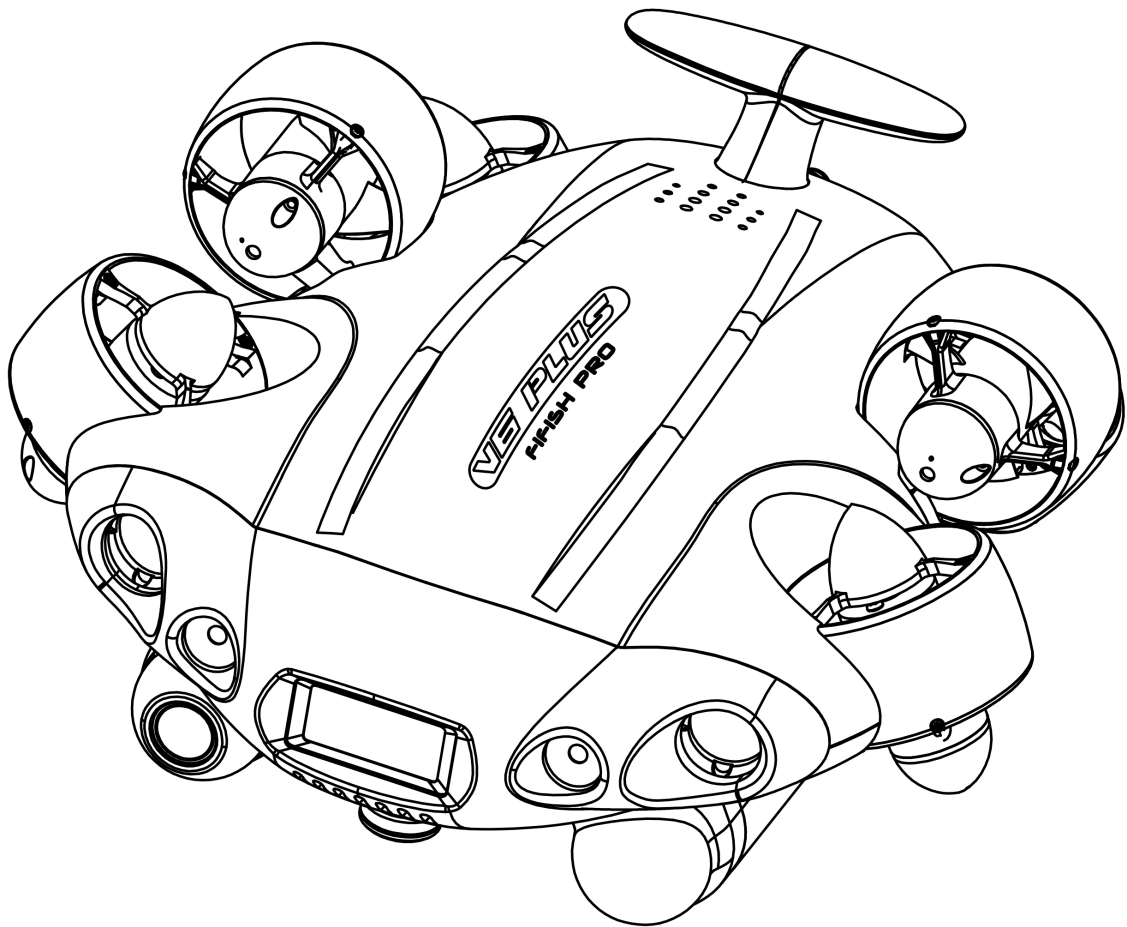


VE PLUS

FIFISH PRO



Quick Start Guide V 1.2



QYSEA

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Thank you for choosing FIFISH PRO-Line (Professional line) as working tool. This Quick Start Guide will help you learn and operate FIFISH PRO V6 PLUS, which is a compact size OMNI-directional ROV (Remotely Operated underwater Vehicle).

Safety and Regulations



Operating FIFISH products requests training and practice. Please read through this document before operating in water.



Do NOT touch the running propeller



Avoid overheating of motors, do NOT run the thrusters in air for over 30 seconds



Do NOT throw the ROV when deploying into the water



Do NOT look directly to the LEDs, and do NOT touch the LEDs when they are ON



Laser Radiation Class 3B. Avoid direct exposure to eyes.



Beware of the environment while operating the ROV (tide, water level, water traffics, etc.)



Avoid the reefs, rocks, seaweeds, fishline or other objects that may cause damage to or entanglement of the ROV or tether



Be part of marine protection and conservation for the local coral and marine life

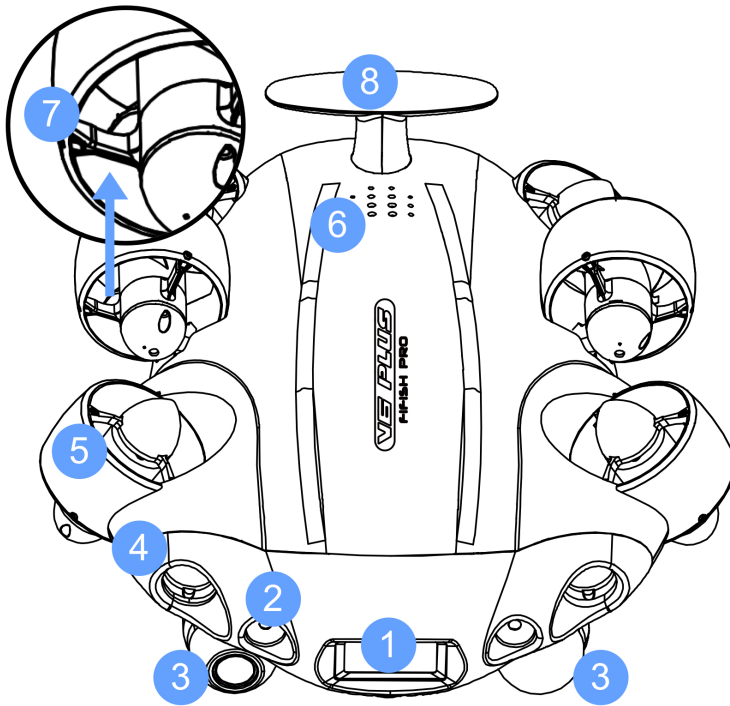


Maintain after dive, check the Maintenance Guide in page 29

Introduction

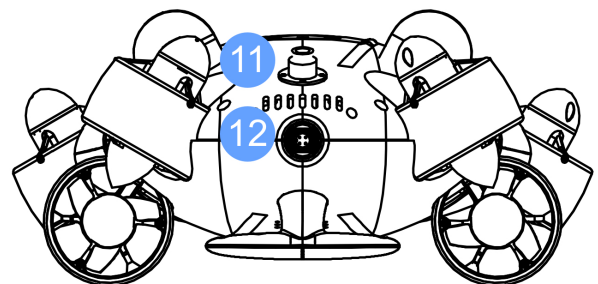
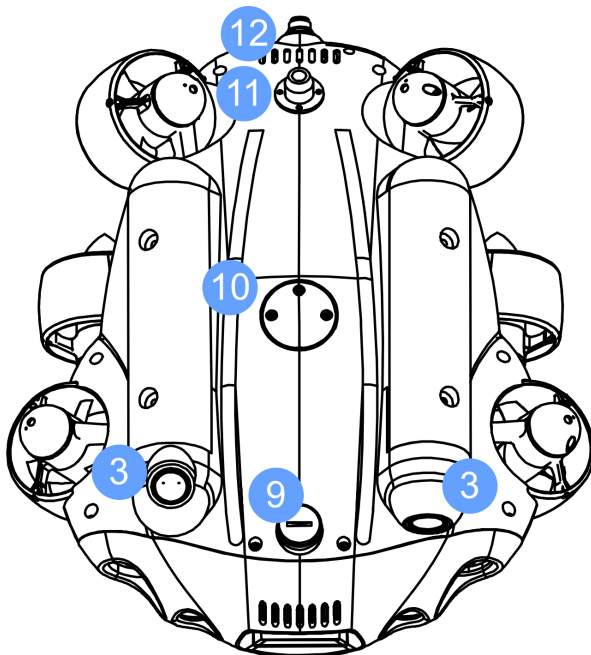
FIFISH PRO V6 PLUS (V6P or V6+) is a 150 meters (~492 feet) depth rating ROV for professional applications. V6 PLUS is using compact and light weight design, which makes you can go even further. V6 PLUS equipped a **4K UHD** camera to capture high resolution video and pictures. The **155.52 Wh battery** deliver longer dive time, and the 1st generation of **Q-motor™** provide smoother operating experiences. The **AR Scaler** provides easy and simple measurement methods for underwater operations. The Sonar Array TM (dual sonar system) enable V6 PLUS lock the frontal distance (**Distance Lock**) and altitude distance (**Altitude Lock**). These features offer more confidence while operating in the challenging environments. The **microSD Hot Shoes** enable the data transfer directly, and **6,000 lumens** LEDs make the deep dive brighter and clear. Nevertheless, the **Aluminum Alloy** propellers more durable and robust for harsh environments.

All of these features make V6 PLUS as an ideal tool for professional underwater operation. In addition, we released our top-secret project **FIFISH Q-Interface™**, which enable various special accessories attach to V6 PLUS. Such potential to upgrade capability will provide specific solutions for marine engineers, ocean explorers and pioneers.



About FIFISH PRO V6 PLUS ROV

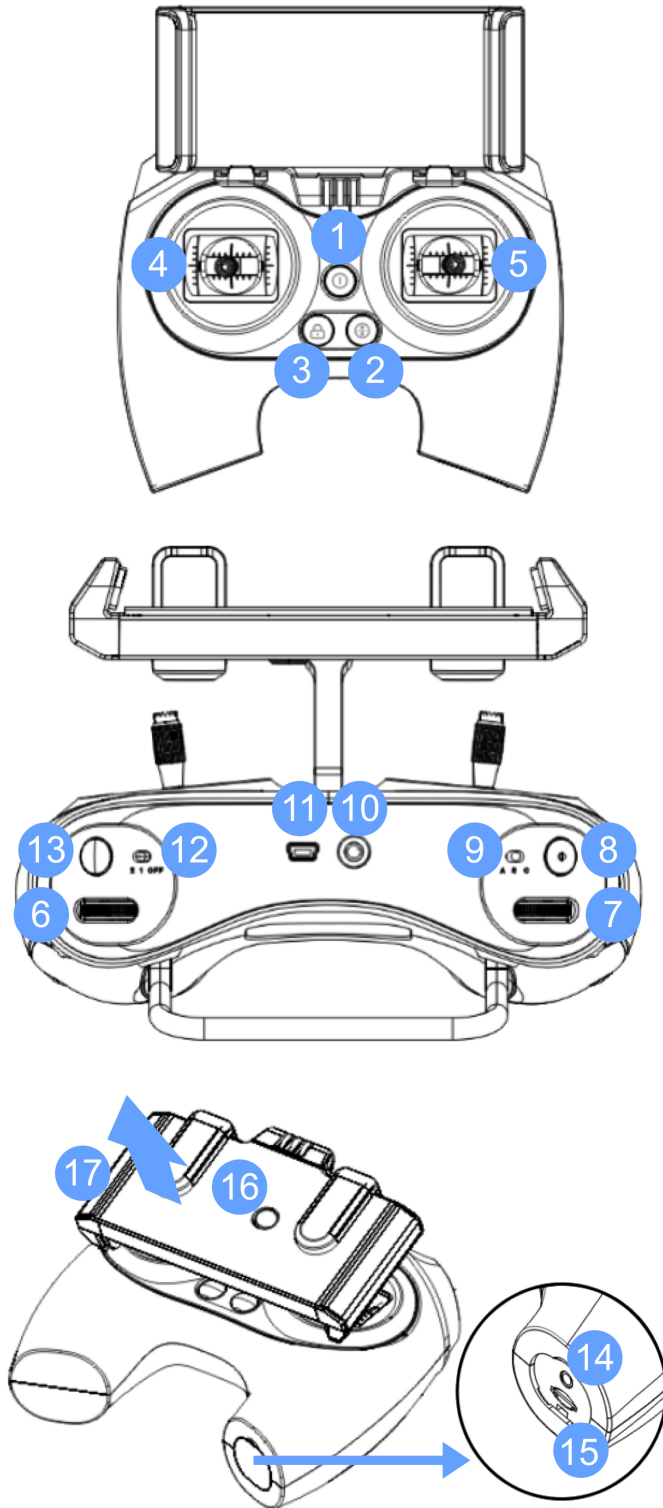
1. 4K UHD Underwater Camera
2. Laser × 2
3. Sonar Array
4. 3000 lumens LED × 2
5. 1st gen Q-motor Thrusters × 6
6. Venting Holes
7. Aluminum Alloy Propellers × 6
8. Rear Wing^{1,2}
9. microSD Hot Shoes
10. Mounting Port
11. FIFISH Q-Interface³
12. ROV Tether Port



⚠ Note:

1. Do NOT shake or swing while holding the rear wing.
2. Make sure hook the loop of tether on the stem of rear wing when connect.
(See **Preparation and Connection** / Hardware Connection/ 4) in page 7)
3. The all ports including **FIFISH Q-Interface™** shall be clean and dry at all time.

