Zhongli SG105MAX DRONE Bluetooth Intercom User Manual

Contents

Zhongli

Zhongli SG105MAX DRONE Bluetooth Intercom

Specifications

- **Model:** SG105 MAX
- **USB:** 5V1-2A
- **Charging Time:** 40 minutes

Product Usage Instructions

Important Notices and Safety Guidelines
You are welcome to purchase our products. To make it easier and more convenient for you to use this drone, please read this manual carefully before operating it. At the same time, please keep this manual properly for future adjustment and maintenance reference.

Important Notice Safety Precautions

- Aircraft part names: fan B, HD camera, main body, fan A, motor

Blade Replacement Matters

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

Remote Control Button Function Introduction

- (roller) Camera up and down
- LCD left joystick
- LCD parameters: Number of satellites, remote control battery, GPS switch, high-speed flight altitude, aircraft battery, low-speed flight distance, speed key
- Short press to take photo/ long press to record switch, right joystick

- Briefly click geomagnetic calibration, long press the obstacle avoidance function switch for 5 seconds
- GPS switch, charging indicator, GPS indicator
- Key to return, short press once to calibrate the gyroscope, long press the UAV light switch for 5S
- Power Indicator, Geomagnetic Indicator

Charge Instructions

- **Charge the aircraft battery:** Take out the USB charging cable and connect the battery interface to the charging head to the USB end. It is recommended to use a 5V1-2A adapter for charging.
- **Charge the remote:** The red light is on when charging and off after completion. Charging time is about 40 minutes. It is recommended to use a 5V1-2A adapter for charging.

Precautions
Aircraft pairing: Insert the battery correctly, power on the aircraft, and remote control. Pay attention to flight height and distance. – Airplane mode switch: Switch between default GPS mode and optical flow mode for proper drone operation.

FAQ

- **Q: How do I charge the drone battery?**
  A: Take out the USB charging cable and connect it to the battery interface for charging using a 5V1-2A adapter.
- **Q: What should I do if the blades need replacement?**
  A: Ensure replacement fan blades A and B are in their corresponding positions on the drone to maintain control.
- **Q: How do I calibrate the gyroscope?**
  A: Short press once on the key to calibrate the gyroscope as indicated in the remote control button function introduction.

Important Notices and Safety Guidelines

You are welcome to purchase our products. To make it easier and more convenient for you to use this drone, please read this manual carefully before operating it. At the same time, please keep this manual properly for future adjustment and maintenance reference.

Important Notice

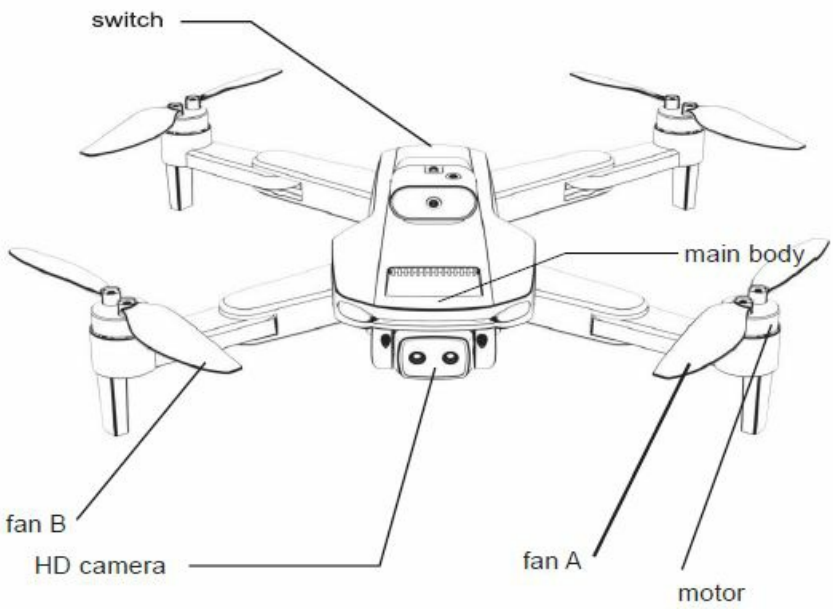
- This product is not a toy, but a precision device that integrates mechanical, electronic, aerodynamic, high-frequency emission, and other professional knowledge. It needs to be assembled and adjusted correctly to avoid accidents. The owner of this product must safely operate the controls; improper operation may cause serious personal injury or property damage.
- This product is suitable for people who have experience in operating model drones and who are not less than 14 years old.
- In case of use, operation, maintenance, and other problems, please contact the local dealer or the relevant personnel of our company. Our company and the seller are not responsible for any loss damage or personal injury caused by improper use or operation.
- The product contains small parts, please keep them out of the reach of children to avoid the danger of accidental ingestion or suffocation.

