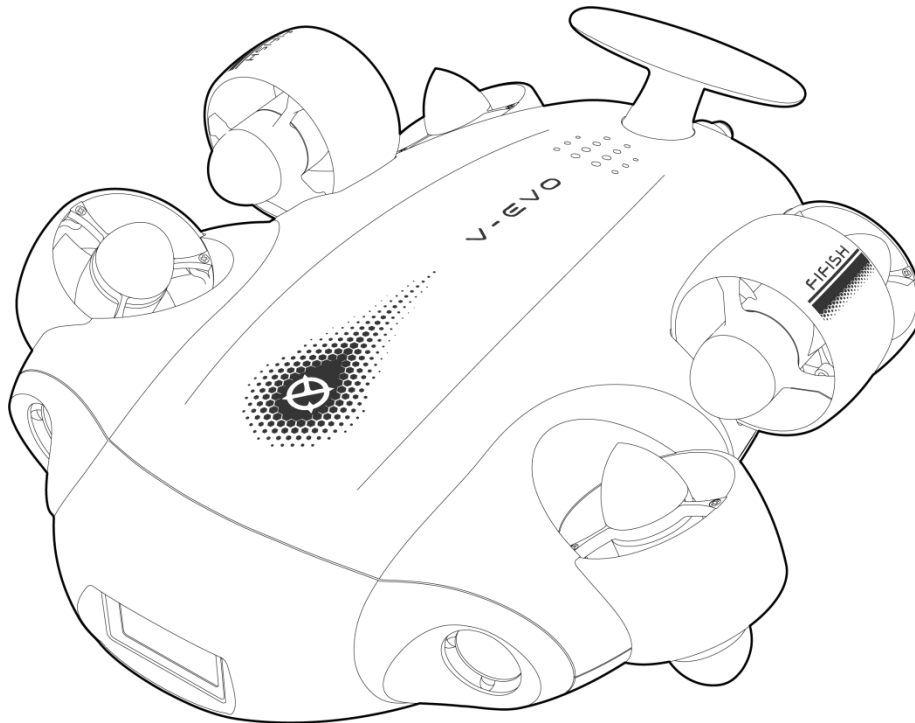# QYSEA

FIFISH V- EVO

Quick Start Guide
V1.5

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

Safety and Regulations

Operating FIFISH products requests training and practice. Please read through this document before operating in water.
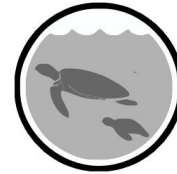
Do NOT touch the running propeller

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)
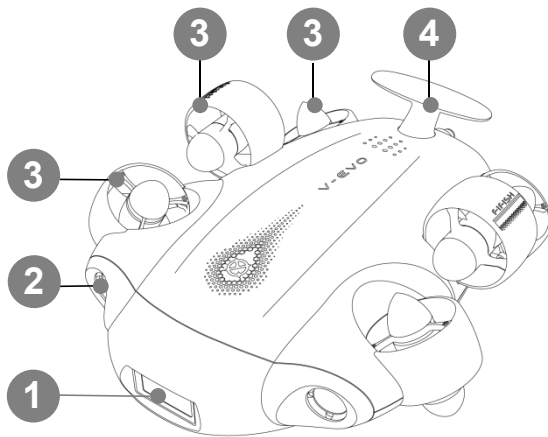
1. 4K Underwater Camera
2. 2,500 lumens LED × 2
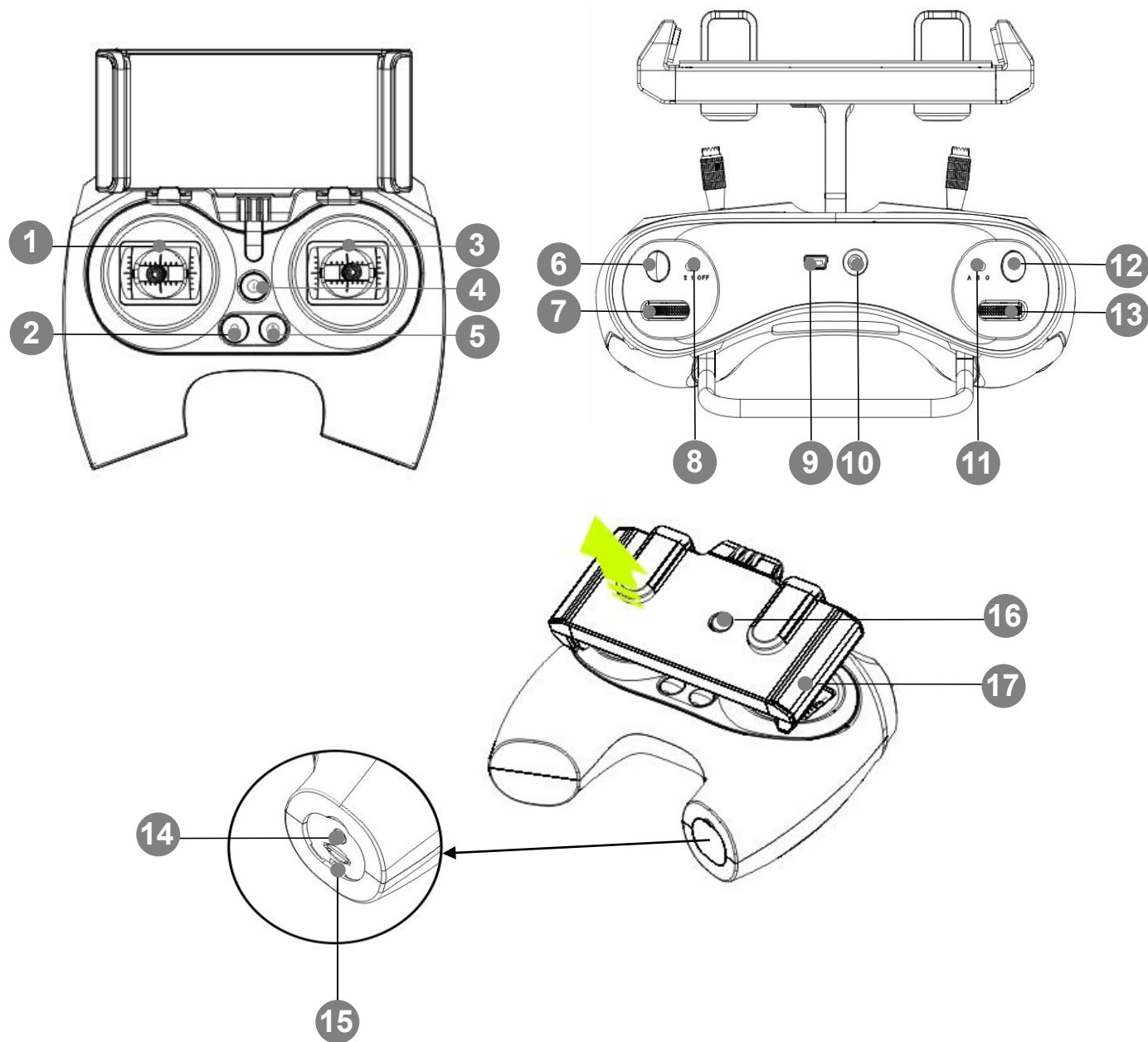3. Thrusters × 6
4. Rear Wing [a],[b]
5. Vent Holes
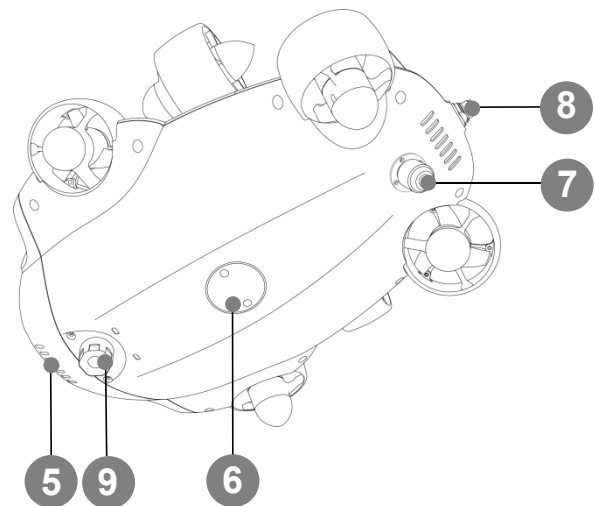
6. Mounting Port
7. Q-interface
8. ROV Tether Port
9. SD Card Slot [c]