Introduction

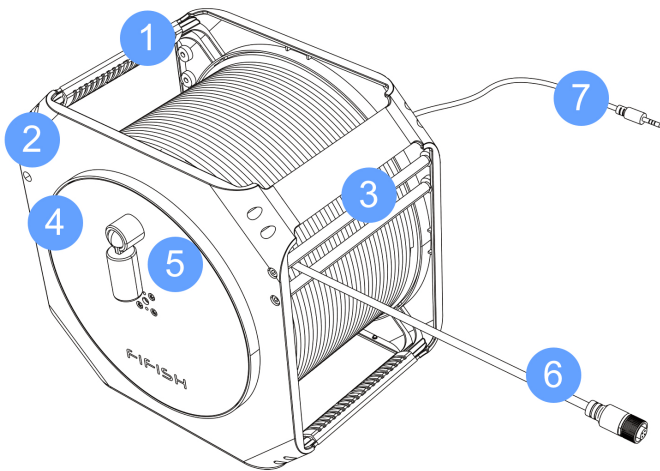


RC (Remote Controller)

1. ON/OFF
2. Depth Holding (ON/OFF)
3. LOCK/UNLOCK
4. Left Control Stick
5. Right Control Stick
6. Right Wheel
7. Left Wheel
8. Video (Record/Stop)¹
9. Control Mode (Attitude / Sport / Combine)
10. Tether Port
11. Ethernet Port (mini USB)
12. LED Brightness (OFF, 1, 2)
13. Photo (Snap)²
14. Charging Port
15. microSD Slot
16. Clamp Release Button
17. Clamp for Smart Device

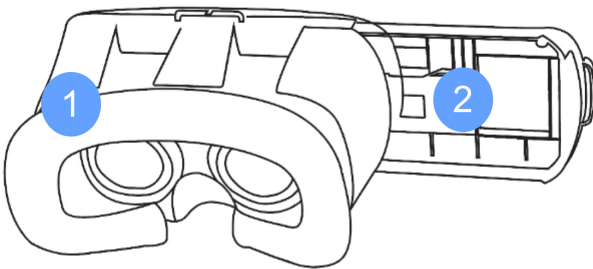
Note:

1. In photo mode, press and hold about 1 second, will switch to video mode.
2. In video mode, press and hold about 1 second, will switch to photo mode.



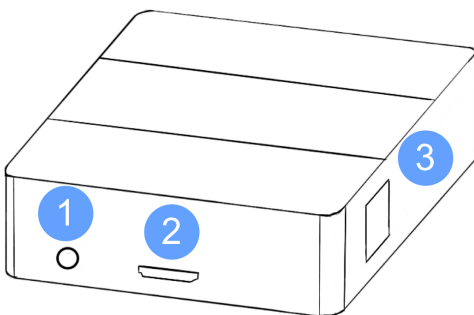
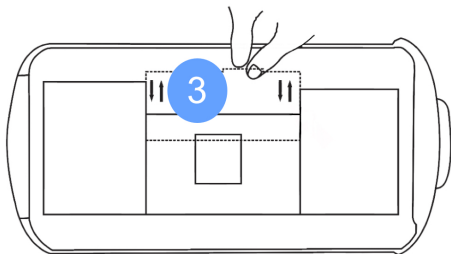
Tether on Spool

1. Spool Handle
2. Spool Frame
3. Tether Regulator
4. Reel
5. Foldable Handle
6. ROV Plug
7. RC Plug



VR Goggle

1. Housing
2. Smart Phone Bracket
3. Adjustable Clamp
(Suitable for 3.5" to 6.0" smart phones)



HDMI Box (Optional)

1. Power Port
2. HDMI Output
3. Ethernet Port

Note:

Hold your cell phone when you lock and unlock the clamp.

Preparation, Connection, and Operating

1.FIFISH App download and Installations



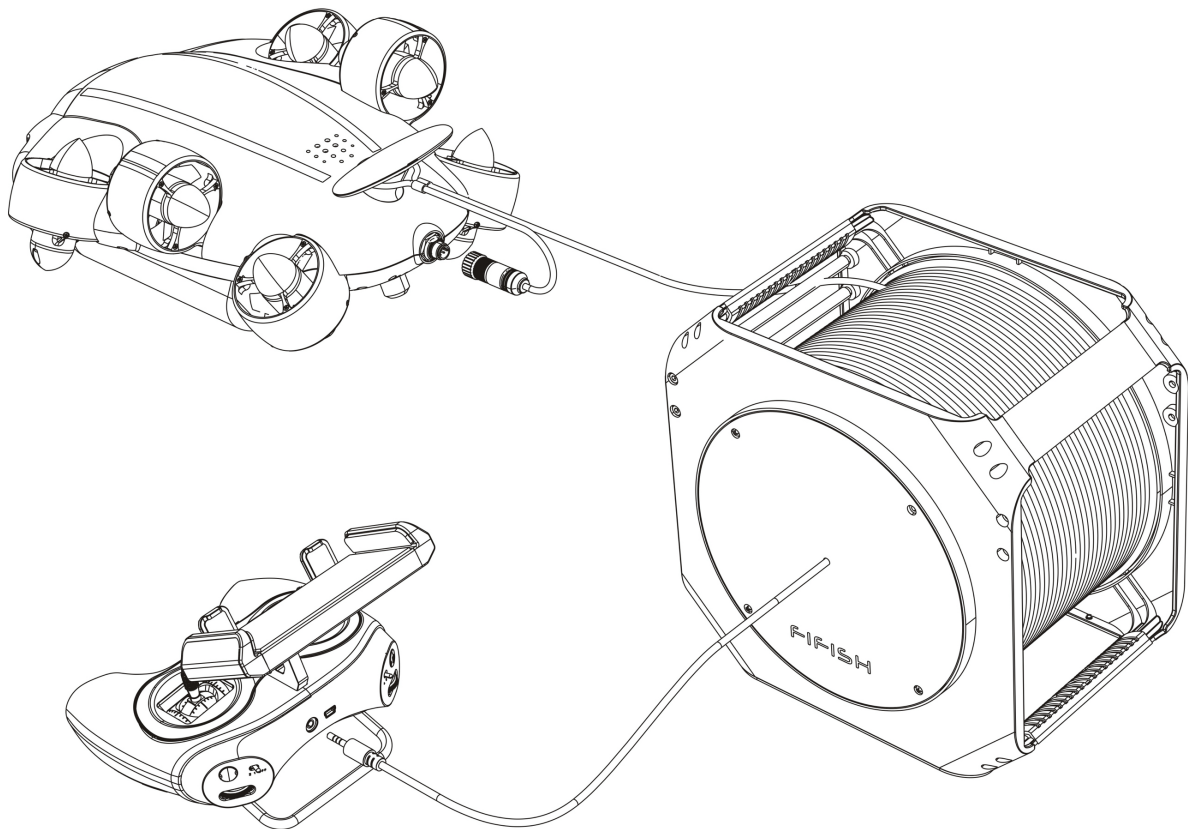
Option 1. Scan the QR code below to download FIFISH App.

Option 2. Search the FIFISH on App Store (iOS) or Google Play (Android).

Option 3. Go to QYSEA's website at <https://www.qysea.com/cn/support/app-download/>

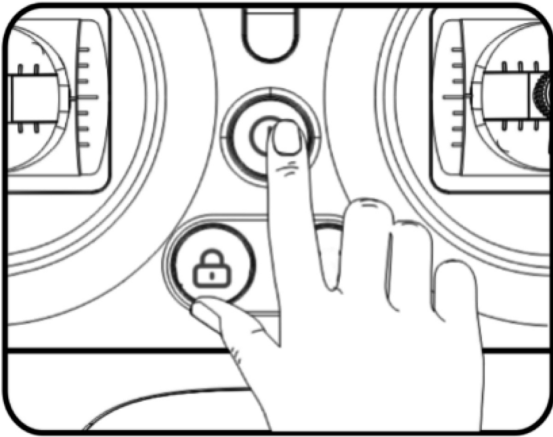
2.Hardware connection

Overview of Hardware connection.

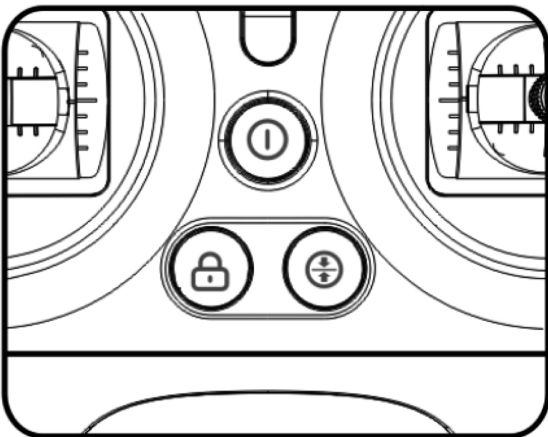


Preparation, Connection, and Operating

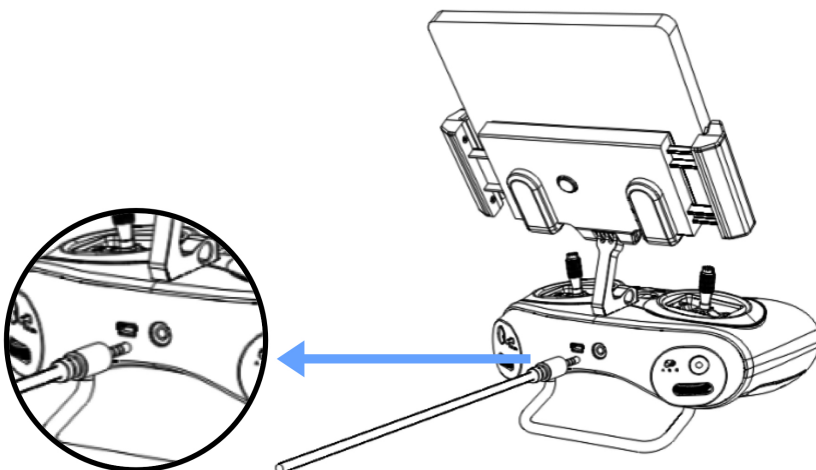
- (1) Turn ON the RC. Press and hold the ON/OFF button, you can hear 7 chimes from low to high (Do, Re, Mi, Fa, Sol, La, Ti)



