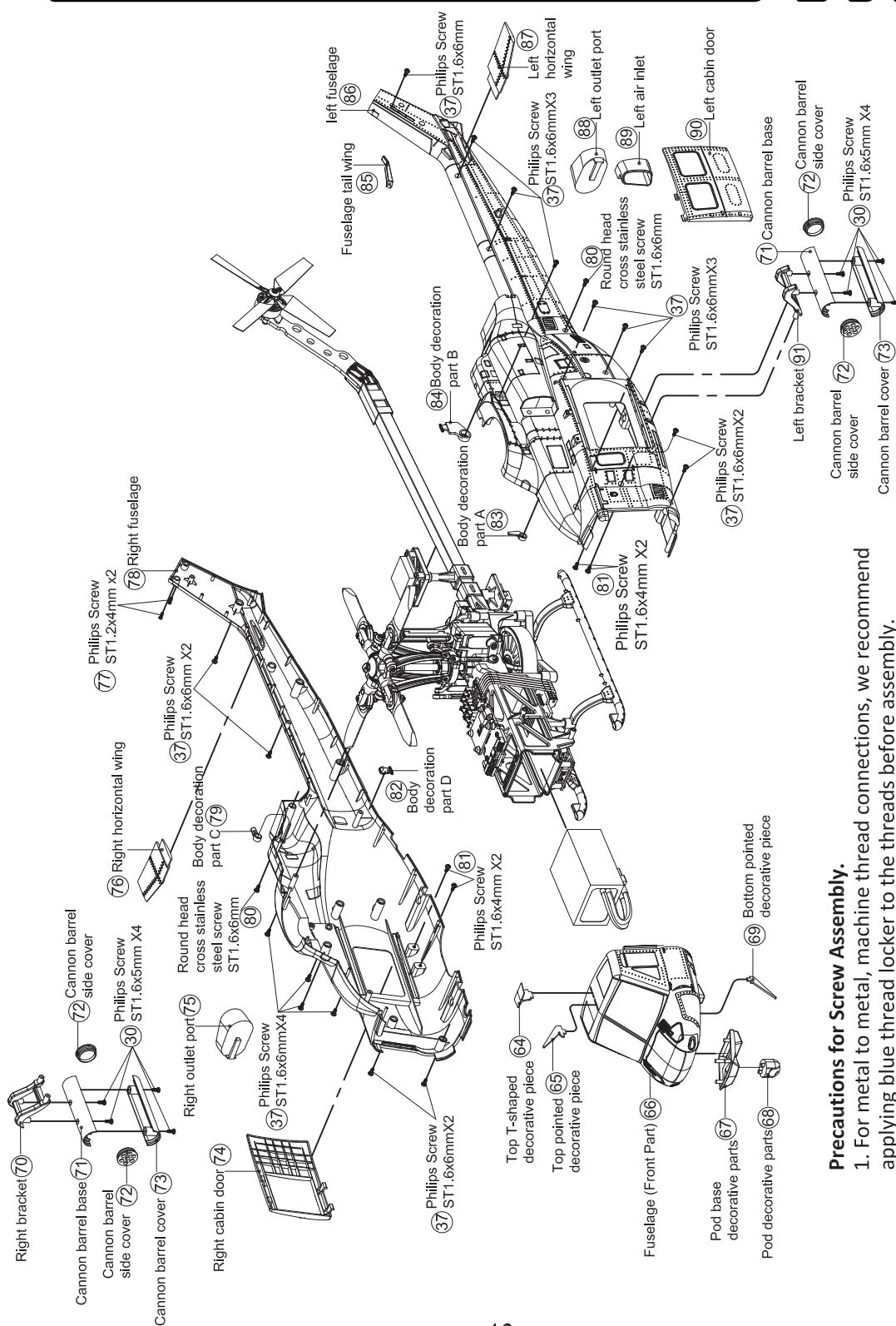
Note:The factory setup has already been bound.

Fault Indicat or LEDs	○○ ○○ ○○ ○○ ○○ ○○	GYRO
	○○○ ○○○ ○○○ ○○○ ○○○	Barometer
	○○○○ ○○○○ ○○○○ ○○○○	Magnetometer
	○○○○○ ○○○○○ ○○○○○○	LiDAR
	○○○○○○ ○○○○○○ ○○○○○○○	VISION

Exploded Parts View

UH-1Y VENOM





Precautions for Screw Assembly.

- 1.1. For metal to metal, machine thread connections, we recommend applying blue thread locker to the threads before assembly.
2. For self tapping screws into plastic, do not apply thread locker, as it can damage plastic parts.

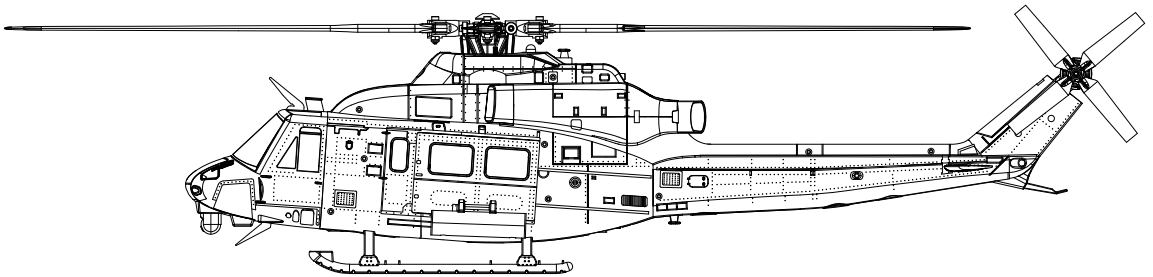


Need spare parts for your model? Visit MotionRC.com (North America) or MotionRC.eu (Europe).

