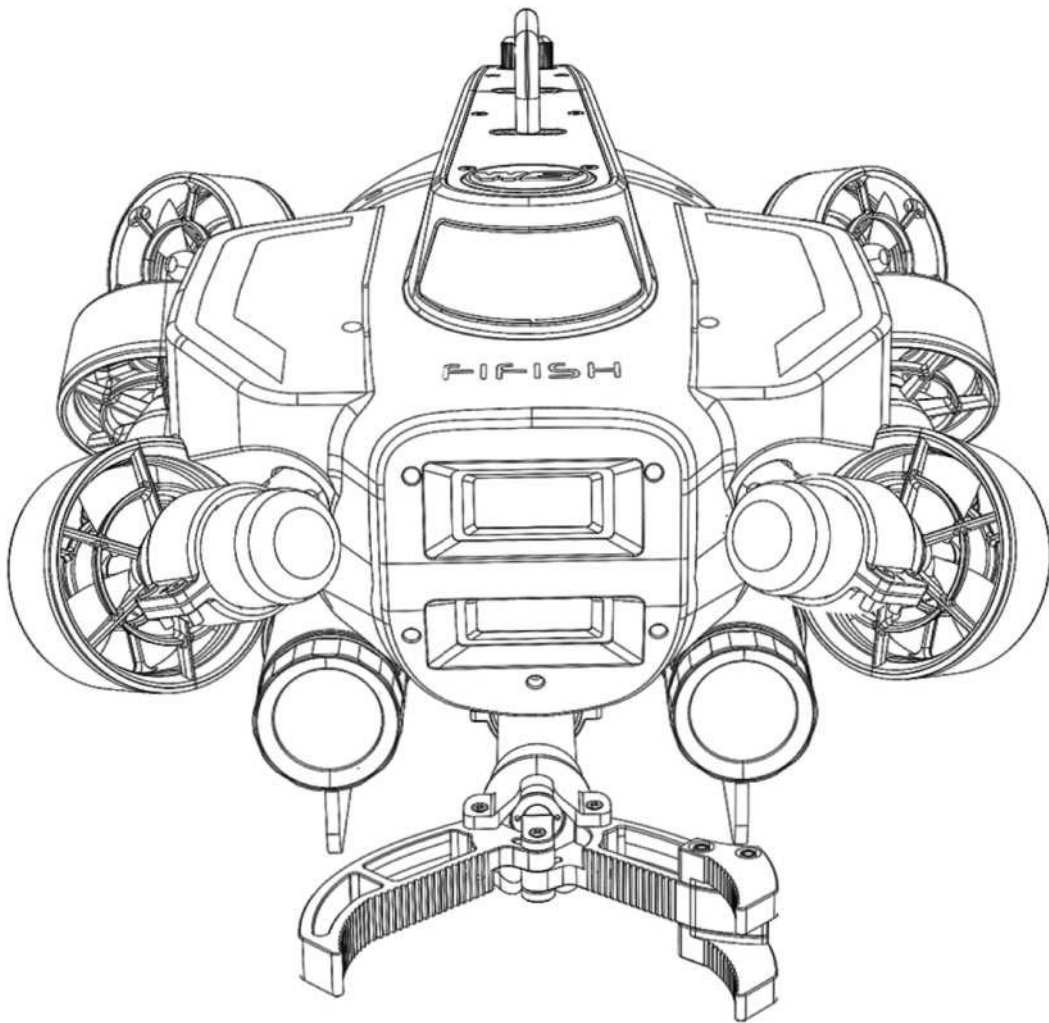# FIFISH PRO W6

Quick Start Guide
V1.0

QYSea

⚠ **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
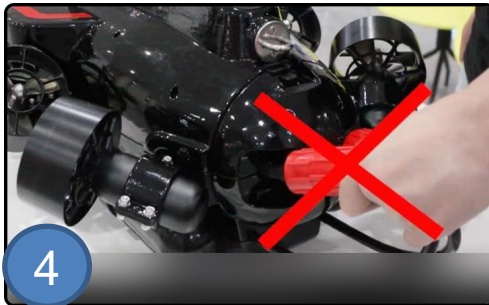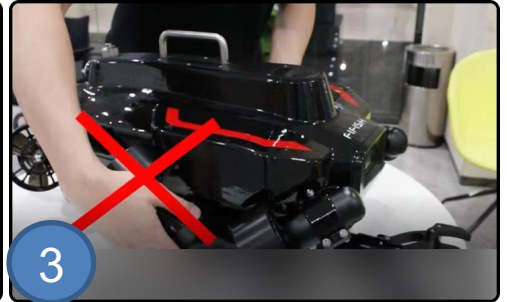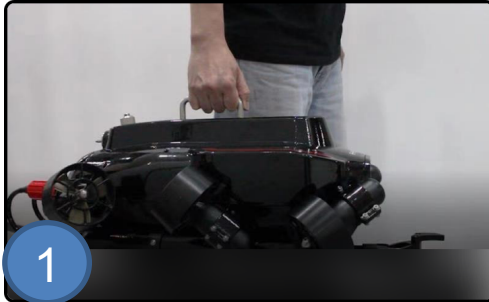
Maintain after dive, check the Maintenance Guide in page 29

⚠️ **Please ensure that you have completed the study of FIFISH PRO W6 product related functions and precautions before the first use.**




1. Holding ONLY on the stainless-steel handle
2. Do NOT pull the tether between connector and safety lock
3. Do NOT ONLY holding on the thrusters
4. Do NOT pull the battery plug cables
5. Do NOT pull the battery plugs
6. Holding on the battery handle when swap battery
7. LEDs shall not turn ON over 10 s in air
8. Motors shall not unlock over 5 s in air
9. Check the O-rings regularly

The FIFISH PRO W6 is an ROV (Remote Operated Vehicle) for underwater operations. 6 vector thrusters™ optimize the maneuverability and speed at the same time. 350 m (over 1100 ft) depth rating covers 95% of underwater operation fields. 2nd gen Q-motor Pro has higher output and energy efficiency. The Aluminum Alloy propeller coated with cat, to withstand the harsh conditions. The top speed 2 m/s (4 knots), capable to against the current.
The dual camera system provides larger FOV, 4K UHD camera produce high resolution image and videos. High-capacity lithium battery means longer operation time, and swappable design keeps underwater operation running all the time. The standard laser scaler is for underwater measure and inspection easier than ever.

