

## Side Mount Control User Manual

2019.04 Version 1.0

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# Acknowledgement

Thanks for choosing ePropulsion products, your trust and support in our company are sincerely appreciated. We are dedicated to providing high-performance electric outboards, pod drives, as well as thrusters, reliable lithium batteries and accessories.

Welcome to visit [www.epropulsion.com](http://www.epropulsion.com) and contact us if you have any concerns.

# Using This Manual

Before the use of the product, please read this user manual thoroughly to understand the correct and safe operations. By using this product, you hereby agree that you have fully read and understood all contents of this manual. ePropulsion accepts no liability for any damage or injury caused by operations that contradict this manual.

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

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ePropulsion reserves the rights of 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

The following symbols will help to acquire some key information.

 Important instructions or warnings

 Useful information or tips

# Product Identification

Below picture indicates the serial numbers of Side Mount Control and Display Panel. Please note the position of the serial numbers and record them for access to warranty services and other after-sales services. Do not remove or alter the identification label, otherwise the product warranty will be invalid.

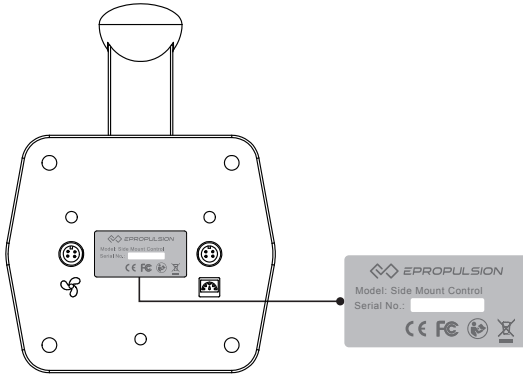


Figure 0-1

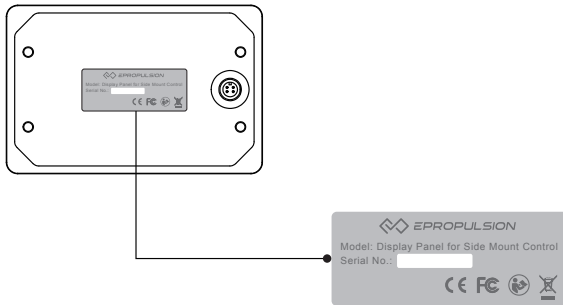


Figure 0-2

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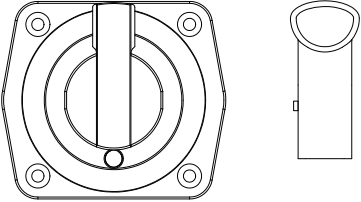
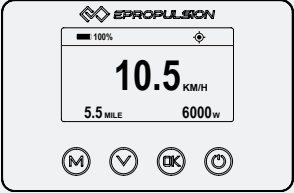
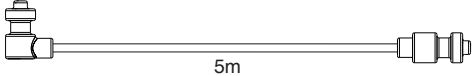
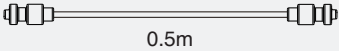
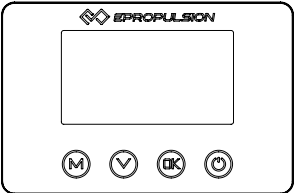
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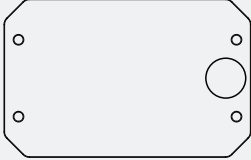
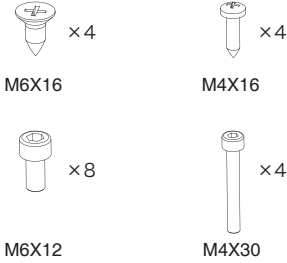
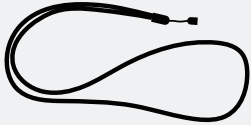
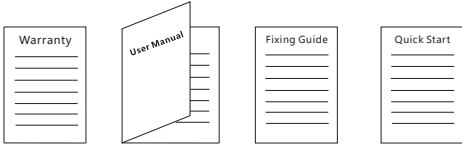
# 1 Product Overview

Side Mount Control is a wired throttle control handle with a display panel. It is compatible with NAVY, SPIRIT outboards (excluding SPIRIT 1.0 with tiller) and Pod Drives.