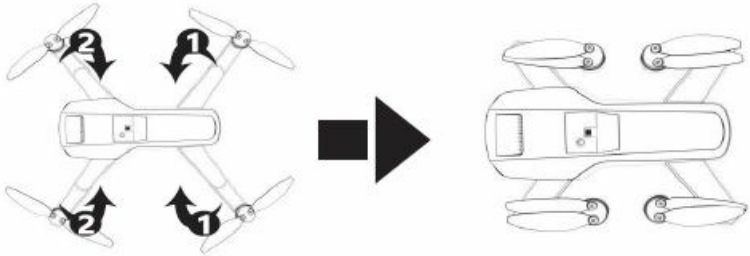
Safety Precautions
Remote-controlled model drones are dangerous goods, so be sure to keep them away from crowds when flying. Improper assembly or damage to the body, poor electronic control, and unfamiliar operation may lead to unpredictable accidents such as damage to the drone or personal injury. Please pay attention to flight safety and understand the responsibility for accidents caused by your negligence.

- **Keep away from obstacles and crowds**
  - Remote control drones have uncertain flight speed and status when flying, which is potentially dangerous.
  - When flying, you must stay away from crowds, high-rise buildings, high-voltage power lines, etc., and avoid flying in bad weather such as wind, rain, thunder, and lightning. The debugging and installation of the drone must be operated in strict accordance with the operating instructions. Pay attention to keeping a distance of 1-2 meters from the user or other people when the drone is flying, to avoid hitting the head or face of the person when the drone is flying or landing. and the body, etc., causing injury.
- **Keep away from the humid environment**
  - The interior of the drone is composed of many sophisticated electronic components and mechanical parts.
  - Therefore, it is necessary to prevent the drone from getting wet or moisture into the body, to avoid accidents caused by mechanical and electronic components failure. Please use a clean rag to wipe the surface stains during maintenance.
- **Avoid controlling alone**
  Remote control drone control skills are difficult in the early stage of learning. To avoid operating and flying alone, you need the guidance of experienced people.
- **Use this product properly**
  - Please use the original parts of the company for modification or maintenance to ensure the safety of the flight.
  - Please operate and use it within the scope permitted by the function of the product, and shall not be used for illegal purposes other than safety laws.
- **Safe operation**
  1. Please operate the remote control drone according to your own state and flying skills. Fatigue, poor energy, or improper operation will increase the probability of accident risk.
  2. Do not use it near the ear! Misuse can cause hearing damage.
- **Keep away from high-speed rotating parts**
  When the rotor of the drone is rotating at a high speed, please keep the pilot, surrounding people, and objects away from the rotating parts to avoid danger and damage.
- **Keep away from heat sources**
  Remote control drones are made of metal, fiber, plastic, electronic components, and other materials, so try to stay away from heat sources, prevent sun exposure, and avoid deformation or even damage caused by high temperatures.
- **Environmental requirements**
  Discarding this product at will may have an impact on the environment, please properly recycle it according to local laws and regulations.
  To ensure the electromagnetic environment of aeronautical radio stations, it is prohibited to use various models and drones on both sides of the airport runway center, 10 kilometers on each side, 20 kilometers on each end of the runway, and civil aviation routes and routes. In the no-fly areas issued by the relevant state departments, stop using all kinds of models and drones.

1. You are responsible for this aircraft to ensure that it will not cause harm to the personal and property of others.
2. To ensure the requirements of the magnetic environment of the aeronautical radio station. During the period of the radio control order issued by the relevant state departments, the use of the model remote control should be stopped as required in the area.