Note:

⚠ a. Do NOT shake or swing while holding the rear wing
b. Make sure hook the loop of tether on the stem of rear wing when connect (See **Preparation and Connection** / Hardware Connection)
c. Only the new V-EVO model with removable SD card design has a SD card slot.
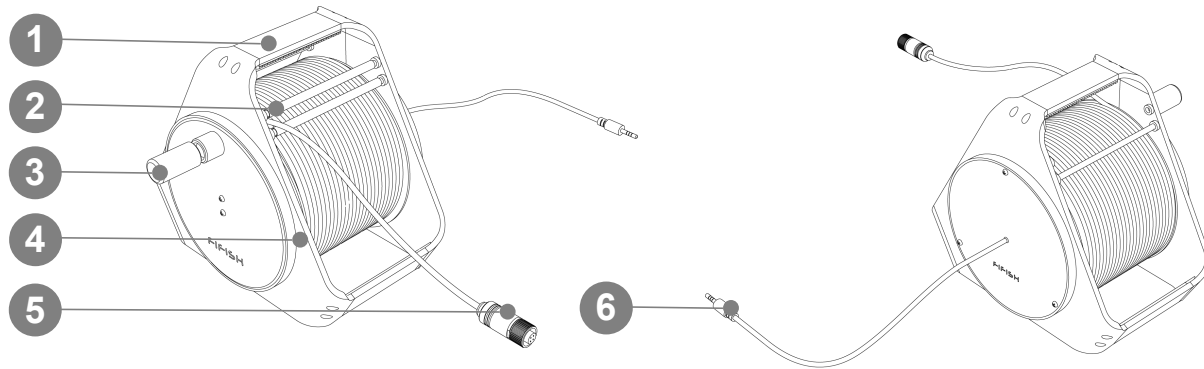
RC (Remote Controller)

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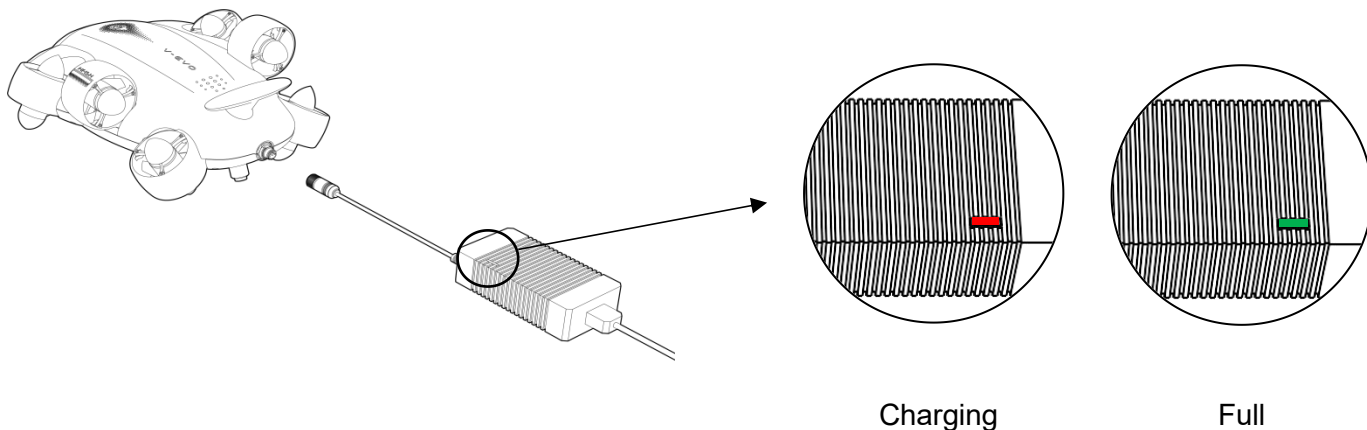17. Clamp for Smart Device

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)