## 1.1 In the Package

When you receive a set of Side Mount Control, unpack its package and check if all the items below are included in the package. If there is any loss or transport damage, please contact your dealer immediately.

Item	Qty./Unit	Figure
Throttle	1 Set	
Display Panel	1 Set	
Communication Cable 5m	1 Piece	
Communication Cable 0.5m	1 Piece	
Film of Display Panel (for Mounting Display Panel)	1 Piece	

Item	Qty./Unit	Figure
Seal	1 Piece	
Screw	1 Set	 <p>M6X16                      M4X16</p> <p>M6X12                      M4X30</p>
Kill Switch	2 Sets	
User Manual, Warranty Card, Quick Start & Fixing Guide	1 Set	



Save ePropulsion original package for transport and storage.



Be attention to distinguish the communication ports in the Side Mount Control. Please using a communication cable to connect the motor or the battery to the connector with the sign "⌘" and use another communication cable to connect the display panel to the connector with the sign "Ⓜ".



## 1.2 Specification

Side Mount Control	
Rated Voltage / Current	5 V / 60 mA
Input Voltage Range	4.5 V ~ 5.5 V DC
Communication	Wired
Length X Width X Height (Throttle)	117 x 160.3 x 57.3 mm / 4.61" x 6.31" x 2.56"
Length X Width X Height (Display Panel)	123.6 x 81.6 x 32.3 mm / 4.87" x 3.21" x 1.27"
Net Weight (Throttle)	0.5 kg / 1.10 lbs.
Net Weight (Display Panel)	0.35 kg / 0.77 lbs.
Operation Environment	-10°C ~ 50°C (14°F ~ 122°F)
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)

## 1.3 Important Notes

1. Check the status of the Side Mount Control and battery level before each trip.
2. Only adults who have fully read and understood this manual are allowed to operate this product.
3. Make sure the Side Mount Control is properly installed before use.
4. Be familiar with the basic operation of this product before use, including start-up, stop, control mode, and emergency stop.
5. Make sure that the function of this product is normal before each use.
6. Stop the motor immediately if someone falls overboard during the trip.
7. When using NAVY outboards or Pod Drive 3.0, the distance and speed value displayed is measured by Global Positioning System (GPS), there may exist small errors due to GPS signal strength degradation or some external environment conditions like currents, winds and change of course.

## 1.4 Declaration

### Object of the declaration:

Product Description: Side Mount Control

Model: Side Mount Control, Side Mount Control-NAVY, Side Mount Control-SPIRIT

**Company Name:** Dongguan ePropulsion Intelligence Technology Limited

**Company Address:** Room 202, Bldg.17A, Headquarter No.1, 4th XinZhu Road, SongShan Lake District, Dong Guan City, Guang Dong Province, China

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

EMC-directive                      2014/30/EU

### Applied standards:

EN 55014-1:2017

EN 55014-2:2015

EN 61000-3-2:2014

EN 61000-3-3:2013

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.

The original certificate was issued by


Dongguan Dongdian Testing Service Co. Ltd. in Dongguan, China.

CE Test Report NO.: DDT-R18111908-3E2

Issued Date: November 30, 2018

FCC Test Report NO.: DDT-R18111908-3E1

Issued Date: November 30, 2018

Signature: 

Shizheng Tao, Chief Executive Officer & Cofounder of  
Dongguan ePropulsion Intelligence Technology Limited

# 2 Mounting

First mount the Side Mount Control including the throttle and the display panel, then connect to the motor and the battery with communication cables, and configure the version and the handle side.