- (2) The “ON/OFF”, “Depth Holding” and “LOCK/UNLOCK” will flash and rotate clockwise, which indicates “Ready to be connected”

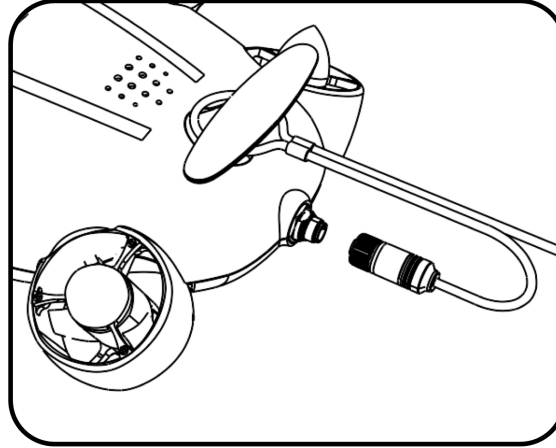
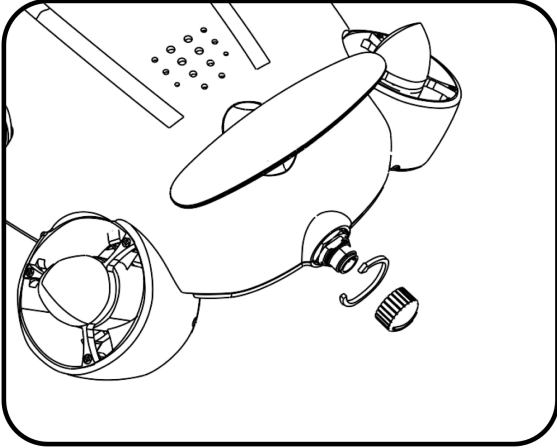


- (3) Plug the tether (3.5 mm head) into remote controller

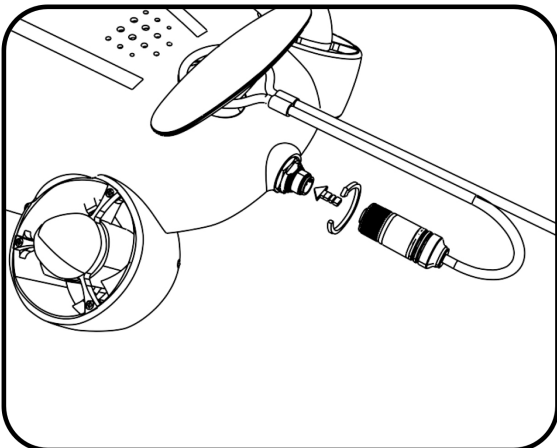


Preparation, Connection, and Operating

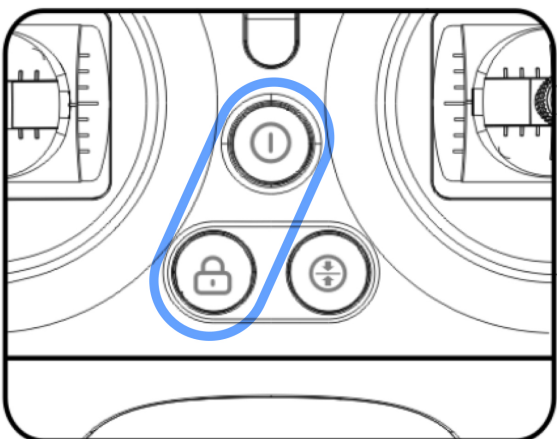
(4) Take off the protect cap, tie the knot around the rear wing



(5) Plug the ROV Plug into the ROV Tether Port, ROV will turn on automatically.
You can hear 5 chimes: (Do, Re, Mi, Do, Mi)



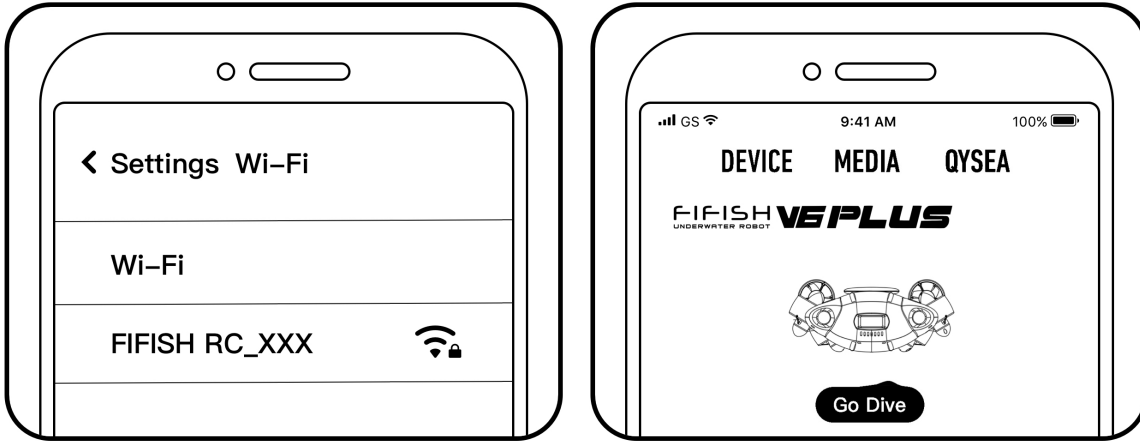
(6) Check the RC, the "ON/OFF" and "LOCK/UNLOCK" buttons will stay solid that indicates the hardware connection successfully



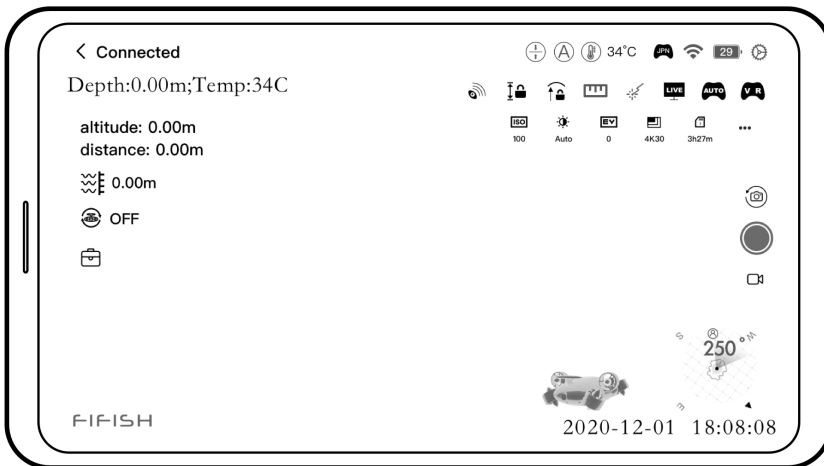
Preparation, Connection, and Operating

3. Software connection

- (1) Connect with the RC's Wi-Fi (5 GHz)
- (2) Find the Wi-Fi network name "FIFISHRC_XXXX"
- (3) The password is "1234567890"
- (4) Select your ROV type (Swipe the model if necessary)



Operation interface



For more information about FIFISH App interface and features, check the **FIFISH App** Section Page 14

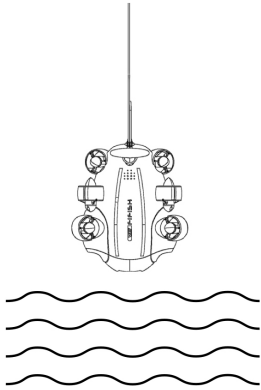
Note:

ROV sensor calibration is recommended before dive, especially traveled in the difference locations. For more information about ROV sensor calibration <https://www.qysea.com/support/>

Preparation, Connection, and Operating

4. Deploy the ROV

Pull **ONLY** on the tether to deploy the ROV into the water. Unlock the thrusters then start to dive.



! Note:

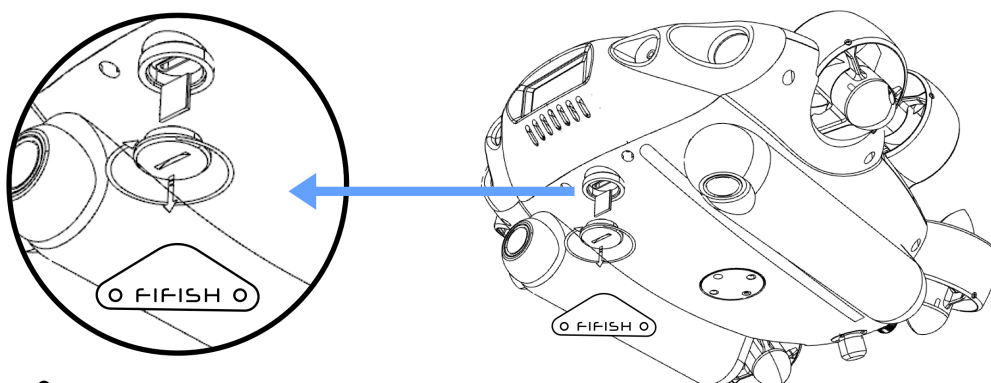
The depth shall greater than 1 meter (about 3 feet) for better experience.

5. Retrieve

- (1) Lock the thrusters
- (2) Stop recording the video before closing the FIFISH App
- (3) Pull **ONLY** on the tether to retrieve the ROV

6. Video/Photo Download via microSD Hot Shoes¹

Open/close the waterproof cover with **special key**. Close the cover with finger tight.



! Note:

Video/photo download can also achieve by microSD slot on RC.

- (1) Check our website for video tuitions at <https://www.qysea.com/support/>
- (2) FIFISH App/Help/College

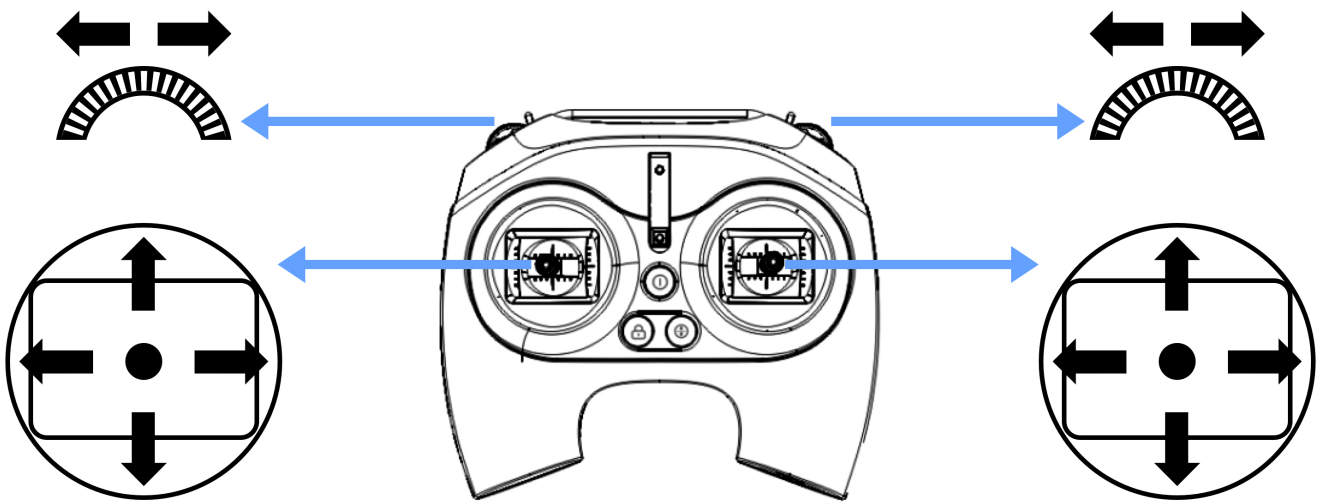
Introduction of Controlling

Definition of Controlling

The FIFISH PRO V6 PLUS uses the patented Smart Thruster Array™ to ensure the ultimate maneuverability and delivers the 6 DOF (degree of freedom).

