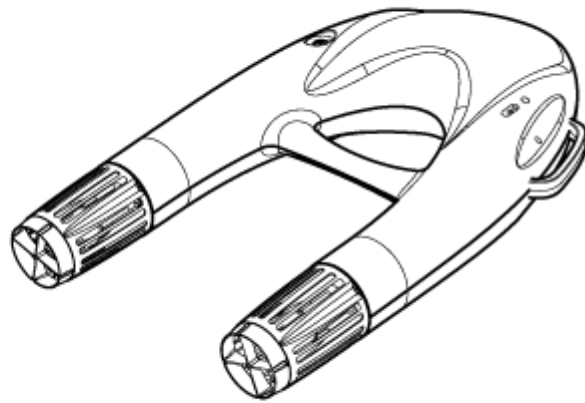


H3 HOVER ARK

User Manual



SHENZHEN HOVERSTAR FLIGHT TECHNOLOGY CO., LTD

To Our Customers:

Dear users welcome to the H3 Hover Ark marine rescue robot device. This product integrates the control technology of an unmanned aerial device and water robot device, and intelligently locates the victim as an alternative or to complement traditional rescue speedboats and lifebuoys. It has prominent features of high rescue efficiency and low rescue or rescuer risk and can cope with all treacherous water rescue environments.

The control system of this product is integrated into the Hover ARK body, and the log-off function allows the ARK to automatically return to the return-point should remote control signal be lost, visual sight lost or cannot be usually controlled. To fully understand ARK's performance, usage and maintenance methods, please read this user manual in detail.

Technical specifications in this user's manual are subject to change will not be informed. The picture of the manual is for reference only. Please refer to the actual product.

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01: Precautions for use:

For your safe and efficient use of this product, please read the following information carefully.

1. Ensure that the battery is fully charged before each use.
2. To push the speed throttle to a minimum before unlocking the ARK.
3. DO NOT Put fingers or debris in the propeller areas of the ARK as sudden and severe injury or damage may occur.
4. If the Ark is indicating a low battery (red light indicator is blinking), it must be stopped and recharged as soon as possible.
5. When the ARK is remotely controlled to the vicinity of the victim, it is recommended to slow down to prevent the victim from being hit by the ARK.
6. The ARK is an auxiliary rescue device, which cannot guarantee the success of the rescue, it is suggested that trained water rescue professionals are always present in the event of an ARK deployment.
7. ARK is prohibited from idling for a long time in a waterless environment.
8. Wash the whole machine with clean, fresh water after each use.
9. The ARK battery is a high-rate lithium-ion battery, which must be charged every 3 months when it is standing idle to protect the battery.
10. Personal casualties or property losses caused by human factors such as improper use shall be borne by the users themselves.
11. Service and maintenance specific to the ARK must be conducted by a qualified professional.
12. Please read the user manual carefully before use and strictly follow the operation rules.
13. PLEASE – it is highly advised that users try the ARK out and become proficient in its use before deploying in a rescue situation. Practice makes perfect.

02: Functional features:

2.1 Know your ARK

This product is a wireless remote-control water intelligent rescue device, Chinese named as airfoil (English named as ARK), Chinese, model no. as H3