Charging   Full

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

2. RC Charging

Press the power button to check the battery level

Red, less than 30%

Yellow, 30% to 70%

White, 70% or higher
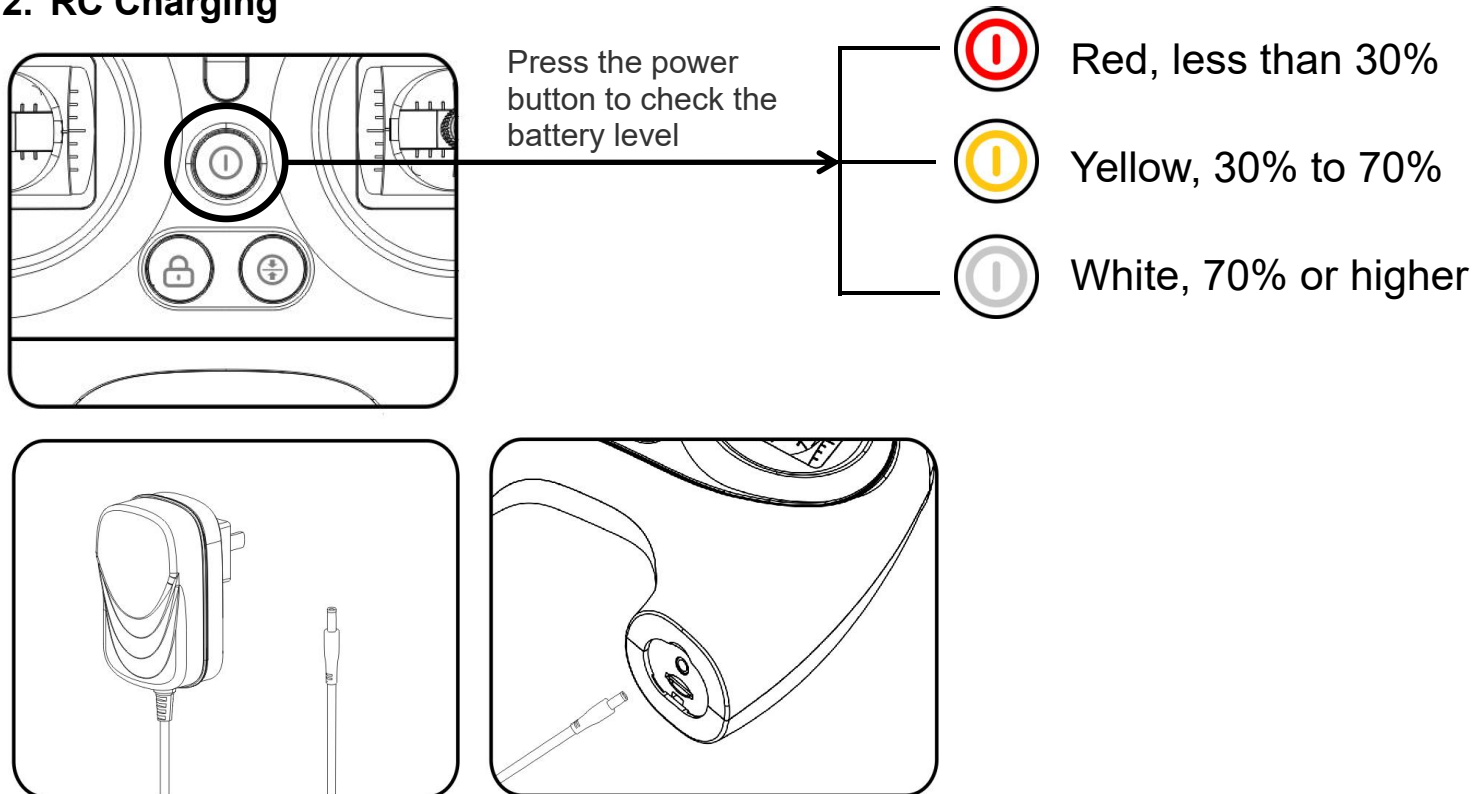
Flashing POWER button, RC is charging,
White steady POWER button, RC is fully charged.

Install FIFISH APP

1. APP download & Installations

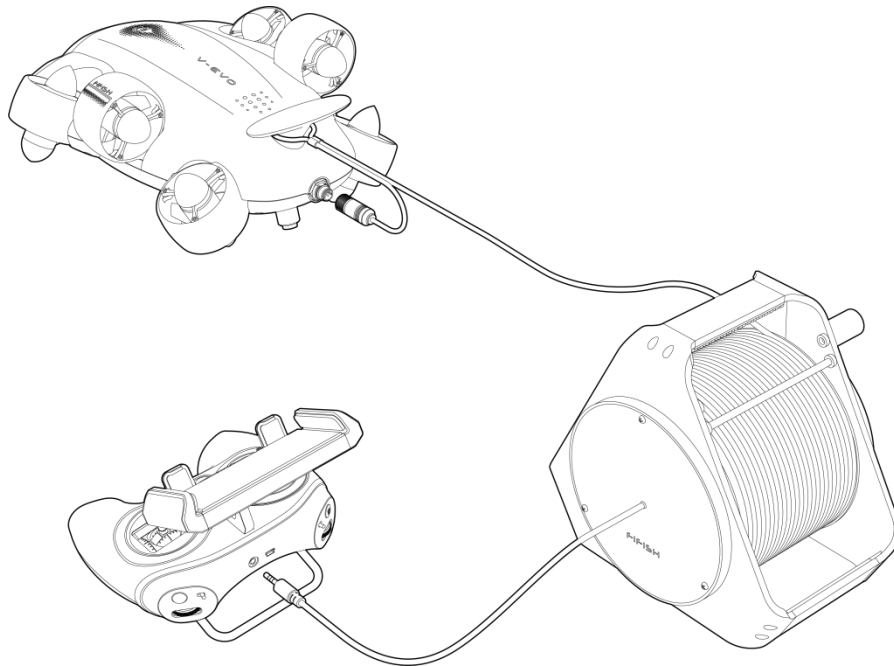Option 1. Scan the QR code below to download FIFISH APP.

