

# 3-AXIS GIMBAL GPS AERIAL DRONE

## OPERATING INSTRUCTIONS



### Safety precautions:

- 1 in order to ensure the electromagnetic environment requirements of aviation radio station (station), it is prohibited to use various model remote controllers in the area with the center point of airport runway as the center point and the radius of 5000M. During the period when the relevant departments of the state issue radio control orders and regional areas, the use of model remote controllers shall be stopped as required. Please fly in warm, clear, windless weather. Do not fly in severe weather conditions such as overheating, overheating, strong wind, rainstorm, etc. Please choose indoor or outdoor open area, and keep a safe distance from people, pets, empty overhead wires and other obstacles. Make sure that no other uses the same frequency. Do not let the aircraft out of sight.
- 2 after the aircraft is started, please do not contact the high-speed rotating part of the aircraft and keep a distance from the high-speed rotating propeller to avoid the risk of strangulation. (Including gears, rotors, etc.)
- 4.During and after the use of the aircraft, the battery and motor will generate high temperature. Please do not touch it to avoid the risk of scalding.
- 4 do not look directly at the light beam of the LED to avoid affecting the eyes.

**Warm Tip:** It is suggested that beginners practice flying at low altitude in an open and unmanned place for about 3 days, and then fly to high altitude after being familiar with flying

## Pre-flight preparation

### flight environment



Indoor: Spacious space away from obstacles, crowds or pets are preferred.



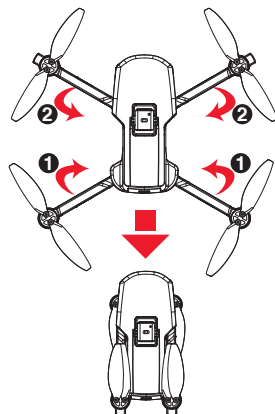
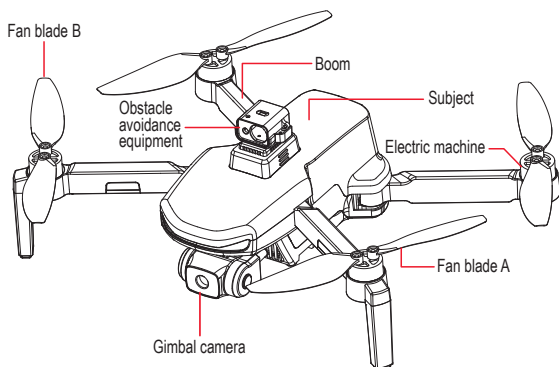
Outdoor: Sunny, windy and sunny weather are preferred.



Please keep the UAV in line of sight and away from obstacles, high-voltage cables, trees and personnel during the flight.



Do not fly in extreme environments, such as heat, cold, strong wind or heavy rain.



### Blade replacement:

1. The fan blade to be replaced must be replaced corresponding to the relative position on the machine. Fan blade A needs to be installed at position A, and fan blade B needs to be installed at position B. If fan blade is replaced incorrectly, it can not be controlled.
2. When flying, the fan blade A rotates clockwise, and the fan blade B rotates counterclockwise.

#### 1. Important note

This product is not a toy, wrong use will cause damage.

Please follow the instructions before using this product. Do not disassemble the product yourself. Otherwise, the manufacturer is not responsible for any damage.

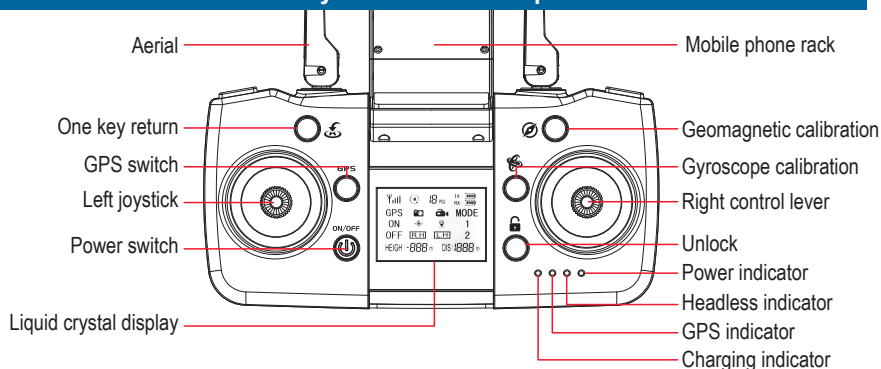
#### 2. Safety instructions

Warning: It is necessary to fly in a safe area or away from others, and do not control the aircraft above a dense crowd. Due to the pilot's operation error or wireless interference in the operation process, accidents and failures are easy to occur, and damage or injury to the crowd is easy to occur.