aircraft part name



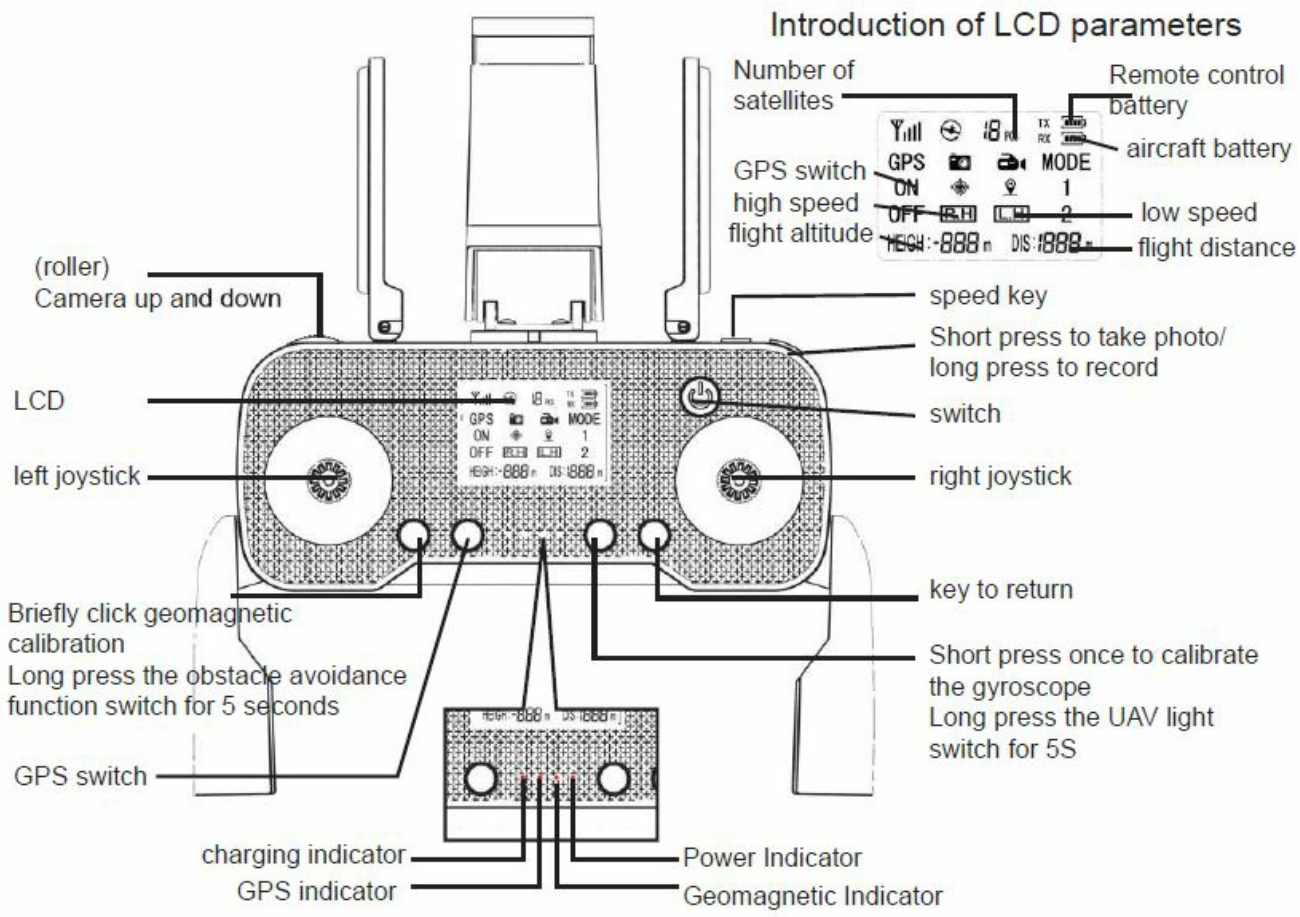


Blade replacement matters

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

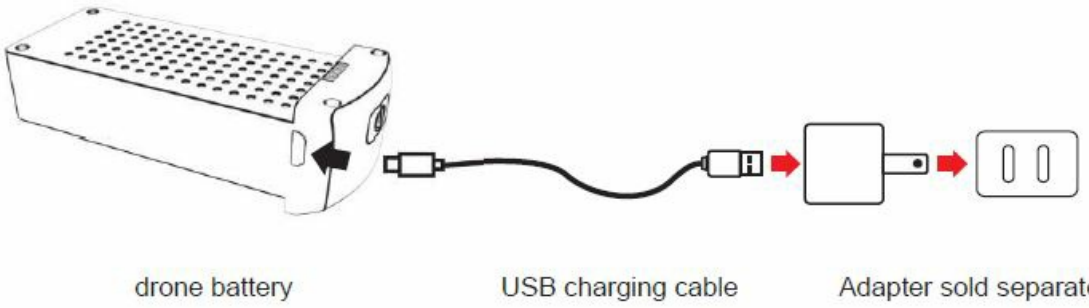
Remote control button function introduction

Introduction of LCD parameters



Charge the aircraft battery

Take out the USB charging cable and connect the battery interface to the charging head to the USB end



Reminder:

- Please correctly insert the plug.
- It is recommended to use a 5V 1-2A adapter for charging.

Charge the remote

The remote control has a built-in battery, the red light is on when charging, and the red light is off after charging is

completed, and the charging time is about 40 minutes.

Reminder: Please correctly insert the plug.

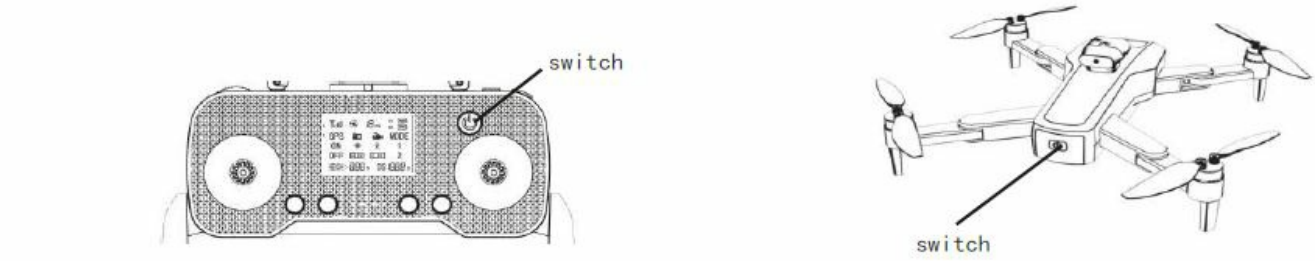
- It is recommended to use a 5V 1-2A adapter for charging.