FIFISH W6's new Q-BOX can expand the interface, support the fast switch and add-on. Extensible accessories include, on-shore power supply, collision avoidance system sonar, DVL, Image Sonar, USBL ultra-short base positioning, U-QPS (underwater quick positioning system), metal thickness gauge, Q-camera , 3-claws robotic arm, rescue clamp, mud sampler, compass ruler clamp, water sampler, salinity sensor, pH sensor, dissolved oxygen sensor, hydrophone etc. Such wide variety selection of accessories can fulfill the any kind of application filed.
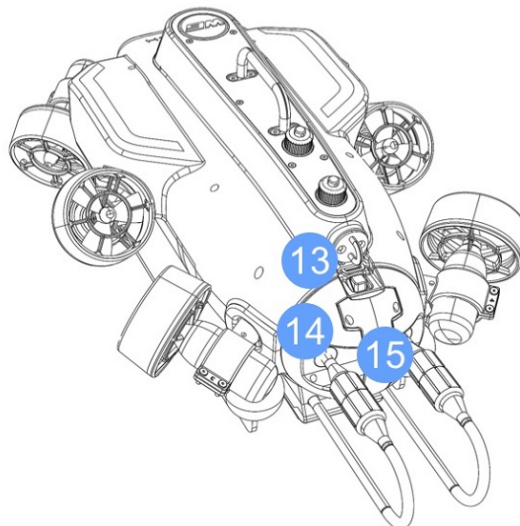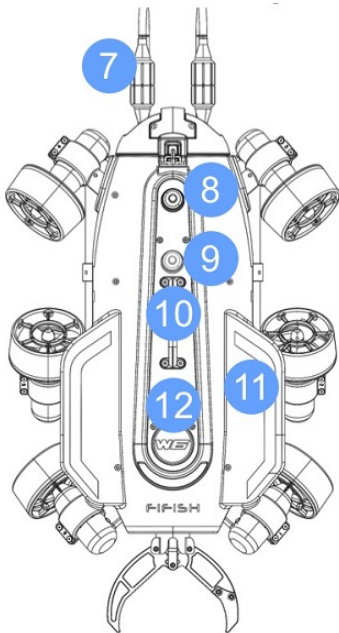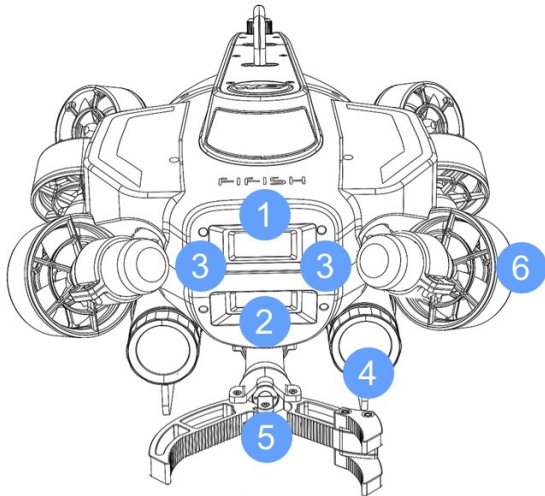
About FIFISH PRO W6 ROV

1. 4K UHD Underwater Camera #1

2. 4K UHD Underwater Camera #2

3. Lasers $\times$ 2

4. 6,000 Lumens LEDs $\times$ 2

5. Robotic Arm

6. 2nd gen Q-motor Pro Thrusters $\times$ 6

7. Battery Plug $\times$ 2

8. ROV Tether Port

9. FIFISH Q-Interface[2]

10. Stainless steel handle

11. W6 wings $\times$ 2

12. Logo Plate

13. W6 Safety Lock[3]

14. Battery

15. Battery Handle

⚠ Note :

1. Do NOT shake or dangle when holding the handle.
2. Safety Check, Check every connector and water-tight connectors
   (See the Page 7 Preparation, Connection, and Operating, Hardware connection)
3. Keep the Q-Interface™ dry and clean at all time.