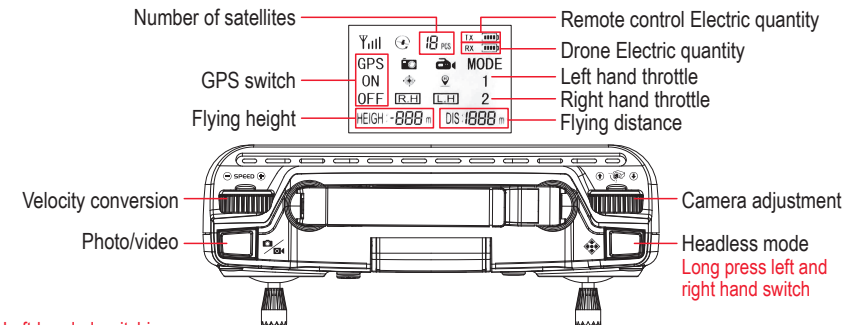
Prohibition: Especially for indoor and outdoor flight, please keep away from obstacles. This product is suitable for both indoor and outdoor flight (wind strength not more than 4). Please choose a place that is free from obstacles, crowds and pets, passers-by, such as, heating source, heat source, electric wires or electronic power source will not collide with the drone, landing, entanglement, or cause fire, electrocution and damage to life and property.

Warning: As this product is mainly suitable for people over 14 years old, it may be difficult to learn at first, we recommend you to ask an experienced pilot for guidance.

## Remote control function key and name Description:

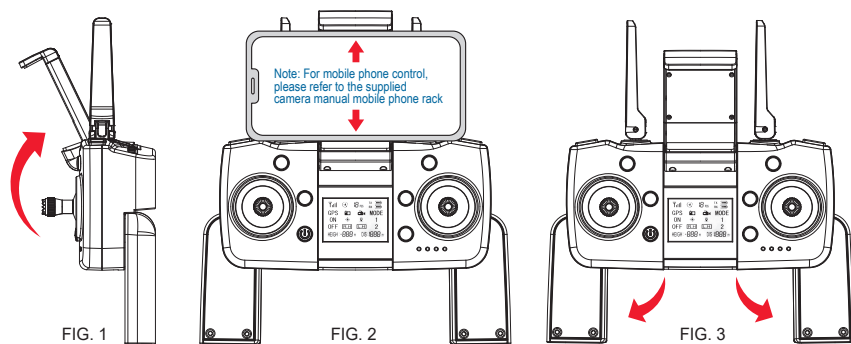


Note: When the satellite can not be found indoors or outdoors, if the GPS needs to be turned off to start the aircraft, press and hold the GPS key for 3 seconds, the remote controller "drops" and the display screen of the remote controller displays "GPS OFF." At this time, press the unlocking key, and the wing of the aircraft starts to rotate and is ready to take off.



Left-handed switching:  
Default left-handed throttle, long press "left-handed switching key" before linking to switch to right-handed throttle.

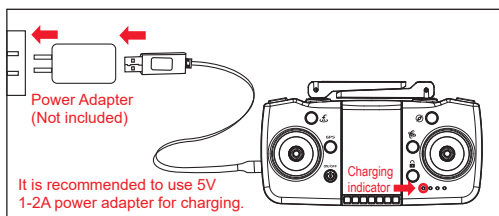
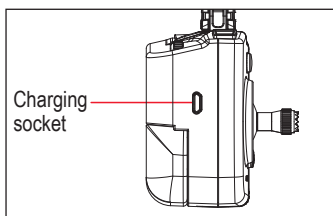
## Instructions for remote control handle/mobile phone rack:



Lift the mobile phone rack in the middle of the remote controller upward (FIG. 1), and stretch upward to place the mobile phone (FIG. 2).

Remote control handle: Pull the bottom handle of the remote control down from the middle position and rotate it into place (FIG. 3).

