



Ages 14+
Please read the instructions carefully before use.



THE HUBSAN X4 PLUS

2.4GHZ RC SERIES 4 CHANNEL



ITEM NO.: H107P

CATALOGUE

INTRODUCTION	02
SAFETY NOTES	02
SAFETY CHECKS BEFORE FLYING	04
CHARGING THE LiPo BATTERY	05
TRANSMITTER	06
FLY THE X4	09
ADVANCED PERFORMANCE SETUP	12
REPLACING PROPELLERS	16
EXPLODED VIEW	18
H107P TROUBLESHOOTING	19
SPARE PART CHART	22

1 INTRODUCTION

Thank you for buying HUBSAN products. The X4 quadcopter is designed as an easy-to-use, full-featured RC model, capable of hovering and aerobatic flight maneuvers. Please read the manual carefully and follow all the instructions. Be sure to retain the manual for future reference, routine maintenance and tuning.

2 SAFETY NOTES

2.1 Important Notes

This RC quadcopter is not a toy.

Any improper use of this product will result in serious injury. Be aware of your personal safety, safety of others and your surrounding environment.

We recommend beginners learn to fly with more experienced pilots before attempting to fly the X4 for the first time.

2.2 Caution

The X4 quadcopter has parts that move at high speed, which poses a certain degree of danger.

Choose a wide open space without obstacles. Do not operate the X4 near buildings, crowds of people, high voltage cables, or trees to ensure the safety of yourself, others and your model.

Improper operation may cause damage to people and property.

2.3 LiPo Battery Safety Notes

The X4 is powered by a Lithium-Polymer (LiPo) battery.

To avoid risk of fire or damage, never recharge your battery while it is inserted in the X4.

If you do not plan to fly the X4 for a week or more, store the battery approximately 50% charged to maintain battery performance and battery life.

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

The toy is only to be connected to Class II equipment bearing the symbol 



SAFETY ADVISORY NOTICE

Lithium-Polymer (LiPo) Batteries

LiPo batteries are different from conventional batteries in that their chemical contents are encased in a relatively lightweight foil packaging. This has the advantage of significantly reducing their weight but it does make them more susceptible to damage if roughly or inappropriately handled. As with all batteries, there is a risk of fire or explosion if safety practices are ignored:

- ☑ Charge and store LiPo batteries in a location where a battery fire or explosion (including smoke hazard) will not endanger life or property.
- ☑ Keep LiPo batteries away from children and animals.
- ☑ Never charge the LiPo battery that has ballooned or swelled.
- ☑ Never charge the LiPo battery that has been punctured or damaged.
- ☑ After a crash, inspect the battery pack for signs of damage. Discard in accordance with your country's recycling laws.
- ☑ Never charge the LiPo battery in a moving vehicle.
- ☑ Never overcharge the LiPo battery.
- ☑ Never leave the LiPo battery unattended during recharging.
- ☑ Do not charge LiPo batteries near flammable materials or liquids.
- ☑ Ensure that charging leads are connected correctly. Reverse polarity charging can lead to battery damage or a fire or explosion.
- ☑ Have a suitable fire extinguisher (electrical type) OR a large bucket of dry sand near the charging area. Do not try to extinguish electrical (LiPo) battery fires with water.
- ☑ Reduce risks from fire/explosion by storing and charging LiPo batteries inside a suitable container.
- ☑ Protect your LiPo battery from accidental damage during storage and transportation. (Do not put battery packs in pockets or bags where they can short circuit or can come into contact with sharp or metallic objects.).
- ☑ If your LiPo battery is subjected to a shock (such as a crash), place it in a metal container and observe for signs of swelling or heating for at least 30 minutes.
- ☑ Do not attempt to disassemble or modify or repair the LiPo battery.

2.4 Prevent Moisture

The X4 contains many precision electrical components.

Store the battery and the X4 in a dry area at room temperature. Exposure to water or moisture may cause malfunction resulting in loss of responsiveness, or a crash.

2.5 Proper Operation

For safety only use the included HUBSAN spare parts for replacement.

2.6 Always Be Aware of the Rotating Blades

When in operation, the rotor blades will be spinning at high speed. The blades are capable of inflicting serious injury or damage to property.

Be careful to keep your body and loose clothing away from the blades. Never take your eyes off the X4 or leave it unattended while it is turned on. Stop operating immediately if the X4 flies out of your view. Once landed, immediately turn off the X4 and transmitter.

2.7 Avoid Flying Alone

Beginners should avoid flying alone when learning flight skills. We recommend flying with an experienced pilot nearby in case you need help.

3 SAFETY CHECKS BEFORE FLYING

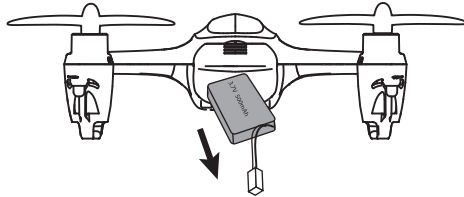
CAREFULLY INSPECT THE X4 BEFORE EVERY FLIGHT

- Before operating, check that the batteries of the transmitter and X4 are charged for the flight.
- Before turning on the transmitter, check that the throttle stick is pulled completely backwards (down position).
- Carefully check rotor blades and rotor holders. Broken parts will pose a risk of injury and hazard.
- Check the battery and power plug are securely fastened. Severe vibration during flight may detach the plug and result in loss of control.
- When turning on the unit, always turn on the transmitter first and then turn on the X4. To power off, always turn off the X4 first and then the transmitter. Improper procedure may cause loss of control of the quadcopter.

