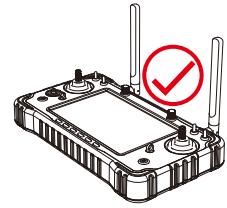
8.0 Prepare the Remote Control

- **Be sure to check whether the remote control has sufficient power before use.**
- **Before use, please check whether the antenna is placed as required, and the best effect has been obtained.**
- **For the first use, please make sure that the firmware has been upgraded to the latest version.**

Position the antennas so that the two antennas are parallel to each other and vertically upward; the antenna cannot be parallel to the remote control.

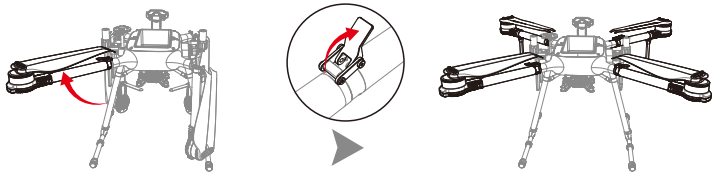


The antenna is unfolded and vertically upward

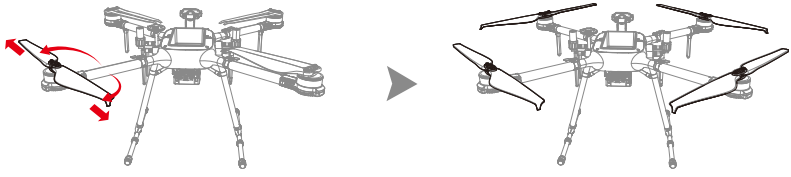
9.0 Prepare the Aircraft

9.1 Unfold the arms, Propellers, and rotable LIDAR

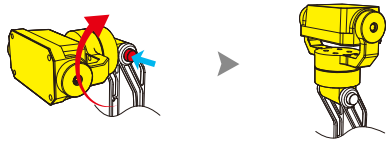
1) Unfold the arm up and lock the arm with the lock, then pull the lock inward until the arm is locked.



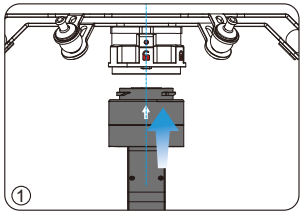
2) Follow the red arrow to rotate the propellers outward and straighten.



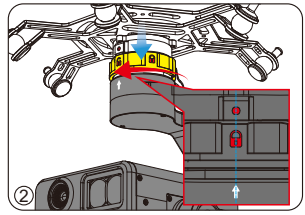
3) First press the button indicated by the blue arrow, and rotate upwards along the red arrow to display the rotable LIDAR.



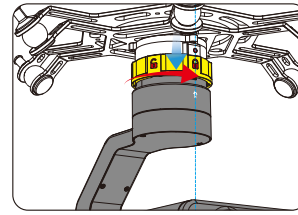
9.2 Install Camera with Gimbal



First turn the latch on the gimbal mount to the unlock logo to align the small dots on the mount, and then align the gimbal camera into the mount (the white arrow pointer on the gimbal camera aligns the small dots on the mount and the unlock logo on the latch).



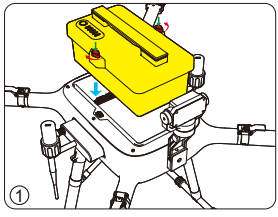
Press down on the latch on the gimbal mount and rotate it to the locking position (align the lock logo on the latch with the small dots on the mount).



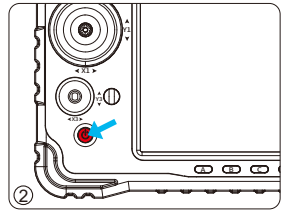
How to take it out: Hold the camera gimbal with one hand, ress down on the latch on the gimbal mount and rotate it to the unlock position (the unlock logo on the latch aligns with the small dot on the mount), and then pull the gimbal camera down.

10.0 Prepare for Flight

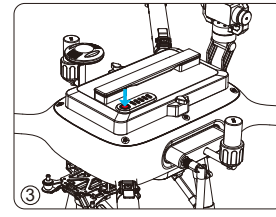
10.1 Startup and connection of aircraft and remote control



1) Install the battery alignment into the battery warehouse, then press the lock cufflinks and rotate 90 degrees outward as shown by the red arrow.



2) Press and hold the power button to turn on the remote control.