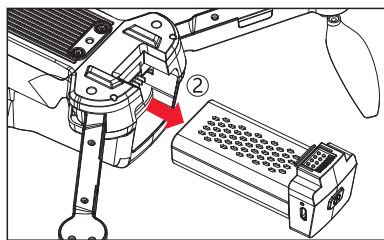
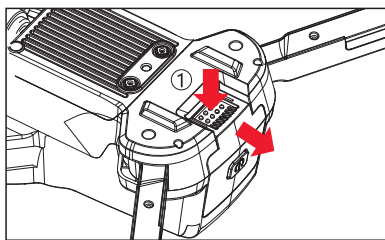
## Instructions for charging controller:



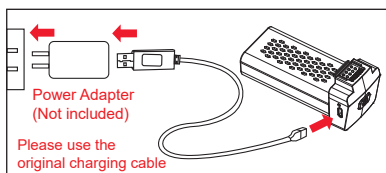
Insert the charging plug of the charging wire into the charging socket of the remote controller, and then connect the USB charger plug to the computer or mobile phone charger for charging. When charging, the charging indicator lights up, and the indicator lights out after full charging. (Charging time is about 60 minutes)

Note: If the charge indicator does not change during charging, this indicates that the battery is fully charged and does not need to be recharged.

## Instructions for charging drone lithium battery:



Take out the drone battery: Hold down the position shown in Figure 1, and pull it back to take out the battery.



### Battery charging steps:

Please use the original charging cable provided in the package to connect the USB charger plug to the computer or mobile phone charger. When charging, the red light on the Android plug on the battery is on, and the red light is off and the green light is on when it is fully charged. (Charging time is about 120 minutes)

It is recommended to use 5V 1-2A power adapter for charging.

Note: If the battery is plugged into the charger and the Android headlight on the battery is on, no recharging is required

- ⚠
- When charging the rechargeable battery, do not use it for children alone. It must be carried out under the supervision of an adult. It must be kept away from flammable materials during charging. The guardian should not leave the aircraft outside the surveillance range during charging.
  - Do not short circuit or squeeze the battery to avoid explosion.
  - The power supply terminals should not be taken out of the model, and the terminals should not be short-circuited; do not short-circuit, disassemble or throw the battery into fire; do not place the battery in high temperature and heat places (such as in a fire or near an electric heating device).
  - The model can only use the recommended charger. Regularly check the charger's wires, plugs, shells and other parts for damage. If you find any damage, stop using it until the repair is complete.
  - The charger is not a toy; the charger can only be used indoors.
  - The battery must be charged and stored after the flight. If not in use, it is recommended to charge the battery at least once every 3 months to avoid over-discharging the battery and permanently damaging the battery.

## Pre-flight environmental requirements:

Please choose an open indoor or outdoor environment without rain and snow and wind force less than Level 4 to fly. Please stay away from people, trees, electric wires, tall buildings, airports and signal transmission towers when flying.

## UAV flight tutorial:

### 1. UAV frequency and gimbal calibration

Put the drone on the horizontal ground and turn on the power, then turn on the remote control power, at this time the lights on the aircraft flashes quickly, the lights on the remote control flashes. Then push up the left joystick of the remote control and pull down, and the remote control "Di" will beep three times. At this time, the front and back lights on the UAV will change from slow flashing before and after to alternate slow flashing, indicating that the pairing is successful. After the linking is successful, it will be automatically calibrated for about 30 seconds, and the gimbal will automatically return to a level state, and the calibration will be successful. (After the second frequency comparison after calibration at the same position, the headlight flashes slowly and then the lamp lights up for a long time to directly enter the star Search state)

### 2. Geomagnetic calibration operation

As the geomagnetic field is easy to be interfered by other electronic devices, which leads to abnormal data and affects the flight. Therefore, it is necessary to calibrate the ground magnetism for the first time. Please follow the steps below to calibrate the ground magnetism and press the remote control (Figure 1) button for 3 seconds, the remote control will emit a "Di" sound, and the drone light will change from slow to fast flashing, then you can calibrate it. Hold the UAV in your hand, press (Figure 2) to slowly rotate clockwise for 3 turns in the horizontal direction, the indicator light on the UAV changes from flash to slow flash, and the remote controller sends out a "Di" sound, indicating that the horizontal Calibration is successful. At this time, it can be carried out in the vertical direction (Figure 3). The nose slowly rotates clockwise for 3 turns downward, the red indicator light on the rear of the UAV slowly flashes and becomes normally on, and the remote controller sends out a "Di" sound to indicate that the calibration is successful.