Option 2. Search the FIFISH on App Store (iOS) or GooglePlay (Android).
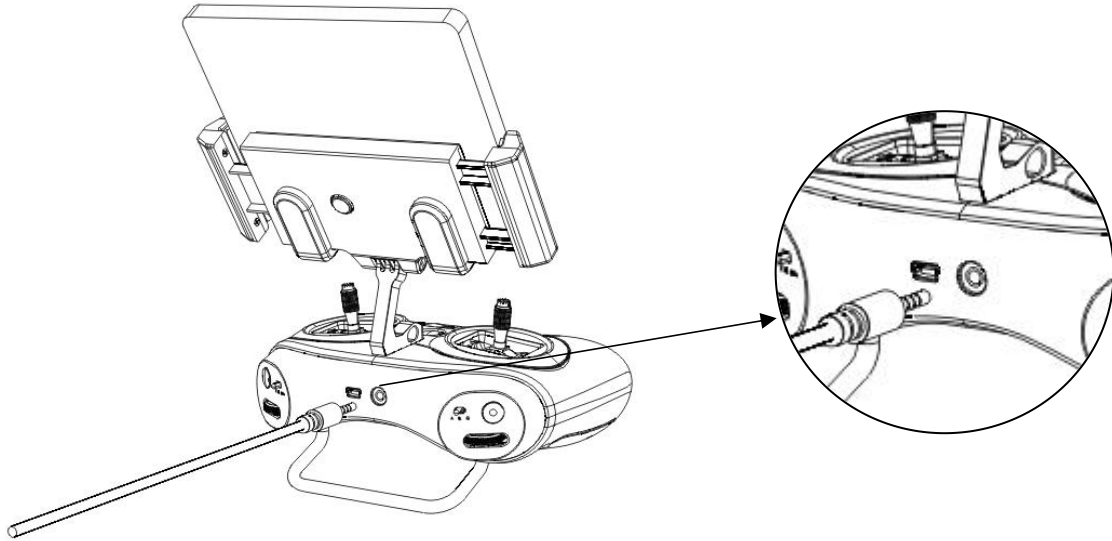
Option 3. Go to QYSEA website (www.qysea.com) support/APP download

2. Hardware connection

Overview of Hardware connection

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

B. Take off the protective cap, tie the knot around the rear wing
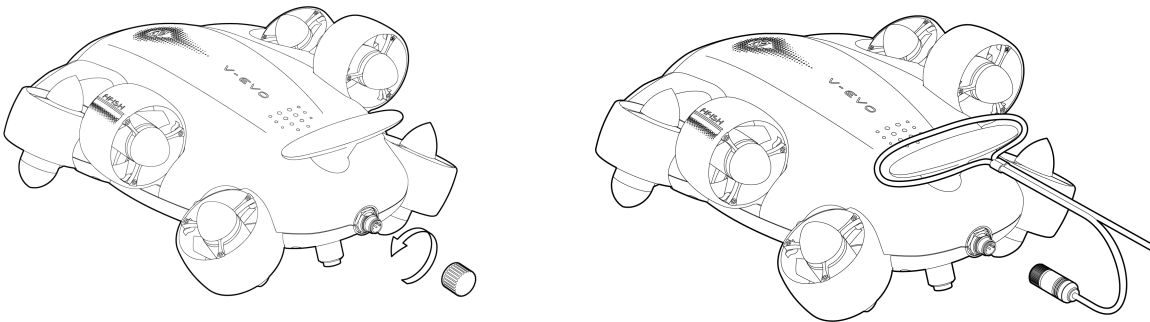
C. Plug the tether (ROV end) into the ROV, the ROV will automatically turn on. The music will play 5 chimes: (Do, Re, Mi, Do, Mi)
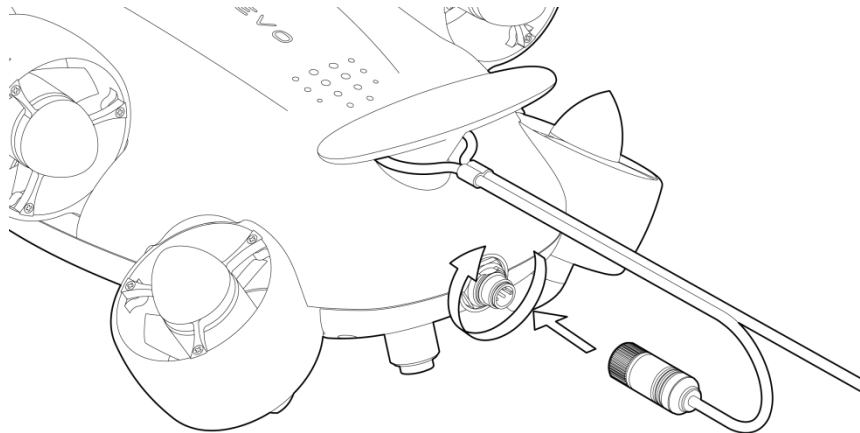
D. Turn ON the remote controller. Press and hold the ON/OFF button, until you hear 7 low to high chimes (Do, Re, Mi, Fa, Sol, La, Si)
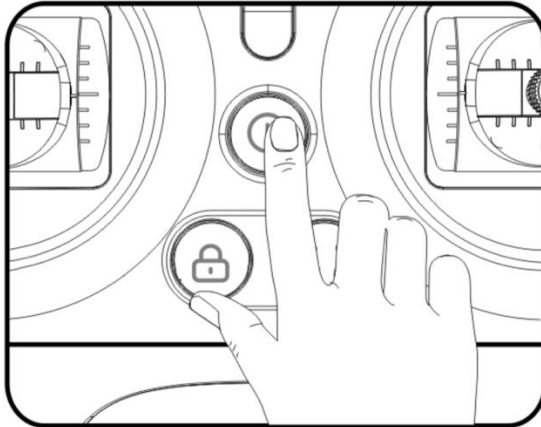
E. The "ON/OFF", "Depth Holding" and "LOCK/UNLOCK" will rotate clockwise, which indicates "Ready to be connected"
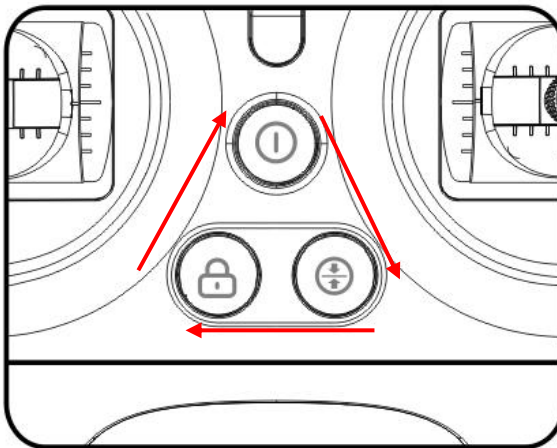
F. Check the remote controller, the "ON/OFF" and "LOCK/UNLOCK" buttons consistently on indicates the successful hardware connection
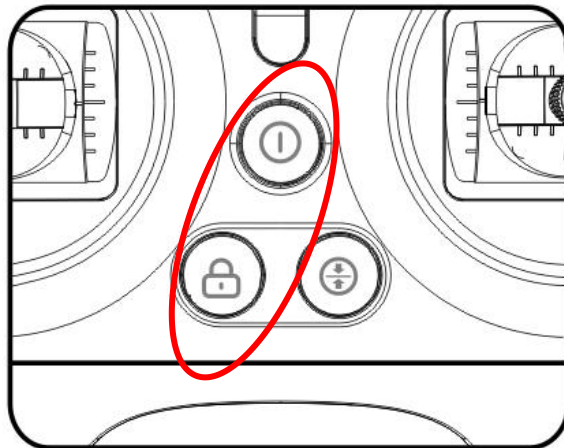
3. Software connection