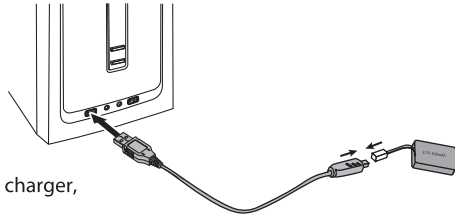
4 CHARGING THE LiPo BATTERY

4.1 3.7V 520mAh LiPo Battery

4.1.1 Take out the battery from the battery compartment of the X4.



4.1.2 Connect the battery with USB charger, then connect the USB charger to a computer or other USB connector, such as a smartphone charger. The LED lights up while charging and turns off when charging is complete. The voltage of the USB is $+5\pm0.5V$. The charging time is around 80mins and the flying time is around 11mins.



The battery should only be charged with HUBSAN charger, or it will be overcharged.

4.2 Safety Advisory Notice

Always partially charge your LiPo battery before storage. LiPo batteries retain the power over a reasonable period. It is not normally necessary to recharge stored LiPo batteries unless stored for periods longer than 3-6 months.

If your LiPo battery has been over-discharged, it will not be possible to recharge it again.



LiPo Battery Disposal & Recycling

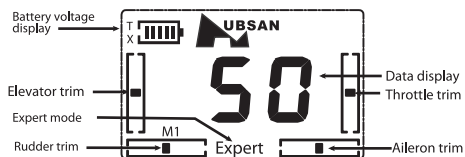


Lithium-Polymer(LiPo) batteries must not be placed in with household trash. Please contact your environmental or waste agency or the supplier of your model for local regulations and the location of your nearest LiPo battery recycling center.

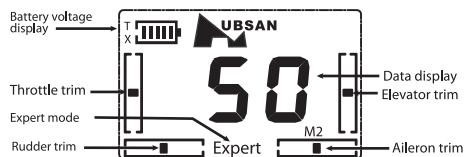
5 TRANSMITTER

5.1 Identification and Functions of the Main Menu

Main Menu

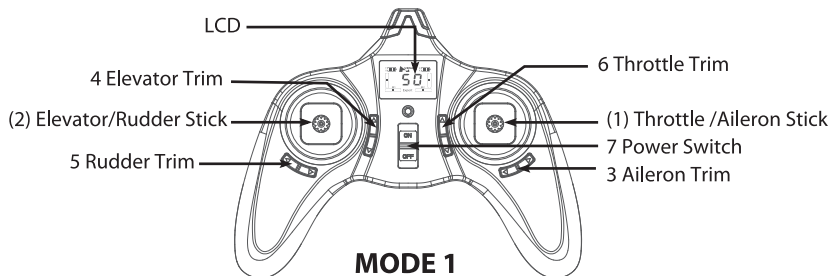


MODE 1

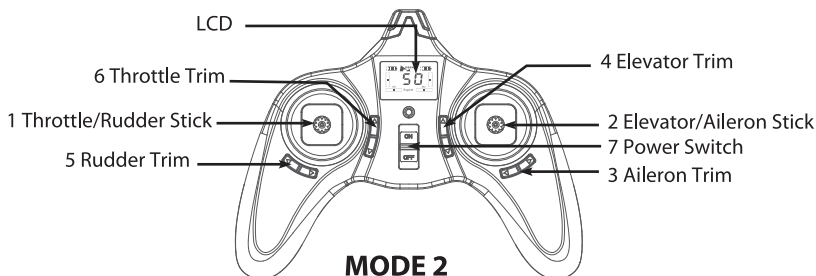


MODE 2

TRANSMITTER



MODE 1



MODE 2

Input Key Function

S/N	Mode/ Control	Function
(1)	MODE 1 Throttle /Aileron Stick	Push the Throttle Stick, the quadcopter will ascend; release the stick, the quadcopter will keep that altitude in the air; Pull the stick, the quadcopter will fall. Move the Aileron Stick left or right to make the quadcopter drift sideways left or right.
(2)	MODE 1 Elevator/Rudder Stick	Move the Elevator Stick forward or backward to make the quadcopter move forward or backward. Move the Rudder Stick left or right to make the quadcopter yaw left or right.
1	MODE 2 Throttle/Rudder Stick	Push the Throttle Stick, the quadcopter will ascend; release the stick, the quadcopter will keep that altitude in the air; Pull the stick, the quadcopter will fall. Move the Rudder Stick left or right to rotate the quadcopter's fuselage left or right.
2	MODE 2 Elevator/Aileron Stick	Move the Elevator Stick forward or backward to make the quadcopter move forward or backward. Move the Aileron Stick left or right to make the quadcopter drift sideways left or right.
3	Aileron Trim	Aileron trim adjusts for left and right drift.
4	Elevator Trim	Elevator trim adjusts for forward and backward drift.
5	Rudder Trim	Rudder trim adjusts for drift of left and right rotation or yaw.
6	Throttle Trim	Throttle trim normally left at neutral.
7	Power Switch	Push to ON to turn on the transmitter. Push to OFF to turn off.

