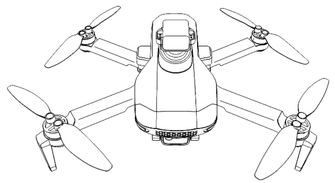
AGES: 14+

GPS QUADCOPTER AERIAL PHOTOGRAPHY UAV

OPERATING INSTRUCTIONS



Safety precaution:

1. In order to ensure the electromagnetic environment of aeronautical radio stations (stations): it is prohibited to use the center of the airport runway as the center of the circle, various model remote controllers are used in a radius of 5000M. During the period when the relevant state departments issue radio control orders, In the area, the model remote control should be stopped as required. Choose to fly in warm, sunny and windless weather, do not fly in overheating, When flying under severe weather conditions such as excessive cold, strong wind, and heavy rain, choose indoor or outdoor open spaces, and fly with people, pets, Keep a safe distance from overhead wires and other obstacles, confirm that no other use the same frequency, and do not let the aircraft out of sight;
2. After the aircraft is started, Please do not touch 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.)
3. During and after use of the aircraft, the battery and motor will generate high temperature, please do not touch it to avoid the risk of burns
4. Do not look directly at the beam of the light-emitting diode, so as not to affect the eyes.

Tips::
It is recommended that beginners practice flying at a low altitude in an open and unmanned place for about 3 days, and then fly to a high altitude after being familiar with flying.

PRE-FLIGHT PREPARATION

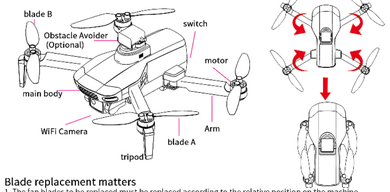
Flight environment

Indoors: Wide space away from obstacles, crowds or pets.

Please keep the drone within sight and away from obstacles, high voltage cables, trees and people during the flight.

Outdoors: sunny and calm weather is preferred.

Do not fly in extreme environments such as heat, Cold strong winds or heavy rain.



Blade replacement matters

1. The fan blades to be replaced must be replaced according to the relative position on the machine. Fan A needs to be installed at the position of A, and fan B needs to be installed In the B position, If the fan blade is replaced incorrectly, it will not be able to control.
2. When flying, the wind blade A keeps rotating clockwise, and the wind blade B rotates counterclockwise.

1. IMPORTANT NOTES

This product is not a toy. Incorrect use will cause damage, please follow the instructions before using this product. Do not disassemble this product yourself. Otherwise, the manufacturer is not responsible for any damage caused.

2. SAFETY INSTRUCTIONS

Warning: To fly in a safe area or away from others, do not control the aircraft over crowded people. When the remote control aircraft is flying, due to the pilot's operation error or wireless interference, accidents and failures re likely to occur, and it is easy to cause damage or injury to the crowd.
Prohibited: When flying especially indoor and outdoor, please keep away from obstacles, this product is suitable for indoor and outdoor flight (wind level no more than 4), please choose one, where there are no obstacles, crowds and pets, passers-by, such as: heating source , heat source, wire or electronic power supply will not be subject to collision landing, entanglement, resulting in fire, electric shock and resulting in loss of life and property.

WARN:
It is mainly suitable for people over 14 years old. It is difficult to start learning.
It is recommended to ask an experienced pilot to guide.

Remote control function keys and name description

Instructions for use of remote control handle / mobile phone holder

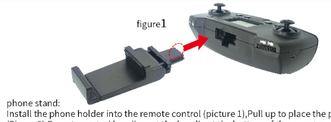


figure1

phone stand:
Install the phone holder into the remote control (picture 1),Pull up to place the phone (Figure 2).Remote control handle: put the handle at the bottom of the remote control
Pull down from the neutral position and rotate into place.

figure 2
figure 3

Remote control charging instructions

Insert the charging plug of the charging cable into the charging socket of the remote control, and then connect the USB charger plug to the computer or mobile phone charger to charge
The green charging indicator lights up when charging, and turns off when fully charged.
(Charging time is about 30 minutes)

Instructions for Charging UAV Lithium Battery

Figure 1

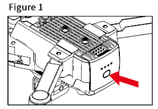
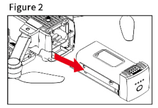


Figure 2

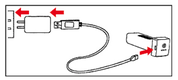


Remove the drone battery:
Pull back to remove the battery as indicated by the arrow in Figure 2 above.