A. Connect with the RC's Wi-Fi
Find the Wi-Fi network name "FIFISHRC_xxxx"
The password is "1234567890"
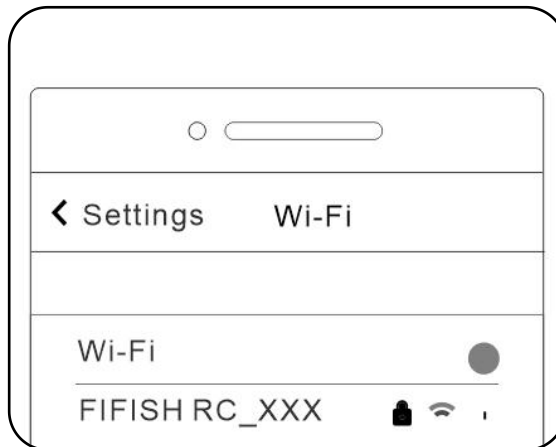
B. Click ' CONNECT' Activate LIVE-Streaming

DEVICE   MEDIA

FIFISH V-EVO

CONNECT

LED Status
Control Mode
Depth Holding
Water Temp.
Pilot / Spector
Control Mode
WIFI Status
ROV's Battery
General Settings

Main Menu

Camera Settings

ISO
Shutter (photo mode)
White Balance
Exposure Value
Resolution
Remaining Time / Pics

Depth Indicator

Tool Box

Flip ROV

Photo/Video Switch

Take Picture

Record / Stop

Mode Select

ROV Heading

Posture Indicator

Compass

C. Deploy the ROV
Pull ONLY on the tether and deploy the ROV into the water.
Unlock the thrusters and start diving.
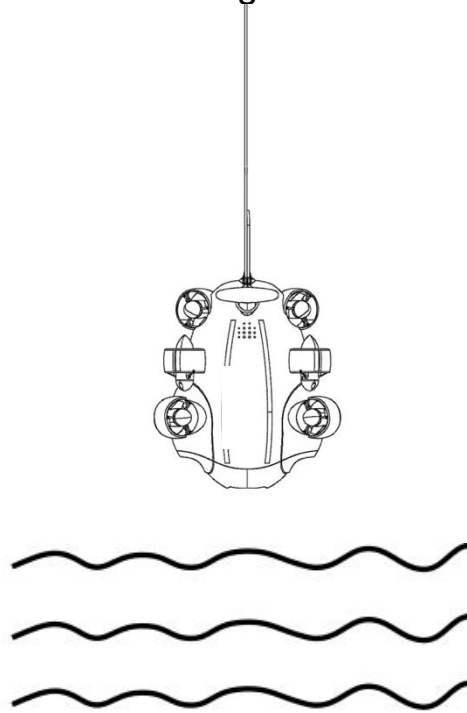
⚠ The depth shall greater than 1 meter (about 3 feet) for better experience.

4. Retrieval

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 i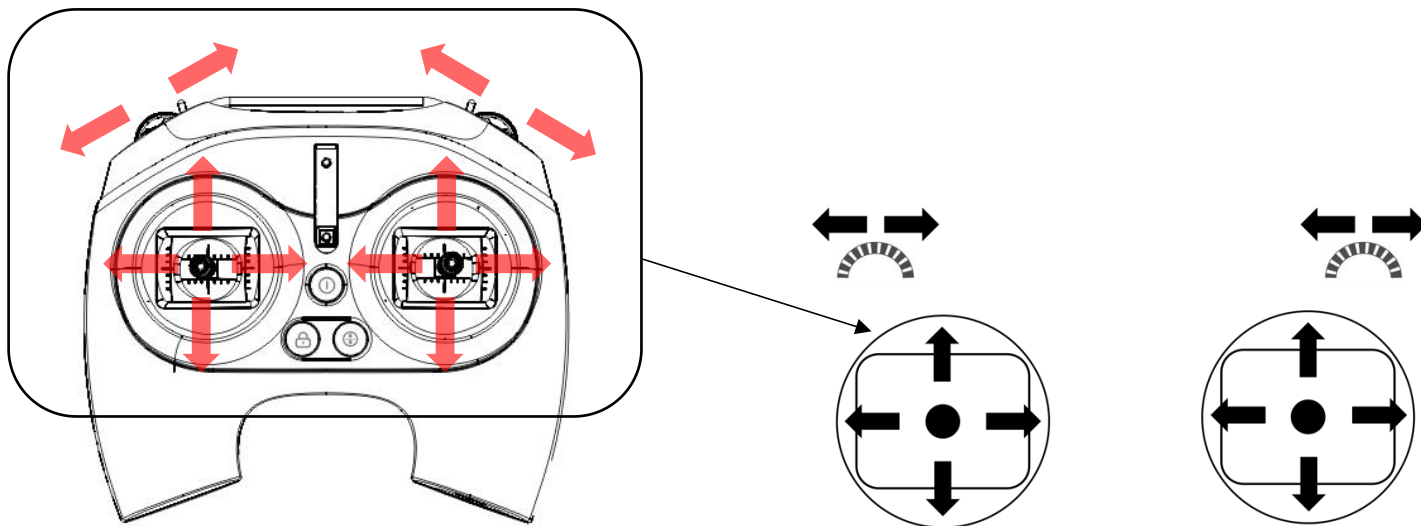ndicate the command and the arrows on ROV indicate the actual movements. **For more information, please check on FIFISH APP, Connected/General Settings/Second Column.**

Remote Controller	Operation Preference Setting	
	ROV Modes (USA/JPN/CHN)	UAV Modes (USA/JPN/CHN)
	Ascend Descend	Pitch Up Pitch Down
	Left ← → Right	Roll Counter Clockwise → Roll Clockwise