NO	Item Number	Description
1	RSH1023-100	RotorScale 220 Size UH-1Y Aluminum Rotor Blade Head
2	RSH1023-101	RotorScale 220 Size UH-1Y Main Blade Grip
3	RSH1023-102	RotorScale 220 Size UH-1Y Pitch Control Arm Set
4	RSH1023-103	RotorScale 220 Size UH-1Y Rotor Clip Feathering Shaft Set
5	RSH1023-104	RotorScale 220 Size UH-1Y Swashplate Set
6	RSH1023-105	RotorScale 220 Size UH-1Y Ball Head Screw Set
7	RSH1023-106	RotorScale 220 Size UH-1Y Plastic Case Servo
8	RSH1023-107	RotorScale 220 Size UH-1Y Main frame plate
9	RSH1023-108	RotorScale 220 Size UH-1Y Main motor mount
10	RSH1023-109	RotorScale 220 Size UH-1Y Limit Bracket
11	RSH1023-110	RotorScale 220 Size UH-1Y Indicator Light
12	RSH1023-111	RotorScale 220 Size UH-1Y Main Shaft
13	RSH1023-112	RotorScale 220 Size UH-1Y Main Motor
14	RSH1023-113	RotorScale 220 Size UH-1Y Tail Motor
15	RSH1023-114	RotorScale 220 Size UH-1Y Tail Boom
16	RSH1023-115	RotorScale 220 Size UH-1Y Tail Adaptor Bracket Set
17	RSH1023-116	RotorScale 220 Size UH-1Y Tail Motor Mount Carbon Plate
18	RSH1023-117	RotorScale 220 Size UH-1Y Main Motor Retaining Screw Set
19	RSH1023-118	RotorScale 220 Size UH-1Y Lipo Battery
20	RSH1023-119	RotorScale 220 Size UH-1Y ESC Module
21	RSH1023-120	RotorScale 220 Size UH-1Y ESC Connecting Wire
22	RSH1023-121	RotorScale 220 Size UH-1Y Gasket Set
23	RSH1023-122	RotorScale 220 Size UH-1Y Screw Set
24	RSH1023-123	RotorScale 220 Size UH-1Y Double Hole Ball Joint Linkage Set
25	RSH1023-124	RotorScale 220 Size UH-1Y P25 2-3S LiPo Charger
26	RSH1023-125	RotorScale 220 Size UH-1Y Servo Swing Arm
27	RSH1023-126	RotorScale 220 Size UH-1Y Rotor Holder Bearing Set
28	RSH1023-127	RotorScale 220 Size UH-1Y Servo Bracket Bearing Set
29	RSH1023-128	RotorScale 220 Size UH-1Y Battery of Transmitter
30	RSH1023-129	RotorScale 220 Size UH-1Y SBUS Receiver External Cable



NO	Item Number	Description
31	RSH1023-130	RotorScale 220 Size UH-1Y DSMX Receiver External Cable
32	RSH1023-131	RotorScale 220 Size UH-1Y Servo Arm Linkage Ball Set
33	RSH1023-132	RotorScale 220 Size UH-1Y Flight Control Module - GPS Version
34	RSH1023-133	RotorScale 220 Size UH-1Y IMU Module
35	RSH1023-134	RotorScale 220 Size UH-1Y TOF Module
36	RSH1023-135	RotorScale 220 Size UH-1Y Optical Flow Module
37	RSH1023-136	RotorScale 220 Size UH-1Y GPS Module
38	RSH1023-137	RotorScale 220 Size UH-1Y IMU Damping Ball Set
39	RSH1023-138	RotorScale 220 Size UH-1Y GPS Connection Wire
40	RSH1023-139	RotorScale 220 Size UH-1Y TOF Connection Wire
41	RSH1023-140	RotorScale 220 Size UH-1Y Optical Flow Connection Wire
42	RSH1023-141	RotorScale 220 Size UH-1Y TOF Support Bracket
43	RSH1023-142	RotorScale 220 Size UH-1Y GPS Support Bracket
44	RSH1023-143	RotorScale 220 Size UH-1Y GPS Mounting Bracket
45	RSH1023-144	RotorScale 220 Size UH-1Y TOF Mounting Bracket
46	RSH1023-145	RotorScale 220 Size UH-1Y Stainless Steel Self-Tapping Screw Set
47	RSH1023-146	RotorScale 220 Size UH-1Y A8 Remote Controller MODE 2 (Left-Handed Throttle Controller)
48	RSH1023-147	RotorScale 220 Size UH-1Y Futaba S-FHSS Receiver
49	RSH1023-148	RotorScale 220 Size UH-1Y Tail Rotor Set
50	RSH1023-149	RotorScale 220 Size UH-1Y Main Rotor Set
51	RSH1023-150	RotorScale 220 Size UH-1Y Canopy
52	RSH1023-151	RotorScale 220 Size UH-1Y Fuselage Set
53	RSH1023-152	RotorScale 220 Size UH-1Y Compartment Door Set
54	RSH1023-153	RotorScale 220 Size UH-1Y Mount Components
55	RSH1023-154	RotorScale 220 Size UH-1Y Air Intake Set
56	RSH1023-155	RotorScale 220 Size UH-1Y Exhaust Port Set
57	RSH1023-156	RotorScale 220 Size UH-1Y Horizontal Stabilizer Set
58	RSH1023-157	RotorScale 220 Size UH-1Y Fuselage Parts Set
59	RSH1023-158	RotorScale 220 Size UH-1Y Landing Gear Set



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