



Explorer 6.0 User Manual

2024.04 Version 2.0

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Acknowledgement

Thanks for purchasing the product and your trust and support in our company are sincerely appreciated.

We are dedicated to providing you with more safe, high-performance, comfortable, reliable and environmentally friendly propulsion equipment and entertainment products on water, such as electric outboard motors, electric inboard motors, sup/kayak motors, reliable lithium batteries and accessories, etc.

Welcome to visit Wolong Marine official website - www.wolong-electric.com and contact us if you have any concerns.

Using This Manual

Before using this product, please read this user manual carefully and thoroughly to understand the correct and safe operations methods. By using this product, you hereby agree that you have fully read and understood all contents of this manual. Wolong Marine is not responsible for any financial damage or personal injury incidents caused by operations that do not comply with the provisions of this manual.

Due to ongoing optimization of our products, Wolong Marine reserves the rights to constantly adjust the contents described in the manual. Wolong Marine also reserves intellectual property rights and industrial property rights including copyrights, patents, logos and designs, etc.

This manual is subject to update without prior notice, please visit our website www.wolong-electric.com for the latest version. If you find any discrepancy between your products and this manual, or should you have any doubts concerning the product or the manual, please visit www.wolong-electric.com.

Wolong Marine reserves the rights to final interpretation of this manual.

This manual is multilingual, in case of any discrepancy in the interpretation of different language versions, the English version shall prevail.

Symbols

When reading this user manual, please refer to the following legend:



Instructions, precautions or operation reminders before use



Important instructions, warnings or precautions



Useful information or tips

Serial Number

Serial Number is the unique identification number of this product, which is an important certificate for after-sales services such as warranty, replacement and return of this product. The serial number label of the main body of the Flowstar series electric outboard motor is located in the position shown in the figure below. Please find this label on the product and record the Serial Number shown. Do not tear off the label, otherwise the product after-sales services will be invalid.



Figure 0-1

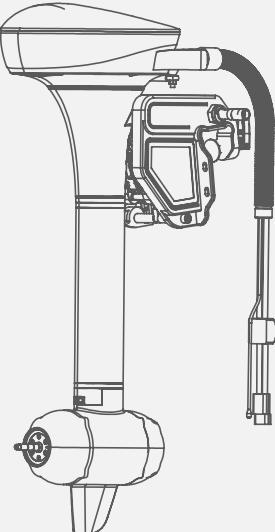
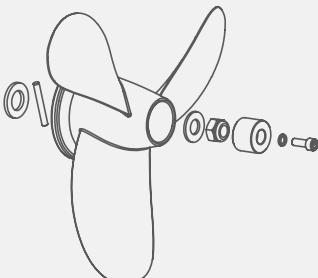
1. Product Overview

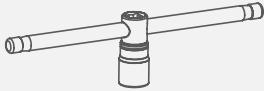
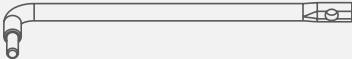
Explorer 6.0 series is a 6kW electric outboard motor. It is equivalent to a 9.9 hp petrol outboard engine in propulsive power but works quieter. Both with integrated foldable tiller design or remote control, it's easy to portability and store. All these high-performance features make Explorer 6.0 series an ideal option for tenders, dinghies and sailboats.

Explorer 6.0 series includes three models. Explorer 6.0 - S, Explorer 6.0 - L and Explorer 6.0 - XL, which have different shaft lengths for adaptation of different transom heights.

1.1 In the Package

Unpack the package and check all the items inside the package against the packing list below. Below if there is any transport damage caused during transport or lack of any listed item, please contact your dealer immediately.

Items	Qty./Unit	Figure
Electric outboard motor (Main body)	1 Set	
Propeller Assy	1 Set	

Items	Qty./Unit	Figure				
Wrench Set	1 Set		19mm Wrench		M6 Wrench	
Link Arm	1 Set					
User Manual, Packing list, Warranty Card & Quality Certificate	1 Sets					



Save the Wolong Marine's original package for the electric outboard motor storage.



Other accessories not included in the package are also required to operate the outboard motor, such as battery, control system, charger and communication cable, etc. Users can buy official accessories provided by Wolong Marine.