- V6 PLUS can move in descend & ascend, left and right, forward and backward.
- V6 PLUS can rotate in 360 yaw (z-axis), 360 pitch (y-axis), 360 roll (x-axis).

We have simplified the Left Joystick, Right Joystick, Left Wheel and Right Wheel into the following symbol. The arrows on RC indicate the command and the arrows on ROV indicate the actual movements. **For more information, please check on FIFISH App, Go Dive/General Settings/Second Column.**



Remote Controller	V6 Operation Preference Setting	
	ROV Modes (USA/JPN/CHN)	UAV Modes (USA/JPN/CHN)
	<p>Ascend</p> <p>Descend</p>	<p>Pitch Up</p> <p>Pitch Down</p>
	<p>Left → Right</p>	<p>Roll Counter Clockwise¹</p> <p>Roll Clockwise¹</p>

Note:

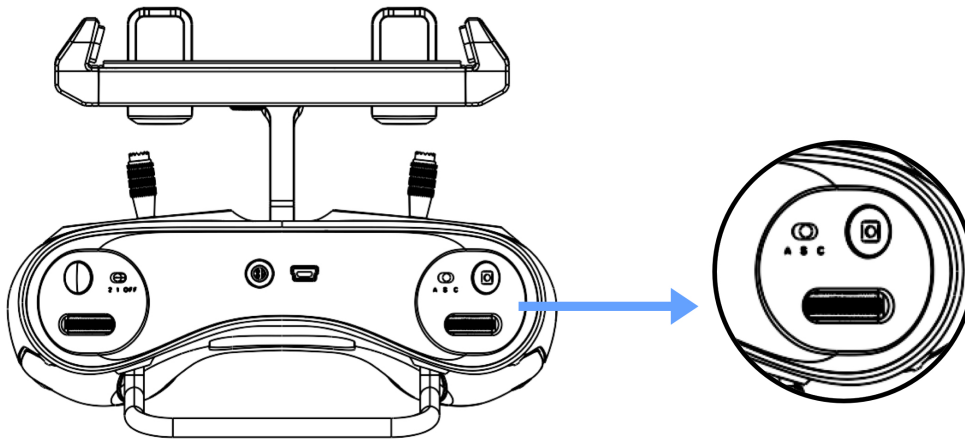
From the FPV (first person view) the bright yellow is rolling clockwise and black is rolling counter clockwise, and the rolling can activate in sport or Combination mode.

Introduction of Controlling

Controlling Modes

FIFISH PRO V6 PLUS supports 3 modes for control: A, S, and C.

A is Attitude Auto mode, S is Sport mode, C is the Combination mode.



1. Attitude Mode

Attitude mode is designed for beginners. The ROV will not roll in Attitude mode. The ROV will stay in same depth moving when depth holding is ON. Even with pitch angle, the depth will be the same.

2. Sport Mode

Sport mode is designed for skillful pilots. Sport mode will enable the rolling freedom, so, you will access all 6 degree of freedom of V6 PLUS. Controlling and moving based on the FPV (Frist Person View), do not operate in third person view. The ROV will only stay in the same depth with no command input, when depth holding ON.

3. Combination Mode

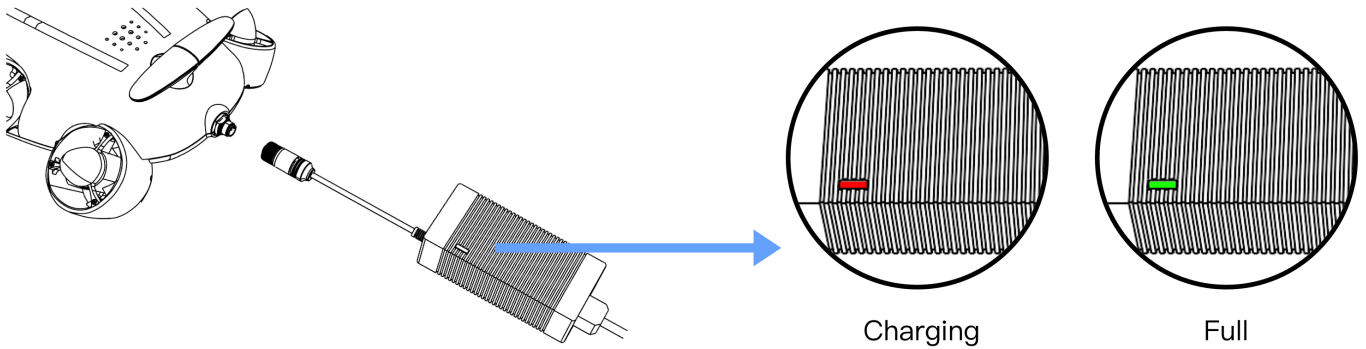
Combination mode activate the head tracking controlling via FIFISH VR Goggle, which allow pilot to use the FIFISH VR Goggle to pitch, roll and yaw. Combination mode delivers the intuitive control and immersive experiences. Combination mode supports head tracking and remote controller working together.

4. Robotic Arm

The robotic arm can be activated ONLY in Attitude mode. Use the right wheel to open and close the robotic claws.

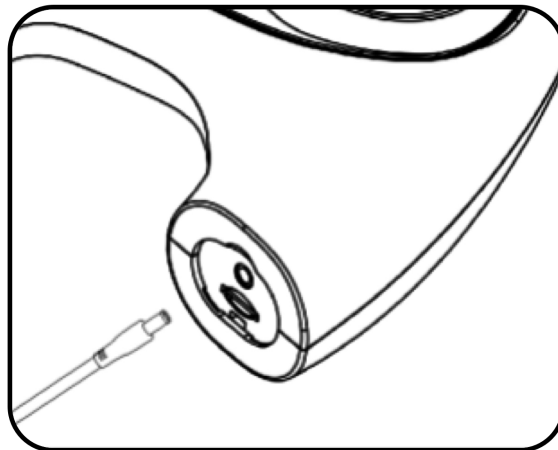
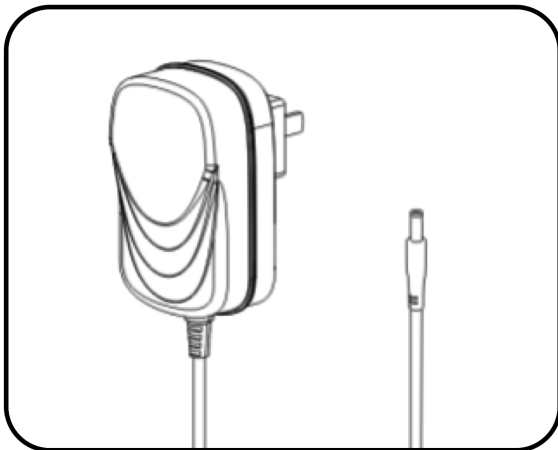
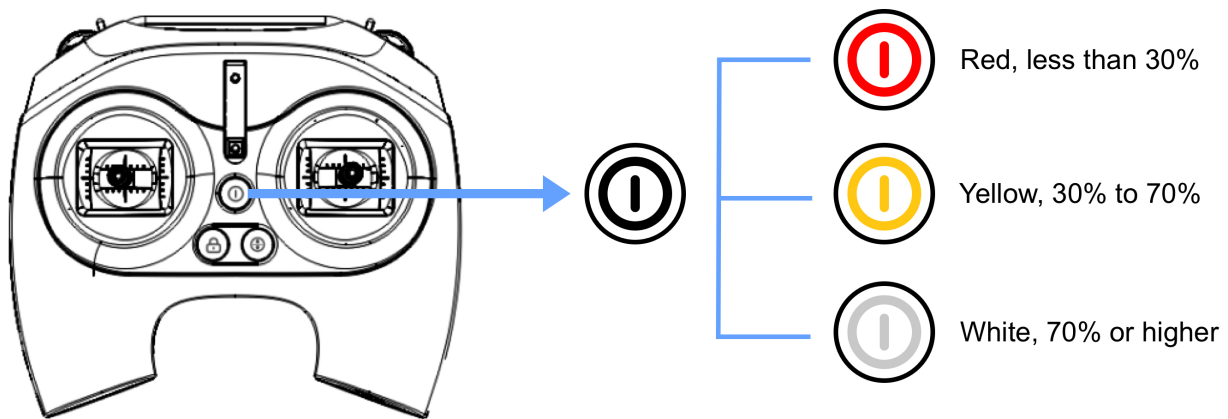
ROV Charging

RED LED indicator illuminates while charging and green LED indicator illuminates while fully charged.



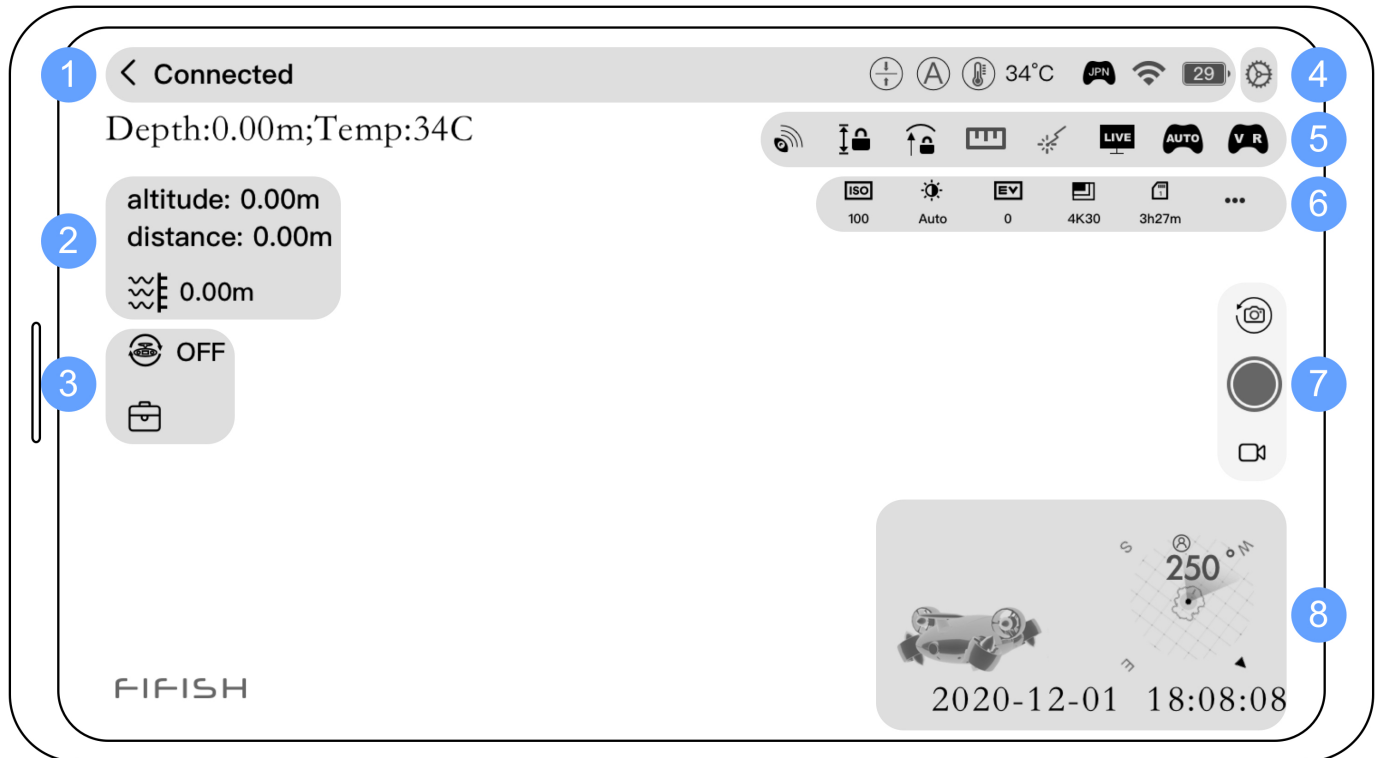
RC Charging

Flashing ON/OFF button, RC is charging
White steady ON/OFF button, RC is fully charged.