Environmentally friendly disposal



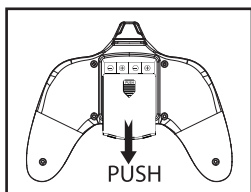
Old electrical appliances must not be disposed of together with the residual waste, but have to be disposed of separately. The disposal at the communal collecting point via private persons is for free. The owner of old appliances is responsible to bring the appliances to these collecting points or to similar collection points. With this little personal effort, you contribute to recycle valuable raw materials and the treatment of toxic substances.

5.2 Transmitter Battery Installation

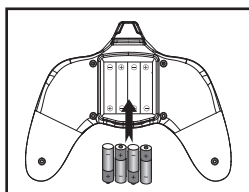
Notice: Do not mix old and new batteries.

Do not mix different types of batteries.

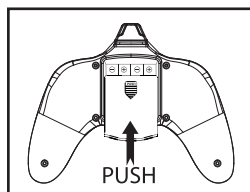
Do not charge non-rechargeable batteries.



Remove the cover



Install 4 x AAA batteries
according to the correct polarities



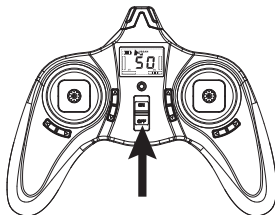
Replace cover

6 FLY THE X4

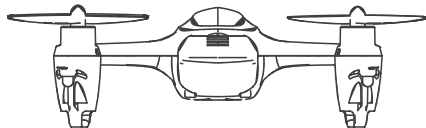
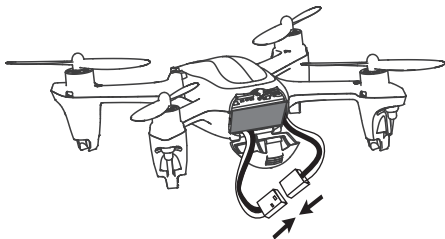
6.1 Power-On Safety Mode

Your X4's flight controller is designed with a Power-On safety feature that ensures that the X4's motor will not start unless it detects a suitable control signal when the LiPo battery is connected.

6.1.1 Power on the transmitter and the red LED will blink. Do not move any other stick or trim before the transmitter and X4 has finished pairing, or the X4 will drift. The transmitter LED will turn green after pairing is successfully completed.



6.1.2 Connect the battery plug with correct polarity. Insert the battery into the bottom of your X4. Make sure the battery and wires are pushed into the battery compartment and the battery cover is closed tightly, so they will not negatively affect the center of gravity and cause unstable flight.



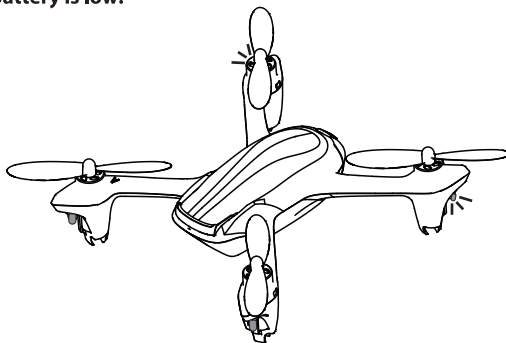
Put the X4 on a level surface before flight, or the X4 will drift.

Always disconnect the X4 battery plug after turning off the transmitter when you stop flying.

6.1.3 LED Indicators

After a “beep”, the red LED on the transmitter turns green, and the red LED lights on the X4 turn steadily, indicating successful pairing.

Low Battery Alarm: The two red LEDs will blink at the same time and the X4 will descend and land down automatically to 5meters or lower from the takeoff point when the X4 battery is low.



6.2 Rotor Guard Mode

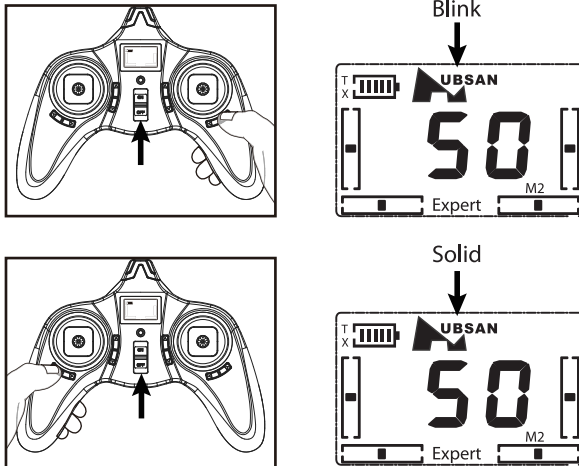
The X4 plus need enter into the rotor guard mode when you add the rotor guard on it.