Precautions

- When charging the rechargeable battery, do not use it for children alone, it must be carried out under the supervision of an adult, and keep away from flammable objects when charging, and the guardian should not leave the model aircraft outside the monitoring range when charging.
- Please do not short-circuit or squeeze the battery to avoid explosion.
- The power 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 a high-temperature, heated place (such as in a fire or near an electric heating device).
- The model can only use the recommended charger. Regularly check whether the cable, plug, shell, and other parts of the charger are damaged. If any damage is found, stop using it until the repair is complete.
- The charger is not a toy; the charger should only be used indoors.
- The battery needs to be charged and stored after the flight. If it is not used, it is recommended to charge the battery at least once every 3 months to avoid over-discharge of the battery and permanent damage to the battery.

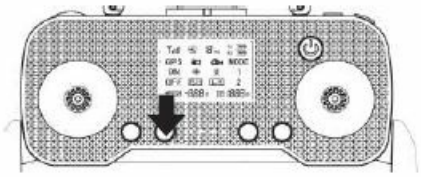
aircraft pairing

1. Put the battery of the aircraft into the battery slot of the aircraft in the correct direction, place the aircraft on level ground, first press the battery switch briefly, then press and hold the battery switch for 5 seconds, the aircraft light flashes slowly, indicating that the power-on is successful.
2. Turn on the power of the remote control, hear a beep, and the power indicator of the remote control is always on. The code is completed.



Airplane mode switch

Note:
The product is powered on by default GPS mode (MODE2). In the case of less than 8 satellites, the drone can only unlock the motor but cannot take off. If you want to take off, you need to switch the optical flow mode before the satellite positioning is completed. Press and hold the GPS button for 5 seconds (the switching method is shown on the right), after the switch is successful, the remote control will make a beep, and the drone will not have all GPS-related functions at this time. Pay attention to the flight height and distance to avoid losing the drone!

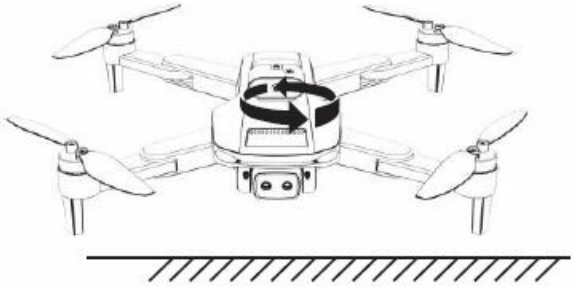


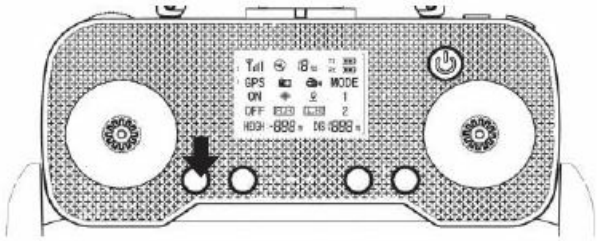
Note
After GPS positioning is completed, it cannot be switched to optical flow mode. If you want to switch, you need to turn off the drone and the remote controller and restart.

Compass Calibration

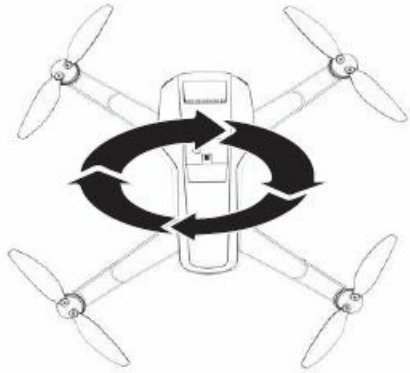
Compass calibration consists of two steps:

- **step 1:**
  After the aircraft is successfully paired, place it on a flat surface, press the geomagnetic calibration button to turn the aircraft as indicated in the picture, rotate it horizontally for about 3 circles, and the remote control beeps until the indicator light stays on after the aircraft.





- **Step 2:**
  Put the nose of the aircraft up and “upright”, as shown in the figure below, rotate the fuselage about 3 times, and the remote control beeps until the front indicator of the aircraft is always on, and the compass calibration is completed.



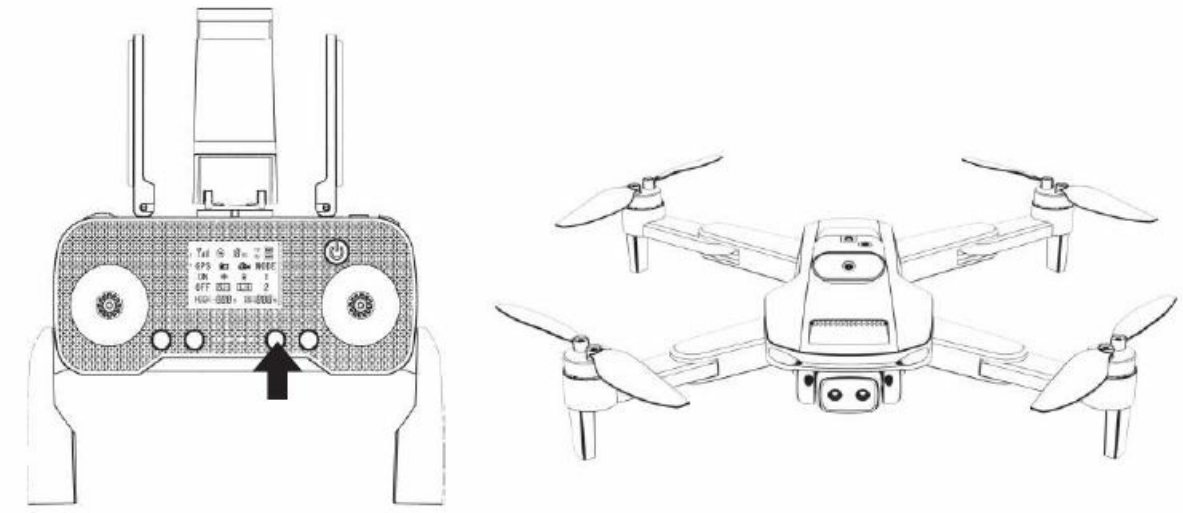
Note:
If the compass of the drone is messed up and the drone is unlocked without calibration, the drone will be enabled to protect the program and cannot take off.