Note: If the battery is plugged into the charger, the blue light on the battery is not flashing, and it does not need to be recharged.

Battery charging steps:

Insert the USB Android head into the battery, connect the USB charger plug to the computer or mobile phone charger to charge, when charging The blue light on the battery flashes, and the blue light stays on when fully charged.
(Charging time is about 200 minutes)



Introduction of Remote Control Indicators

1. Turn on the red and green lights, and the blue lights flash alternately

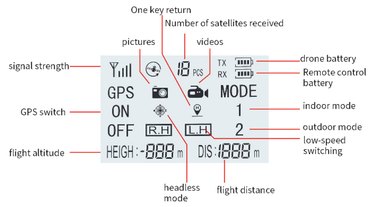
2. Only the blue light will be on after the frequency pairing (power indicator light, always on) the aircraft is in Outdoor mode GPS receiving satellite signal status

3. When the green light is on, it means the outdoor model of the aircraft can fly normally

4. Turn off GPS outdoor mode, the red light is on Indicates that the aircraft can fly normally in indoor mode

5. The green light is on during charging, and green when fully charged lights off

Remote Control Screen Icon Detailed Explanation



Warning: Please understand this diagram carefully before operation, and master the operation of the remote control function of the drone!

OBSTACLE AVOIDANCE

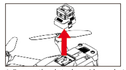
Installation Guide

Precautions for installation and use of obstacle avoidance equipment:
1. Take out the cover of the installation position of the obstacle avoidance device
2. Insert the obstacle avoidance device as shown in the picture

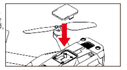
A. The obstacle avoidance equipment must be installed before turning on the power of the drone, otherwise the obstacle avoidance equipment will be damaged and normal use will be affected.

3. Operation of obstacle avoidance equipment: Do not prevent it from rotating when rotating, otherwise it may cause equipment damage.

B. 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 fail to work normally, and the function of the obstacle avoidance equipment will be damaged.



C. When removing the obstacle avoidance equipment, the power supply of the drone must be turned off first, and then removed, otherwise the obstacle avoidance equipment will be damaged and normal use will be affected.



1. Remove the obstacle avoidance device as shown in the picture
2. Install the cover for the installation location of the obstacle avoidance equipment

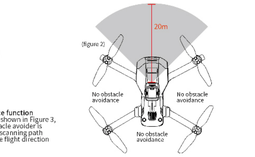
Obstacle avoidance function and working principle

A. The working conditions of the obstacle avoider
Turn on the default low gear mode, the drone has a 360° obstacle avoidance function, such as switching to high high-speed mode, because the aircraft is flying fast, the system has not received the stop flight command, the drone may have hit an obstacle, no The man-machine obstacle avoidance function is automatically disabled.

LOW setting gear mode has obstacle avoidance function
Short press this key to switch the speed

HIGH setting gear mode has Obstacle avoidance function automatically disabled
Short press this key to switch the speed

The working principle of B obstacle avoider
(Fig. 1) A pulse signal is sent from the transmitting port, and the pulse signal is folded back after encountering an obstacle within the scanning range. After encountering an obstacle within the scanning range, the pulse signal is folded back. The receiving port receives the turn-back pulse signal through a series of operations. After getting the distance between the drone and the obstacle, send a stop forward command to the drone, so as to achieve the effect of avoiding obstacles!

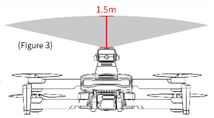


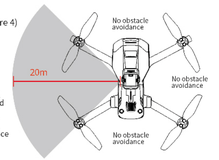
C. Use and effect of obstacle avoidance function
1. (Figure 2) When the drone is flying, as shown in Figure 3, the effective scanning range of the obstacle avoider is 20 meters in front of the drone, and the scanning path is about 90° between the two arms in the flight direction scanning!