3) Press the power button once, and then press and hold the power on button for 3~5 seconds to turn on the aircraft.

4) After powering on, put the aircraft stationary in a horizontal position, the indicator light of the aircraft changes from fast flashing to slow flashing and the buzzer stops sounding, and the App shows that the drone is connected, indicating that the remote controller and the aircraft have been successfully connected.

Tip: When connecting, if the status light of the aircraft keeps flashing rapidly, it indicates that the aircraft is abnormal. Please check the system notification message of the remote control APP.

10.2 Remote control connection network

The remote control can be networked in four ways:

1) Connect to 5GHz wifi networking (this remote control only supports WiFi in the 5GHz band).

2) Network cable is used through the WAN port of the remote control.

3) Connect the wireless card tray through the OTG port of the remote control to access the Internet.

4) Share the network through the phone Bluetooth.

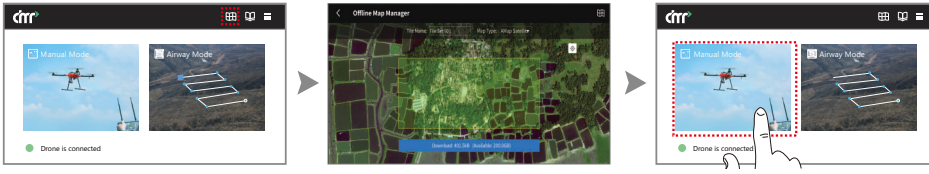
10.3 Run DMRGCS App and download map

1) Click the DMRGCS icon on the home screen of the remote control system.

2) Click the icon " " in the upper right corner of the App main interface to enter the offline map management interface → Drag and zoom the map with two fingers on the screen, place the map area to be downloaded in the yellow box, and then click " Download " to download the offline map of the area;

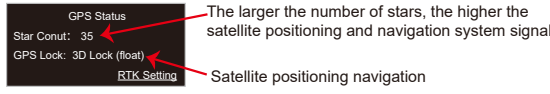
3) After downloading, click " < " in the upper left corner of the APP to return to the main interface → Select flight mode: normal flight, aerial shooting, etc. Please click"Manual Mode"(Manual flight) on the left to enter the normal flight interface; For mapping operations, please click on the right "Airway Mode" (Route flight) interface.

The following diagram takes Manual Mode (ordinary flight) as an example.



10.4 GPS (Satellite Positioning) Status Instructions

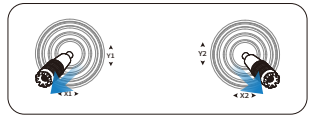
Click the GPS (satellite positioning) status icon in the status bar at the top of the remote control APP to expand the GPS (satellite positioning) status pop-up window to view the GPS (satellite positioning) status, the larger the number of satellites, the stronger the signal of the current satellite positioning and navigation system.



10.5 Unlock the motor

Note: Motor unlocking can only be achieved via the remote control joystick, before unlocking, make sure that the number of satellites is greater than 12, the horizontal speed and vertical speed are ess than 0.2m/s, when the aircraft is placed horizontally, the roll and pitch angles are less than 5 degrees, and the arrow of the aircraft heading icon on the map interface is the same as the direction of the actual aircraft.

After binding successfully, put the left and right sticks at the lowest position simultaneously and hold until the motor rotates.
Once unlocked, the motor will rotate. then , quickly release the stickers .



10.6 Lock the motor

After the aircraft lands on the ground, pull the throttle stick to the lowest position and hold it for more than 2 seconds, and the motor will stop rotating.

Throttle stick

11.0 Flight control

⚠NOTES

1) Confirm that the signal of the satellite positioning and navigation system is received (check the status on the APP interface).

2) Please switch flight mode before takeoff. We recommend taking off in GPS mode (check the current flight mode on the APP interface, Loiter Mode)

3) Please unlock the motor before take-off.

11.1 Takeoff

Perform a combination stick as shown in the figure below to start the motor, and then slowly push the throttle stick upward to take off the aircraft.

11.2 Landing

Slowly pull down the throttle stick until the aircraft lands on the ground. After the aircraft lands on the ground, pull the throttle stick to the lowest position and hold it for more than 2 seconds, and the motor will stop rotating.

11.3 Loiter Mode(GPS Mode)

After the satellite positioning of the aircraft, dial the 3-position switch SW2 of the remote controller to the midpoint position, and return the throttle stick to the midpoint, and the aircraft will enter the Loiter mode(GPS mode) to fly.