Note: The best distance is 1 meter above the ground during calibration

- Do not calibrate in areas with strong magnetic fields, such as magnetic mines, parking lots, construction areas with underground steel bars, etc.
- During calibration, do not carry ferromagnetic substances, such as keys, mobile phones, etc. with you.
- Do not calibrate near large pieces of metal.

Gyro Calibration

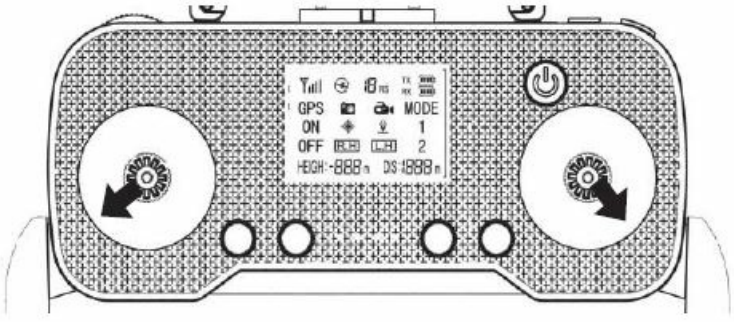
After the code alignment is successful, put the aircraft on the horizontal ground, and press the remote controller briefly as shown in the following figure to give a “drip” sound. At this time, the front and rear indicator lights flash quickly, and the gyroscope enters the calibration state. When the indicator light changes from flash to constant light, the calibration is completed.



- When calibrating the gyroscope, be sure to place the aircraft on a level surface, otherwise the flight will be affected.

Star search:
After the compass calibration is completed, the aircraft is placed flat on the horizontal surface, the aircraft will automatically search for stars and the rear indicator light of the aircraft will change from slow flashing to steady light. Push the stick to 45° in the lower left corner, and at the same time push the right stick to 45° in the lower right

corner to unlock and take off.



- **Reminder:** Please ensure that the take-off environment is open and the satellite signal is greater than 7 satellites before take-off.
- In GPS mode, the drone will not be able to take off until the GPS positioning is completed.