OBSTACLE AVOIDANCE FUNCTION

2. (Figure 3) When the drone takes off, as shown in the figure, 1.5 meters above the drone is the effective scanning range of the obstacle avoider.

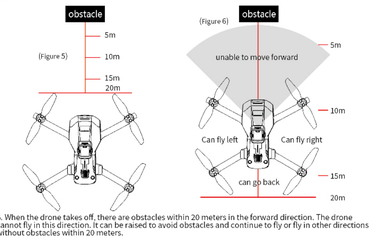
3. (Figure 4) When the drone is flying on the left side, as shown in the figure, the left side of the drone is 20 meters away to avoid obstacles The effective scanning range of the machine is set, and the scanning path is about 90° between the two arms on the left. Fly backward or fly right to the obstacle avoidance scan range.





4. (Figure 5) The position where the drone stops flying is determined by the flight speed, when the drone is flying at full speed in a low gear, After the drone scans the obstacle at 20 meters, it starts to calculate and sends a stop flight command. 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, the opposite flight. The slower the speed, the farther the distance between the drone and the obstacle)

5. (Figure 6) When the drone encounters an obstacle and hovers within the scanning range of 20 meters in the flight direction, the drone cannot continue to fly in this direction. Fly in the direction of no obstacles within the meter.



6. When the drone takes off, there are obstacles within 20 meters in the forward direction. The drone cannot fly in this direction. It can be raised to avoid obstacles and continue to fly or fly in other directions without obstacles within 20 meters.

7. If the drone encounters an obstacle during GPS intelligent return, the obstacle avoider will scan the obstacle and rise to a safe height again before returning.

basic flight

Basic flight steps:
1. The remote control is paired with the drone, and the drone is initialized.
2. Geomagnetic calibration. (No need to calibrate again at the same location)
3. Connect the mobile phone to Wifi and open the mobile app
4. After the aircraft is calibrated, wait for the stars to be collected, usually 60-80 seconds (more than 9 stars) to unlock the flight.

Preflight Environmental Requirements

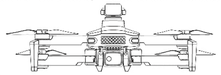
Please choose an open room or an outdoor environment with no rain and snow and wind less than level 4 to fly. Please stay away from crowds, trees, wires, Tall buildings, airports and cell towers, etc.

Drone Flight Tutorial

Indoor Mode Tutorial:

1, UAV pair frequency
Insert the drone battery into the drone battery slot in the correct direction, place the drone on a level ground and turn on the power, then turn it on again The remote controller is powered on. At this time, the remote controller beeps three times in a row, and the indicator light of the aircraft is always on, indicating that the frequency is successful.

2. Gyro calibration operation
Place the drone in a horizontal position, press and hold the "gyro calibration" button on the remote control (above), press and hold for 3 seconds, the drone's light flashes quickly and becomes long on, and the remote control emits a "Di" sound, Indicates that the calibration was successful.



3. Turn on indoor mode
Press and hold the GPS switch button for 3 seconds(Figure 2), the remote control will "Di", and the indoor mode will be turned on. At this time, the rear light of the drone flashes slowly.

Outdoor Mode Tutorial

1. UAV pairing
Insert the drone battery into the drone battery slot in the correct direction, place the drone on a level ground and turn on the power, then turn it on again
The remote controller is powered on. At this time, the remote controller beeps three times in a row, and the indicator light of the aircraft is always on, indicating that the frequency is successful.
2. Gyro calibration operation
Place the drone in a horizontal position, press and hold the "gyro calibration" button on the remote control (Figure 1), press and hold for 3 seconds, the drone's light will flash quickly and become long on, and the remote control will make a "Di" sound , indicating that the calibration is successful.