2.1.1 ARK Part names

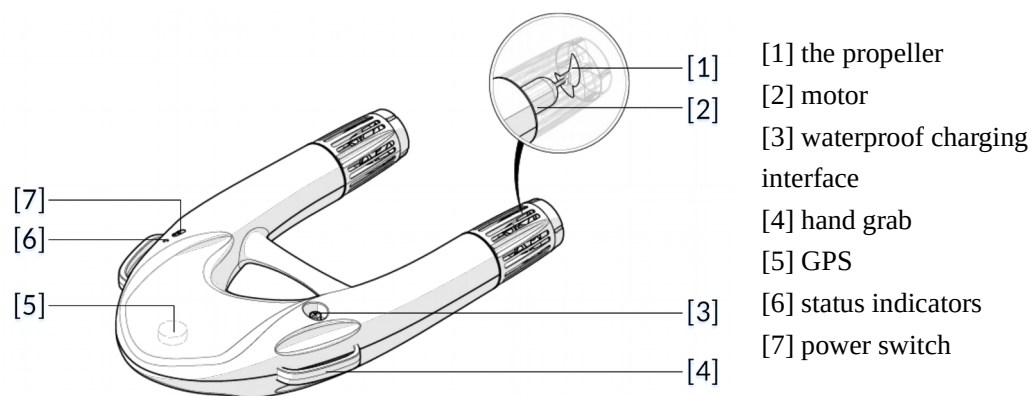


Figure 1

2.1.2 Remote control part names

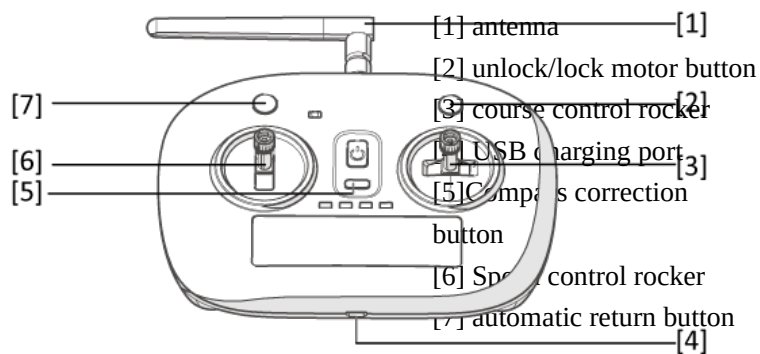


Figure 2

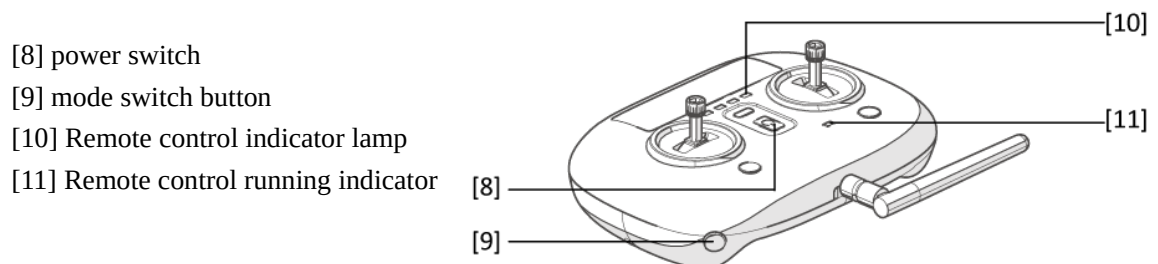


Figure 3

2.2 ARK usage mode

2.2.1 Manual mode

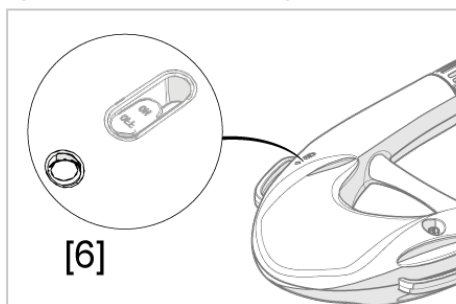
In response to an emergency rescue situation, the ARK may be in a magnetic disturbance area, so can be switched to manual control mode, to ensure the rescue effectively. The course correction function is not used at this time. When the ARK works in an area with magnetic disturbance, to avoid interference of course correction function and effect a rescue, it is necessary to switch to manual operation mode to ensure the rescue work goes smoothly.

2.2.2 System auxiliary mode

The central control system makes real-time adjustments to the direction of the ARK to prevent it from deviation due to external forces. So, the ARK can be in the wind and waves in a smooth straight navigation pattern, and control more conveniently.

2.3 ARK status indicator

The running status indicator light is installed on the right side of the ARK. See ARK [6]



The ARK status indicator indicates the current state of the ARK system. Please refer to table 1 for the ARK system state represented by different flashing lights.

Table1: The status of the system: status indicators

The normal state	
White light normally on	The system lock
purple light normally on	System start correction
purple lights flashing	Compass adjustment
Blue light normally on	Manual control mode
Green light normally on	System assist mode
Yellow light normally on	Autonomous return mode

Warning and abnormal	
Orange lights flashing	Calibration failure
Yellow lights flashing	System lost
Red lights flashing	Low battery alarm
Red lights flash	Serious low-battery alarm

2.4 Automatic return

The ARK has an automatic return function. Press the unlock button, the motor will enter the unlock state, and the ARK will record the return point automatically. When the communication signal between the remote control and the ARK is lost for more than 15 seconds, the ARK will automatically return to the return point to prevent the ARK's loss. The ARK offers two different return modes: one key return and the missing link.