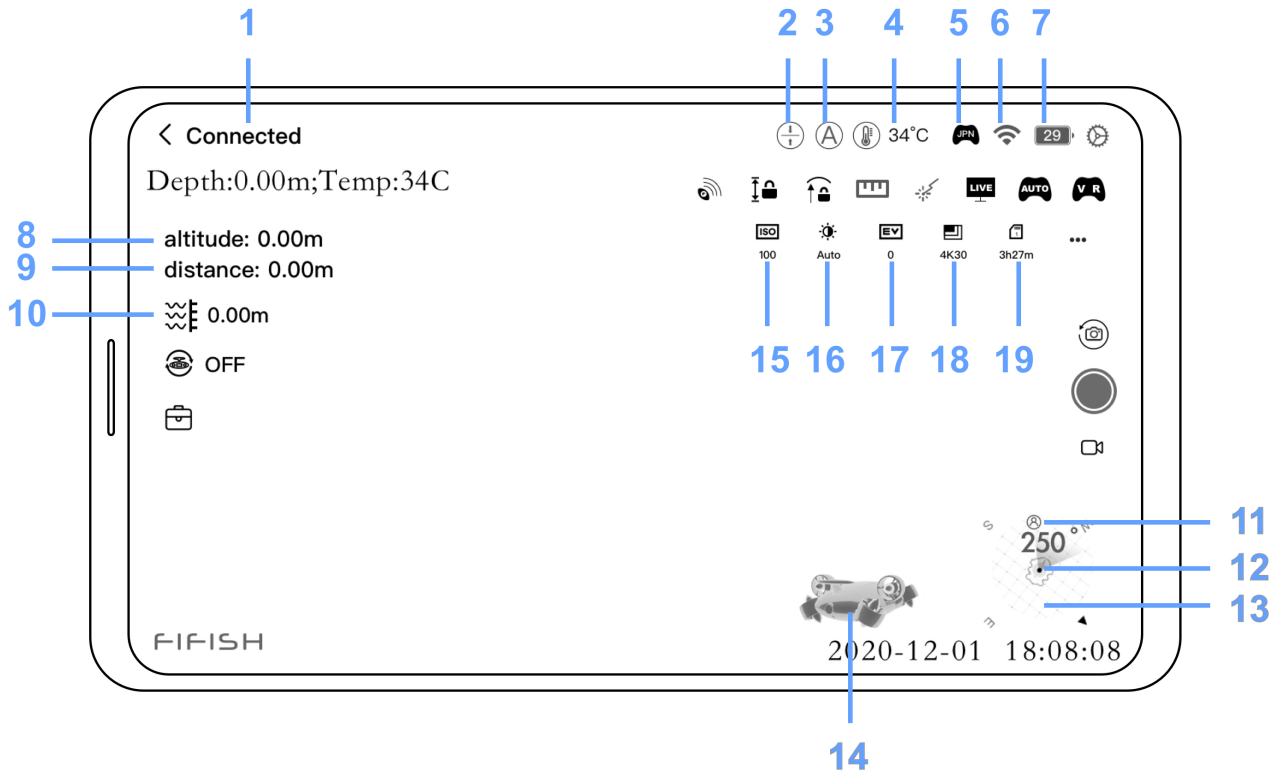
FIFISH App

Operation interface



FPV

- (1) Status
- (2) Navi. Info
- (3) Additional Feature
- (4) General Settings
- (5) Additional Feature
- (6) Image/Video Setting
- (7) Image/Video Button
- (8) Navi. Chart



Status

1. Current System Status
2. Depth Holding ON/OFF
3. Control Mode
4. Water Temp in C/F
5. Controlling Preference
6. RC's Wi-Fi Signal
7. ROV Battery Status

Navigation Information

8. Altitudinal Distance Detect by Downward Sonar
9. Frontal Distance Detect by Forward Sonar
10. ROV Current Depth

Navigation Chart

11. Pilot's Heading
12. ROV's Heading in Degrees
13. Compass (North)
14. Posture Indicator

Camera Parameters

15. ISO
16. White Balance
17. Exposure Value
18. Resolution Frame Rate
19. Remaining Time/Pics

FIFISH App

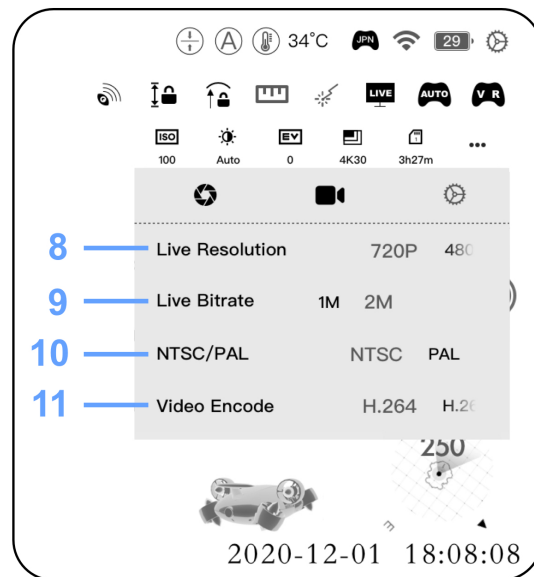
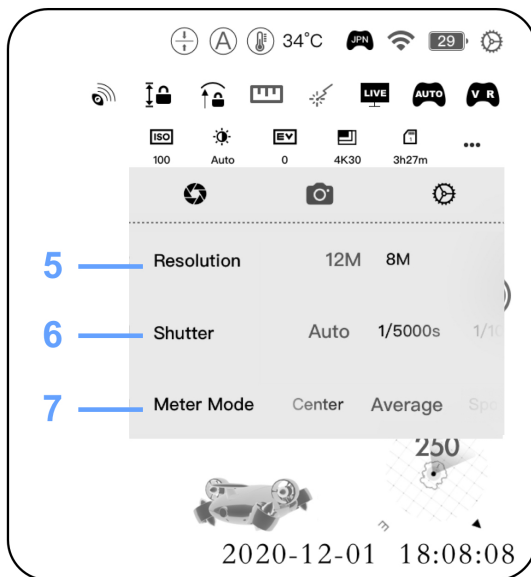
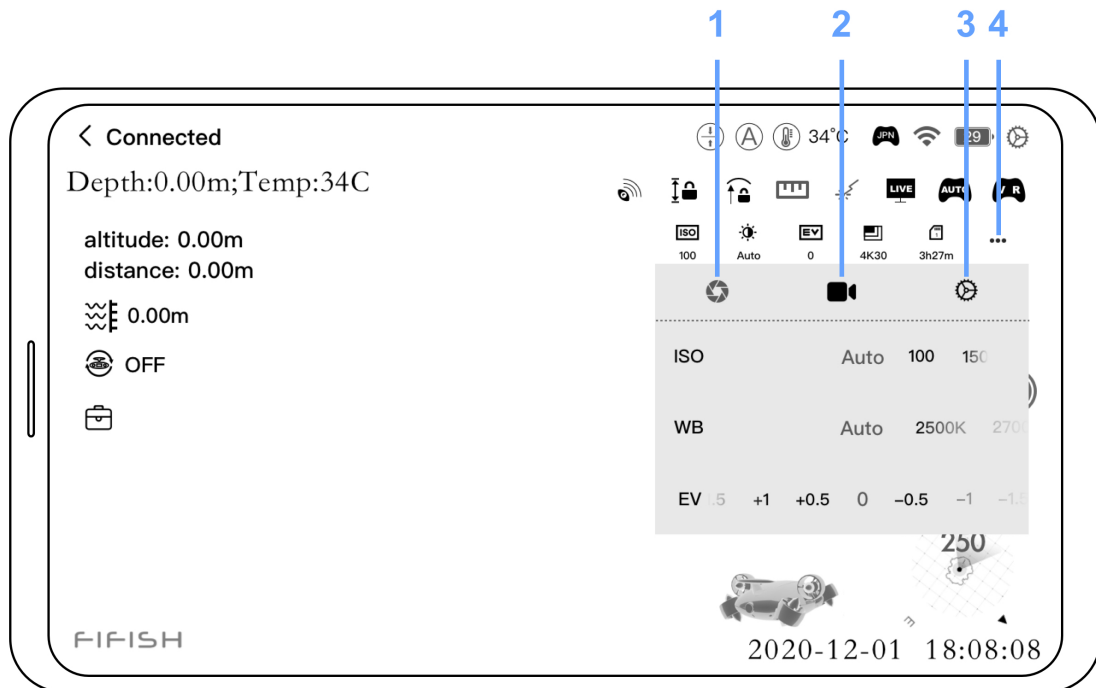


Image Settings

1. Exposure and WB
2. Video Setting
3. System Preferences
4. Image/Video Settings
5. Image Resolution
6. Shutter Speed
7. Lighting Meter

Video Settings

8. Resolution Live on FIFISH App
9. Bitrate Live on FIFISH App
10. Analog color Television Standards
11. Video Coding

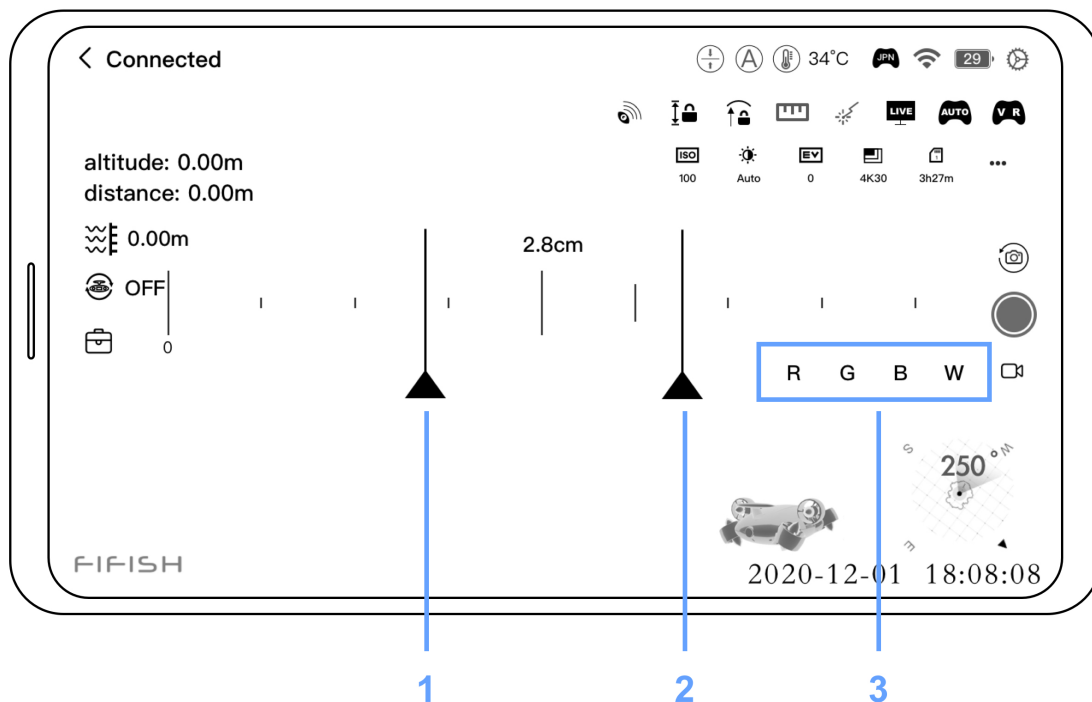
Features

AR Scaler™ and Laser Ruler

1. AR Scaler™ is a simple measuring solution, based on machine vision

2. Laser Ruler is the traditional method, based on manually image analyzation

The precision of AR Scaler™ is up to 1cm. The machine vision algorithm produces self-adaptive measurement result and visualized data. The two arrows on the AR Scaler can be adjusted, the customizing color (red, green, blue) is available for the best contrast. One click screenshot saves the measuring result.

