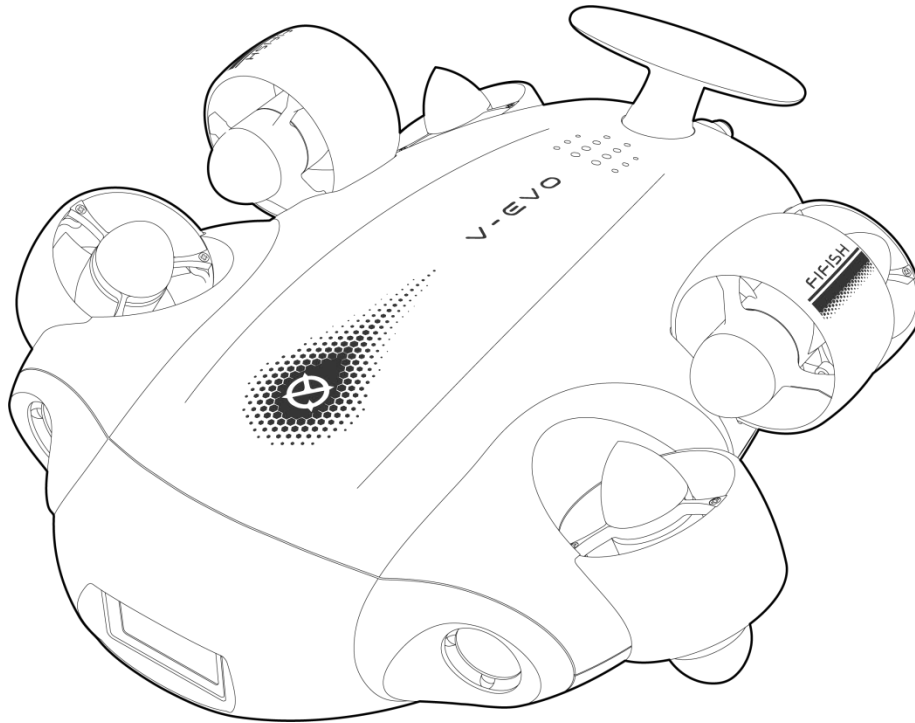


# FIFISH V-EVO



## Quick Start Guide

V 1.0





Thank you for choosing FIFISH as your underwater exploring kit. This Quick Start Guide will help you learn and operate FIFISH V-EVO, the 1<sup>st</sup> compact size **OMNI**-directional ROV.

## Safety and Regulations

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



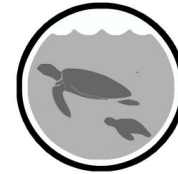
Do NOT touch the running propeller



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



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



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



Do NOT throw the ROV when deploying into the water



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



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



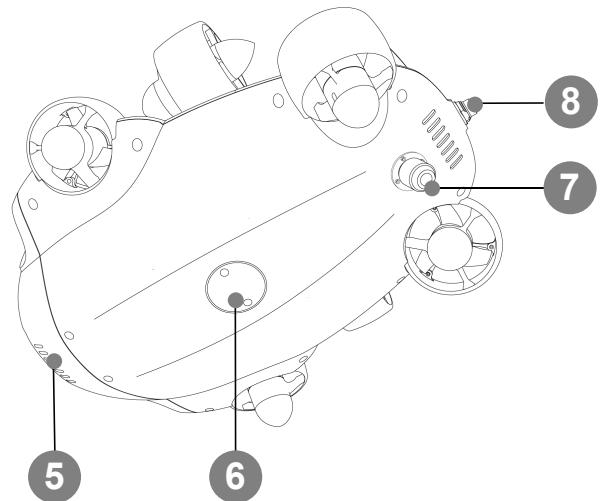
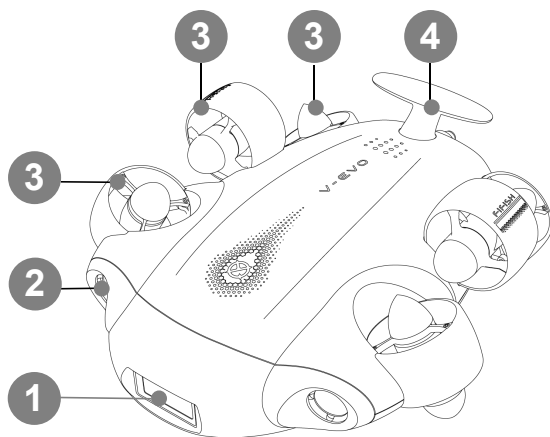
Maintain after dive, check the ***Maintenance Guide***

# Introduction

## About FIFISH V-EVO

FIFISH V-EVO is the first underwater drone to combine a 4K · 60FPS high frame-rate camera with 360-degree autonomous movements, giving you the ability to create their own unique and cinematic underwater films and explorations. Compact drone robotics and AI black technologies converge together to deliver a newly-immersive underwater experience. Break through the limits of traditional dive photography, and discover thrilling worlds below the depths with FIFISH V-EVO.

## ROV (Remotely Operated underwater Vehicle)



1. 4K Underwater Camera
2. 2,500 lumens LED × 2
3. Thrusters × 6
4. Rear Wing<sup>1,2</sup>

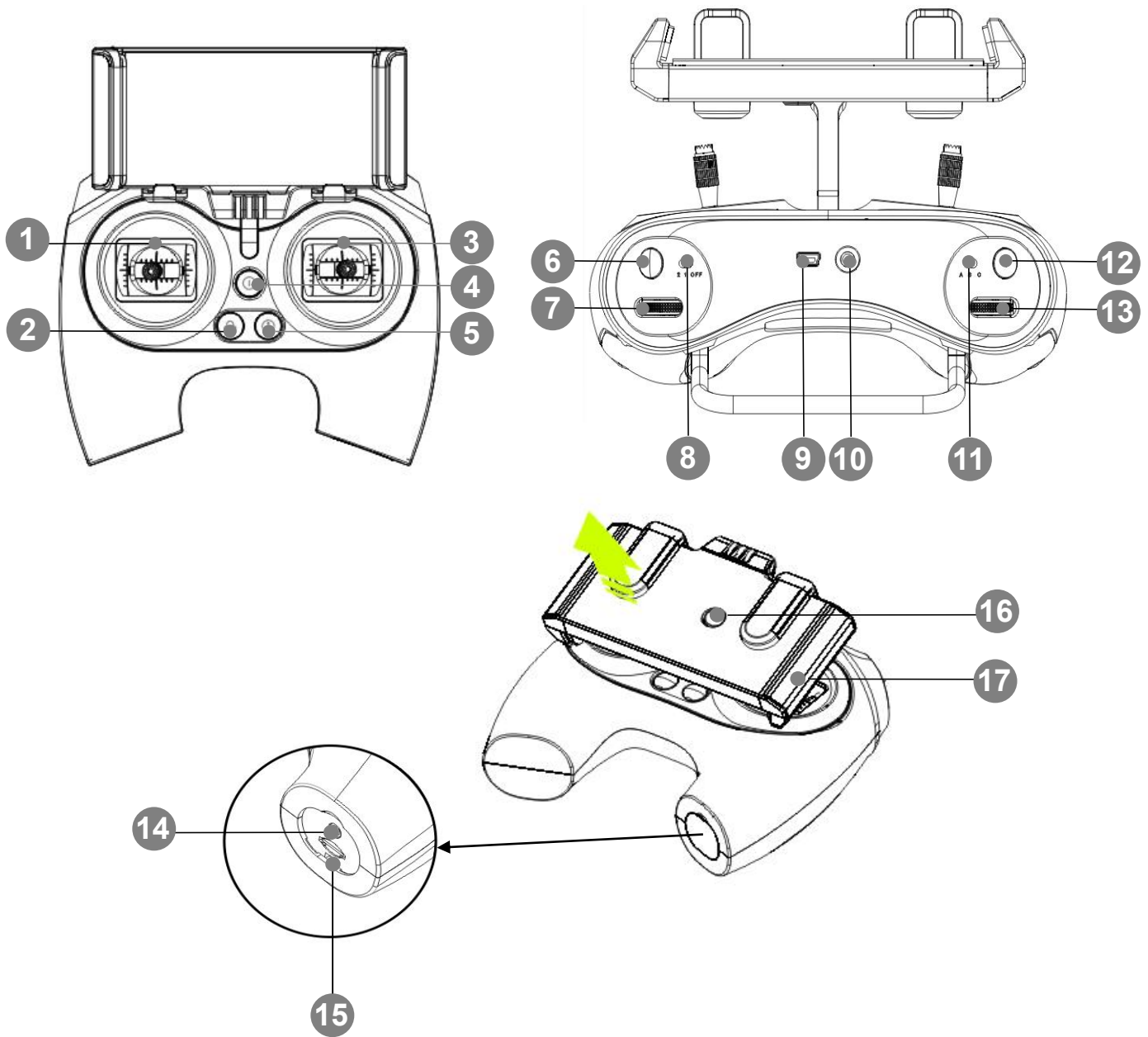
5. Vent Holes
6. Mounting Port
7. Q-interface
8. ROV Tether Port