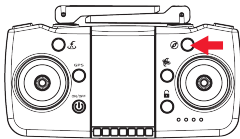


FIG. 1

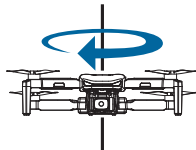


FIG. 2



FIG. 3

### 3. Gyroscope calibration operation ( Must be calibrated before takeoff )

Place the UAV in a horizontal position, press and hold the "gyroscope calibration" button on the remote controller (Figure 4), and press and hold for 3 seconds, the UAV light flashes slowly, and the remote controller sends out a "Di" sound to indicate that the calibration is successful.

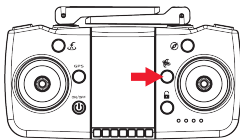
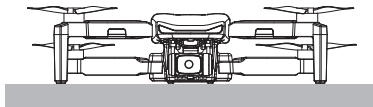


FIG. 4



### 4. Search for GPS signals:

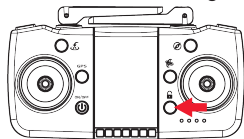


FIG. 5

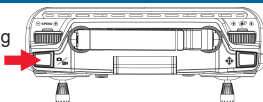
After successful calibration, the green indicator light in front of the UAV flashes slowly, and the red indicator light in the rear is always on. Put the UAV in a horizontal position for about 30 seconds. The green indicator light in front of the aircraft changes from slow flash to constant light, the satellites on the remote control display more than 8 satellites, and the remote controller sends out a "Di" sound to indicate that the star Search is successful. At this time, press and hold the "unlock button" of the remote controller (Figure 5) to fly.

### Special note:

1. When the calibration of the UAV is completed, place the UAV horizontally in a wide outdoor place, the green light in front of the aircraft flashes slowly, wait for about 30 seconds for the green light in front of the UAV fuselage to become normally on, and send out "Di" to indicate that the star Search is successful.
2. Please take the drone to an open area for calibration.
3. The longitude and latitude of each region are different, New customers must calibrate the geomagnetism for the second takeoff. For example, the difference between Guangdong and Beijing is 28 degrees. Therefore, non-calibration shows that forward and backward flight is not a straight line flight. Calibration is for the accuracy of the barometer's height measurement.

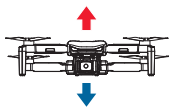
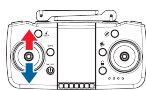
## Remote controller Video picture shooting instructions:

Video recording  
Photograph

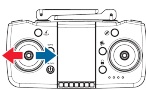


Remote control video key, gently press to take photos, long press to record.

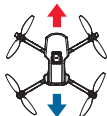
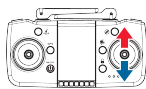
## Manipulation method



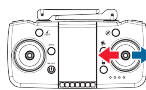
When the left lever (accelerator) is pushed upwards, the speed of the main wind blade increases and the aircraft goes up.  
When the left lever (accelerator) is pushed downward, the speed of the main wind blade slows down and the aircraft descends



When the left lever (rudder) is pushed to the left, the aircraft head turns to the left, when pushed to the right, and the head turns to the right.



When the right lever (rudder) is pushed up, the aircraft goes forward.  
When the right lever (rudder) is pushed down, the aircraft goes backward.



When the right lever (rudder) is pushed to the right, the aircraft flies to the right.  
When the right lever (rudder) is pushed to the left, the aircraft flies to the left.

**Warning:** When the Drone is 30 cm away from the ground, the Drone will become unstable due to the influence of its own blade eddy current, which is called "ground effect reaction". When the height of the Drone is lower, the effect of ground effect reaction is the largest.

## Operation description of remote control function:

### 1. UAV unlock

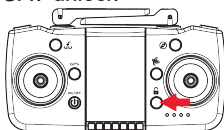


FIG. 1

When the drone has successfully positioned itself outdoors, the drone needs to be unlocked to start, press and hold the remote control. Press the "unlock" button (Figure 1). At this time, the four propellers rotate at the same speed, indicating that the unlocking is successful. When the unlocking is completed, the UAV can operate and fly normally.

### 2. speed gear adjustment

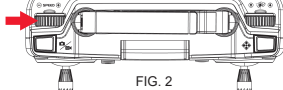


FIG. 2

The take-off speed gear of the UAV defaults to slow gear. When the UAV flies in the air, the speed gear can be adjusted through the knob (Figure 2). Rotate the speed knob to the right. The remote controller "drops" twice indicates that it enters the second gear. When the remote controller is rotated, the remote controller "drops" three times indicates that it enters the third gear high-speed mode. Otherwise, the left turn indicates that it enters the second gear and the first gear low-speed.