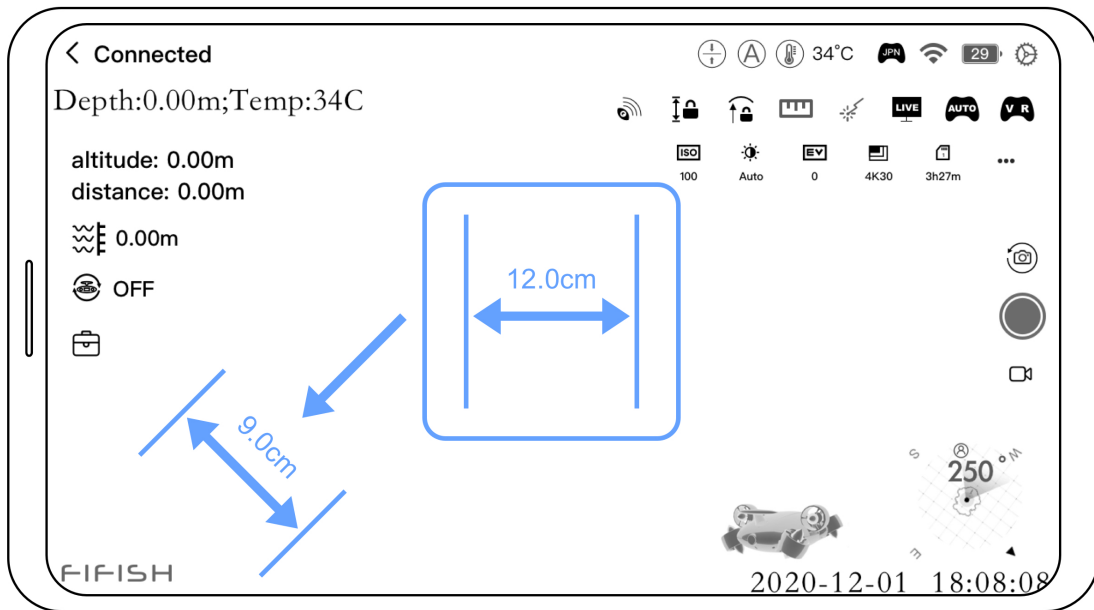


1. Left Arrow
2. Right Arrow
3. Arrow Color: Red, Green, Blue, White

Features

Laser Scaler

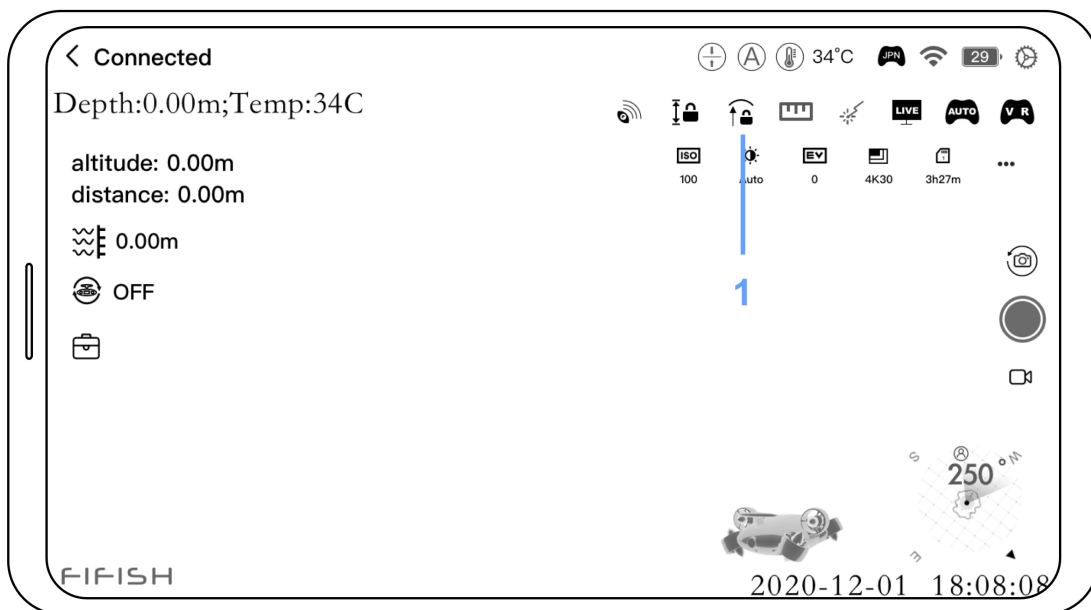
The Laser Dots could be the reference dots. It can work out the distance measure with a manual Image Processing software.



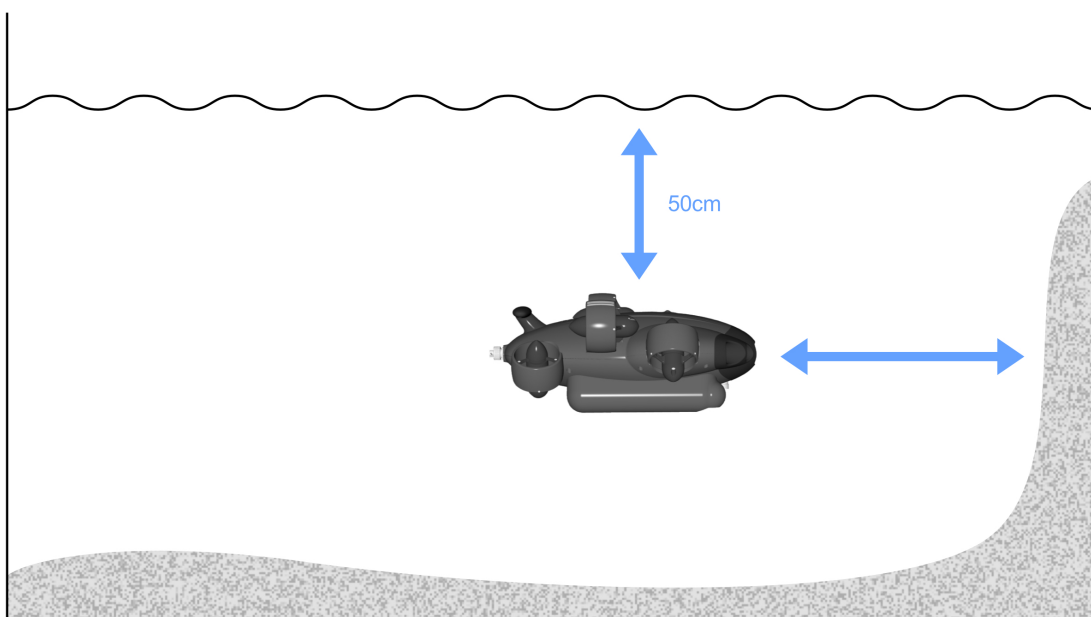
Distance Lock

Press the icon to activate the Distance Lock feature.

V6 PLUS will keep the current distance (frontal), to against external force or command inputs.



1. Distance Lock OFF / Distance Lock Active



1st, adjust the pitch angle until the distance data is stable

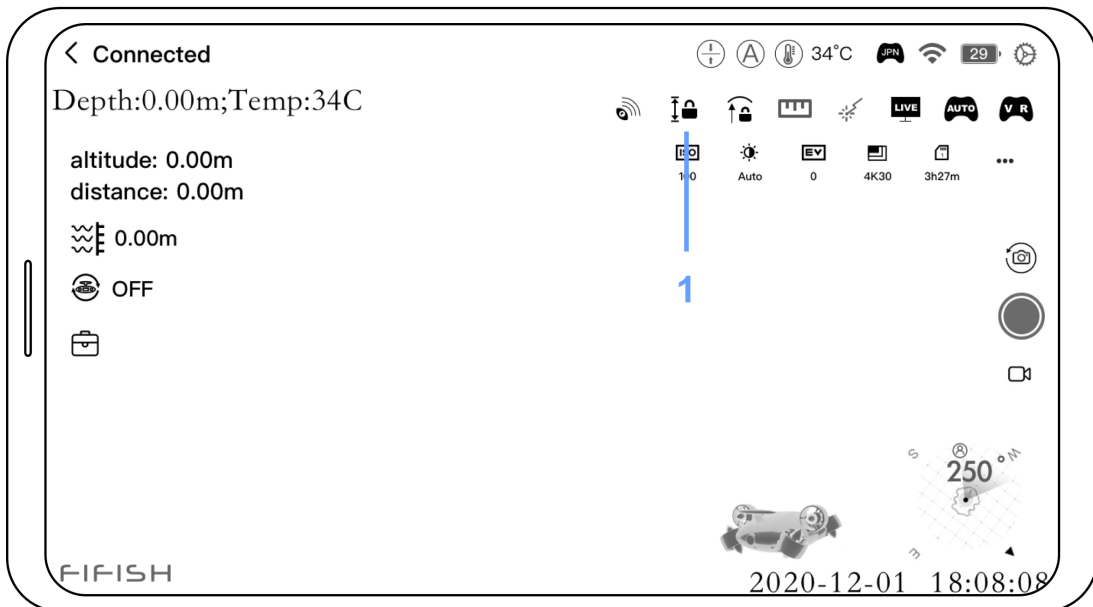
2nd, press the distance lock button on FIFISH App to activate the distance lock feature

Features

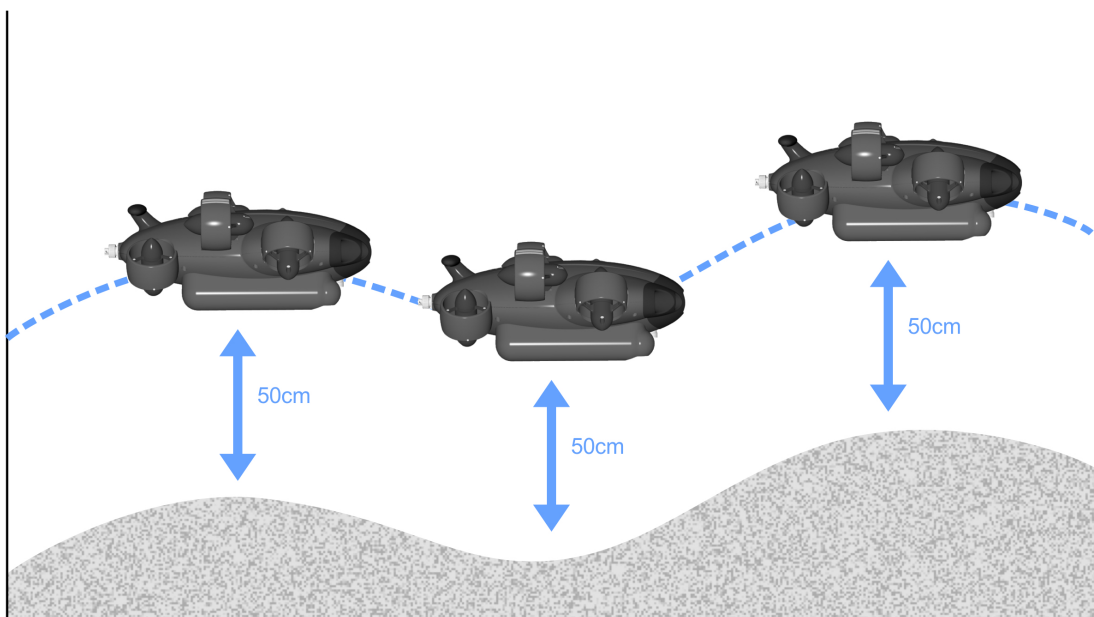
Altitude Lock

Press the icon to activate the Altitude Lock feature.