One key back. One key to reverse the course can be activated by the reverse course button with a long press of the remote control. After starting, the ARK status indicator light is always on in yellow light status. During the one-key course reversal option, the user cannot control the ARK. After exiting the one-key course reversal by the one-key course reversal button on the remote control, the user can regain control. After pressing the button on the remote control, the ARK enters the return mode and returns to the return point automatically. At this time, the status indicator light on the ARK is yellow, and the user cannot manually control the ARK. Press and hold the one-key course reversal button again on the remote control, that is, exit the one-key course reversal mode, and restore the manual operation mode.

Lost union return. The GPS signal is good, the compass works normally, and after the ARK successfully records the return point, when the remote control signal is interrupted for more than 15 seconds, the ARK system will take over the control of the ARK and control the return point of the ARK record. At this time, the ARK status indicator is flashing yellow light.

If the radio signal is back on the return trip, the return trip will continue, but the user can pull back from the return flight with a button on the remote.

2.5 The battery

Smart battery features include

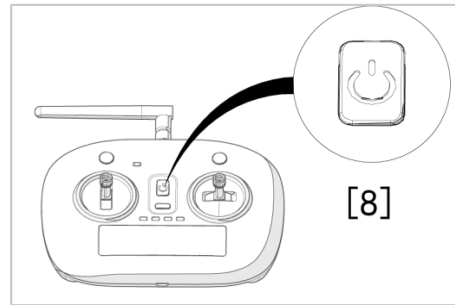
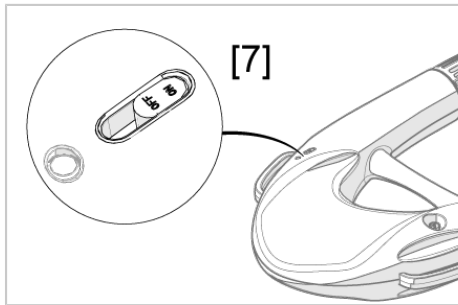
- low voltage alarm
- discharge protection: excessive discharge can severely damage the battery, when the battery is empty after use, it will stop providing power, in order to protect the batteries
- overcharge protection, overcharge cause severe damage to the battery, when the battery is full charging will stop, in order to protect the batteries
- high temperature protection, if the temperature is too high during the discharging

process, the battery will immediately stop working, in order to protect the batteries

03: Begin to use

3.1 check before use

1. Toggle switch the ARK [7] to turn on the ARK, and press the remote control [8] to turn on the remote control.

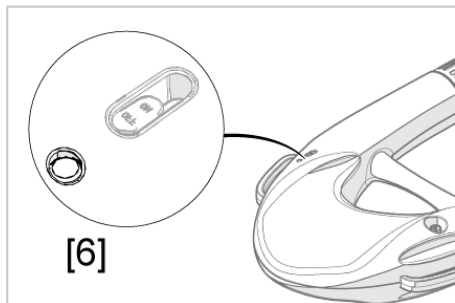
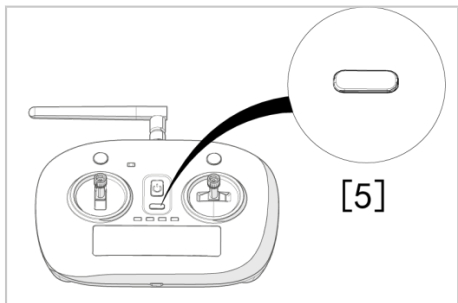


2. Check whether the ARK and the remote are fully charged and maintain sufficient power.
3. Check whether the ARK indicator is normal (the white light is always on), and make sure there is no warning signals. If the indicator light is flashing red to indicate low power, please recharge it as soon as possible.

3.2 Compass alignment

Calibration steps. Please select an open field and calibrate the compass according to the steps below:

1. Click the button of the remote control [5] for calibration, and the ARK status indicators [6] are shown as normally on the purple indicator is short. Don't move the machine at this time.