Note:



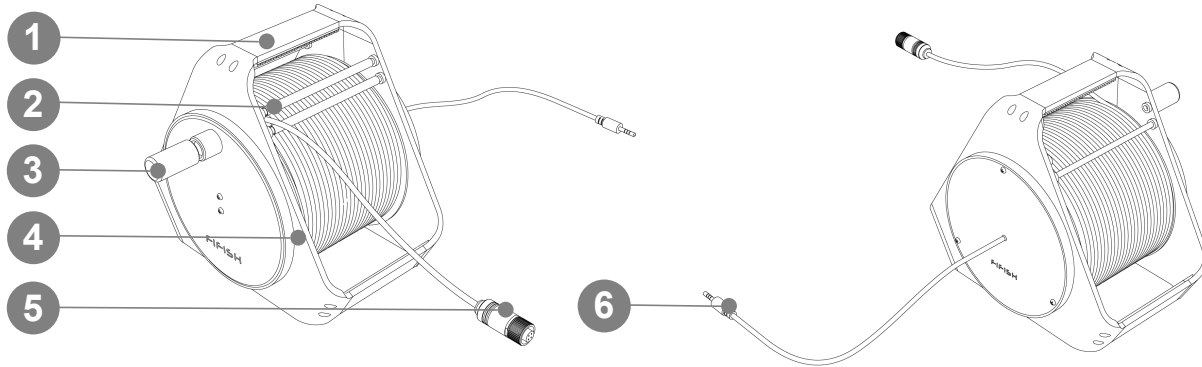
1. Do NOT shake or swing while holding the rear wing
2. Make sure hook the loop of tether on the stem of rear wing when connect (See **Preparation and Connection / Hardware Connection** )

## RC (Remote Controller)



- |                               |   |
|-------------------------------|---|
| 1. Left Control Stick         | 10. Tether Port (3.5 mm head port)            |
| 2. Thrusters LOCK/UNLOCK      | 11. Control Mode (Attitude / Sport / Combine) |
| 3. Right Control Stick        | 12. Video Record/Stop                         |
| 4. ON/OFF                     | 13. Left Wheel                                |
| 5. Depth Holding (ON/OFF)     | 14. Charging Port                             |
| 6. Take Picture               | 15. Micro SD Slot                             |
| 7. Right Wheel                | 16. Clamp Release Button                      |
| 8. LED Brightness (OFF, 1, 2) | 17. Clamp for Smart Device                    |
| 9. Ethernet port              |   |

## Spool and Tether



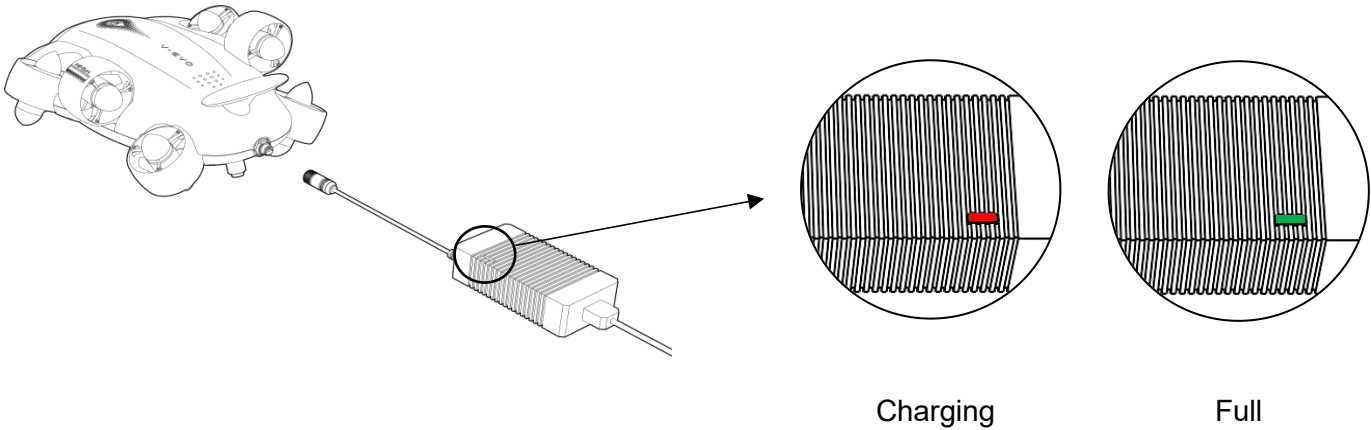
1. Spool Handle
2. Tether Regulator
3. Foldable Handle