Basic Flight

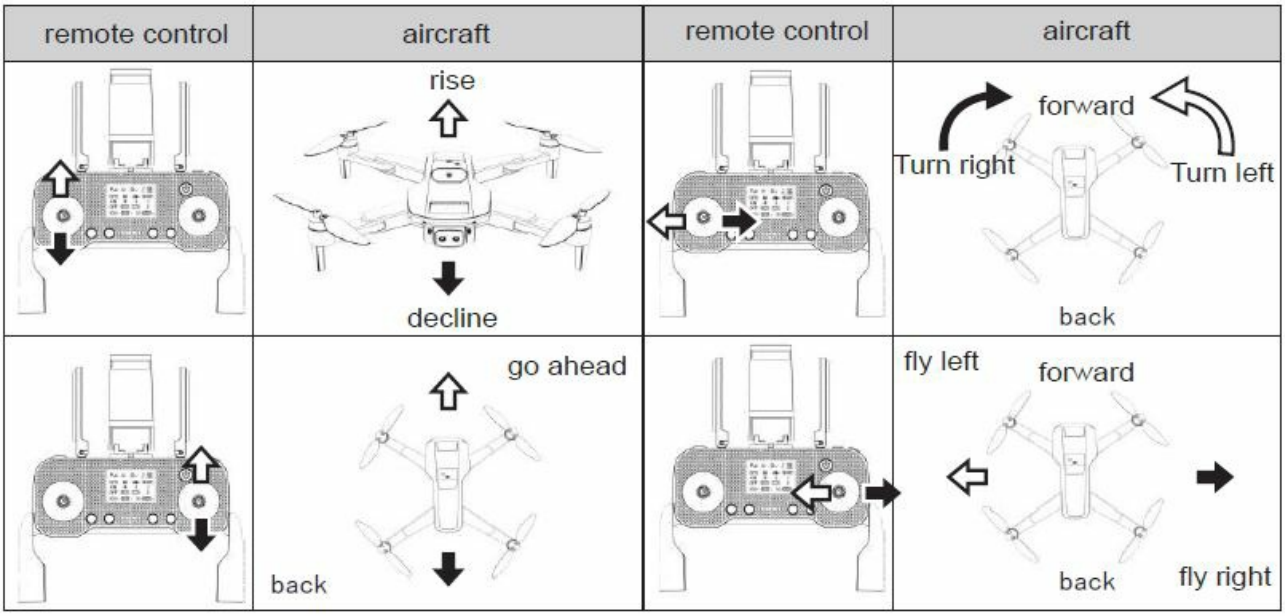
basic flight steps

1. Pair the remote controller with the aircraft, and the aircraft is initialized.
2. Compass calibration.
3. Connect the mobile phone Wi-fi to the aircraft and open the mobile APP.
4. After the gyroscope of the aircraft is detected, wait for the collection of stars, usually 60-80 seconds (more than 7), until the indicator light of the aircraft is always on.
5. Push the left joystick of the remote control to 45° in the lower left corner, and push the right joystick to 45° in the lower right corner. After unlocking, the aircraft starts.

pre-flight inspection

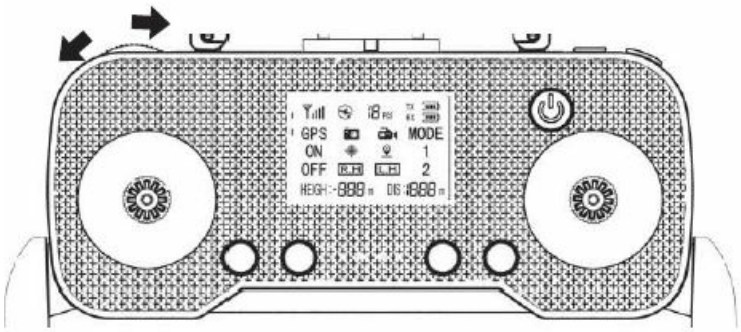
1. Check whether the batteries of the remote controller and aircraft are fully charged.
2. Whether the fan blades are installed correctly.
3. Whether the compass is calibrated successfully.
4. Whether the star received is normal (more than 7 stars).
5. Whether the motor starts normally after the power is turned on and unlocked.

flight control method



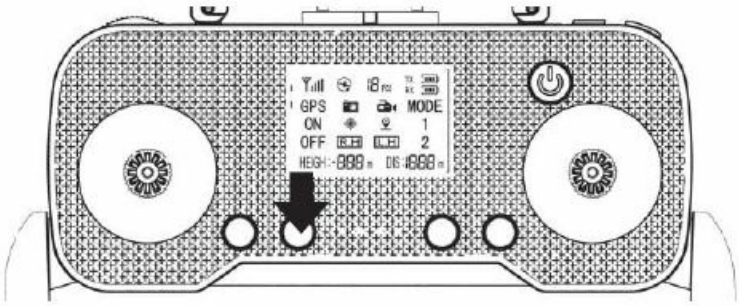
Servo function

When flying, you can even turn the wheel to adjust the camera angle.



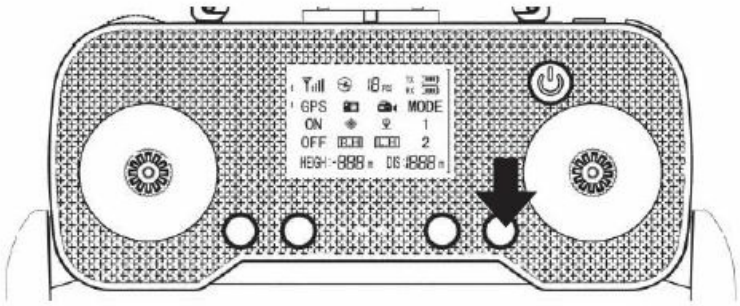
GPS switch function

It is recommended to use GPS mode in outdoor open areas to calibrate the geomagnetic search for satellites, which can be used for long-distance flight operations. If the satellite cannot be searched indoors, turn off the GPS switch and fly in the open space indoors. (Note: After turning off the GPS function, the flight does not have a series of GPS functions such as low-power return, one-key return, etc. Please pay attention to the flight distance and altitude when using it)



One-key return function

After the GPS function is turned on outdoors and the satellite search is calibrated to take off, the drone will fly far away or the drone is in a low-power state. Press the one-key return button, and the drone will return to the initial take-off position.

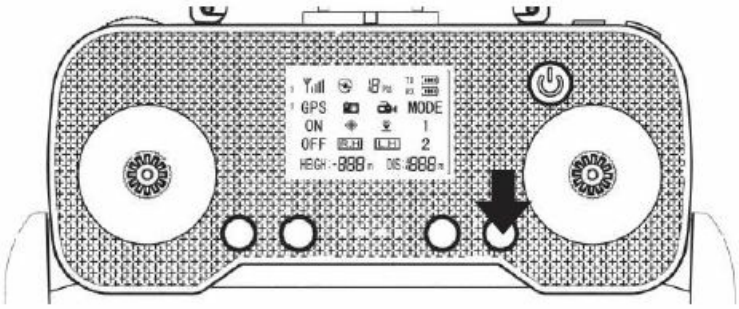


return flight
The aircraft has a return-to-home function. If the home point is successfully recorded before takeoff, the aircraft will automatically return to the home point and land when the communication signal between the remote control and the aircraft is lost or when the return button is pressed to prevent accidents. There are three different ways to return the aircraft, which are:

1. One-key return
2. Out-of-control return
3. Low battery return.

Home point:
When the GPS receives more than 7 stars for the first time during takeoff or flight, it will record the current position of the aircraft as the home point.