V6 PLUS will keep the current altitude (to seafloor), to against external force or command inputs.



1. Altitude Lock OFF / Altitude Lock Active



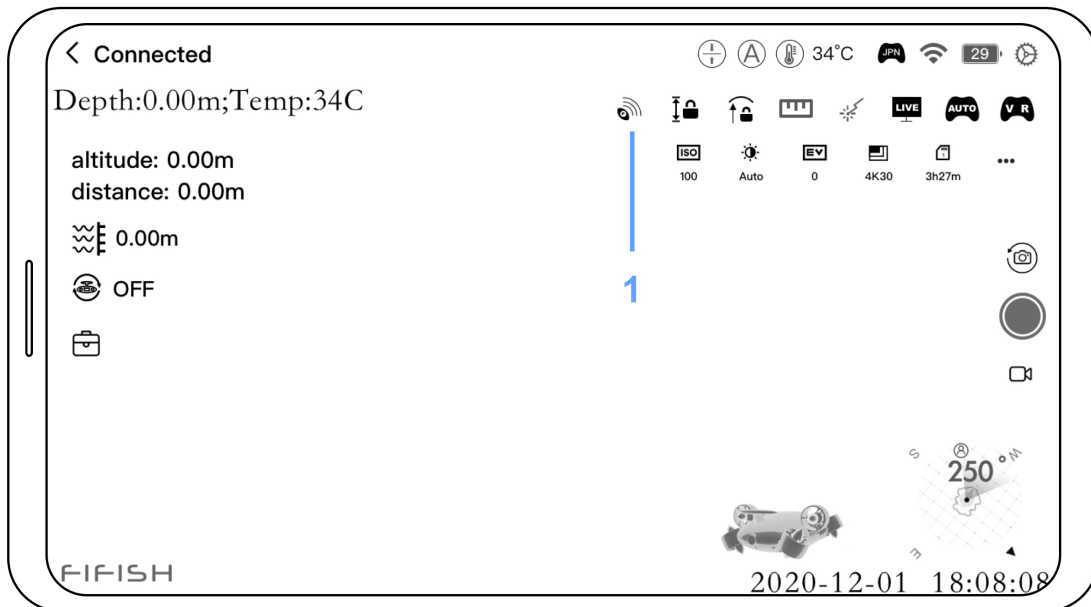
1st, adjust the depth until the altitude data is stable

2nd, press the altitude lock button on FIFISH App to active the altitude lock feature

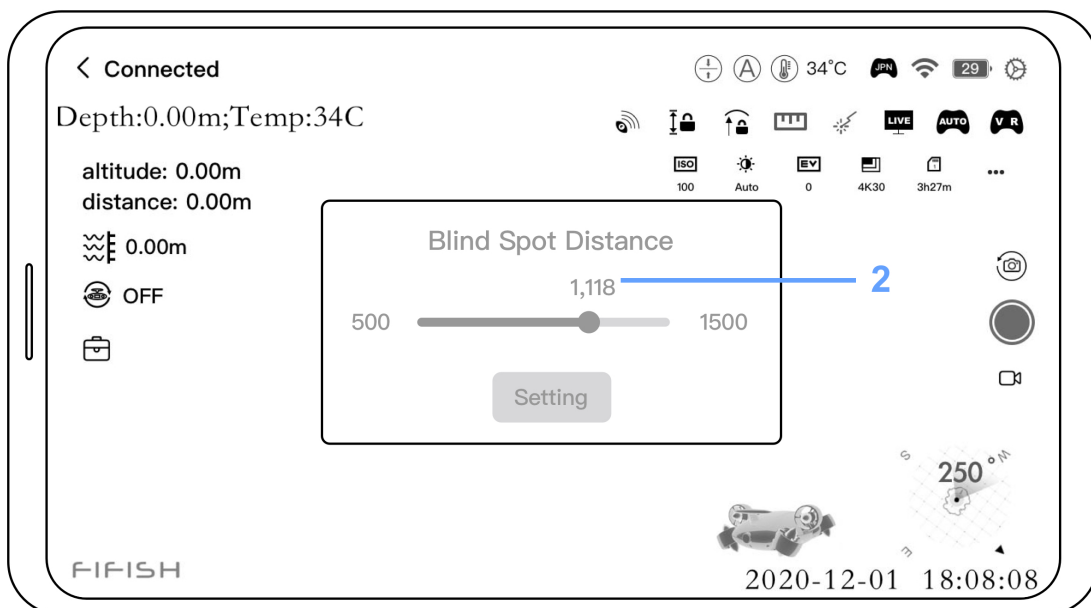
Collision Avoidance System (CAS)

Press the icon to activate the Collision Avoidance System (CAS) feature (CAS ONLY working in frontal direction).

Set the blind spot distance (the distance between objects to the ROV's camera).



1. CAS OFF / CAS ON



2. Distance unit is in "mm, Millimeter".Rang is 500 mm to 1500 mm (19 3/4 inches to 59 inches)

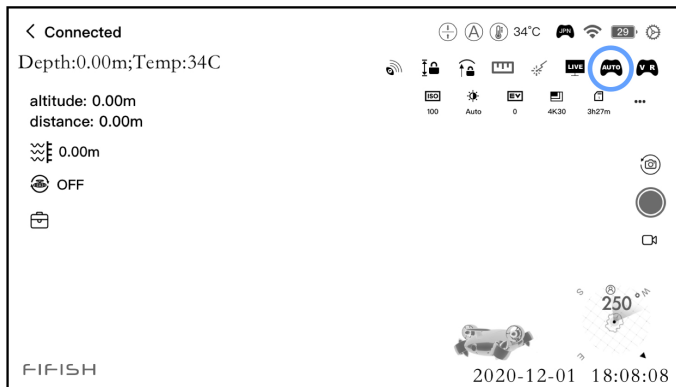
Features

Auto Pilot 2nd Gen

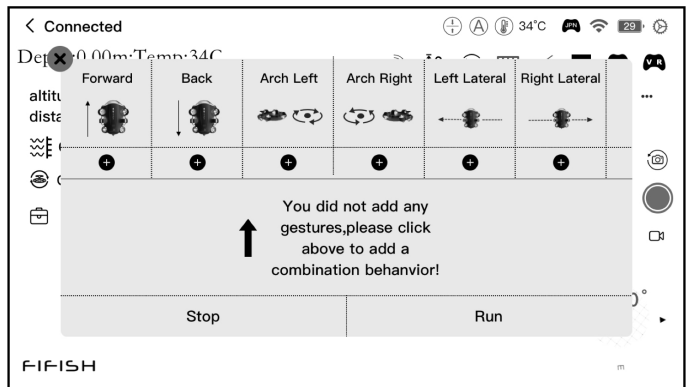
The Auto Pilot 2nd Gen is able programable auto moving commands.

1. Press the “AUTO” to turn ON the Auto Pilot
2. Select moving behavior
3. Set speed of such segment
4. Set time of such segment
5. Program next segment
6. Click “Run” to activate the Auto Pilot 2nd Gen

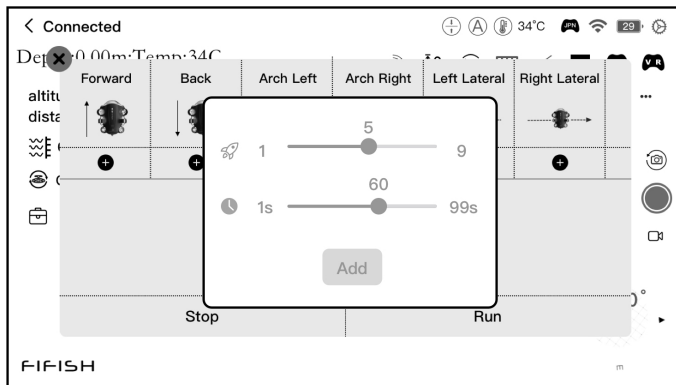
1.



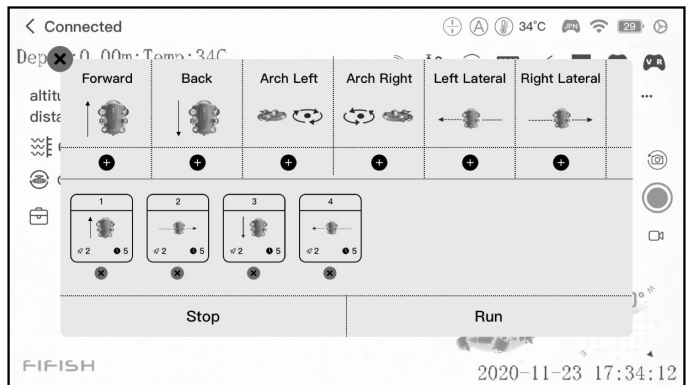
2.



3. 4. 5.

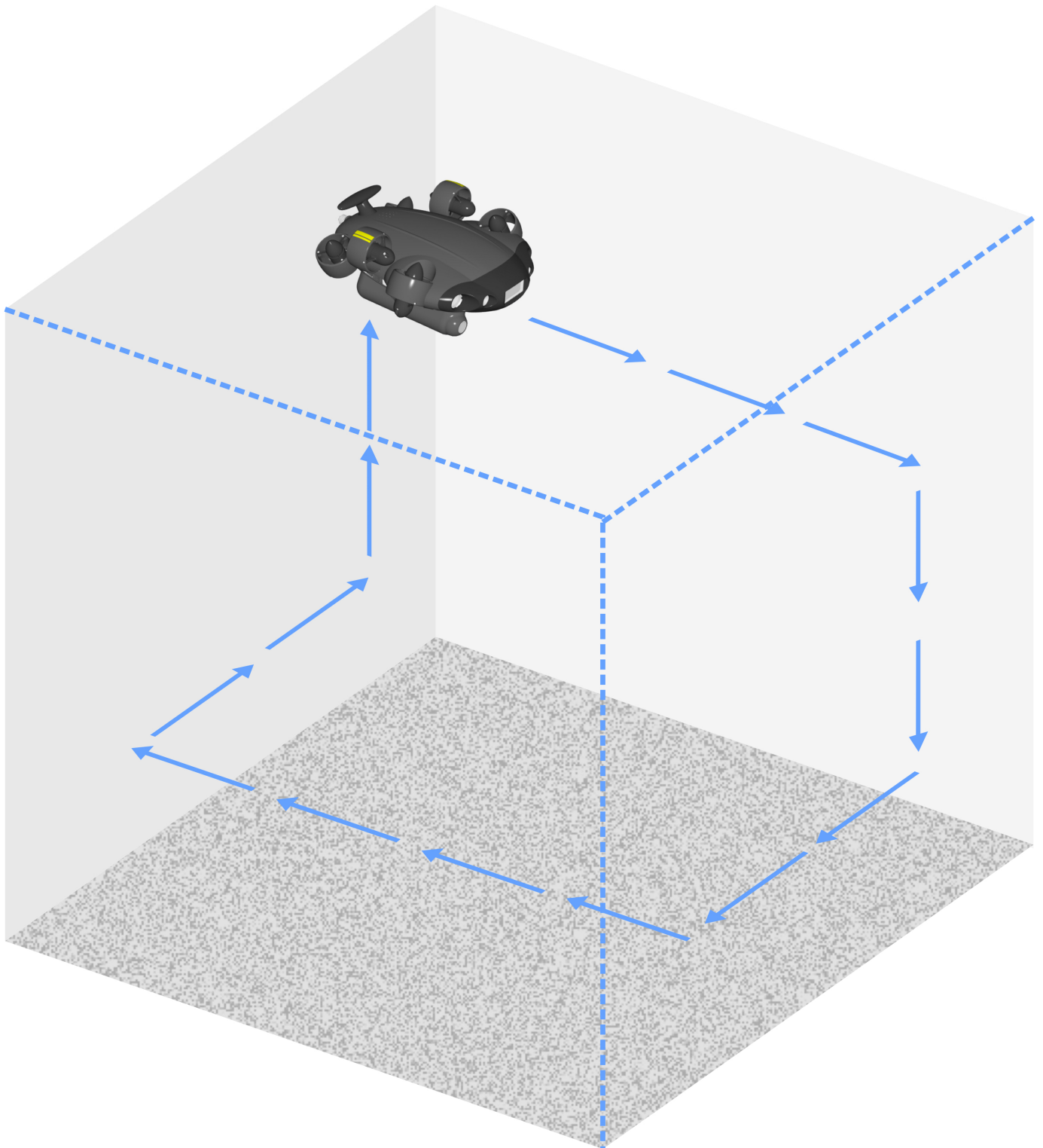


6.