### 3. Camera angle adjustment

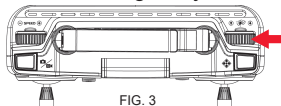
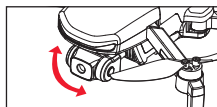


FIG. 3



The angle of the camera can be adjusted through the camera adjustment knob (Figure 3) during UAV flight. Knob right turn camera angle decreases, knob left turn camera angle increases

### 4. headless mode

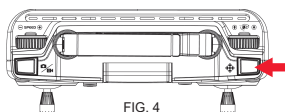


FIG. 4

Place the UAV directly in front of the remote controller, with the nose of the UAV facing forward, calibrate and take off horizontally after frequency alignment, press the headless mode button (Figure 4) during flight, and the remote controller "drops" three times, indicating that the UAV enters headless mode. At this time, The UAV's front indicator lights flash slowly. To exit headless mode, press the headless mode button again, and the remote control drops to exit headless mode.

Make sure that the operator is facing the same direction from beginning to end, in the same direction as the aircraft took off. At this time, no matter which direction the aircraft faces, the operator dials the direction rocker to retreat, v and the aircraft will retreat towards the operator.

## 5. One-press for return

When the drone is flying in the air, press this function button on the remote control (Figure 5), it will automatically rise or fall to a height of 50 meters, return straight and land to the take-off location.

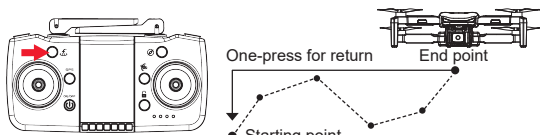


FIG. 5

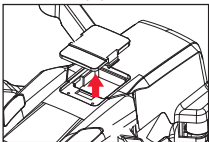
### Special suggestion:

it is suggested that when the LED light in front of the body flashes slowly during Drone flight, the remote control makes a "Di" sound, it indicates that the Drone has insufficient power. When the Drone power is insufficient or loses the signal during flight, the aircraft will automatically enter the return mode and fly back according to the original route.

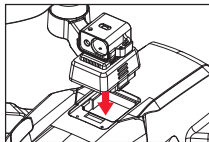
## Obstacle avoidance function (need to be purchased separately)

### Precautions for the installation and use of obstacle avoidance equipment:

**Use note:** Obstacle avoidance equipment must be installed before turning on the power of the drone, otherwise it will damage the obstacle avoidance equipment and affect normal use.



1. Take out the cover for the installation position of the obstacle avoidance equipment



2. Insert the obstacle avoidance equipment as shown in the picture



The obstacle avoidance equipment will rotate left and right when it is running. Do not manually interfere with it to prevent it from rotating when it is rotating, otherwise the equipment may be damaged.



When turning on this product, do not touch the obstacle avoidance equipment, because the obstacle avoidance equipment is in the power-on working state, unauthorized touching will cause the obstacle avoidance equipment to not work normally, and it will most likely damage the obstacle avoidance equipment function.

When removing the obstacle avoidance equipment, the power of the drone must be turned off before dismantling, otherwise it will damage the obstacle avoidance equipment and affect normal use.

### Obstacle avoidance function and working principle

(Please fly in outdoor GPS mode, the indoor space is too small to affect the flight status.)

The product is turned on by default in low-speed mode (50%). The drone has 360° obstacle avoidance function, such as switching to high-speed mode (100%). Because the aircraft is flying fast, the system has not received the instruction to stop the flight. The aircraft may have hit an obstacle, and the UAV's obstacle avoidance function automatically fails.

### Use and effect of obstacle avoidance function

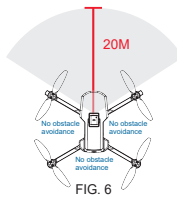


FIG. 6

When the drone is flying, as shown in Figure 6, 20 meters in front of the drone is the effective scanning range of the obstacle avoider, and the scanning path is about 90° between the two arms in the flying direction.

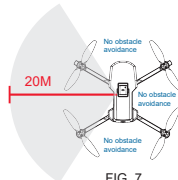


FIG. 7

When the drone flies on the left side, as shown in Figure 7, 20 meters from the left side of the drone is the effective scanning range of the obstacle avoider, and the scanning path is about 90° between the two arms on the left side. The same applies to the scanning range of the shock absorber flying backwards or right.