4. Tether Plug
5. Spool Frame
6. Controller Plug

# Preparation & Connection

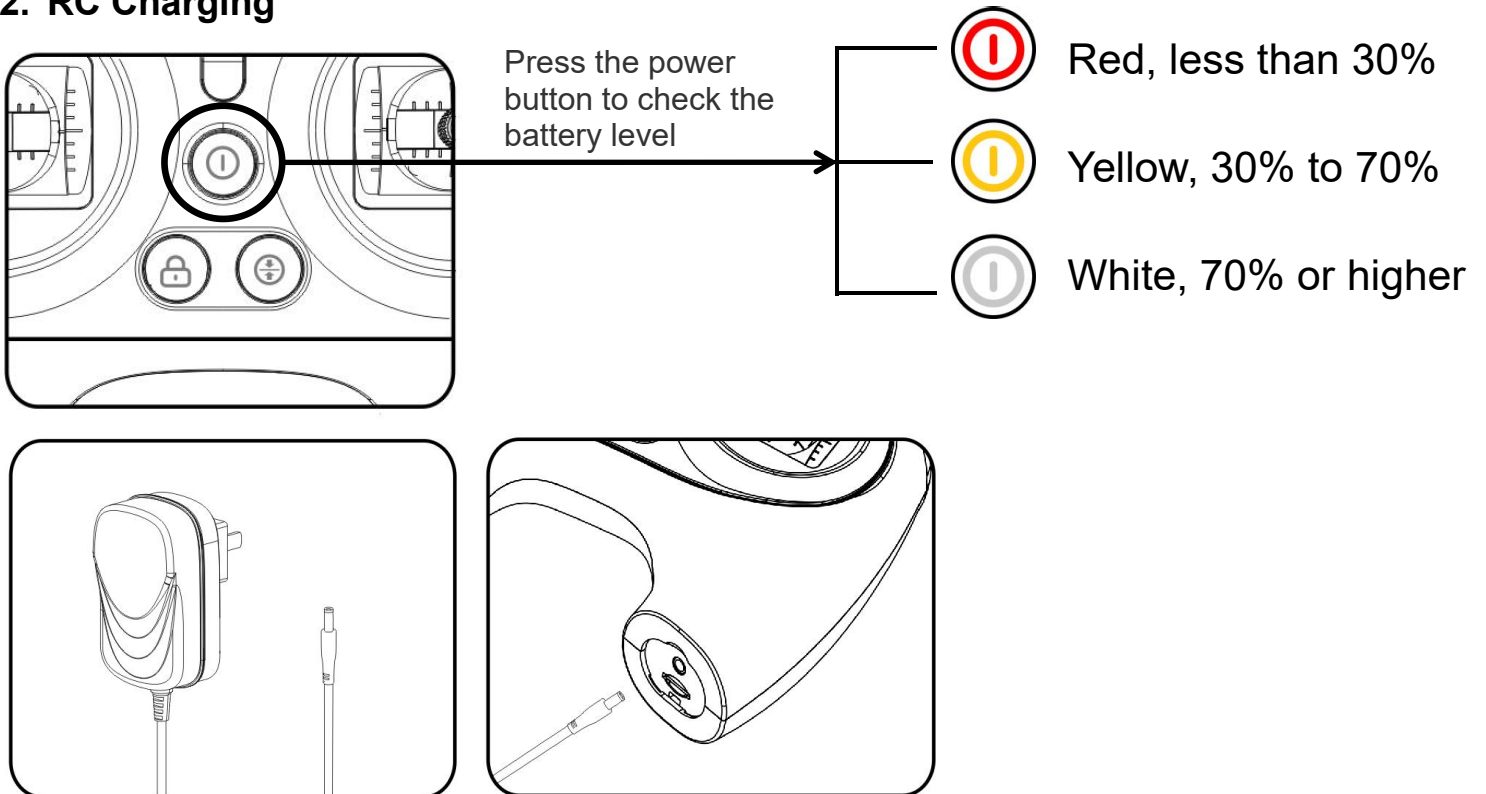
## Charging

### 1. ROV Charging (Please charge the ROV and remote controller for the first use)



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

### 2. RC Charging



Flashing POWER button, RC is charging,  
White steady POWER button, RC is fully charged.

# Install FIFISH APP

## 1. APP download & Installations

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

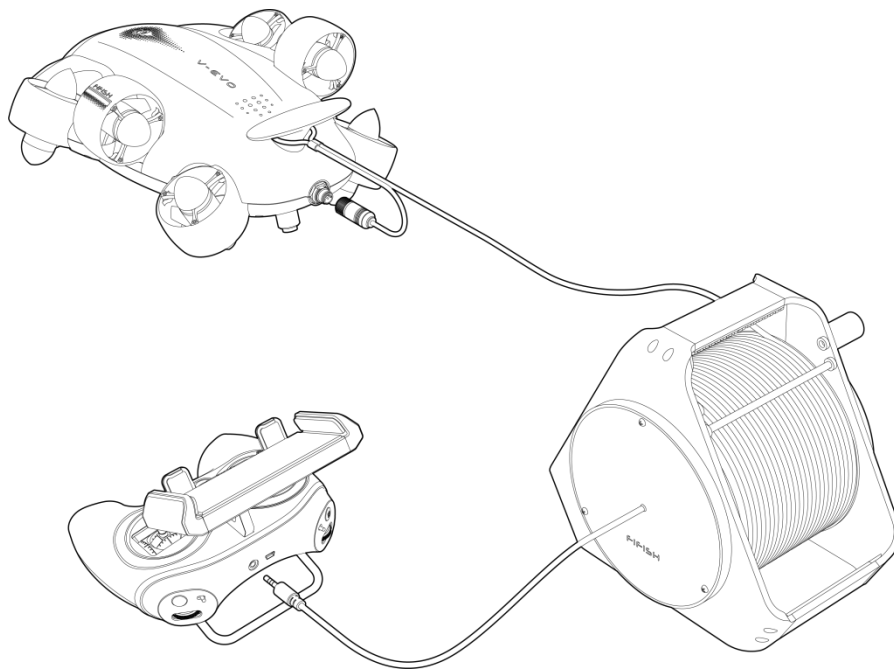


Option 2. Search the FIFISH on App Store (iOS) or GooglePlay (Android).

Option 3. Go to QYSEA website ([www.qysea.com](http://www.qysea.com)) support/APP download