Introduction
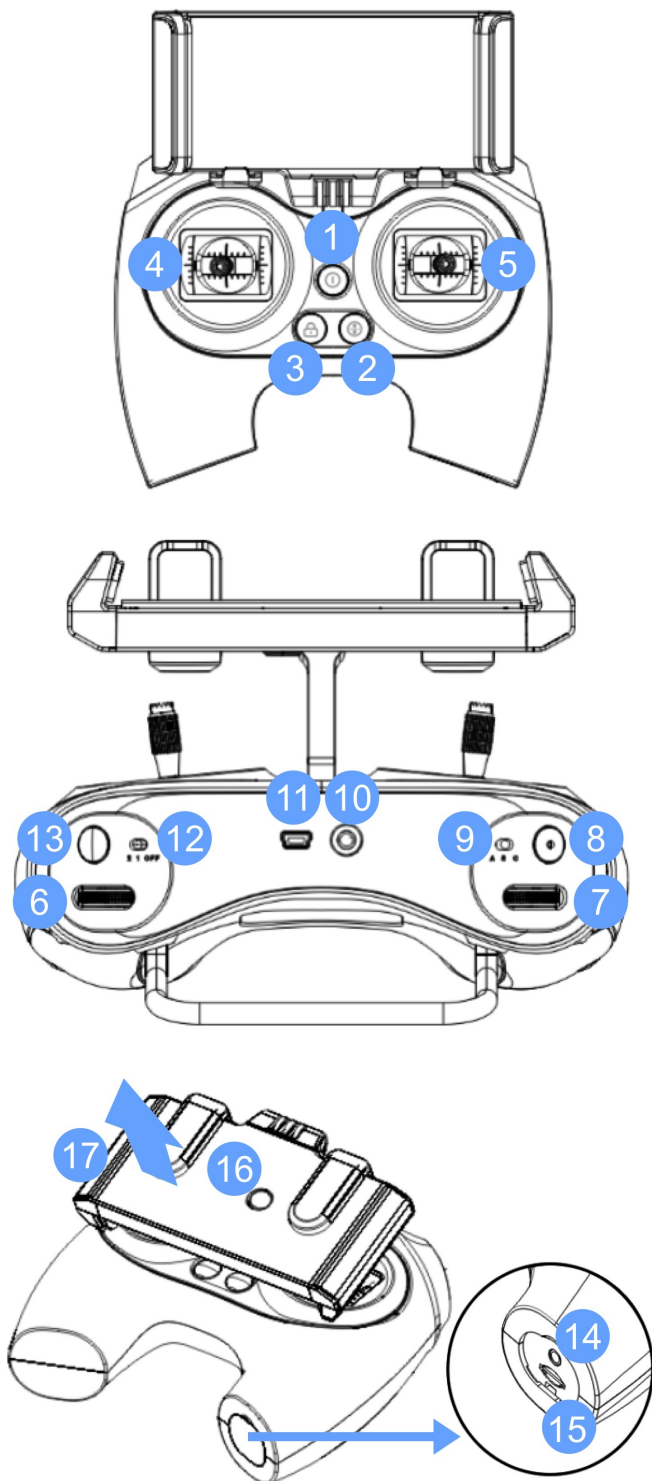
RC (Remote Controller)

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.
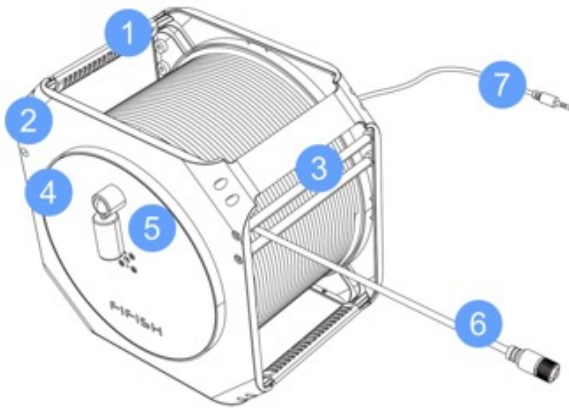
Tether on Spool

1. Spool Handle

2. Spool Frame

3. Tether Regulator

4. Reel

5. Foldable Handle

6. ROV Plug

7. RC Plug

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

1. Take off protective cap on the ROV Tether Port
2. Hook the safety lock and fasten the security nut
3. Align first then insert the ROV plug Twist to the end for water tight (finger-tight)
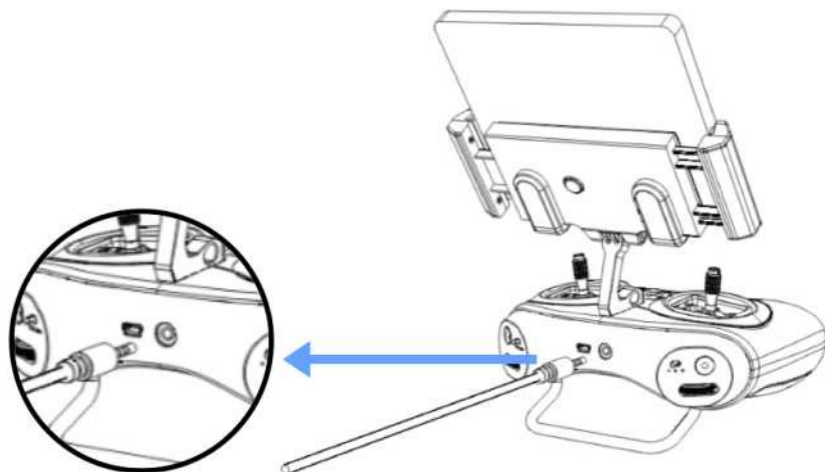4. Fully insert RC plug (3.5mm) to RC's Tether Port
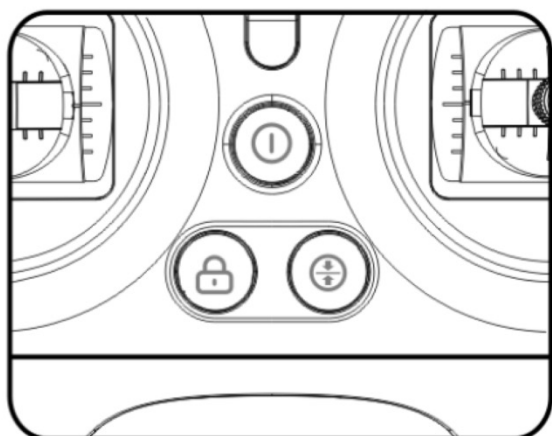
（1）Plug the tether (3.5 mm head) into remote controller