Auto Pilot 2nd Gen

The Auto Pilot 2nd Gen is able programable auto moving commands.



Maintenance

1. Soak ROV at least 1 hour after dive, then let the motors run in fresh water at least 10 minutes, then rinse ROV with fresh water. Air dry and avoid direct sunlight (for more information, please check **Motor Maintenances** the **Maintenance Guide** in page 29)
2. Keep every connector (**port and plug**) dry and clean at all time. Put on the protective caps when not connected. The salt and moisture may cause corrosion on the connectors. Clean the plug with running fresh water and dry with air blow gun or dust blower.
3. Check the **propellers** after every dive. Make sure NO entanglement, i.e. seaweed or fishing lines. Turn on the ROV (See the Preparation & Connection Section, page 6-9) and check the thruster and test movement and rotation.
4. Use the integrated **self-checking** program (FIFISH App/Help/Machine self-check) if you have spot malfunction part or parts after dives, contact your local services center for help. For more information about FIFISH Authorized Services Centers <https://www.qysea.com/support/repair-center/>
5. Clean **sand or mud** if necessary. Soak the ROV inside the clean fresh water at least 1 hour. Shake ROV tail down or head down position, let sand washed out through the venting holes. Wash until the clean water drips out.
6. Check the **tether** on regular basis, replace the tether if break or damage appears.
7. **Store** ROV and RC in dry and cool environment (Temperature range: 5°C to 25°C or 41°F to 77°F).
8. For long-term storage, keep 50% to 60% of **battery** level. Charge and discharge every 90 days to keep the activation of Lithium battery.

Specifications

ROV

Dimension	383 mm × 331 mm × 158 mm	(15 in × 13 in × 6 1/8 in)
Weight	5.0 kg	(9 3/4 lbs)
Thrusters	6	(4 × Vector + 2 × Horizontal)
Maneuverability	6 DOF	(Degree of Freedom)
Moving	Sway	left / right
	Surge	forward / backward
	Heave	up / down
Rotation	360°	Pitch, Yaw & Roll
Posture Lock™	± 0.1° accuracy	Static / Moving
Depth Holding	± 1 cm accuracy	Suspending
Speed	3.2 knots (1.6 m/s) max speed in still water	
Depth Rating	150 m (~500 ft)	
Operating Temp	-10 °C ~ 60 °C	(14 °F ~ 140 °F)
Max Dive Time	Up to 6 hours ¹	
Battery	14,400 mAh / 155.52 Wh	Rated Capacity
	1 Hour Quick Charge (70%)	
	21700 Panasonic Li-ion	

Camera

Sensor	1/2.3"	SONY CMOS
	12MP	Effective Pixels
	100-6400	ISO Range (Auto / Manual)
Lens	166°	Field of View
	f/2.5	Aperture
	0.4 m	Min Focusing Distance
Shutter	5~1/5000 second	Auto/Manual (Electronic)
Burst shooting	3 / 5 / 10 / 15	Frames
White Balance	2500K ~ 8000K	Auto / Manual
EV	- 3 EV ~ + 3 EV	Exposure Compensation
Video Resolution	4K UHD	25/30 fps
	1080P FHD	25/30/50/60/100/120 fps
	720P HD	25/30/50/60/100/120/200/240 fps
Video Encode	MPEG4-AVC/H.264, HEVC/H.265	
Color System	NTSC or PAL	
Stabilization	EIS (Electronic Image Stabilization)	
Photo Resolution	4000 x 3000	
Photo Format	JPEG, DNG	
Storage microSD	64/128/256/512 GB	Standard SanDisk Ultra 128 GB

 **Note:** Depending on the using condition and settings, the actual dive time may various.

Specifications

LED Beams

Brightness	6000 lumens
CCT	5500 K (Correlated Color Temperature)
Beam Angle	120°
Dimming	2

Sonar

Detect Distance	0.4 to 7 meters	(~ 1 1/3 to 23 ft)
Precision	± 5 cm	
Angle	15°	

Laser

Wavelength	660 nm (Red)
Type	Spot/Dot
Output Power	200 mW

microSD Card requirements for Hot Shoes

R/W Speed	80 MB/s or up (Write)
Capability	64/128/256/512 GB
Format	exFAT
Recommended	SanDisk (Ultra/Extreme/Extreme Pro) or Samsung, Kingston, Toshiba's with similar speed

Optional Accessories

Robotic Arm

Claws Opening	140 mm	(5 ½ in)
Gripping Force	10.0 kgf	(22 lbf)

Remote Controller

Wireless	5 GHz Wi-Fi 11a, n, ac	
Battery Life	Up to 4 hours	
microSD Slot	FAT32 or exFAT format (≤128GB)	

Charger

ROV	100-240 V, 50/60 Hz, 3.0 A	MAX Input
	12.6 V = 10A	Output
RC	100-240 V, 50/60 Hz, 0.5 A	MAX Input
	5 V = 3A	Output

Tether

Length	200m (656 ft) on Spool	
Breaking Force	100 kgf (220 lbf)	

Spool

Dimension	250 mm × 252 mm × 215 mm	(9 7/8 in × 10 in × 8 1/2 in)
Weight	4.0 kg	(8 7/8 lbs)
Capability	Hold up to 200 m tether	(656ft)

Disclaimer

We provide customers with after-sale services, excluding the following circumstances :

- Crashes damage caused by non-manufacturing factors, including but not limited to, pilot errors.
- Damage caused by unauthorized modification, disassembly, or shell opening not in accordance with official instructions or manuals.
- Damage caused by improper installation, incorrect use, or operation not in accordance with official instructions or manuals.
- Damage caused by a non-authorized service provider.
- Damage caused by unauthorized modification of circuits and mismatch or misuse of the battery and charger.
- Damage caused by dives which do not follow instruction and manual recommendations.
- Damage caused by operation in bad water conditions (i.e. strong currents, huge waves, etc.)
- Damage caused by operating the product in an environment with electromagnetic interference (i.e. in mining areas or close to radio transmission towers, caves, muddy condition, radiations, tunnels, etc.).
- Damage caused by operating the product in an environment suffering from interference from other wireless devices (i.e. transmitter, video-downlink, Wi-Fi signals, etc.).
- Damage caused by a forced dive when components have aged or been damaged.
- Damage caused by reliability or compatibility issues when using unauthorized third-party parts.
- Damage caused by operating the unit with a low-charged or defective battery.
- Uninterrupted or error-free operation of a product.
- Loss of, or damage to, your data by a product.
- Any software programs, whether provided with the product or installed subsequently.
- Failure of, or damage caused by, any third-party products, including those that QYSEA may provide or integrate into the QYSEA product at your request.
- Damage resulting from any non-QYSEA technical or other support, such as assistance with “how-to” questions or inaccurate product set-up, installation, and firmware upgrade.
- Damage caused by operating the ROV in the sensitive zone (military, natural resource protection zoning, marine conservation and ocean conservation, etc.)
- Damage caused by unpredictable factors (current, cave collapse, swallow by animal, etc.)
- Products or parts with an altered identification label or from which the identification label has been removed.
- The presence of water droplets or water stains on the ROV may be due to the running tests in water performed at our factory. This will not affect the features and function of FIFISH underwater robot.

For more information, please check our website for tuition videos, or read FAQ in FIFISH APP/help/FAQ.

For latest version of use guide/manuals and other instructions, check on our website.

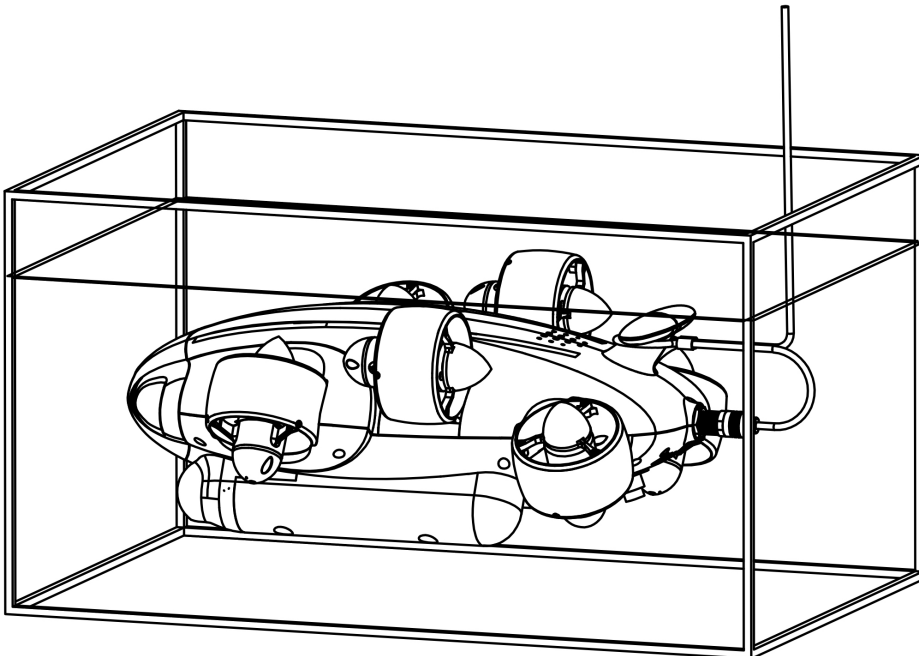
<https://www.qysea.com/support/user-manual/>

Note:

This content is subject to change without prior notice.

Motors Maintenance (After Every Dive)

- (1) Connect the RC to V6 PLUS and open the FIFISH App (see Hardware Connection section, in Quick Start Guide).
- (2) Make sure every motor is immersed inside fresh water, see the picture (vertical soaking in bucket will have same results).
- (3) Open FIFISH App, homepage, Click “Help” on the bottom right corner. Click “Maintain/Thrusters”, then press “Start”. All motors will rotate slowly.
- (4) In about 10 mins this cleaning program will stop.
Air dry V6 PLUS in the cool place and avoid direct sunlight.



Battery Maintenance

- (1) Keep 50% to 60% battery level before long term storage.
- (2) Charge to full once every 90 days.

Maintenance Guide

In order to have your V6 PLUS in a good condition at all time, soak and clean your V6 PLUS with clean fresh water after every dive. The cleaning procedures in FIFISH App will instruct you to get rid of the salt residues and salt crystallization inside the motors, as well as, clean the chlorine from pool water. The standard maintaining steps are listing in page 29.