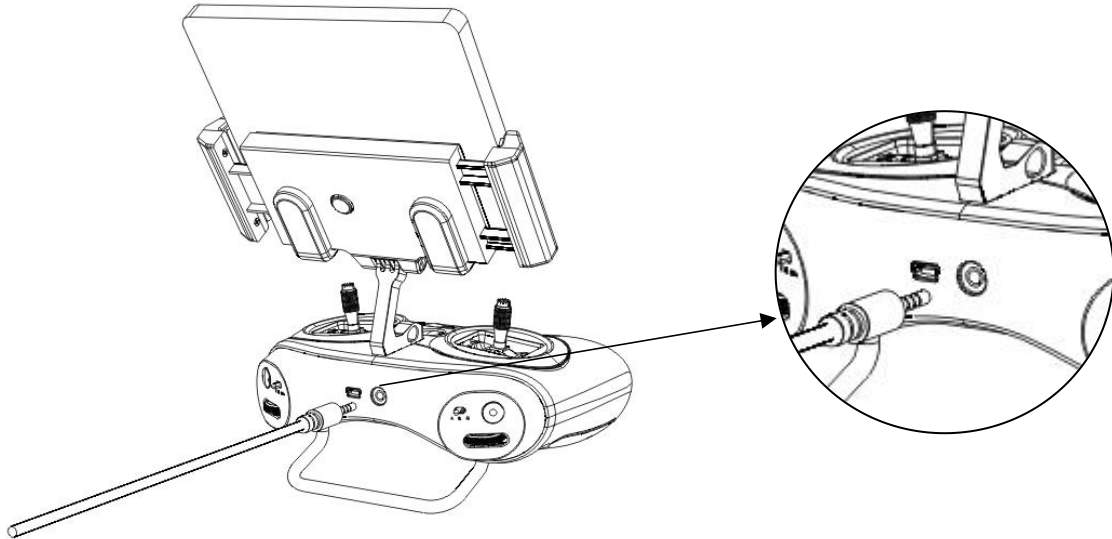
## 2. Hardware connection

Overview of Hardware connection

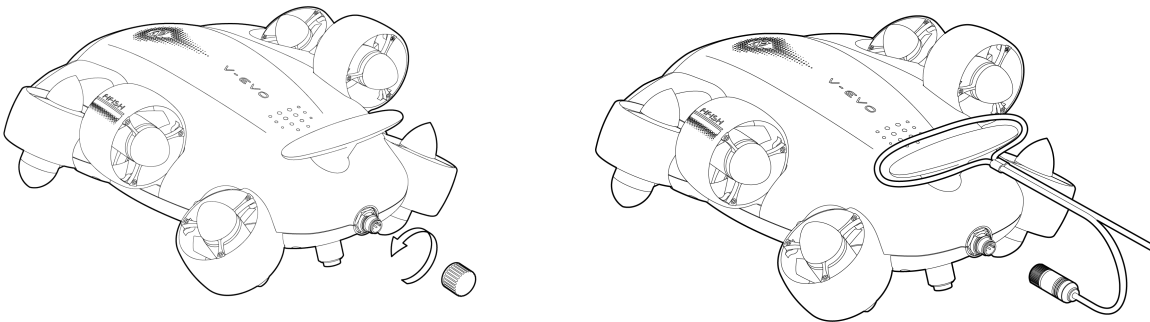




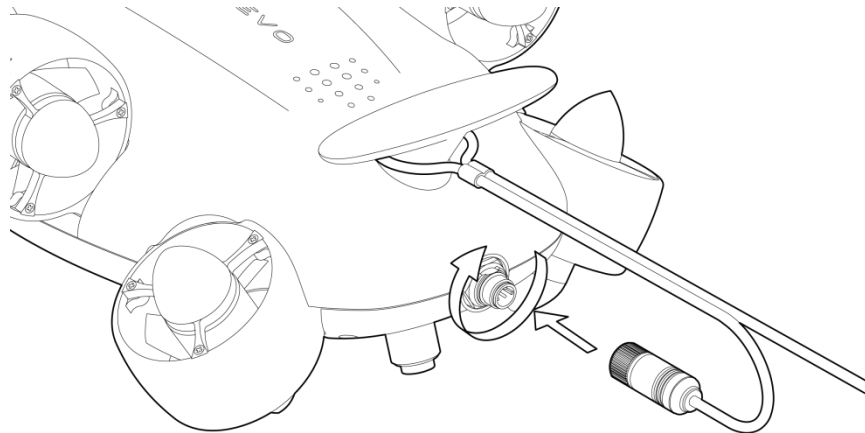
**A.** Plug the tether (3.5 mm head) into remote controller



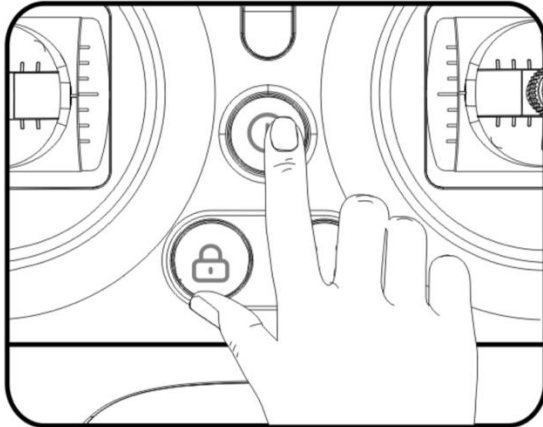
**B.** Take off the protect cap, tie the knot around the rear wing



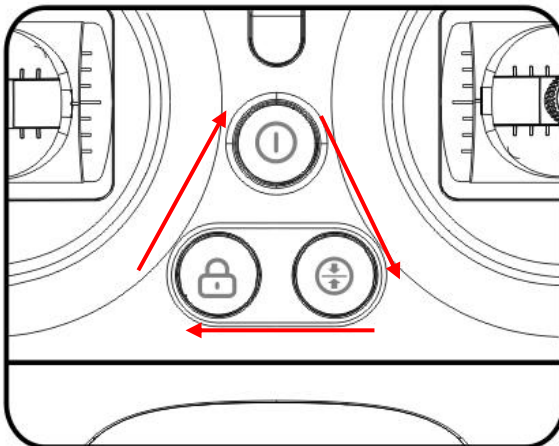
**C.** Plug the tether (ROV end) into the ROV, the ROV will automatically turn on. The music will play 5 chimes: (Do, Re, Mi, Do, Mi)



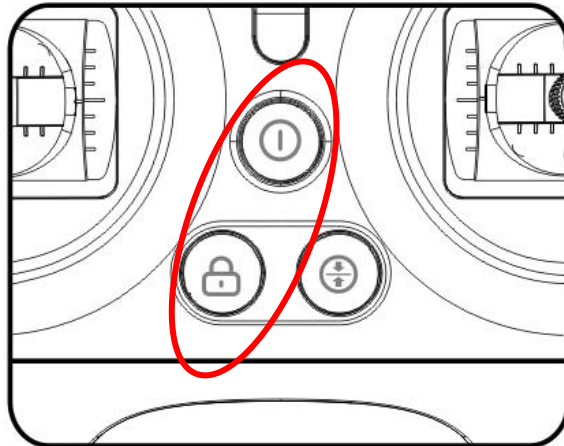
- D.** Turn ON the remote controller. Press and hold the ON/OFF button, until you hear 7 low to high chimes (Do, Re, Mi, Fa, Sol, La, Si)



- E.** The “ON/OFF”, “Depth Holding” and “LOCK/UNLOCK” will rotate clockwise, which indicates “Ready to be connected”

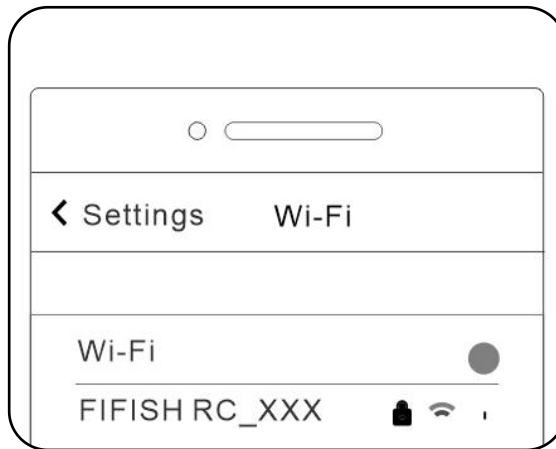


F. Check the remote controller, the “ON/OFF” and “LOCK/UNLOCK” buttons consistently on indicates the successful hardware connection