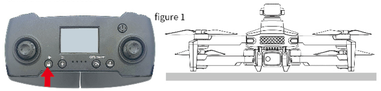


figure 1

3. Calibrate Geomagnetic Operation
The geomagnetism is easily interfered by other electronic devices, which will cause abnormal data to affect the flight. For the first use, geomagnetism calibration must be performed.
Follow the steps below to calibrate the geomagnetism:
After long pressing the button on the remote control (Figure 2) for 3 seconds, the remote control will emit a "Di" sound, and the drone indicator will flash quickly. At this time, the calibration can be performed. Hold the drone in your hand, and press (Figure 3) Slowly rotate 3 circles clockwise in the horizontal direction. The indicator light on the front of the drone changes from fast flashing to long on, and the remote controller emits a "Di" sound, indicating that the horizontal calibration is successful. At this time, it can be carried out (Fig. 4) in the vertical direction, and the nose of the machine is slowly rotated clockwise for 3 circles. After the drone, the indicator light flashes quickly and turns into a long light, and the remote control emits a "Di" sound to indicate that the calibration is successful.

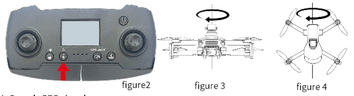


figure2
figure 3
figure 4

4. Search GPS signal:
After the geomagnetic calibration is completed, place the aircraft on the horizontal plane, and the aircraft will automatically search for satellites. At this time, the front and rear indicators of the aircraft flash alternately slowly until they become solid lights. Press "unlock button" (picture 5) on the remote control to fly.

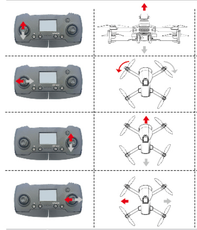
SPECIAL NOTE:
1. Please ensure that the take-off environment is an outdoor open space, and the satellite signal is greater than 9 satellites before take-off.
2, The latitude and longitude of each region is different, new customers must calibrate once, such as Guangdong and Beijing The difference is 28 degrees, so the non-calibration performance is that forward and backward are not straight flight, the calibration is in order to measure the height of the barometer accurately.

figure5

Remote control video/picture shooting instructions

During the flight, you can use the photo or video on the remote control to record the flight The image captured by AVIC, press the camera button, the camera will take a photo The remote control prompts "Di", the mobile APP prompts "ka", press to record Press the button, the camera starts recording, and the controller prompts "Di, press again. This button exits the recording mode.

Control method:



When the left joystick (throttle) is pushed up, the main fan speed increases The aircraft is raised. When the left joystick (throttle) is pushed down, the speed of the main fan is slowed down Aircraft descends.

When the left joystick (rudder) is pushed to the left, the nose of the aircraft will Turn left, push right, the nose of the aircraft will turn right.

When the right joystick (rudder) is pushed up, the aircraft moves forward. When the right joystick (rudder) is pushed down, the aircraft goes backwards.

When the right joystick (rudder) is pushed to the right, the aircraft turns to the right flight. When the right joystick (rudder) is pushed to the left, the aircraft moves to the left flight.

warning:
When the drone is at a position of 30m from the ground, the drone will be affected by its own blades and become unstable, which is called "ground effect response". The lower the drone height, the greater the impact of the ground effect response.

Remote control function operation introduction

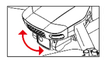
1. Unlock the drone (Figure1)

2. Speed gear adjustment (Figure 2)

The take-off speed gear of the drone is slow by default. When the drone is flying in the air, adjust the speed through the fast and slow speed gear (Figure 2).
Briefly press the speed button, the remote control will return to the low gear with a "Di" sound.

3. Camera angle adjustment

(Figure3)



During the flight of the drone, the camera angle can be adjusted through the camera adjustment knob (Figure 3). Turn the knob to the left to decrease the camera angle, Turn the knob to the right to raise the camera angle.

4. Headless Mode
(Figure4)

Put the drone directly in front of the remote, with the nose of the drone facing forward, calibrate the drone horizontally and take off after the frequency alignment. During the flight, press the key of headless mode (Figure 4) on the remote controller "Di Di Di", three times, it means that the drone enters the headless mode, and the indicator light of the drone flashes slowly at this time. If you want to exit the headless mode, press the button of the headless mode again, and the remote control will make a beep, and the headless mode will be exited. model.