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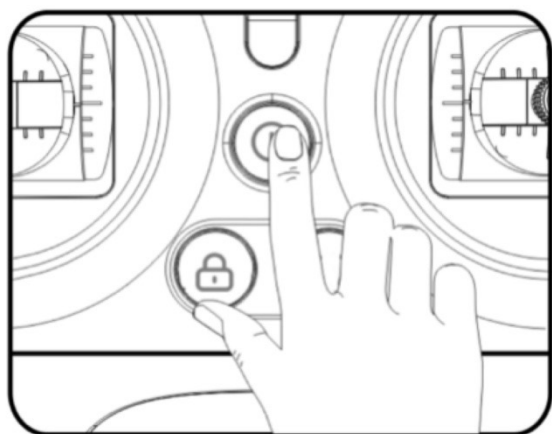
（3）The "ON/OFF"，"Depth Holding" and "LOCK/UNLOCK" will flash and rotate clockwise, which indicates "Ready to be connected"

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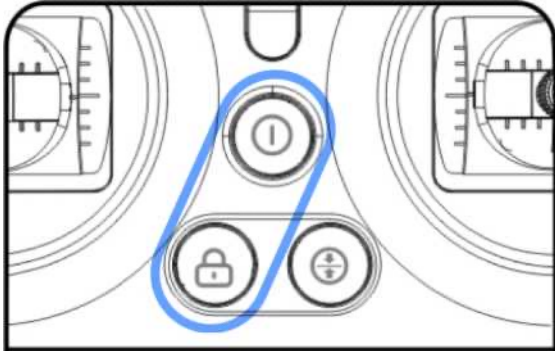
3. Software connection

(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)
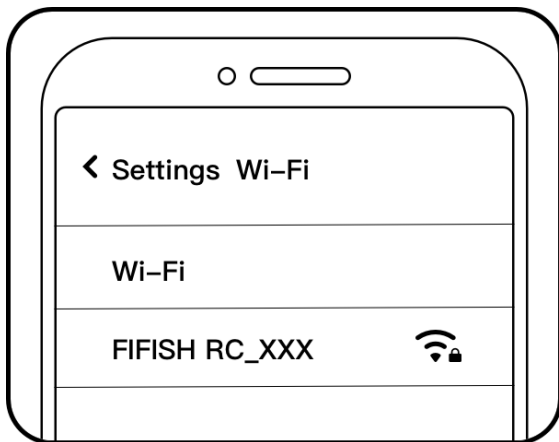
4. Operation interface
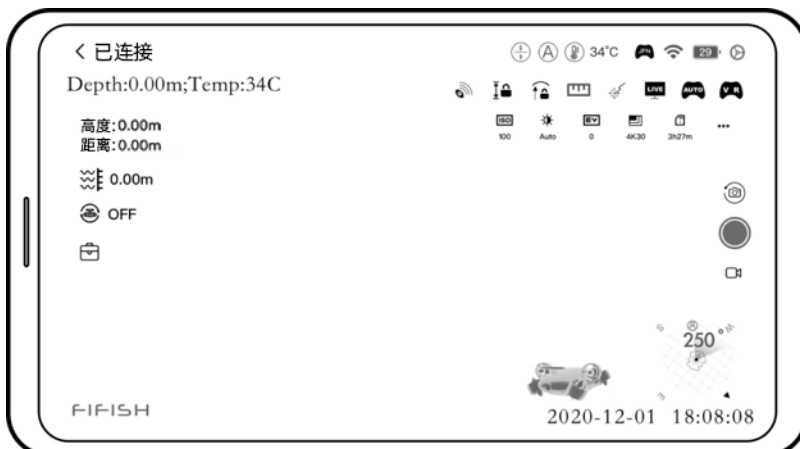
⚠ Note：

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

5.Deploy the ROV

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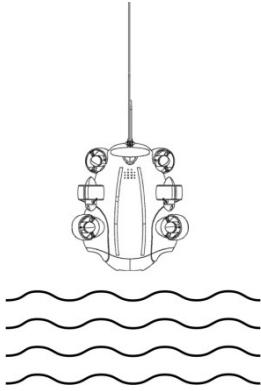
⚠ Note :

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

6.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

7.Video/Photo Download

Download videos/photos by using terminal equipments (smart phones or tablets), PC for FTP FileZilla to transfer.

The detailed tutorials can be found on https://www.qysea.com/support/

Definition of Controlling

The FIFISH PRO W6 uses the patented Smart Thruster Array™ to ensure the ultimate maneuverability and delivers the 6 DOF (degree of freedom).

• W6 can move in descend & ascend, left and right, forward and backward.
• W6 can rotate in 360 yaw (z-axis), 360 pitch (y-axis), 360 roll (x-axis).

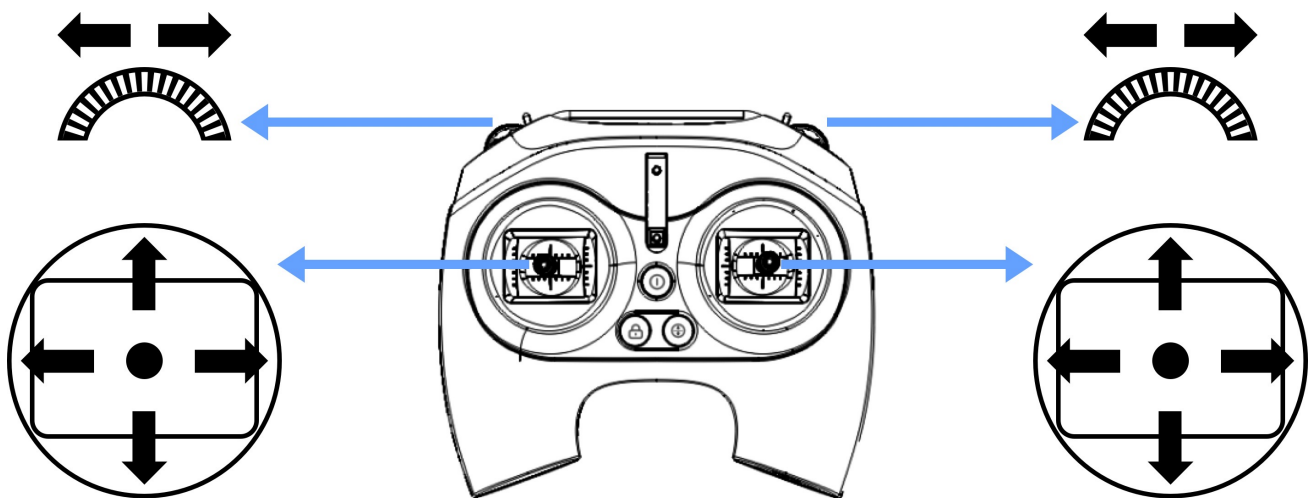We have simplified the Left Joystick, Right Joystick, Left Wheel and Right Wheel into the following symbol. The arrows on RC indicate the command and the arrows on ROV indicate the actual movements. **For more information, please check on FIFISH App, Go Dive/General Settings/Second Column.**