2. When the purple light begins to blink, the compass calibration procedure starts. At this time, the ARK body is rotated horizontally for more than two circles. When the indicator light is restored to the white light, it stops turning. At this time, it is more accurate.

3. After the calibration, if the ARK status indicator shows that the white light is always on, it

means the calibration is successful, and if the ARK status indicator shows that the orange light is flashing, it means the calibration failed. If you fail, repeat steps 1 and 2.

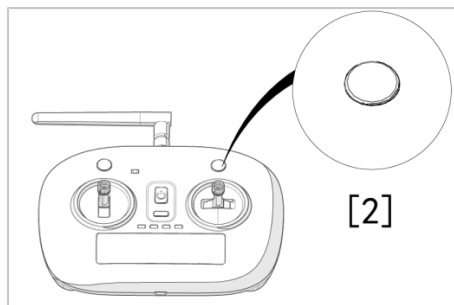


White light is on Purple light temporarily on Purple light flashing white light is on

Note that if the correction button is pressed again or the unlock button is pressed during the correction process, the correction will fail, and the ARK status indicator shows the orange lamp flashing.

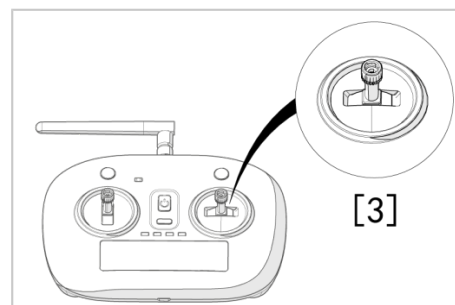
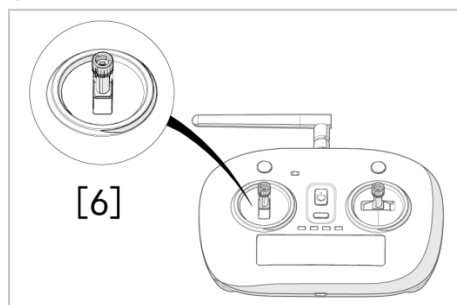
3.3 Unlock the ARK

Hold [2] of the remote control to unlock/lock the button for a few seconds, and the ARK indicator will indicate that the green light is always on, indicating that the current state is unlocking, and the motor can rotate normally.



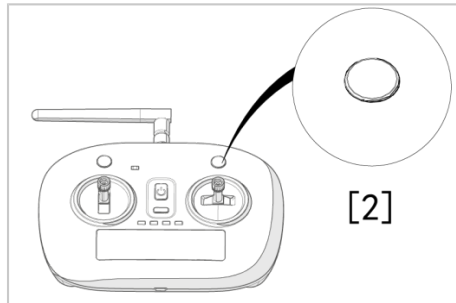
3.4 Use the ARK

The remote control [6] is the throttle control rocker. Before unlocking the motor, the remote control rocker [6] must be pushed to the bottom. At this time, the accelerator is 0. Remote control [3] is the directional control rocker, center is forward, left is pushed to turn left, right is pushed to turn right



3.5 Lock the ARK

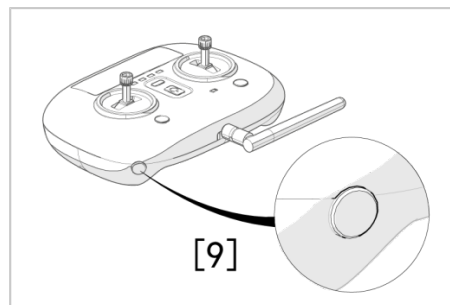
When the motor is in the unlocking mode, hold the "[2]" button of the remote control to unlock/lock for a few seconds. The ARK indicator will turn white and the motor will not work when the lock is on.