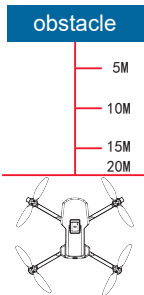


FIG. 8

The position where the UAV stops flying is determined by the flight speed, when the UAV is flying at full speed in low gear. After the drone scans the obstacle at 20 meters, it starts to calculate and issue a stop flight instruction. The stop position of the drone is determined by the flight speed (the faster the flight speed, the closer the distance between the drone and the obstacle, and the opposite flight. The slower the speed, the farther the distance between the drone and the obstacle)

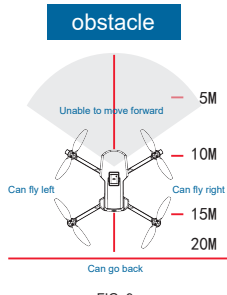


FIG. 9

When the UAV encounters obstacles and hover in the scanning range of 20 meters in the flying direction, the UAV cannot continue to fly in that direction, and can continue to fly after avoiding the obstacles or to other obstacles within 20 meters. In the direction of flight.

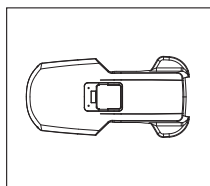
When the UAV takes off, there is an obstacle within 20 meters of the forward direction. The UAV cannot fly in this direction. It can continue to fly after avoiding the obstacle or fly in the direction of other obstacles within 20 meters.

6. If the UAV encounters an obstacle during GPS intelligent return, the obstacle avoidance device will rise to a safe height again after scanning the obstacle before returning.

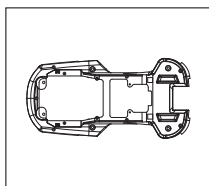
## Resolution guide for common problems

Problems	Causes	Resolutions
Drone indicator is flashing while not respond when operating	<ol style="list-style-type: none"> <li>1. Unsuccessful Drone GPS souxing</li> <li>2. Low power of Drone</li> </ol>	<ol style="list-style-type: none"> <li>1. Move the Drone to an empty place to perform souxing again</li> <li>2. Charging the battery</li> </ol>
Drone blades turn but can't fly	<ol style="list-style-type: none"> <li>1. Low battery</li> <li>2. Blade deformation</li> </ol>	<ol style="list-style-type: none"> <li>1. Charging the battery</li> <li>2. Replacement of blade</li> </ol>
The drone was badly shaken	Blade deformation	Replacement of blade
Can't keep the drone steady after fine-tuning to the bottom	<ol style="list-style-type: none"> <li>1. Blade deformation</li> <li>2. Poor motor</li> </ol>	<ol style="list-style-type: none"> <li>1. Replacement of blade</li> <li>2. Replacement of motor</li> </ol>
After impact, uncontrolled flying of Drone when start again	Triaxial acceleration sensor overbalances due to impact	Make the Drone standstill for 5-10 seconds

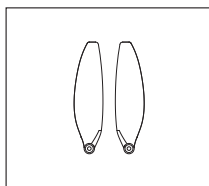
## Accessories



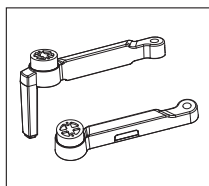
Upper cover



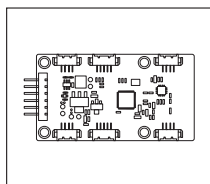
Lower lid



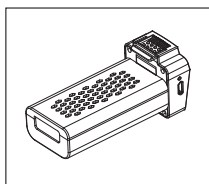
paddle A/B



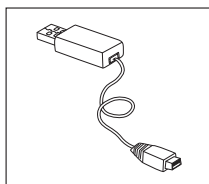
Arm components



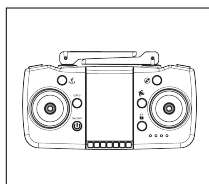
Receiving board



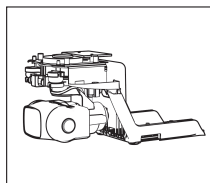
Battery



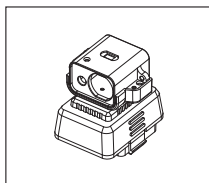
USB charging cable



Remote control



Gimbal camera components



Obstacle avoidance equipment