1 Power on the X4 first. Power on the transimtter while holding the right aileron trim.

The HUBSAN logo on the tranmitter screen will **blink**, indicating that the X4 plus is in the rotor guard mode.

2 Power on the X4 first. Power on the transmitter while holding the left rudder trim.

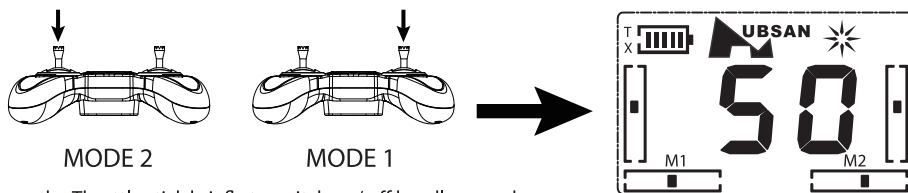
The HUBSAN logo on the transmitter screen will be **solid**, indicating that the X4 plus exit the rotor guard mode.



6.3 Headless Mode

Headless mode means the X4 will default any direction as its head in front of the transmitter.

The blue lights on the X4 will blink and a star icon shows on the LCD screen when the X4 is in headless mode.



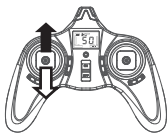
Press the Throttle stick briefly to switch on/ off headless mode.

Press the Throttle stick to enter headless Mode, indicated by two "beeps".

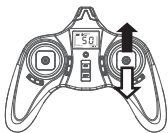
Press the Throttle stick again to exit headless Mode, indicated by one "beep".

6.4 Transmitter Sticks And X4 Control Responses

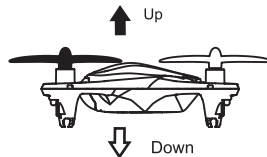
CAUTION: To avoid loss of control, always move the transmitter sticks slowly. Be aware that control inputs will reduce available lift. Wait a few seconds for the X4 to recover the height.



MODE 2



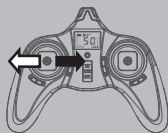
MODE 1



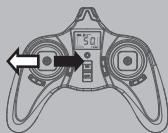
Throttle increases/decreases the flying height of your quadcopter.

This quadcopter can hold the altitude in the air.

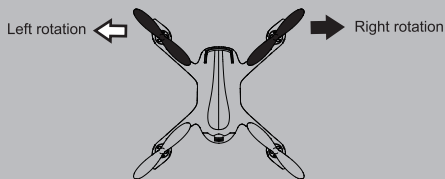
Method: Push the throttle stick up and the quadcopter will rise; Release the stick to the central position, the quadcopter will hover automatically and hold its altitude; Pull the stick down and the quadcopter will fall.



MODE 2



MODE 1



Rudder rotates your quadcopter's fuselage left or right.

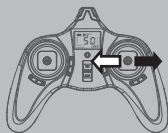
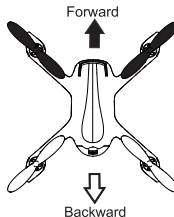


MODE 2

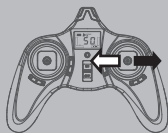


MODE 1

Elevator moves your quadcopter forward and backward.



MODE 2



MODE 1

Aileron moves your quadcopter left and right.



NOTE: Controls will appear reversed when the model is flying toward you !

6.5 Start/stop the motors

When you need to stop the motors quickly you can use both stickers to stop the motors.

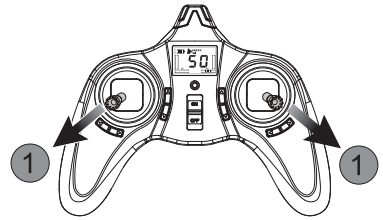
Stop the motors

Method: Pull the two sticks again as in the picture. Release them after the motors stop.

Start the motors

Method: Pull the two sticks as the picture shows. Release them after the motors start.

Note: You can also use the throttle stick to start/stop the motors. The X4 will ascend or descend slowly.

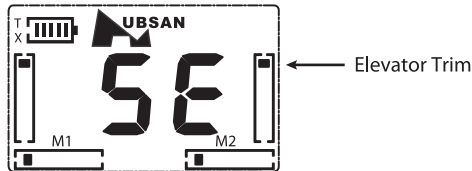


7 ADVANCED PERFORMANCE SETUP

7.1 Reverse Setup

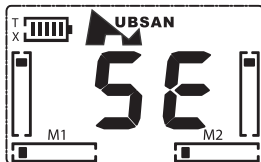
7.1.1 Elevator Reverse Setup

Pull the throttle stick to the lowest position. Press and hold the Elevator stick for 1 second to enter the settings menu. The LCD will display “SE”. Press the Elevator Trim up or down to reverse the channel and then press and hold the Elevator stick for 2 seconds to confirm and exit.

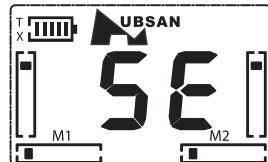


7.1.2 Aileron and Rudder Reverse Setup

Pull the throttle stick to the lowest position. Press and hold the Elevator stick for 1 second to enter the setting menu. Press (a) Aileron Trim /(b) Rudder Trim left or right to reverse the channel and then press and hold the Elevator stick for 2 seconds to confirm and exit.