3.6 Mode switch (optional steps)

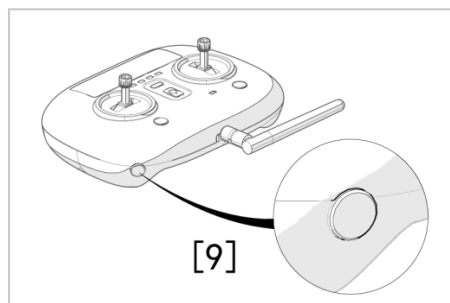
3.6.1 Intelligent auxiliary mode

This mode is the default mode of the system. The main control system makes real-time adjustment of the direction of ARK, making it easier to control. Click the remote control [9] to switch mode



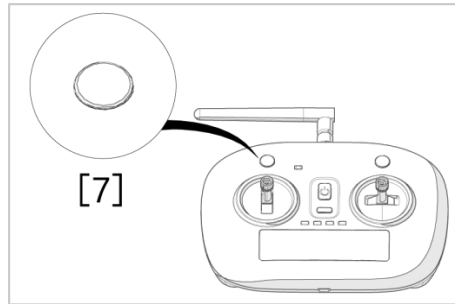
3.6.2 Manual mode

Under special circumstances, the ARK compass may be abnormal, and the rescue can be carried out by remote control for emergency rescue. In this mode, course correction are not used. Click the remote control [9] to exit the intelligent auxiliary mode and switch to manual mode.



3.7 Automatic return

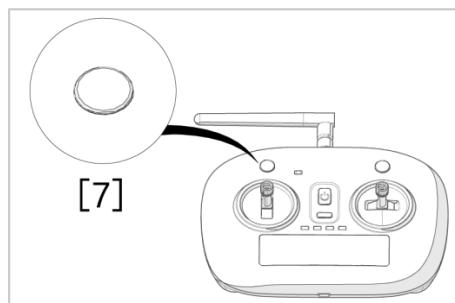
Press and hold (about 3 seconds) the button [7] of the remote control to automatically reverse course. After starting, the ARK status indicator light is yellow, and the ARK automatically returns to the position where the user has unlocked. The ARK cannot be manipulated by the user during the automatic return trip. If you want to gain control, you need to exit the automatic course reversal by pressing the automatic course reversal button [7] for a short time (about 3 seconds) on the remote again or wait for the end of the course reversal, the user can regain control.



3.8 Missing return trip (automatic trigger meeting the conditions)

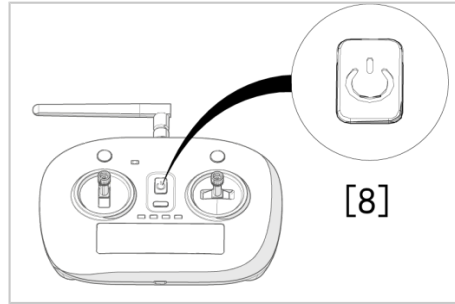
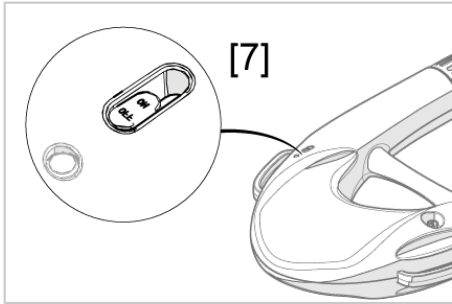
When there is no signal communication between the ARK and the remote control within 15 seconds, it will trigger the log-off function. The indicator light of the ARK body will show that the yellow light is flashing, and the ARK will return to the location where the user unlocked it initially.

During the return flight of the ARK after lost contact, or the user could not control the ARK. When the ARK communicates with the remote control, the user can press and hold (about 3 seconds) the button [7] to cancel the return flight, or the user can control the ARK again after the ARK returns to the unlock position.



3.9 Shutting down the ARK

Turn the ARK [7] to turn off the ARK power, and double-click the remote control [8] to turn off remote control power supply.



The appendix:

ARK parameter

ARK	
Weight	13kg
Maximum speed of navigation	6m/s
Battery life	45 Minutes
working voltage	DC 23-29.4V
Working temperature	0 °C-50 °C
Charger	
Charging voltage	29.6V
Charging current	7A
Charging time	3h
Battery	
Capacity	8000mAH
Voltage	29.4V
Battery category	The lithium battery
Energy	201.6Wh
Battery weight	5kg
Working temperature	0 °C-50 °C

Information of remote control

Remote control	
Working frequency	433MHz
Signal effective distance	800m
Working temperature	0 °C-50 °C
Battery	5000mAH lithium battery
Working voltage	DC 3.7V

State indicator light instruction

The normal state	
White light normally on	The system lock
Purple light normally on	System start correction
Purple lights flashing	Compass adjustment
Blue light normally on	Manual control mode
Green light normally on	System assist mode
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