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.
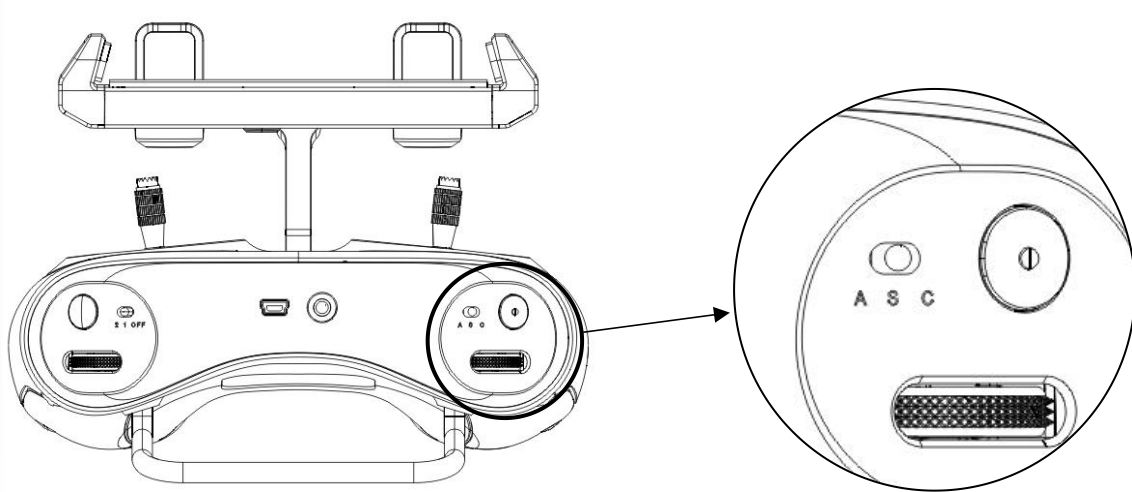
1. Attitude Mode

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 headset 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 headset[1], which allow pilot to use the VR headset[1] 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 prepare their VR headsets

Robotic Arm Installation (Optional)

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

A. Remove the protective cover from the SD card protective cap[a]
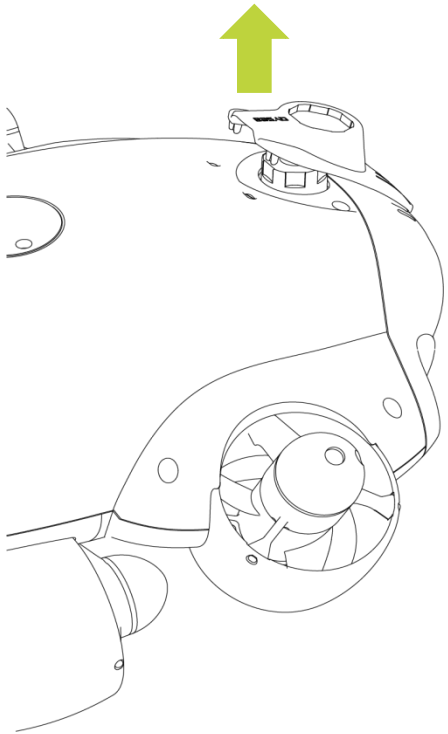
a. Only applicable to V-EVO with removable SD card design.