(a)Aileron Trim



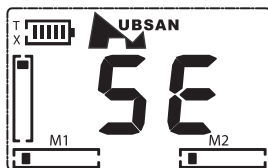
(b)Rudder Trim

7.2 Normal and Expert Flight Modes

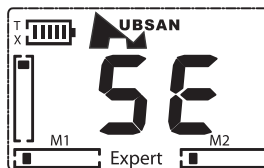
The X4 is factory set for Normal Mode flying, and it will always power up in Normal Mode. Though fast and responsive in Normal Mode, the X4 has even greater performance capability when Expert Mode is activated.

Press the Elevator stick to activate Expert Mode (the X4 and transmitter must both be on). Two beeps indicate Expert Mode; one beep indicates Normal Mode.

The LCD will display EXPERT and the green LED will blink red and green when in Expert Mode.



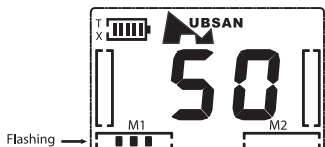
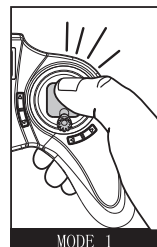
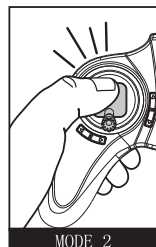
Normal mode



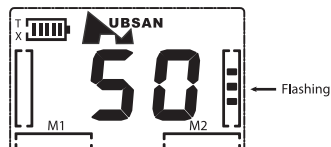
Expert mode

7.3 Sensitivity Setup

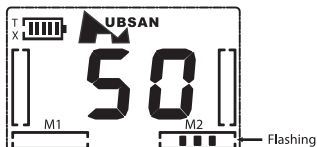
Pull the throttle stick to the lowest position. Hold down the Elevator stick for 1 second to enter the setup (SE) menu. Press the base of the throttle stick and the three-point dotted line starts to flash (see picture (a) below). Press it again to switch to different channels. Use the (a) Rudder Trim, (b) Elevator Trim, or (c) Aileron Trim to change the sensitivity values shown on the LCD and then hold down the Elevator stick for 2 seconds to confirm or exit. The X4 control sensitivity increases with higher value settings.



(a) Rudder Sensitivity Adjustment

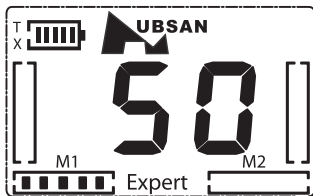


(b) Elevator Sensitivity Adjustment



(c) Aileron Sensitivity Adjustment

You can also adjust sensitivity in Expert Mode following the Normal Mode procedure controls.



3 dots displayed in Normal (Sensitivity range 20-60%)



5 dots displayed in Expert (Sensitivity range 60-100%)

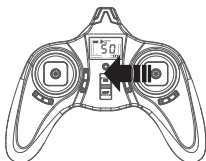
Press the Elevator stick to switch between Normal Mode and Expert Mode at any time.

7.4 Aerial Flip

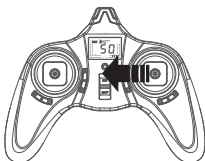
Press and hold down the Throttle stick for 1 second to enter Flip Mode, indicated by "beeps". The beeps will last for 2 seconds. In this 2 seconds, push the accordance sticks to perform the flips.

7.4.1 Left Flip

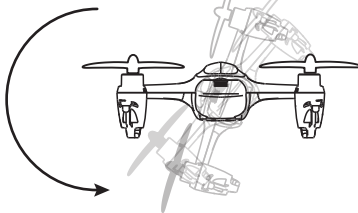
Push the Aileron stick to the left. Release the stick to the center position after the flip.



MODE 2

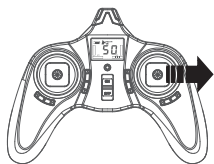


MODE 1

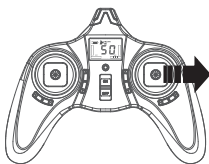


7.4.2 Right Flip

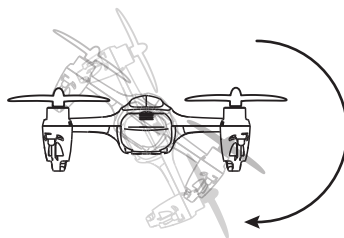
Push the Aileron stick to the right. Release the stick to the center after the flip.



MODE 2

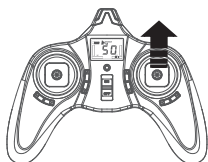


MODE 1

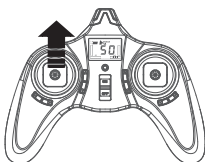


7.4.3 Forward Flip

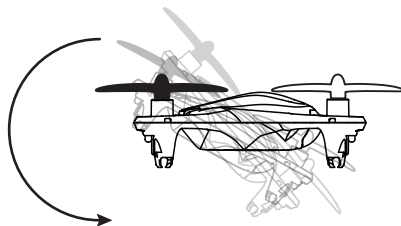
Pull the Elevator stick forward. Release the stick to the center after the flip.