| Remote Controller	V6 Operation Preference Setting	
	ROV Modes (USA/JPN/CHN)	UAV Modes (USA/JPN/CHN)
	Ascend / Descend	Pitch Up / Pitch Down
	Left ← → Right	Roll Counter Clockwise[1] / Roll Clockwise[1]

⚠ 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.
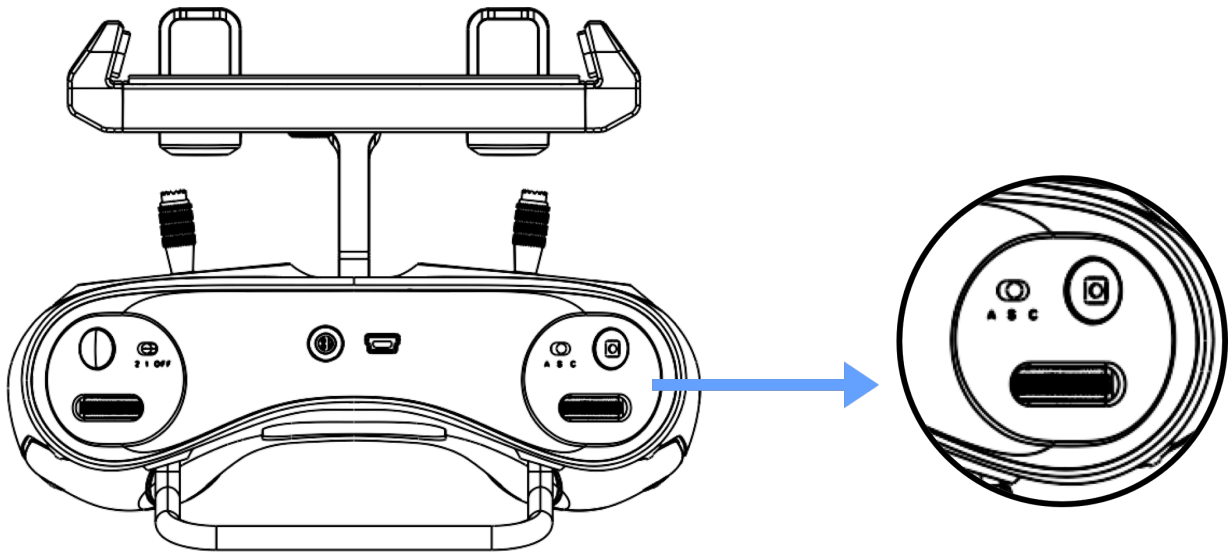
1 .Attitude Mode

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.
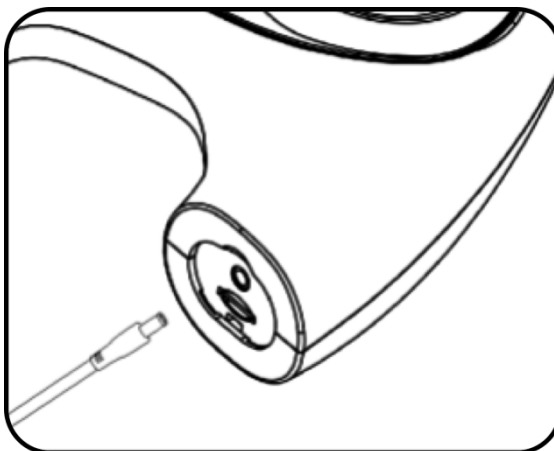
ROV Charging

Pull out the battery and charge the battery separately.
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.