B. Insert the bracket into front vent holes
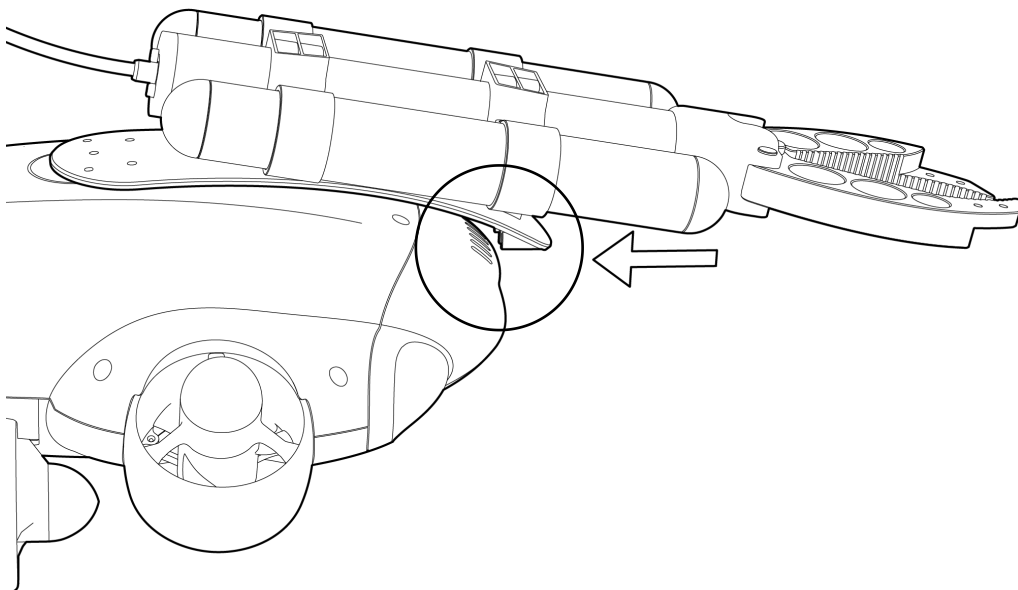
C. Fasten the 3 screws to secure robotic arm on the bracket
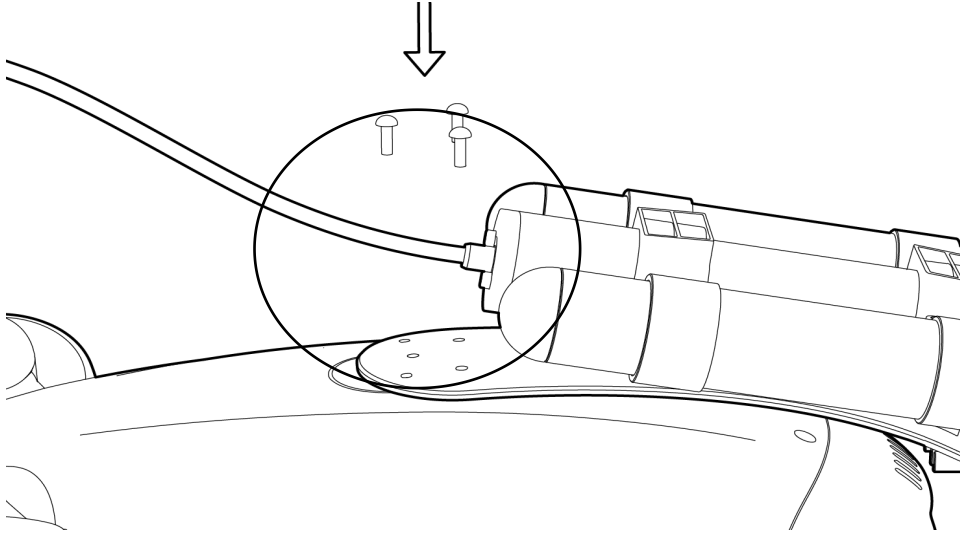
D. Align the cable to the Q-interface and fasten the bolt
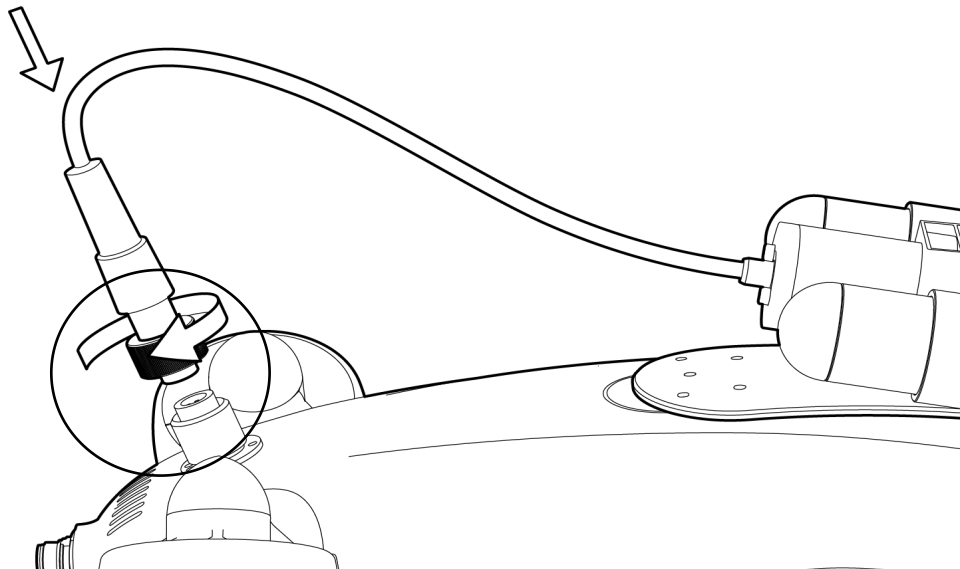
E. The robotic arm can be activated **ONLY** in Attitude mode (Mode A). Use the right wheel to open and close the robotic claws
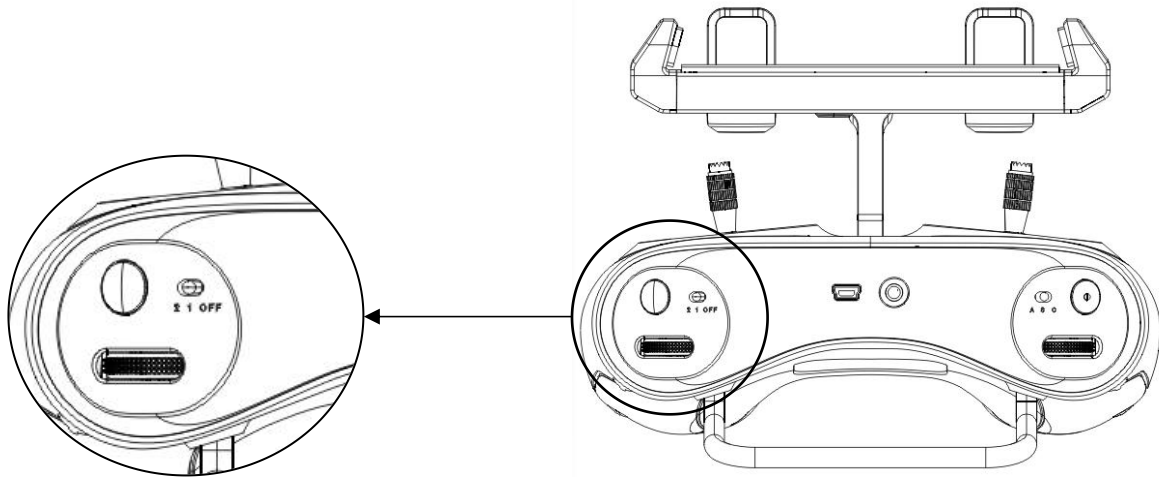
Camera Firmware Upgrade

1. Please ensure that the SD card is inserted in the ROV before performing the camera firmware upgrade to avoid failure.

New Firmware Reminder

Camera firmware
* xxx

Confirm

SD Card Removal

1. Detach the protective cover of the SD card protective cap.
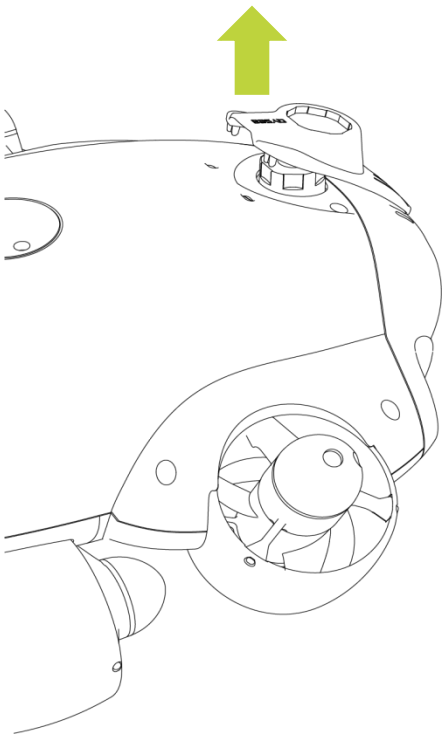
2. Attach the protective cover to the SD card protective cap, then turn counterclockwise to loosen the cap and remove the SD card.[b]
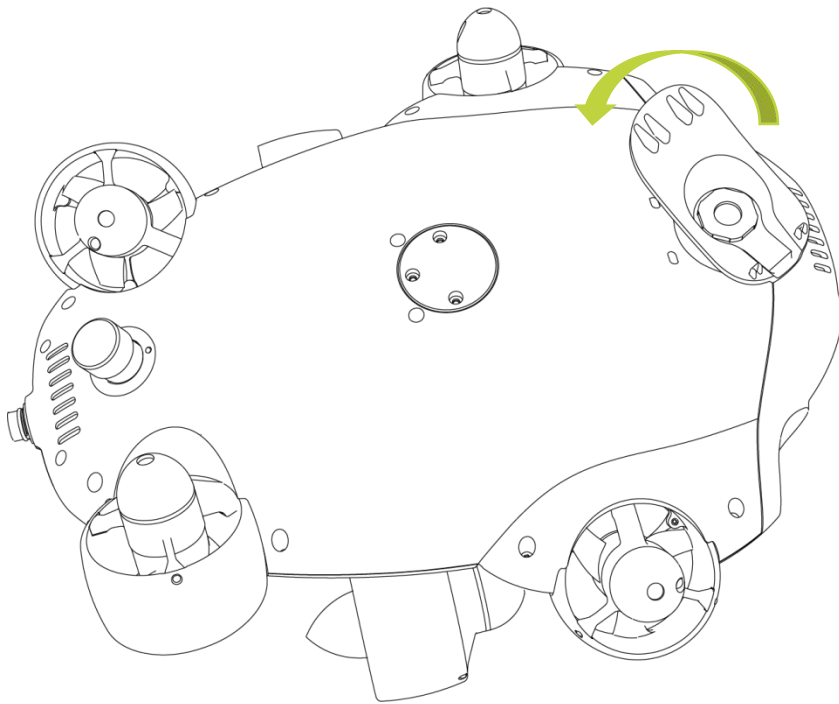
b. Only applicable to V-EVO with removable SD card design.