MODE 2

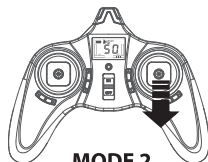


MODE 1

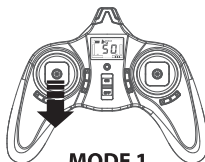


7.4.4 Backward Flip

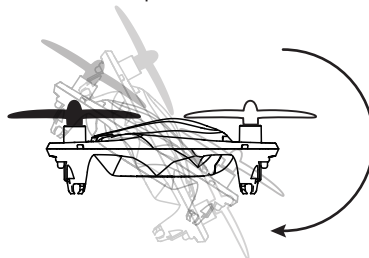
Push the Elevator stick backward. Release the stick to the center after the flip.



MODE 2



MODE 1

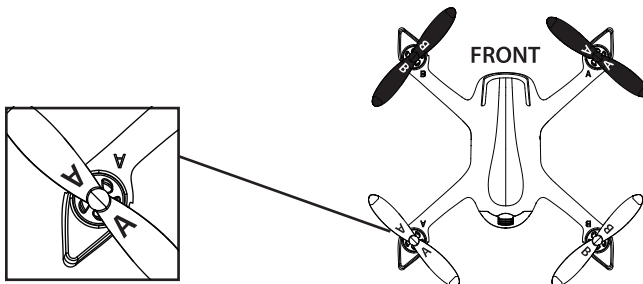




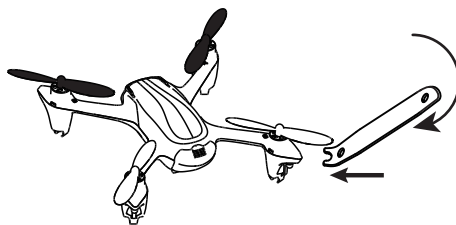
Note: When the X4 battery is low, performing flip is not possible.

8 REPLACING PROPELLERS

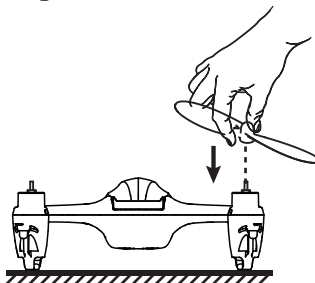
The X4's propellers are not identical. Each propeller is labeled with an A or B. When installing replacement propellers, be sure to install as shown below. The X4 will not fly but will flip and crash if the propellers are not installed correctly.



Remove Propellers: Hold the propeller, insert the U wrench under the propeller, pull up and the propeller will easily come off the motor shaft.



Install Propellers: Pinch the propeller hub, align the hole to the motor shaft and press it straight down firmly but gently.



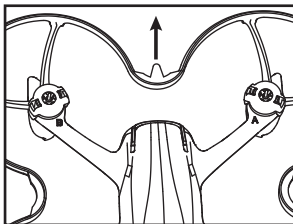
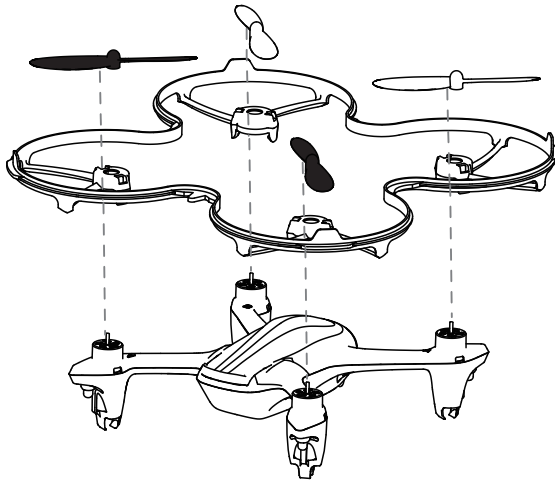
WARNING

HAZARDOUS MOVING PARTS
KEEP FINGERS AND OTHER
BODY PARTS AWAY

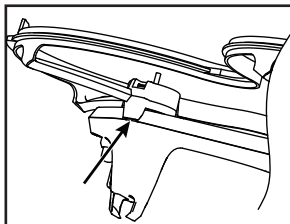
The propellers are dangerous when the quadcopter is flying. To avoid injury or damage, install the rotor guard as below.

Installation method: Remove the propellers. Position the cover's four holes with the motor shafts. Install the rotor guard as the picture(1) shows(the arrow side in front) into the four legs. Press the rotor guard to make sure it embed the cover's buckle into the body's slot as the picture (2) shows. Then install the propellers into the motor shafts.

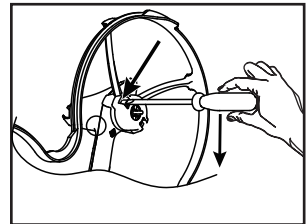
Removal method: When removing the rotor guard, remove the propellers first as in the above steps, Hold the quadcopter, insert the screwdriver into the gap between the rotor guard and the body shell, press down the screwdriver to remove the rotor guard as the picture(3) shows. After any crash landing, always check to make sure the rotor guard is still on tight, and that the body, motors and propellers are not damaged.