Red, less than 30%

Yellow, 30% to 70%

White, 70% or higher
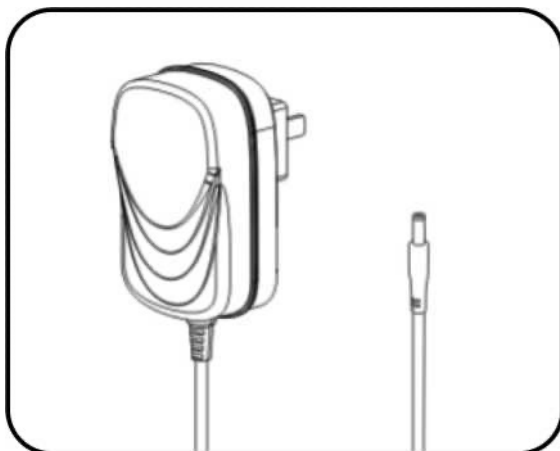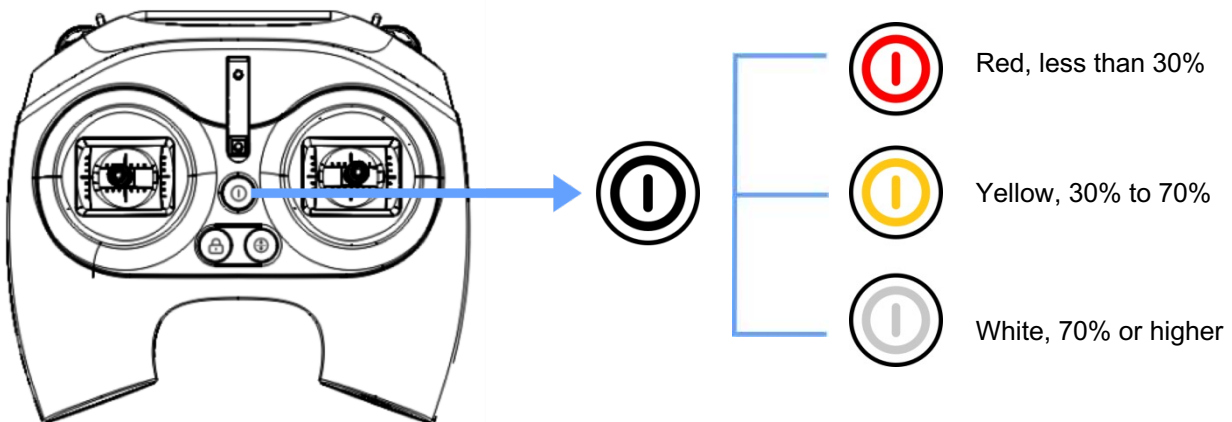
Operation interface
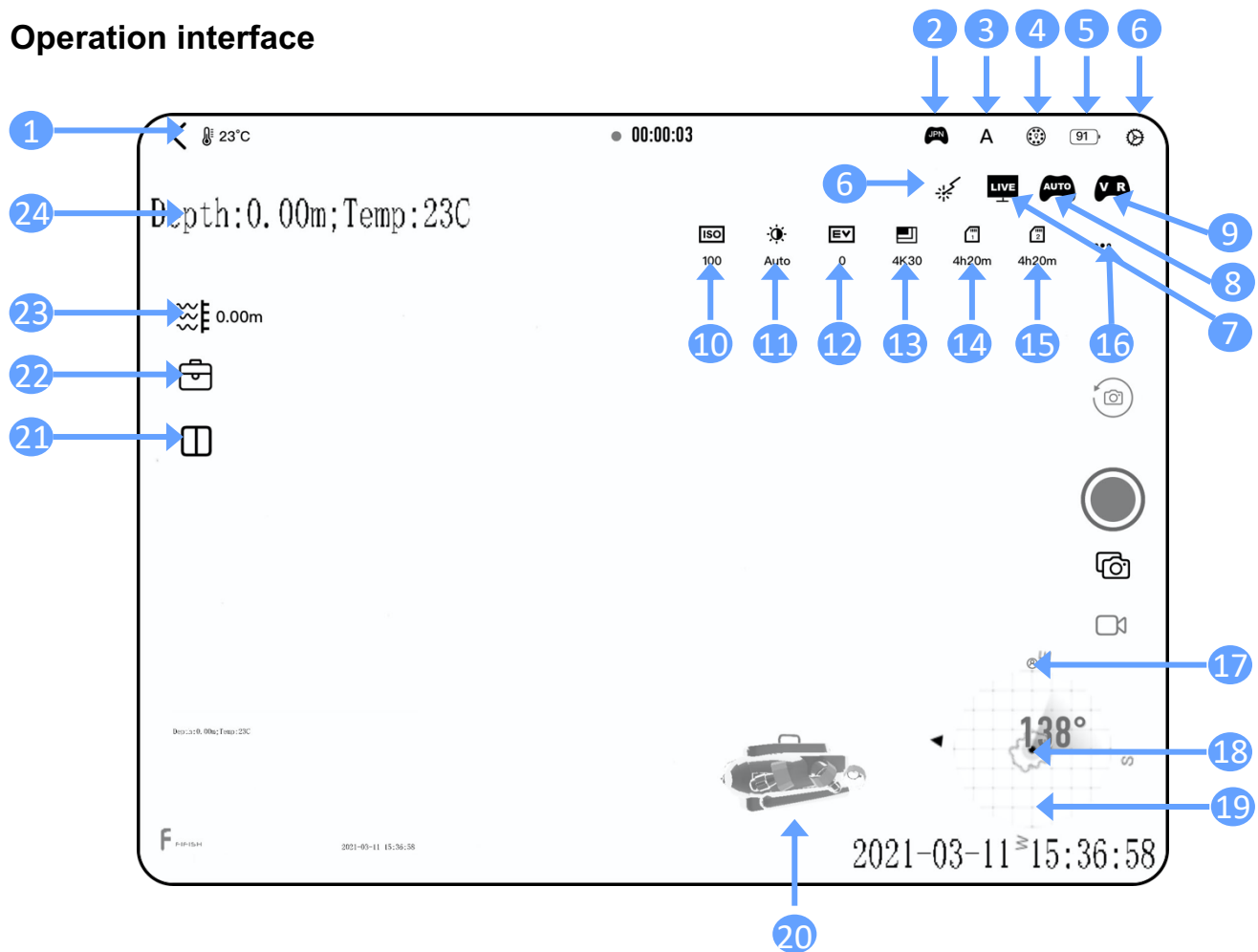
1. ROV Status
2. Controlling Preferences
3. Control Mode
4. LED Brightness
5. ROV Battery
6. General Settings
7. LIVE Board Casting
8. Auto Pilot 2nd Gen
9. VR Mode
10. ISO
11. White Balance
12. Exposure Value
13. Resolution Frame Rate