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):
	Moving: left & right, up & down, forward & backward
	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
	Rated Capacity 9,000 mAh / 97.2 Wh

Camera:

Sensor	1/2.3" SONY CMOS
	Effective Pixels 12MP
	ISO Range 100-6400 in Auto / Manual
Lens	Field of View 166°
	Aperture f/2.5
	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 Compensation	- 3 EV ~ + 3 EV
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)
	1080P FHD: 25/30/50/60/100/120 fps
	720P HD: 25/30/50/60/100/120/200/240 fps
Video Encode	H.264
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 (≦128GB)

Charger:

ROV   Input: 100-240 V, 50/60 Hz, 1.3 A MAX

                      Output: 12.6 V ⎓ 5A, DC
RC   Input: 100-240 V, 50/60 Hz, 0.5 A MAX

                      Output: 5 V ⎓ 3A, DC

Spool & Tether:

Length   100m (328 ft) on Spool
Breaking Force   80 kgf (176 lbsf)
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

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).
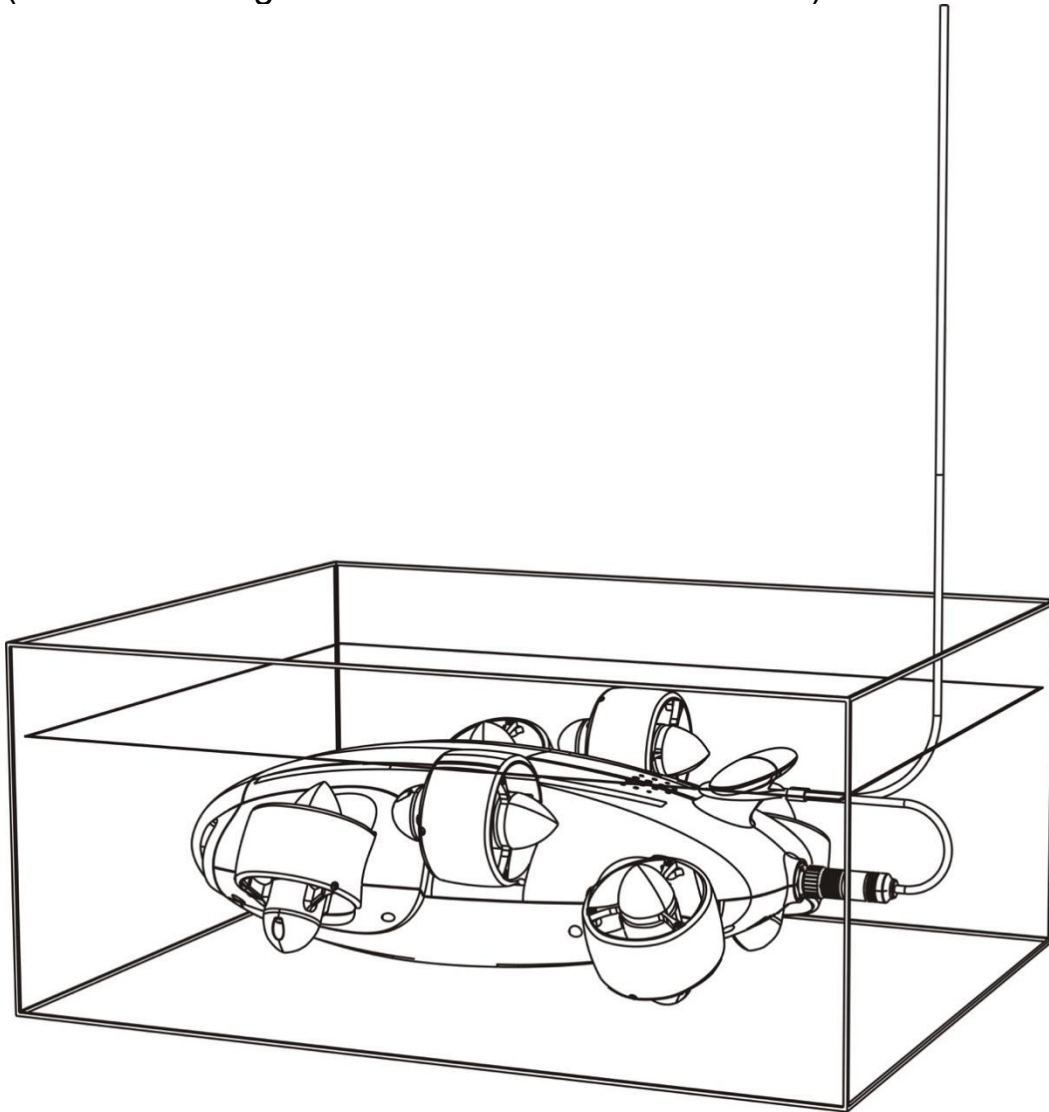
    1.3.   Open FIFISH App, homepage, Click "Help" on the bottom right corner. Click "Maintain", and then "Cleaning Program" will start. All motors will rotate slowly.

    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.