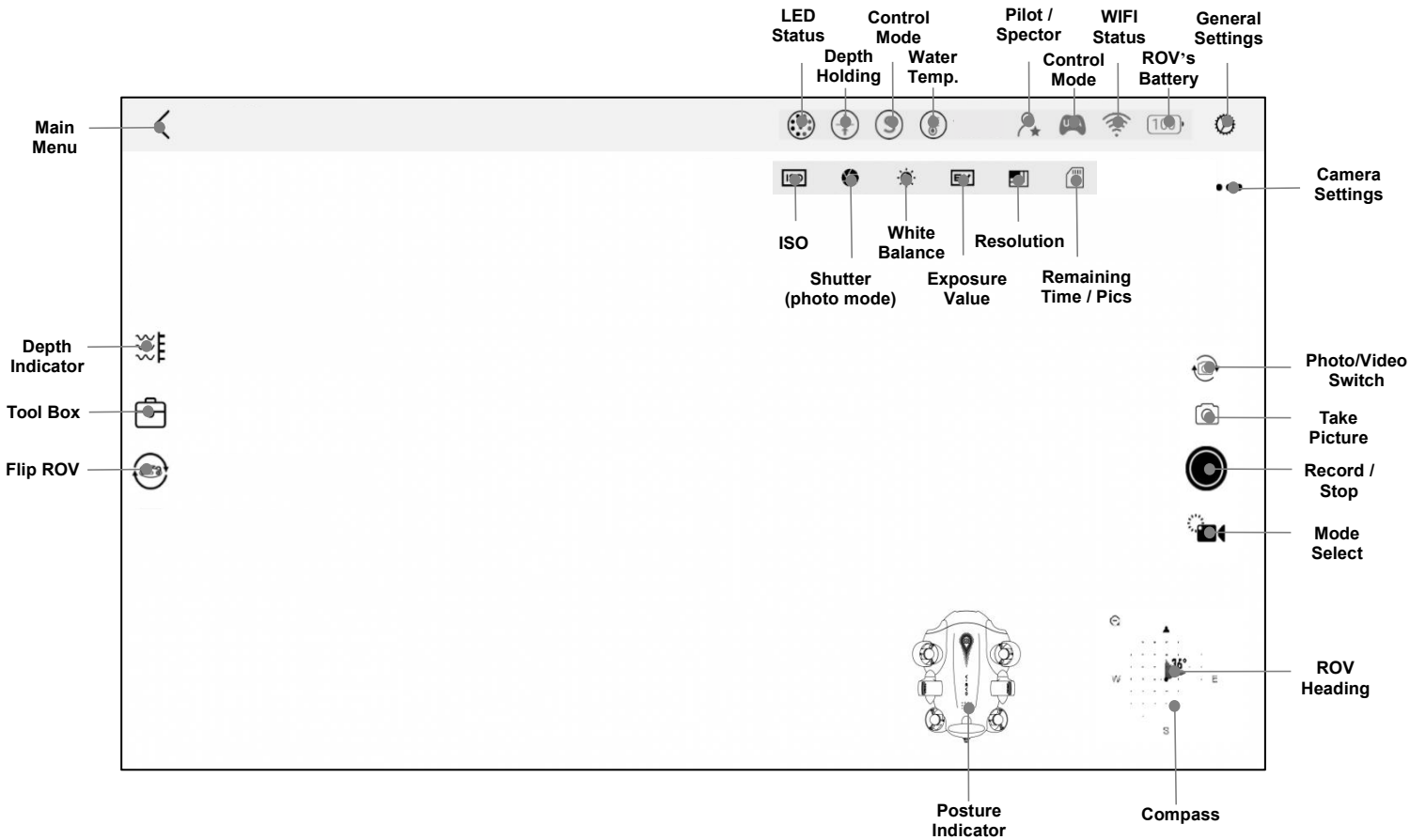
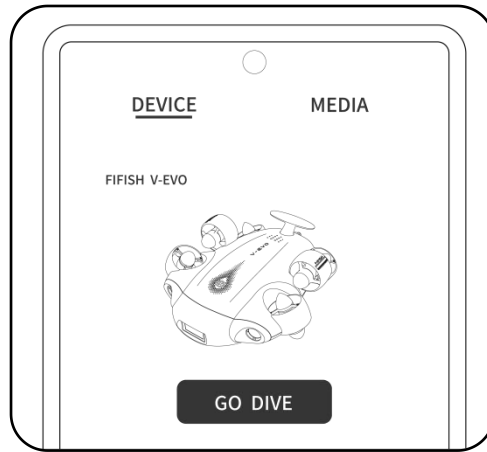


### 3. Software connection

A. Connect with the RC's Wi-Fi  
Find the Wi-Fi network name “FIFISHRC\_XXXX”  
The password is “1234567890”



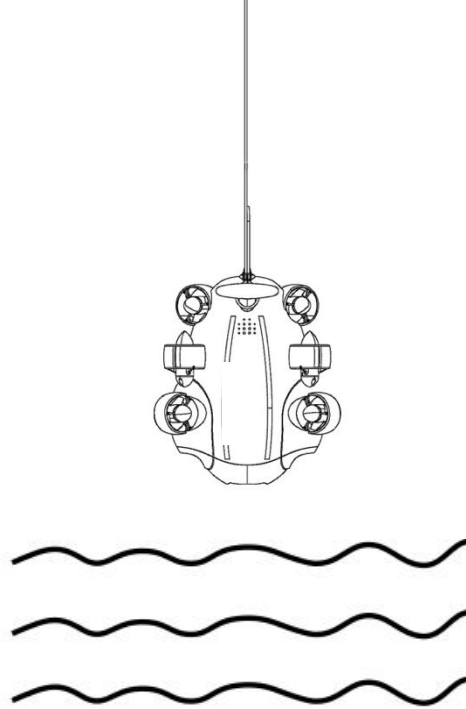
## B. Click 'GO DIVE' Activate LIVE-Streaming



**C. Deploy the ROV**

Pull **ONLY** on the tether and deploy the ROV into the water.

**Unlock** the thrusters and start dive.



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

**4. Retrieve**

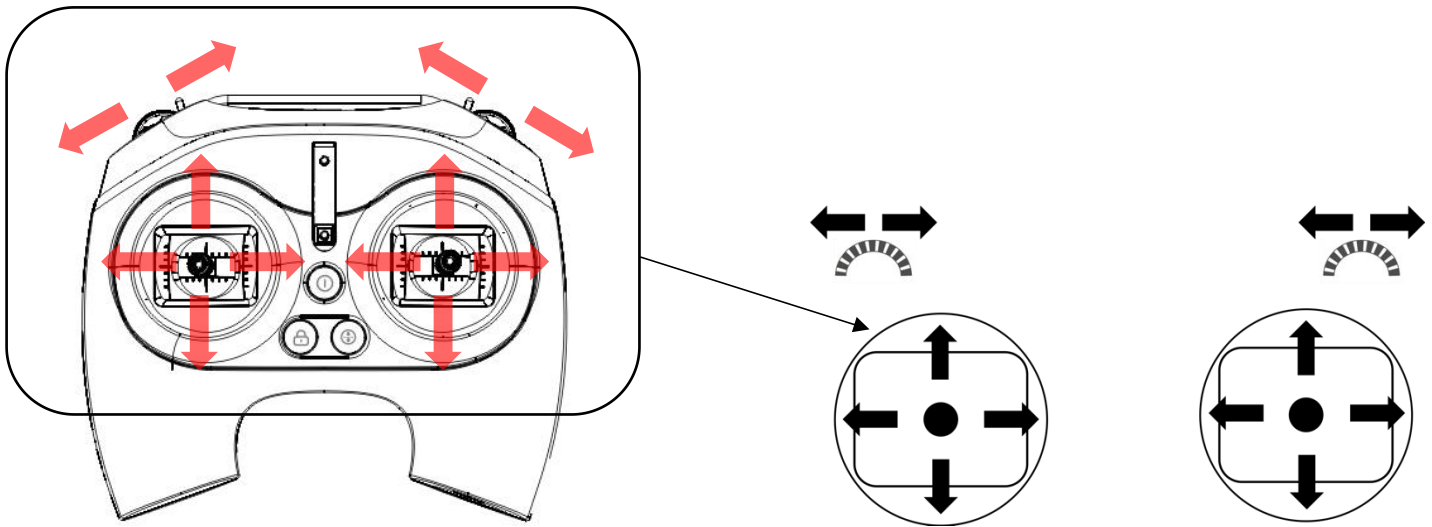
Lock the thrusters and stop recording the video before closing the FIFISH App. Pull **ONLY** on the tether to retrieve the ROV.