1.2 Parts and Diagram



Figure 1-1

1.3 Technical Data

Model	「Explorer 6.0 - S/L/XL」
Type	Electric outboard motor
Input power	6.0 kW
Rated Voltage	48 Vdc
Input Voltage	39 - 60 Vdc
Comparable petrol outboards	9.9 HP
Maximum overall efficiency	58 %
Rated propeller speed	1500 rpm
Control system	Integrated Fold-able Tiller / Nav side Mount Control / Remote Control
Weight *	33.81 kg / 74.54lbs (S) 、 35.31 kg / 77.85lbs (L) 、 38.75kg / 85.43lbs (XL)
Dimensions (L × W × H) *	504.29 × 206.77 × 870.36 mm / 19.85 × 8.14 × 34.27 inches (S) 504.29 × 206.77 × 1027.84 mm / 19.85 × 8.14 × 40.47 inches (L) 504.29 × 206.77 × 1124.36 mm / 19.85 × 8.14 × 44.27 inches (XL)
Shaft length	381.00 mm / 15 inches (S) 507.99 mm / 20 inches (L) 635.00 mm / 25 inches (XL)
Trim Angles	Manual (Air spring assist) , 5 -step, 0°、5°、10°、15°、20°
Tilt Angles	Manual, with impact protection, 75°
Propeller (diameter x pitch)	12.6" × 10.8" 3-blade composite propeller or 13.4" × 8.5" 3-blade composite propeller
Recommended Operating Ambient Temperature	-10°C – 45°C

* The weight is only for the main body of an electric outboard motor, excluding the battery, control system and remote operation kit.

* This dimensions only refers to for the main body of the electric outboard motor without the tiller installed.

1.4 Declaration

We Wolong (Zhejiang) Marine Technology Limited, hereby, declares that this equipment is in compliance with the applicable Directives and European Norms, and amendments.

Object of the Declaration:

Products: Electric outboard motor

Model: Explorer 6.0-T, Explorer 6.0 - TS, Explorer 6.0 - TL, Explorer 6.0 - TXL
Explorer 6.0-R, Explorer 6.0 - RS, Explorer 6.0 - RL, Explorer 6.0 - RXL



The object of the declaration is in conformity with the following directives:

Electromagnetic Compatibility (EMC) Directive 2014/30/EU

Machinery Directive 2006/42/EC

Radio Equipment Directive 2014/53/EU

Applicable standards:

EN 55014-1:2017 EN 300328:2019

EN 55014-2:2015 EN 50663:2017

EN 61000-3-2:2014 EN 60335-1:2012+A14:2019

EN 61000-3-3:2013/A1:2019 EN 60204-1:2018

EN 301489-1:2019 EN ISO 12100:2010

EN 301489-3:2019

This device complies with part 15 of the FCC Rules: Operation is subject to the following two conditions:

1. This device may not cause harmful interference and,
2. This device must accept any interference received, including interference that may cause undesired operation.

Manufacturer:

Name: Wolong (ZHEJIANG) Marine Technology

Address: No. 1801, West Section of Renmin Avenue, Cao'e Street, Shangyu District, Shaoxing City, Zhejiang Province

Signature:

Date: 2nd of April, 2023

Zhou Jun, General Manager and legal representative of Wolong (Zhejiang) Marine Technology Limited.

1.5 Statement

Operation is subject to the following three conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.
- (3) This device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

1.6 Important Notes

Flowstar series electric outboard motor is designed to offer clean propulsion and excellent experience on water, For safety reasons, please read the following instructions and notes before using this product. By using this product you hereby :

- 1) agree to these notes and instructions;
- 2) agree not to use this product for purposes that infringe upon or contravene laws and regulations;
- 3) agree to be responsible for your own conduct while operating this product