(1)

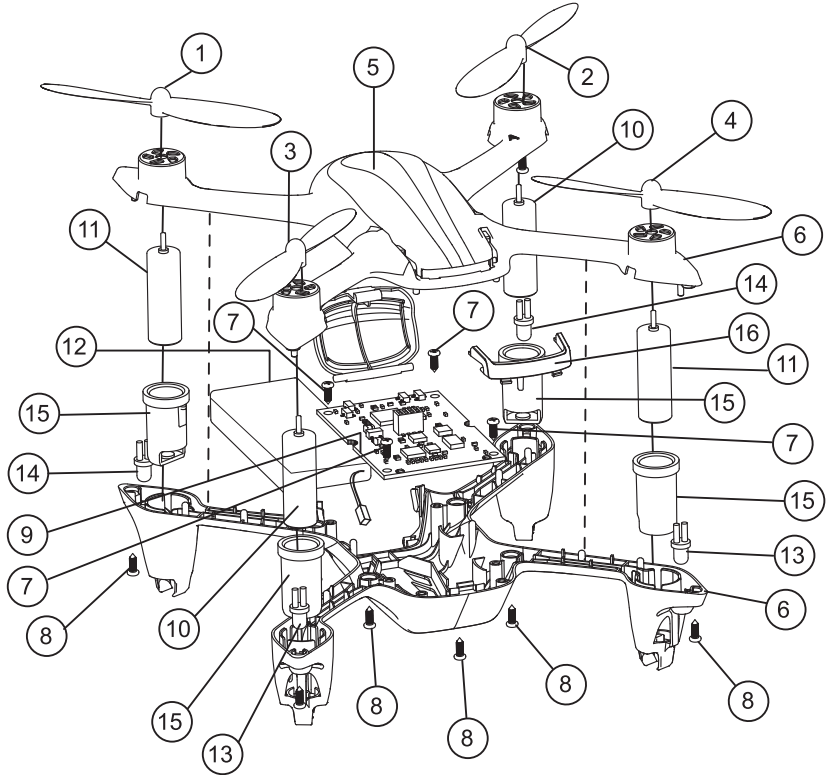


(2)



(3)

Exploded View



No	PART NAME	QTY	No	PART NAME	QTY
1	White blade B	1	9	RX	1
2	White blade A	1	10	720 motor (clockwise)	2
3	Black blade A	1	11	720 motor (counterclockwise)	2
4	Black blade B	1	12	LiPo battery	1
5	Upper shell	1	13	Blue LED	2
6	Lower shell	1	14	Red LED	2
7	Screw	4	15	Motor Sleeve	4
8	Screw	8	16	Transpant hood	1

H107P TROUBLESHOOTING

1. Transmitter and X4 do not pair.

Close the Transmitter and the X4. Make sure you do not move the transmitter sticks or trim during initial power-on.

2. Transmitter LED suddenly goes out.

Replace the AAA batteries in the transmitter.

3. Transmitter display is not showing the setting interface after holding down the throttle for 2 seconds.

The throttle stick needs to be in the fully down position.

4. Gyro is not working well.

- (1) Battery voltage is too low.
- (2) Pair the X4 with the transmitter again.
- (3) Land the X4 with the throttle stick in the fully down position for 3 seconds and then take off again.

5. X4 won't perform flips.

- (1) Press and hold down the throttle stick for 1 seconds to enter into flip mode. Do the flip when the transmitter "beeps".
- (2) LiPo power is too low. Recharge the X4.

6. Quadcopter is shaking and making noise.

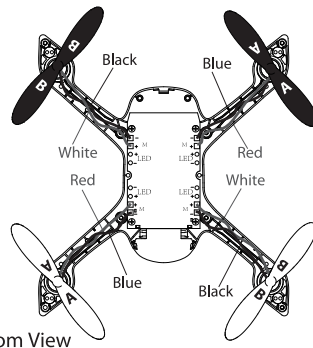
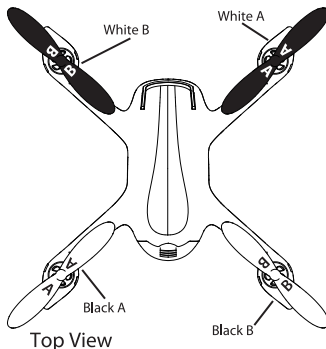
Check that the motors, canopy, body and propellers are all properly positioned.

7. Switching between low and high rates on the transmitter is difficult.

Press the elevator stick briefly to switch between the Expert Mode (transmitter LED flashes red and green) and Normal Mode (transmitter lights up green steadily). "Expert" will also appear at the bottom center of the display.