# Introduction of Control

The FIFISH V-EVO uses the patented *Smart Thruster Array*™ to ensure the ultimate maneuverability and delivers the 6 DOF (degree of freedom).

- V-EVO can move in descend & ascend, left and right, forward and backward.
- V-EVO 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.**



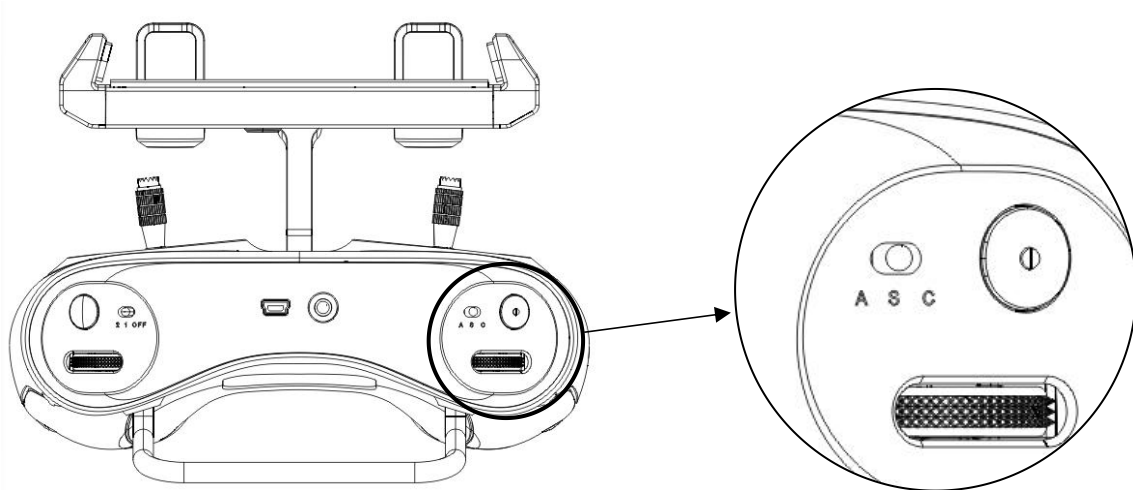
| Remote Controller | Operation Preference Setting |   |
|-------------------|------------------------------|---|
|                   | ROV Modes (USA/JPN/CHN)      | UAV Modes (USA/JPN/CHN)                             |
|                   | <p>Ascend</p> <p>Descend</p> | <p>Pitch Up</p> <p>Pitch Down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

Note: 1. 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.

## Methods of Control

FIFISH V-EVO 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 V-EVO. Controlling and moving based on the FPV (First 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

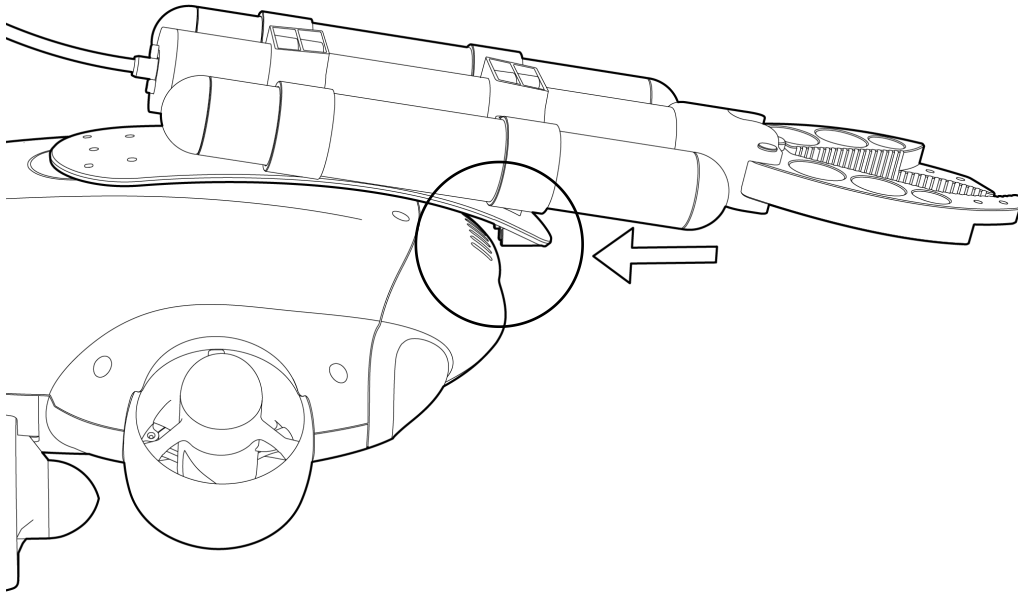
User puts the mobile phone into VR glasses after turning ON VR mode in the FIFISH APP toolbox, and turns the controller to C mode. Combination mode activate the head tracking controlling via VR Goggle<sup>[1]</sup>, which allow pilot to use the VR Goggle<sup>[1]</sup> to pitch, roll and yaw. Combination mode delivers the intuitive control and immersive experiences. Combination mode supports head tracking and remote controller working together.

[1] To use Combination mode, users need to have user's own VR glasses or FIFISH VR Goggle ready

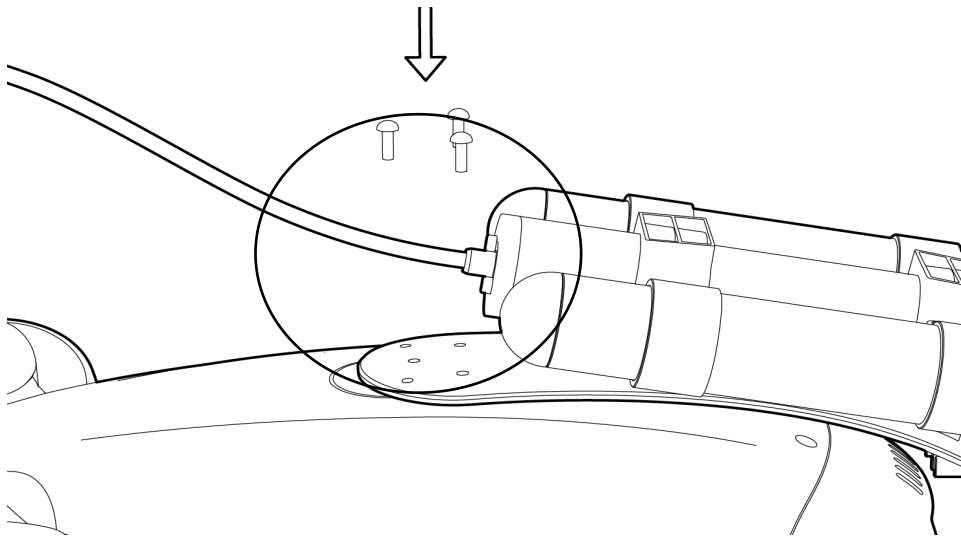
## Robotic Arm Installation (Optional)