Notes

- ※ The product should only be used by adults who have fully read and voluntarily abide by this user manual, and teenagers must be used under the supervision of an adult.
- ※ Always have a paddle on board especially if the electric outboard motor is the only propulsion system.
- ※ Please be familiar with the basic operation of this product before use, including: start, stop, control direction and tilting operation.
- ※ Check the status of the electric outboard motor and battery level before each trip.
- ※ Follow the boat manufacturer's instructions on the maximum allowed electric outboard motor power of your boat, do not overload the boat or the electric outboard motor.
- ※ Only run the electric outboard motor while the propeller is under water, do not idle the propeller.
- ※ Stop the electric outboard motor immediately if someone falls overboard.
- ※ Do not leave the electric outboard motor in the water while the boat speed reach 35km/h.
- ※ Tilt up the electric outboard motor above water after use.
- ※ Wash the electric outboard motor with fresh water after operating in seawater.
- ※ For protection considerations, the motor will stop immediately if the battery voltage drops below the critical level during operation or when running.
- ※ Take seriousness of battery safety. Follow battery instructions, avoid short-circuit, overheat, overcharge and over-discharge.
- ※ To keep electric connectors in good condition, please spray the connectors about every 3 months with contact spray.
- ※ To store the electric outboard motor, put the machine in original Wolong Marine package and keep it in a dry and ventilated place without direct sun exposure.
- ※ If the communication cable is not connected, ensure to cover the cap of the communication connector on the machine, otherwise the connector will corrode and the machine will not be able to communicate.

2. Preparations

2.1 Selecting the Battery

 It is recommended to use Wolong Mariner E Series Batteries.

Lithium-based and lead-acid batteries can be used to supply power for Explorer 6.0. Considering the high performance in energy density and discharge ability, lithium-based batteries are more preferable. To ensure that Explorer 6.0 can work at its full power continually, the batteries are required to possess over 125A of continuous discharge current. To ensure at least one hour of duration, the battery capacity should reach 6000Wh or above.

The rated continuous discharge current is affected by the battery type and quantity of parallel batteries. To use lead-acid batteries, conventional lead-acid or AGM or GEL batteries are acceptable, while starter batteries are not recommended. Traction batteries or deep cycle batteries are more preferable as they give power over sustained period of time. Besides, the deep cycle marine batteries are also capable.

Battery capacity is a major factor that affects trip duration and distance. For instance, a battery with 48V of rated voltage completely discharges at a continuous current of 125A in 1 hour, so its rated capacity is 6000Wh ($125\text{Ah} \times 48\text{V} = 6000\text{Wh}$), we also can say its rated capacity is 125Ah. The maximum power of Explorer 6.0 is 6kW which means the system can be running at full power for about 1 hour when using this battery. You can select a battery with proper capacity based on your requirements for travelling time and distance. Note that the operating time and distance are also affected by the input power of the outboard plus the external environment and temperature. In addition, boat type and load also play important roles.

 When using E Series official batteries, the batteries will work well once being correctly connected. When using Unofficial batteries, before starting the outboard, users should configure the batteries via the Control System for the first time use, otherwise the batteries may not work properly.

 Only use the same batteries (same model, same capacity, same age and same manufacturer) in series or in parallel configuration. Variations in the batteries will cause damage to them.

2.2 Selecting and Mounting the Propeller

For Explorer 6.0, the plastic propeller is in the package, users should mount the propeller before use. The included plastic propeller is suitable for scenarios with a speed of up to 20km/h. When the speed exceeds 20km/h. It is recommended to purchase and use metal propeller. Metal propeller can fully perform in scenarios with this speed and can also be equipped with a cutter to handle debris such as aquatic plants and ropes in the water, preventing machine malfunctions caused by entanglement with debris.

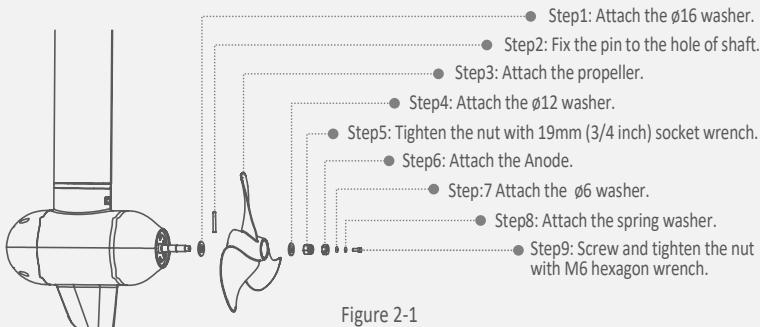


Figure 2-1

3. Mounting the Outboard Motor

Select an outboard with proper shaft length according to the transom height of your boat. The top of the propeller should be 100mm to 150mm below the water.