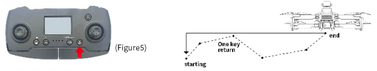
Please make sure that the operator is facing the same direction from beginning to end, which is the same as the direction when the aircraft takes off. At this time, no matter which direction the aircraft is facing, if the operator moves the direction stick to move back, the aircraft will move back towards the operator.

5. One key return home
After Fuwei turns on the GPS function and searches for satellites to calibrate and take off, the drone flies farther or the drone is in low power state, press the one-key return button, the drone will flywill return to the original take-off position.

Return:
The aircraft has a return-to-home function. If the home point is successfully recorded before takeoff, the communication signal or connection between the remote controller and the aircraft will be lost. When the home button is pressed, the aircraft will automatically return to the home point and land to prevent accidents. The aircraft has three different ways to return to home, namely: one-key return, no signal return, and low battery return.

Return point:
During takeoff or flight, when the GPS receives more than 9 stars for the first time, it will be recorded as the current position of the aircraft as the home point.

One key return home:
When the GPS signal is good (the number of satellites is greater than 9), you can press the "One Key Return" button on the remote control to start the aircraft to return. The aircraft can avoid obstacles, and then press the "One Key Return" button on the remote control to exit the return home, and the user can regain control.


(Figure5)

RUNAWAY RETURN:
When the GPS signal is good (the number of satellites is greater than 9), the compass works normally, and the aircraft successfully records the home point, if the remote control signal continues to be interrupted for more than 6 seconds, the flight control system will take over the control of the aircraft and control the aircraft to fly back to the recorded return point. If the remote control signal is restored during the flight, the return-to-home process will continue, but the user can cancel the return-to-home through the remote control return button and regain control of the aircraft.

⚠ Notes for return flight:
1 During the auto-return process, the aircraft cannot avoid obstacles.
2 When the GPS signal is poor or the GPS is not working, it is impossible to return home,
3 If the aircraft does not receive the satellite display, and the remote control signal continues to be interrupted for more than 6 seconds, the aircraft will not be able to return to the home. Descend until the landing is locked.

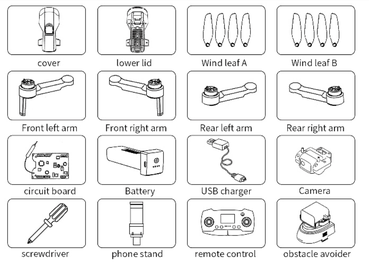
LOW BATTERY RETURN:
The low-voltage indicator light of the aircraft will flash slowly, and the aircraft will automatically return to 30 meters from the take-off point (the aircraft will return to the take-off point after low power). nearby, the height and distance of the aircraft will be limited to 30 meters) When the voltage of the aircraft is lower than the safe value, it will automatically land to the home point.

⚠ **Reminder: The aircraft is in a low power return-to-home state, and the remote control cannot cancel the return-to-home.**

Common problem solving guide:

QUESTION	SOLUTION
After the aircraft is powered on, the indicator light keeps flashing rapidly	The aircraft is in the gyroscope detection state, please place the aircraft on a stationary plane or on the ground
After the aircraft takes off, Can't hover, leans more to one side	Place the aircraft on a flat or level ground and re-calibrate the gyroscope
The aircraft vibrates violently	The fan blades are deformed and need to be replaced
The aircraft cannot be unlocked, and the indicator light flashes quickly	The battery voltage of the aircraft is too low, please fully charge the battery
Unsteady flight in strong wind	Wait for less than 4-5 gusts before flying
Can't hover, won't circle	The geomagnetic calibration is unsuccessful, re-calibrate the geomagnetism

Parts List



FCC WARNING

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.

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

NOTE: 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 dealer or an experienced radio/TV technician for help.

To maintain compliance with FCC’s RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.