**!** Please power off the ROV before installing

**A.** Insert the bracket into front vent holes

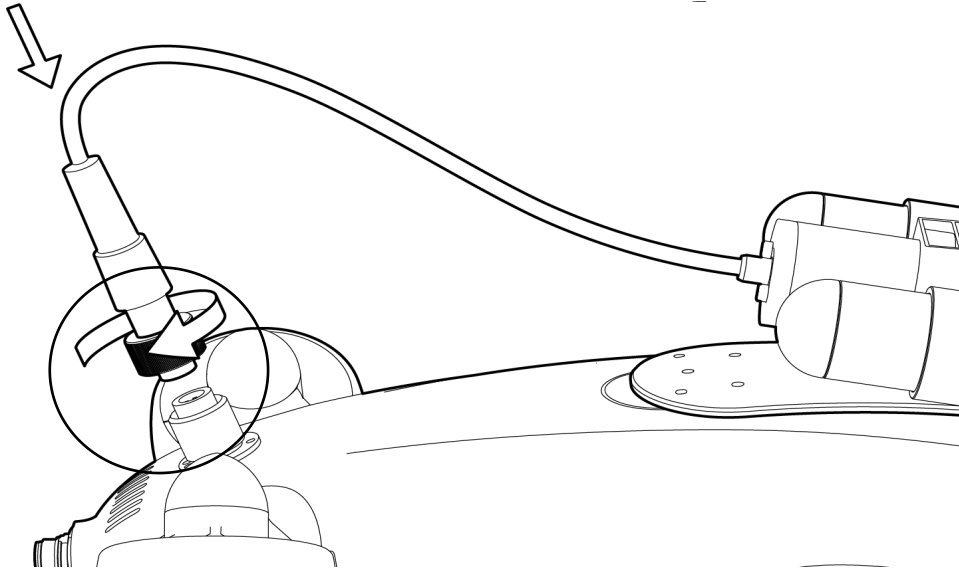


**B.** B.Fasten the 3 screws to secure robotic arm on the bracket

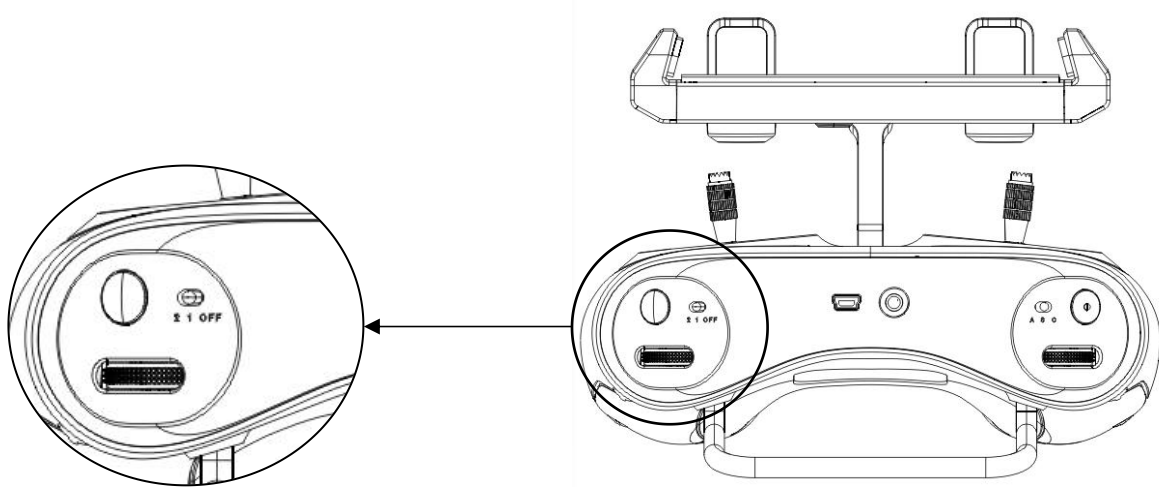




C. Align the cable to the Q-interface and fasten the bolt



D. The robotic arm can be activated **ONLY** in Attitude mode (Mode A).  
Use the right wheel to open and close the robotic claws



# Maintenance

1. Soak ROV at least 1 hour after dive, then let the motors run in fresh water at least 10 minutes and rinse the ROV with fresh water. Air dry and avoid direct sunlight (for more information, please check the ***Maintenance Guide***)
2. Keep the every connector (port and plug) dry and clean at all time. Put on the protective cap all the time. The salt and moisture may cause corrosion on the connector. Clean the plug with running fresh water and dry with cotton pad or tissue paper.
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 ) and check the thruster and test movement and rotation.
4. Clean sand regularly. 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.
5. Check the tether on regular basis, replace the tether if break or damage appears.
6. Store ROV and RC in dry and cool environment (Temperature range: 5°C to 25°C or 41°F to 77°F).
7. 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 × 143 mm (15 in × 13 in × 5 5/8 in)  |
| Weight          | 3.9 kg (9 lbs)   |
| Thrusters       | 6 (4 × Vector + 2 × Horizontal)  |
| Maneuverability | 6 DOF (Degree of Freedom):<br>Moving: left & right, up & down, forward & backward<br>Rotation: 360° yaw, 360° pitch, 360° roll |
| Posture Lock™   | ± 0.1° pitch angle or ± 0.1° roll angle and moving in any direction  |
| Depth Holding   | Suspending in ± 1 cm   |
| Speed           | Max 3 knots (1.5 m/s) in still water   |
| Depth Rating    | 100 m (328 ft)   |
| Operating Temp. | -10 °C ~ 60 °C (14 °F ~ 140 °F)  |
| Battery         | 1~ 4 hours<br>Rated Capacity 9,000 mAh / 97.2 Wh   |

## Camera:

|                  |  |
|------------------|--|
| Sensor           | 1/2.3" SONY CMOS<br>Effective Pixels 12MP<br>ISO Range 100-6400 in Auto / Manual   |
| Lens             | Field of View 166°<br>Aperture f/2.5<br>Min Focusing Distance 0.3 m  |
| Shutter          | 5~1/5000 second ; Auto/Manual (Electronic Shutter Speed)   |
| Burst shooting   | 1 / 3 / 5 / 10 / 15 frames   |
| White Balance    | 2,500K ~ 10,000K ; Auto / Manual   |
| Exposure         | - 3 EV ~ + 3 EV  |
| Compensation     |  |
| Photo Resolution | 4:3: 4000 x 3000   |
| Photo Format     | JPEG, DNG  |
| Video Resolution | 4K UHD: 25/30/50/60 fps (50/60 fps are limited to H.264 format )<br>1080P FHD: 25/30/50/60/100/120 fps<br>720P HD: 25/30/50/60/100/120/200/240 fps |
| Video Encode     | MPEG4- AVC/H.264, HEVC/H.265   |
| Stabilization    | EIS (Electronic Image Stabilization)   |
| Color System     | NTSC and PAL   |
| Internal Storage | 64 GB standard   |