14. Camera #1 Remaining Time/Pics
15. Camera #2 Remaining Time/Pics
16. Camera Settings
17. Pilot's Heading
18. ROV's Heading in Degrees
19. Compass
20. Posture Indicator
21. Display Arrangement
22. Tool Box
23. Current Depth
24. Watermark: Depth and Temp

FIFISH App
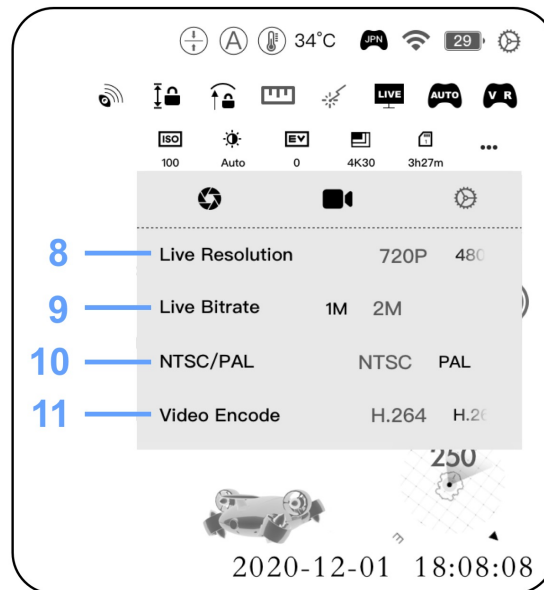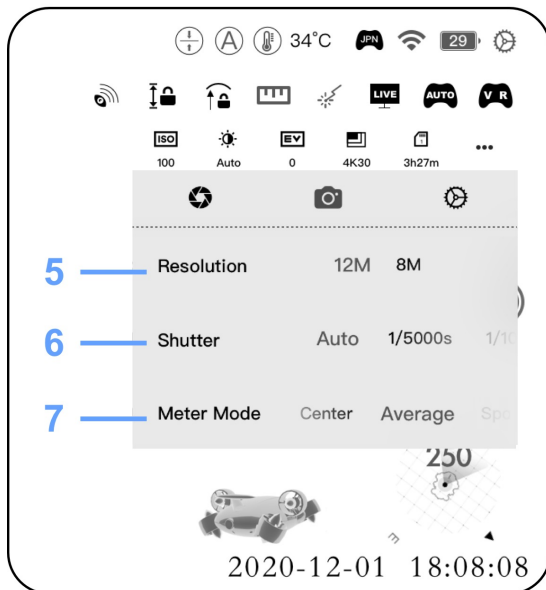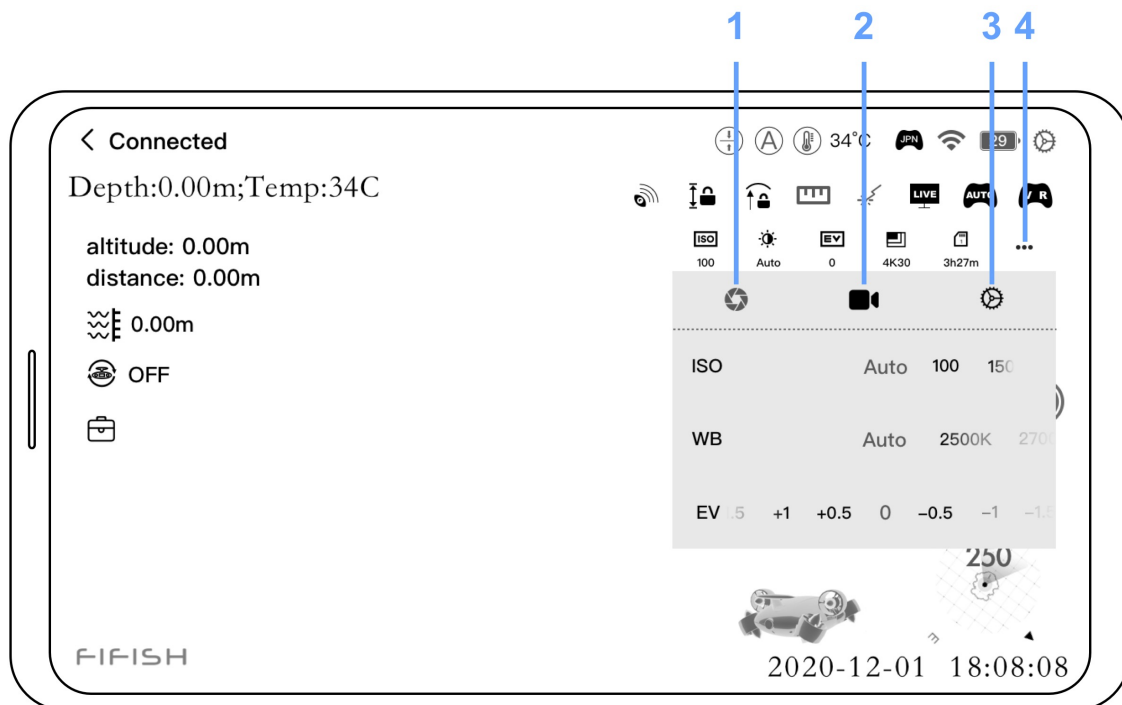
Image Settings