One key return
When the GPS signal is good (the number of satellites is greater than 7), you can start the aircraft to return home by pressing the button below on the remote control. The process of returning home is the same as that of the uncontrolled return. The difference is that when the aircraft returns and lands, the user can use the joystick to control the aircraft to avoid obstacles. Press the ” ” button to exit the return home, and the user can regain control.



runaway return
The GPS signal is good (the number of GPS satellites is greater than 7), the compass is working normally, and after 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. 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:

- During the auto-return process, the aircraft cannot avoid obstacles.
- When the GPS signal is poor or the GPS does not work, you cannot return home.

- If the aircraft does not receive satellites and the remote control signal continues to be interrupted for more than 6 seconds,

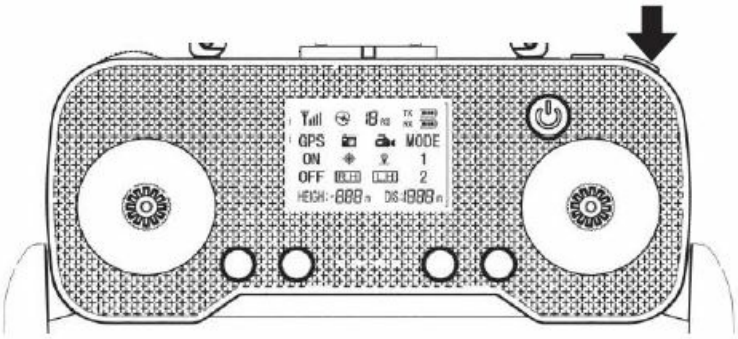
The aircraft will not be able to return home, so it will descend slowly until it locks on landing.

low battery return
The indicator light will flash slowly after the low voltage of the aircraft. At this time, the aircraft will automatically return to around 20 meters from the take-off point.

- When the voltage of the aircraft is lower than the safe value, it will automatically land at 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.

Photo/Video
During the flight, you can use the camera or video on the remote control to record the images captured during the flight. Short press the camera button on the remote control, and the camera takes a photo, long press the camera button on the remote control, and the camera starts recording, and long press the button again. Exit recording mode.



Common troubleshooting

	question	Solution
1	Mode 1 The drone motor does not ro tate, the aircraft cannot take off, and t he light flashes	If the GPS function is not turned off, the drone enables the pr otection program and long presses the GPS switch for 5 seco nds to turn off the GPS function
2	Mode 1 after the GPS function is turn ed off. The drone motor can turn, but the drone cannot take off. The light fl ashes quickly and slowly	Recalibrate geomagnetism after reboot
3	After taking off in mode 1, the drone keeps flickering and cannot hover, flo ating around	The ground is too smooth and the environment is too dark, wh ich will cause the optical flow lens to be unsteady. Please fly i n a place with good light and no reflection on the ground.
4	After taking off in mode 2, the drone keeps flickering and cannot hover, an d it floats around. The remote control keeps switching between mode 1 an d mode 2	GPS positioning is not good, too much interference. Please ta ke it to an open, unobstructed, high-voltage wire-free place
5	Mode 2: The motor of the drone can rotate, but the aircraft cannot take off , and the light flashes quickly and slo wly	Recalibrate geomagnetism after reboot
6	The drone vibrates violently	The fan blade is deformed or damaged, and the fan blade needs to be replaced

GPS function and precautions for use

The working principle of GPS function and precautions for use

- After the UAV and the remote control are successfully paired, the GPS module on the UAV will be connected to the satellite.
- After the satellite accuracy reaches the positioning standard, the remote control displays MODE 2, that is, the GPS positioning is completed, and the UAV remembers the take-off point.

When taking off in GPS mode, if the signal is interrupted, it is generally divided into the following two situations:

1. The signal of the UAV and the remote control is disconnected: When the signal of the UAV and the remote control is interrupted for more than 6 seconds due to over-distance or signal interference, and the GPS signal of the UAV is normal, the UAV will turn off the signal and return to the take-off point.
2. UAV GPS signal interruption: When encountering large obstructions, signal interference, etc., it may directly cause the UAV to fail to receive satellite signals, the UAV GPS signal is interrupted, the UAV cannot locate, and the signal cannot pass through the interruption. Return to home or one-key return to return to the take-off point.

The influence of temperature and environment on the use of UAV lithium battery:

1. The temperature has a certain influence on the lithium battery: the best use temperature of the battery is 20 ° C

~ 30 ° C, the low-temperature environment will reduce the activity of lithium ions, make the battery discharge capacity weaker, and shorten the use time.