Attentions:

1) In Loiter mode(GPS mode), altitude holding, location fixing and braking functions are available, and the flight speed is lower.
2) If the satellite positioning signal is poor or there is no satellite positioning signal, the aircraft will automatically switch to the attitude mode (AltHold Mode).
3) After switching to AltHold Mode(manual mode), location fixing is invalid.

11.4 Sport Mode

When the satellite positioning status of the aircraft is normal, dial the 3-position switch SW2 of the remote controller to the upper end, and the aircraft will enter the sport mode flight.

Attentions:

1) In the Sport Mode, there are Altitude hold, fixed point, brake function, the flight speed is faster.
2) If the satellite positioning signal is poor or there is no satellite positioning signal, the aircraft wil automatically switch to the attitude mode (AltHold Mode).
3) After switching to AltHold Mode(manual mode), location fixing is invalid.

11.5 Alt Hold Mode(Manual Mode)

Dial the 3-position switch SW2 of the remote controller to the lower end, and the aircraft will enter the Alt Hold Mode(Attitude mode) to fly.

Attentions:
In the attitude mode, the flight attitude is completely controlled by manually, there is no height, fixed point function, the flight speed is fast, please use caution.

11.6 Auto mode (automatic cruise)

The aircraft can only enter the automatic cruise in the Loiter mode(GPS Mode, the remote controller's 3-position switch SW2 is dialed to the midpoint position).

1) Route editing

First light the icon" "at the map window of the APP Airway Mode interface; then lit the icon" " to select the route to be added; and then light the icon" " ,click on the map window to add the route; The last click the icon" " to save the route to the plan list or click the icon" " to start this directly flight missions on the route.

2) Route flight

Setting up the route parameters

Light the icon" "at the map window of the APP Airway Mode interface to list of the mission plan. → Click on the name of the mission plan route that requires operation on the plan list to load the plan route to the map window (such as Figure 11.6-1); → Light the icon "" progress open mission settings, Set the mission altitude, the speed,the margin; Light the icon " " to expand the camera settings, set the parameters of the surveying and mapping cameras; Light the icon" " to expand the safety settings, set the disconnected protection method, complete the action, climb behavior, return height, etc;

Execution route flight task

Click the icon " " in the lower right corner of the map window. → Click "Confirm" in the confirmation take-off point window. → Click the icon " " on the right side of the recommended scheme in the selection scheme bullet window or choose another option and click the icon " " on the right. → Click "Confirm" in the bullet window to confirm the selected plan → Click "Start Self-inspection" in the preparation of the flight bomb window → Click "Confirm" in the reminder window after confirming the safety of the surrounding environment. After the upload of the mission route is completed, the aircraft will begin to perform the flight mission of the route (such as Figure 11.6-2); after the mission is completed, the aircraft will automatically perform the set completion action.

Tip: During the course of the rout flight, the remote control joystick cannot control the aircraft, and the aircraft can be controlled only after the task is completed.

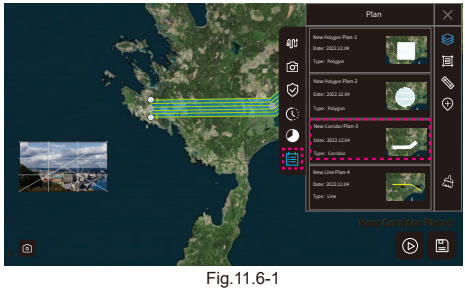


Fig.11.6-1

Fig.11.6-2

Note: During the rout flight, please keep monitoring and control of the aircraft throughout the whole process. According to the information and data displayed on the remote control screen combined with naked eye observation, hold the flight attitude of the aircraft throughout the process. If the attitude of the aircraft is abnormal, please abort the cruise operation in time and control the landing or return of the aircraft.

Suspension of automatic cruise operation steps:

First dial the 3-position switch SW2 of the remote controller to the upper end or lower end, then dial back to the midpoint position to make the aircraft hover. After stable hover, short press the RTL mode button in the lower right corner of the remote controller to make the aircraft enter the RTL mode or slowly pull down on the throttle stick to land the aircraft on the spot, During the landing, the stick was used to control the aircraft to avoid obstacles and make it land safely.