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

Laser Ruler

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

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.
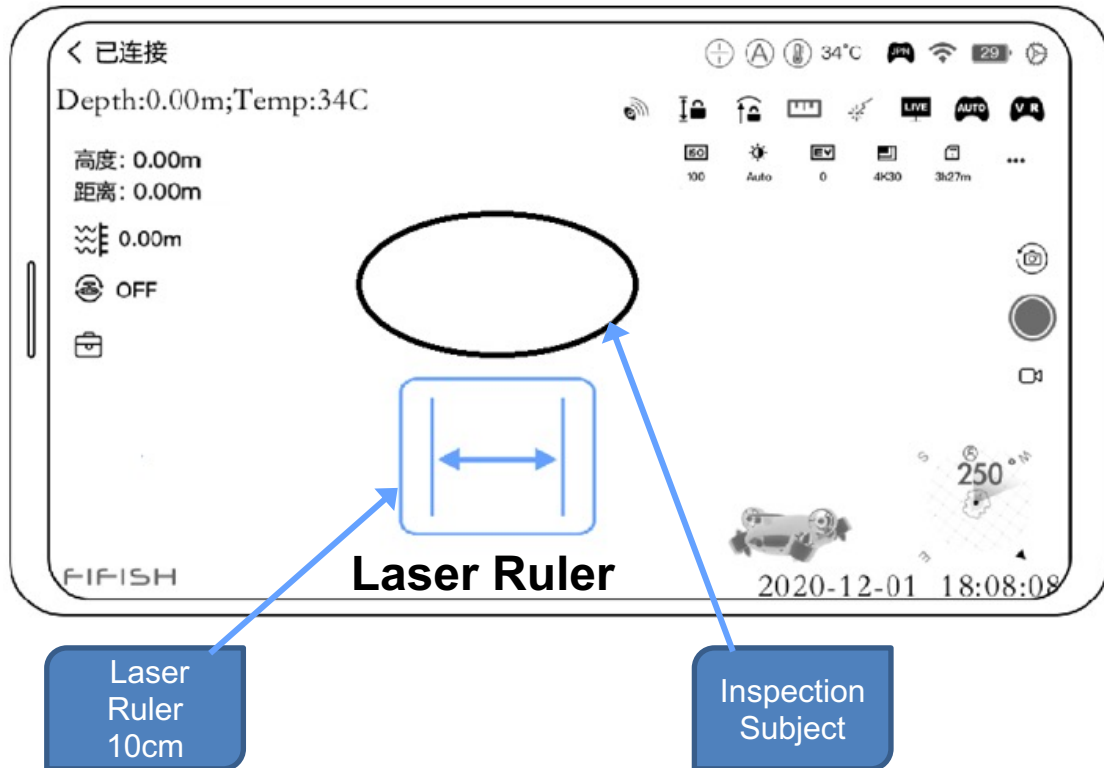
3. Check the **propellers** after every dive. Make sure NO entanglement, i.e. seaweed or fishing lines. Turn on the ROV (See the Preparation & Connection Section, page 6-9) and check the thruster and test movement and rotation.

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	604 mm × 450 mm × 310 mm (~ 23 ¾ in × 17 ¾ in × 12 ¼ in)		
Weight	19 kg (41 7/8 lbs)		
Thrusters	6 × (FIFISH 2nd Gen Q-Motor Pro)		
Moving	Sway：left / right		
	Surge：forward / backward		
	Heave：up/down		
Rotation	360°, Pitch, Yaw, & Roll		
Posture Lock™	Static / Moving：± 0.1° accuracy		
Depth Holding	± 3 cm accuracy		
Speed	4 knots (2 m/s) max speed in still water		
Depth Rating	350 meters (~1148 feet)		
Operate Temp	-10℃ ~ 60 ℃ (14°F ~ 140°F)		
Battery *2	Up to 6 hours [1]		
	388.8 Wh		
	1 Hour Quick Charge (70%)		
	18650 Panasonic Li-ion		
Sensor	Accelerate Sensor, Gyroscope Sensor, Magnetic Sensor		
	Temperature Sensor		
	Depth Sensor		

RC

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

APP

System	iOS 10.0.0 ＆Android 5.0

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

Camera

Sensor	1/2.3" SONY CMOS
Pixels	12MP
ISO	100-6400
Lens	Dual cameras Field of View: 178º Single camera Field of View: 166º
	Aperture：f/2.5
	Min Focusing Distance: 0.4 m (~1 1/3 feet)
Shutter	5~1/5000
Frames	3 / 5 / 10 / 15
White Balance	2500K ~ 8000K
White Balance	- 3.0 EV ~ + 3.0 EV
Burst shooting	4:3: 4000 x 3000
Photo Format	JPEG, RAW in DNG
Video Resolution	4KUHD; 25/30 fps
	1080P FHD; 25/30/50/60/100/120 fps
	720P HD; 25/30/50/60/100/120/200/240 fps
Video Format	MPEG4- AVC/H.264, HEVC/H.265
Stabilization	EIS (Electronic Image Stabilization)
Color System	NTSC & PAL
Storage microSD	Standard SanDisk Ultra 128 GB

LED

Brightness	12,000 lumens
CCT	5500 K (Correlated Color Temperature)
Beam Angle	120º
Dimming	3

Charger

ROV	MAX Input: 100-240, 50/60Hz, 3 A Max
	Output: 25.2V ⎓ 6A
RC	MAX Input: 100-240V,50/60Hz, 0.5 A Max
	Output: 5 V ⎓ 3A

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

Specifications

Tether

Length	305 meters (~ 1,000 feet)
Breaking Force	160 kgf (~352 ¾ lbsf)

Spool

Dimension	295 mm x 246 mm x 255 mm (~ 11 ½ in × 9 ¾ in × 10 in)
Weight	7.0 kg (~ 15 ½ lbs)
Capability	Hold up to 305 meters (~ 1,000 feet)tether

Robotic Arm

Claws Opening	125mm (~ 4 1/16 in)
Gripping Force	20.0 kgf (~ 44 lbsf)

Laser

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

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

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.

⚠️ Maintenance Guide ⚠️

In order to have your W6 in a good condition at all time, soak and clean your W6 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.

QYSEA