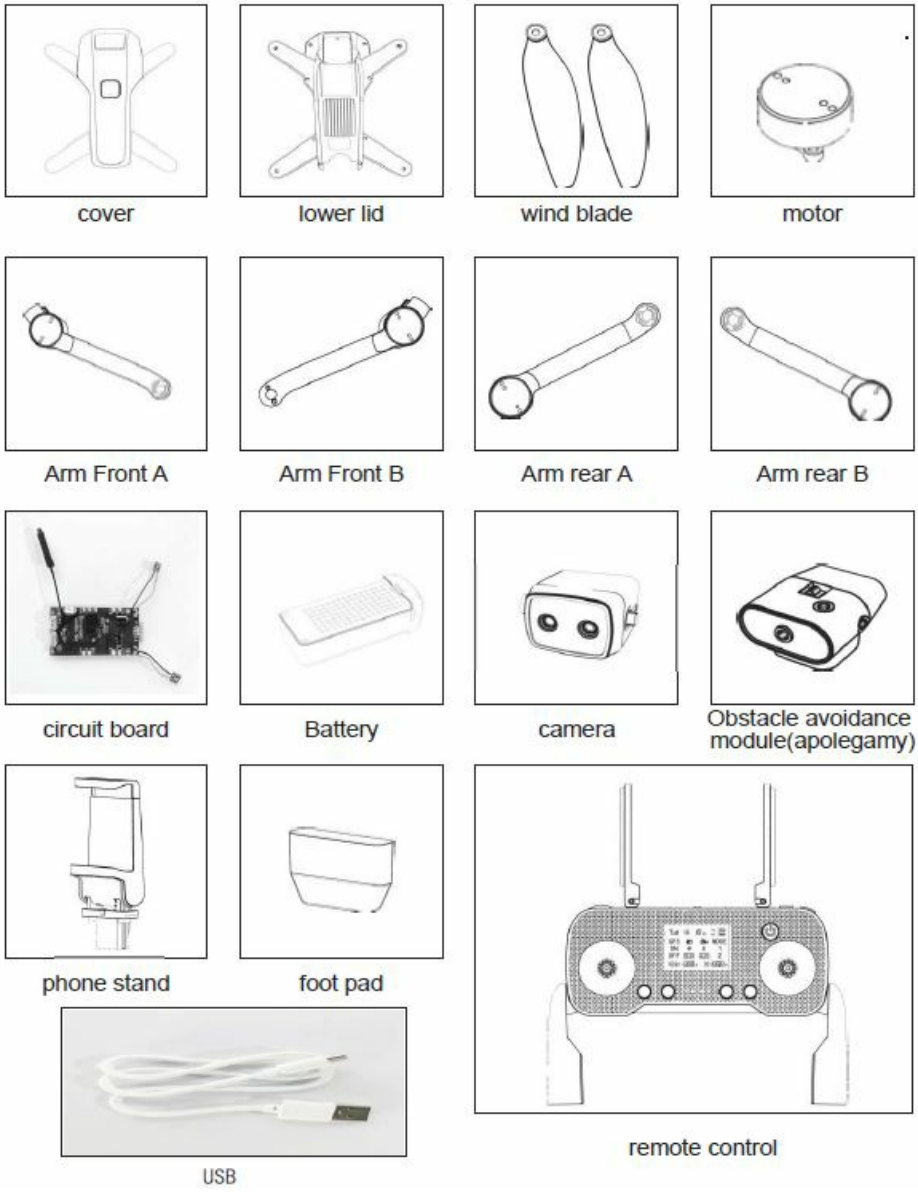
2. The influence of the flight environment on the battery life. When the UAV encounters a strong wind or is flying against the wind, the resistance will lead to fast power consumption and shorten the battery life. Therefore, before flying outdoors, please pay attention to the weather and the surrounding environment. If the temperature is low and the wind is strong or you are flying against the wind, be careful not to fly high and far, and return to the flight ahead of time when the battery power is sufficient to avoid being unable to complete the return flight due to insufficient power halfway.

Safety Guidelines

To avoid unforeseen circumstances, the following safety guidelines should be followed when flying a drone:

-  Get a good GPS signal before taking off
-  Keep both hands to control the aircraft at all times
-  Check the accessories and the appearance of the body to ensure that the device is fully charged
-  Fly at a safe altitude and avoid canyons
-  Fly at a safe height and avoid buildings with large height differences such as tall buildings
-  Avoid places with large signal interference such as signal towers and wire towers
-  Flying in open space and line of sight Never fly over people, animals, or moving vehicles for safety reasons
-  Stay awake and do not fly after drinking
-  Comply with local laws, and check relevant laws before flying

Parts List



FCC STATEMENT

NOTE:
This equipment has been tested and found to comply with the limits for a Class B digital device, under 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 by 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 the receiver.
- Connect the equipment to 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

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.

RF Exposure Information
The device has been evaluated to meet general RF exposure requirements. The device can be used in portable exposure conditions without restriction.

Documents / Resources

	Zhongli SG105MAX DRONE Bluetooth Intercom [pdf] User Manual SG105MAX DRONE Bluetooth Intercom, SG105MAX, DRONE Bluetooth Intercom, Bluetooth Intercom, Intercom

References

- User Manual