## **LED Beams:**

|            |  |
|------------|--|
| Brightness | 5,000 lumen                            |
| CCT        | 5,500 K (Correlated Color Temperature) |
| Beam Angle | 120°                                   |
| Dimming    | 3                                      |

## **Remote Controller:**

|                 |  |
|-----------------|--|
| Wireless        | 5 GHz Wi-Fi supported  |
| Battery Life    | 1 ~ 4 hours  |
| Copy & Download | Support Micro SD Card FAT32 and exFAT format ( $\leq$ 128GB) |

## **Charger:**

|     |  |
|-----|--|
| ROV | Input: 100-240 V, 50/60 Hz, 1.3 A MAX<br>Output: 12.6 V = 5A, AC |
| RC  | Input: 100-240 V, 50/60 Hz, 0.5 A MAX<br>Output: 5 V = 3A, DC    |

## **Spool & Tether:**

|                |   |
|----------------|---|
| Length         | 100m (328 ft) on Spool                                    |
| Breaking Force | 80 kgf (176 lbf)  |
| Dimension      | 238 mm × 205 mm × 207 mm (9 3/8 in × 8 1/8 in × 8 1/8 in) |

## **Robotic Arm & Parallel Gripper (Optional):**

|                |                   |
|----------------|-------------------|
| Claws Opening  | 120 mm            |
| Gripping Force | 7.0 kg (15.4 lbs) |

# 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, high-voltage wires, substations, 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.
- Please check the QYSEA After-sales Policy published by official website for more detail.  
(<https://www.qysea.com/support/after-sales/>)

If needing any help, please contact QY after-sales personnel

1. Online customer service: you can find the entrance of customer services via the FIFISH APP, WeChat official account (FIFISH Underwater Robot) and the official website.

2. Tel:+86 18138838924 (We-Chat & WhatsApp&Skype) & +86-755-22662313

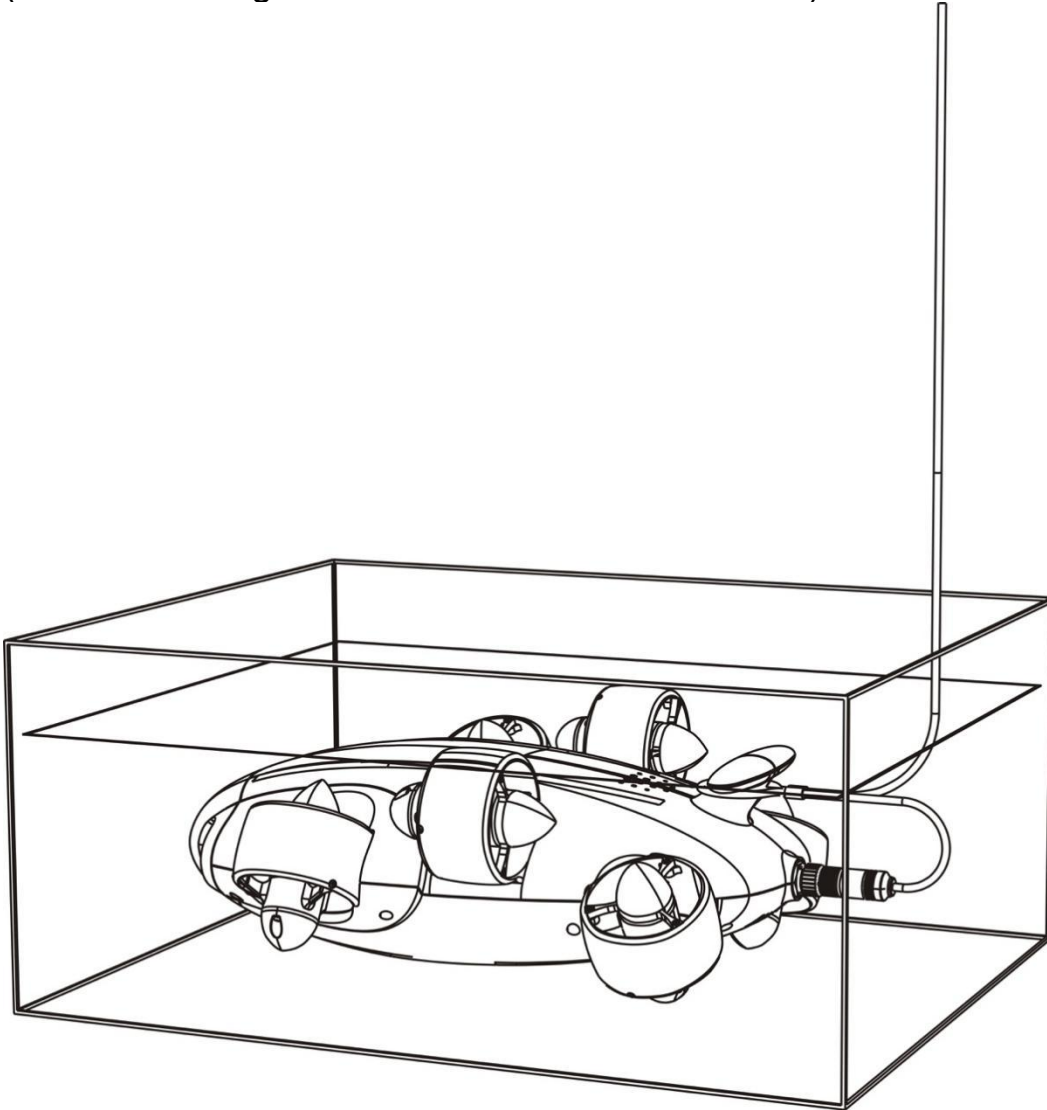
Working hours: Monday to Friday, 9:00-18:10 (GMT+8)

3. Email: [support@qysea.com](mailto:support@qysea.com)

This content is subject to change without prior notice.

## 1. Motors Maintenance (After Every Dive)

- 1.1. Connect the remote controller to V-EVO, and open the FIFISH App (see Hardware connection section, in Quick Start Guide).
- 1.2. Make sure every motor is immersed inside fresh water, see the picture (vertical soaking in bucket will have same results).



- 1.3. Open FIFISH App, homepage, Click “Help” on the bottom right corner. Click “Maintain”, and then “Cleaning Program” will start. All motors will rotate slowly.
- 1.4. In about 10 mins the Cleaning Program will stop. Air dry V-EVO in the cool place and avoid direct sunlight.

## 2. Battery Maintenance

- 2.1. Keep 50% to 60% battery level before long term storage.
- 2.2. Charge to full once every 90 days.
- 2.3. If you haven't used V-EVO for more than 40 days, you need to use a charger to activate it.



# **Maintenance Guide**

**In order to have your ROV in a good condition at all time, soak and clean your ROV with clean fresh water after every dive. The cleaning process 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.**