The outboard should be mounted on the center line of your boat. If the boat shape is asymmetric, please consult your dealer for proper solution.

3.1 Position of Mounting

The mounting height of the outboard affects the running speed seriously. When the mounting height is too high, cavitation may occur, which may lead to speed slowdown, energy waste, and propeller damage. When the mounting height is too low, the water resistance will reduce both travelling speed and performance of the outboard.

In general, the optimal mounting height is affected by the specific conditions of a boat. In order to get the optimal mounting height, it's suggested to test running by mounting the outboard at different heights. Please consult your dealer for more help.

Transom Height	Recommended Model
Use requirements of shallow water or mini boats	Flowstar 6.0 - S
400mm~500mm	Flowstar 6.0 - L
$\geq 500\text{mm}$	Flowstar 6.0 - XL

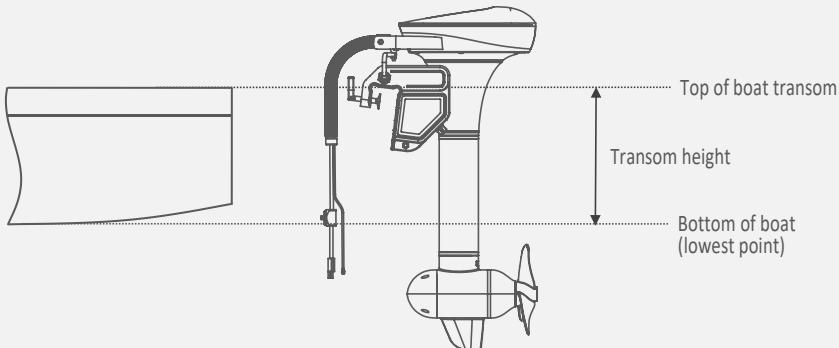


Figure 3-1

3.2 Mounting the Outboard

Method 1

Rotate the two clamps in clockwise direction to fix the outboard onto transom.

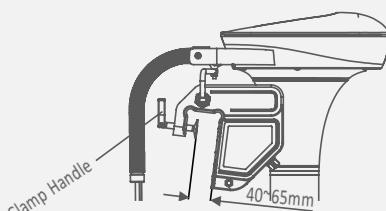


Figure 3-2

Method 2

Use two screws to fix the outboard to the boat. The dimensions of the two mounting holes are shown below.

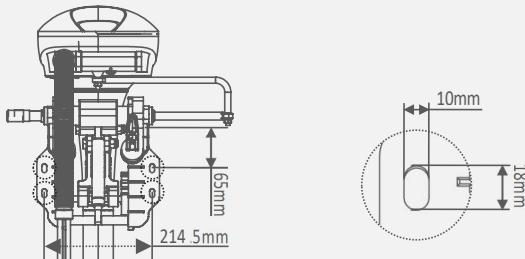


Figure 3-3

 Ensure the outboard is firmly fixed as loosened clamp screws may cause the outboard to fall into water or get damaged. Check the screws or clamps every time before use since they may be loosened because of mechanical vibrations.

 A cable is recommended to be used to avoid complete loss of your outboard in case it falls off the transom. Use the cable to connect your outboard and a secure mounting point on the boat.

3.3 Mounting the Steering System

 Before using Remote Control, please follow the fixing guide to fix the Remote Control in the proper position.

When using the Remote Control, please prepare a steering wheel (not supplied with Explorer 6.0 or the Remote Control) and mount it on the corresponding position to control the direction.