8. Cannot take off.

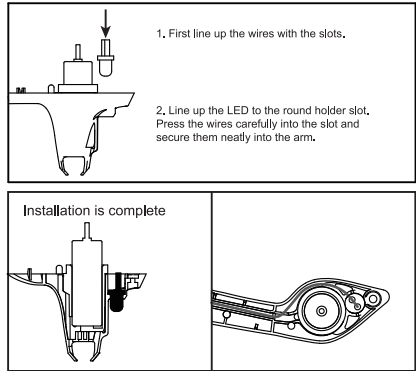
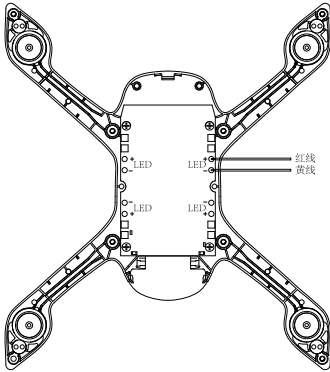
- (1) Make sure the propellers are installed correctly. The propellers are marked with "A" (clockwise) and "B" (counterclockwise). Refer to the Top View picture below for the correct orientation.
- (2) Make sure that each motor is installed correctly. There are two different motors with different motor wire colors. Refer to the Bottom View picture below for the correct order.



9. REMOVING AND INSTALLING LEDS

Removal: Unscrew and remove the upper shell. Then desolder the red and yellow wires.

Installation: Solder the red wire onto the anode/positive (+) lead of the LED, and the yellow one onto the cathode/negative (-) lead of the LED. Press the LED wires into the leg slots, then press the motor wires into the leg slots. Install the upper shell. You can distinguish the color of the LED lights by the color of the LED wire insulation at the bottom of the LED lens. Red color insulation is for the red LED, blue color insulation is for the blue LED.



10. The motors do not spin freely after a crash.

Press the shaft down from the top of the propeller and motor to remove any objects, or replace the motor.

11. One or more motors stop working.

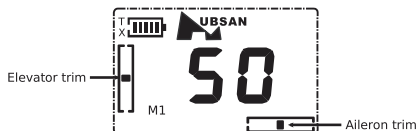
- (1) Spin the propellers to see if the motors are jammed and make sure the propellers can spin normally.
- (2) Resolder any broken motor connections.
- (3) Replace the motor.

12. The X4 always drifts to one direction.

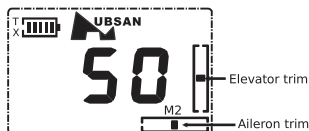
Calibrate the accelerometer as follows:

1) Before calibrating the accelerometer, make sure that the propellers, motors and body are in good condition with the battery fully charged. Ensure that the battery and the cables are inserted into the battery compartment correctly.

Pair the X4 and transmitter, then put the X4 in Expert Mode (see P12, 7.2).

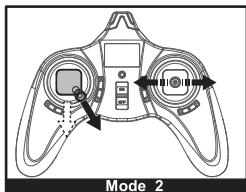


(MODE 1)

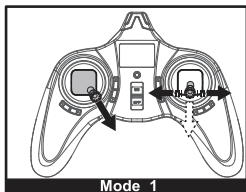


(MODE 2)

3) Pull the Throttle stick fully down and move the Rudder stick to the lower right position. Quickly move the Aileron stick to the left and right repeatedly until LED lights blink, indicating successful calibration. This calibration will reduce excessive drifting when doing level yaw turns.

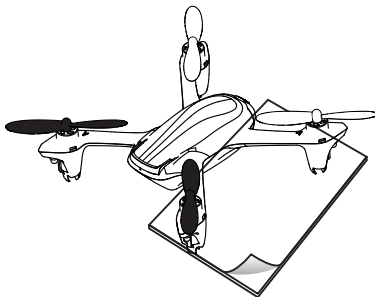


Mode 2



Mode 1

4) If the X4 still drifts to one side, add a few sheets of paper (the number of sheets will vary depending on the amount of drift) to the side of the X4 that drifts. The paper will help counterbalance and create a level offset angle.



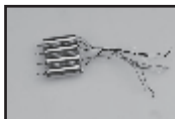
H107P SPARE PART CHART



H107P-04
Body Shell



H107P-A02
Propellers



H107P-07
Motor



H107P-12
X4 RX



H107P-09
Battery



H107P-A06
USB Charger



H107P-16
Screw Set



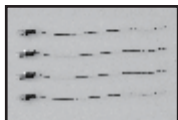
H107P-14
Transmitter



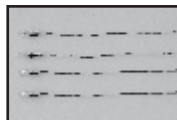
H107P-A11
U Wrench



H107P-A13
T-Shirt



H107P-02
Blue LEDs



H107P-03
Red LEDs



H107P-01
Screwdriver



H107P-06
Transparant Hood



H107P-10
Motor Sleeves



H107P-05
Battery Cover



H107P-11
Rotor Guard



H107P-15
Crash Pack

FCC Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

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

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.

Electrical and electronic equipment that are supplied with batteries (including internal batteries)

WEEE Directive & Product Disposal

At the end of its serviceable life, this product should not be treated as household or general waste. It should be handed over to the applicable collection point for the recycling of electrical and electronic equipment, or returned to the supplier for disposal.

Internal / Supplied Batteries.

This symbol on the battery indicates that the battery is to be collected separately.

This battery is designed for separate collection at an appropriate collection point.



www.hubsan.com