11.7 RTL Mode(Auto Return)

The aircraft is equipped with auto return function, and the auto return function triggering methods are mainly categorized into user -initiated triggering, aircraft low battery triggering, and uncontrolled triggering (loss of communication signals between the remote control and the aircraft). The aircraft has successfully recorded the Home point and in the case of good positioning service, when the auto return function is triggered, the aircraft will automatically fly back to the Home point and land.

Active Trigger: During the flight, short press the return(RTL mode) button of the remote control, and the aircraft will automatically enter the automatic RTL(return to home) mode; After the return is completed, it will automatically exit the return mode.

Horizontal distance between aircraft and Home point >20m

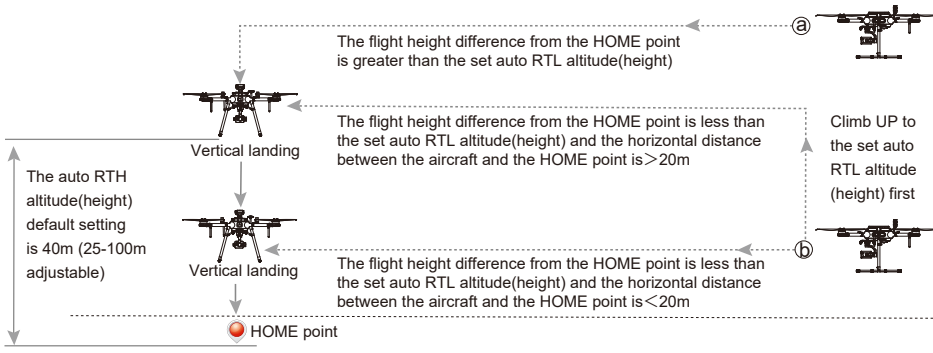
a. When the aircraft flight height is higher than the set RTL Height, the aircraft will maintain the current altitude and fly back horizontally to the top of the Home point , then landing vertically.

b. When the aircraft flight height is lower than the set RTL Height, he aircraft will climb vertically to the set RTL hight and fly back horizontally to the top of the Home point , and then landing vertically.

Horizontal distance between aircraft and Home point <20m

a. When the aircraft flight height is higher than the set RTL Height, the aircraft will maintain the current altitude and fly back horizontally to the top of the Home point , then landing vertically.

b. When the aircraft flight height is lower than the set RTL Height, the aircraft will maintain its current altitude and fly back horizontally to the top of the Home point , then landing vertically.



Notes:

1) The default setting of the RTL Height is 40m (25-100m isadjustable), pleaseset it according to the actual flight environment.

2) When the aircraft enters RTL mode(auto return home) flight, please do not perform any other operations.

3) When the aircraft loses the signal of the remote controller, it will automatically enter the runaway return.

4) When the GPS(satellite positioning) signal is abnormal or the GPS(satellite positioning) module is not working, the RTL mode(auto return home) flight cannot be realized, please manually control the landing.

5) During the the actively-triggered RTL mode(auto return home) flight process, you can press the RTL mode button again to exit the RTL mode flight.

6) During the out-of-control return to home process,after the remote control communication signal returns to normal, the return flight process will continue, but it can be canceled by flipping the 3-position switch SW2 to switch the flight mode.

7) If the aircraft is landing speed too fast when the height is lower than 15 meters during the return landing process, you must manually push up the throttle stick slightly to slow down the aircraft's descent speed to ensure the aircraft's safe landing.

11.8 Low Voltage Protection

When the aircraft battery voltage is too low, the aircraft will automatically land from the current position. During the landing, you can control the throttle and direction.

12.0 End Flight

1) Manual landing RTL mode (return flight) landing or low voltage landing.

2) After the aircraft has landed, turn off the battery power of the aircraft first, and then turn off the power of the remote controller.

13.0 Gimbal Control

The three-axis stabilization gimbal provides a stable platform for the camera, so that the camera can capture stable images even when the aircraft is flying at high speed.

You can control the gimbal quickly back to horizontal forward or Straight down quickly through the App, or you can control the Pitch angle and yaw angle of the gimbal through the remote control small joystick (X_3 , Y_3).

13.1 Back to horizontal forward/Straight down

Click the icon in the lower right corner of the DMRGCS App camera window interface to realize the camera gimbal to quickly back to horizontal forward (the camera lens viewing angle is facing the front of the aircraft);

Click the icon in the lower right corner of the DMRGCS App camera window interface to quickly adjusted for straight down (the camera lens viewing angle facing the aircraft directly below).