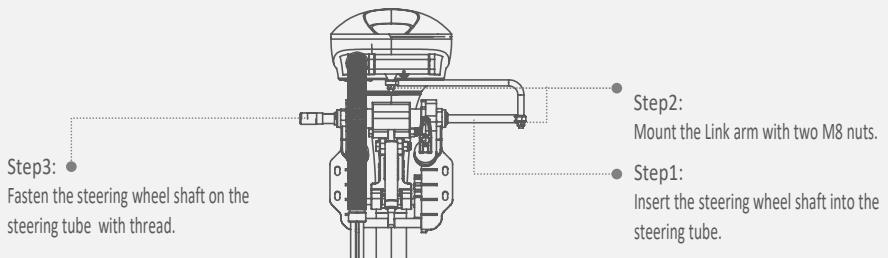


Figure 3-3

3.4 Mounting the Tiller

1. Rotate the handle shaft counterclockwise by wrench, then pull out the handle shaft and decorative cover.

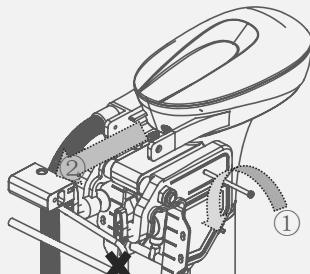


Figure 3-4



When the user selects the Tiller operation, please do not use the Steering System to avoid interference caused by the two operation methods

2. Install the tiller to the machine, Insert the handle shaft into the hole to the end and lock it clockwise.

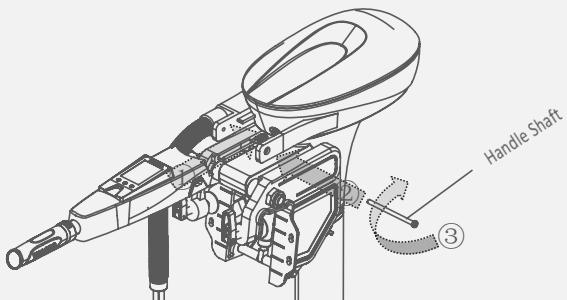


Figure 3-5

2. Connect the communication cable of Tiller to the communication port of the Explorer 6.0

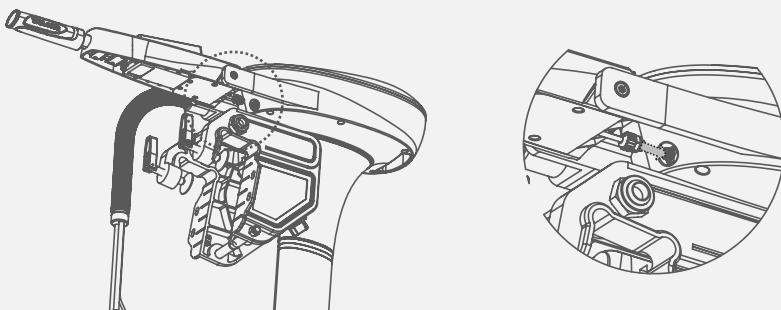


Figure 3-6



Do not use the tiller handle to tilt or lift your outboard. The damage of tiller or battery base due to pushing down the handle is out of warranty.

4. Connecting the Battery

4.1 Connecting a 48V Battery

When using a battery, make sure the main switch is off before connection.

Step1: Connect the power cable and communication cable of the Explorer 6.0 to the battery.

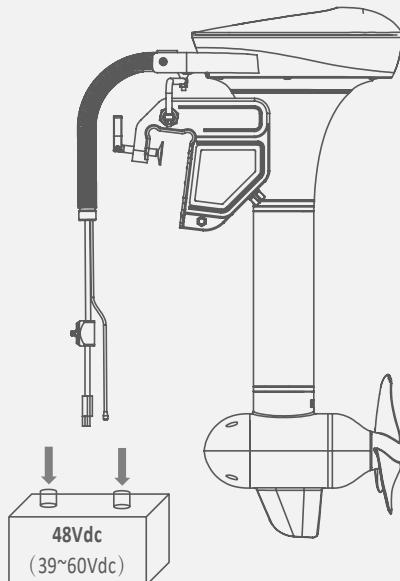


Figure 4-1



Avoid battery short-circuit during connection.



Do not short-circuit the main switch with other power supplies. The main switch should be mounted on the boat, and the back plate of the main switch should not be removed.



Outboard motor will stop working once the power cable disconnects.



Clockwise rotate the main switch to power on the battery before use.



Users can also enlarge the battery capacity by connecting multiple batteries in parallel.



The main switch and power cable are connected by the fixing screws that may loosen after long-time use.

Loosen screws will lead to poor contact, which may result in over-current or other errors. If this problem is discovered, open the back cover of the switch, and tighten the screws inside.