- 💡 Before mounting the Side Mount Control, it is recommended to connect the entire equipment first, check whether it works well, and whether the communication cable is properly connected. For the connection method of the communication cable, please refer to *2.3 Connection*.
- 💡 Make sure the proposed location reserves enough room for operating and will allow rotating the throttle without hitting obstructions.
- 💡 When selecting the mounting location, examine your boat to ensure that you will not drill into any obstructions and the throttle will be accessible for assembly, the cables will be accessible for connection.

## 2.1 Mounting the Throttle

Follow the instructions below to fix the throttle of the Side Mount Control to the boat. It can be mounted from the back side or front side.

### 2.1.1 Mounting from the back side

- ① Drill holes on the hull through the fixing guide referring to the figure 2-1.

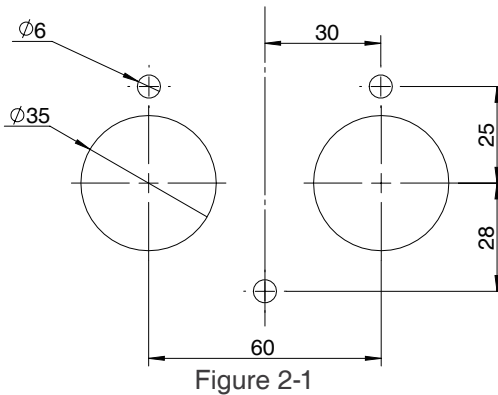


Figure 2-1

② Fix the throttle to the side of the boat referring to the figure 2-2.

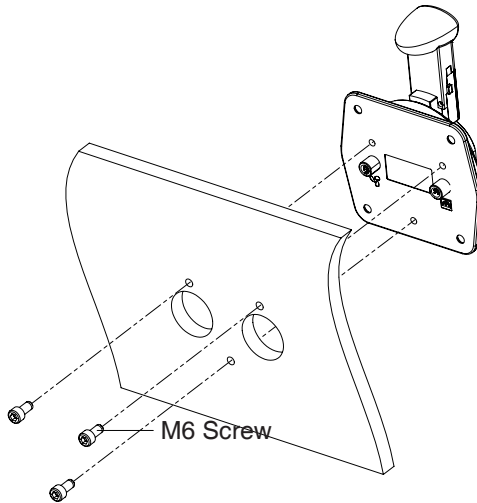


Figure 2-2

### 2.1.2 Mounting from the front side

① Drill holes on the hull through the fixing guide referring to the figure 2-3.

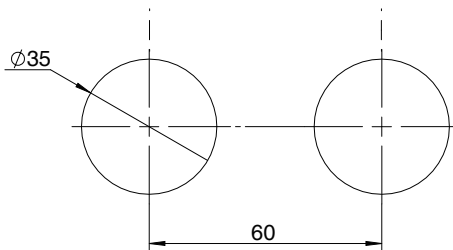


Figure 2-3

② Fix the throttle to the side of the boat referring to the figure 2-4.

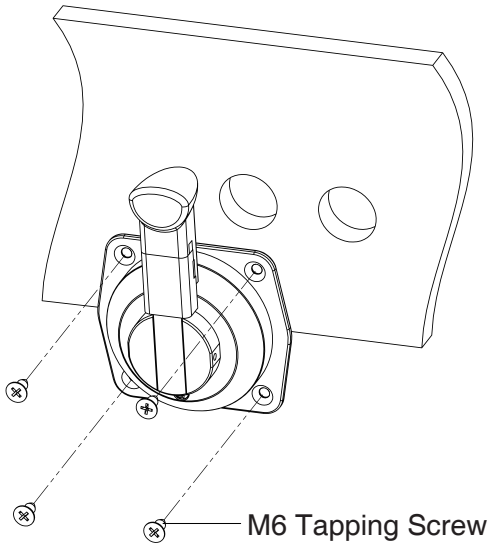


Figure 2-4

## 2.2 Mounting the Display Panel

Follow the instructions below to fix the display panel of the Side Mount Control to the boat. It can be mounted from the back side or front side.

### 2.2.1 Mounting from the back side

① Drill holes on the hull through the fixing guide referring to the figure 2-5.

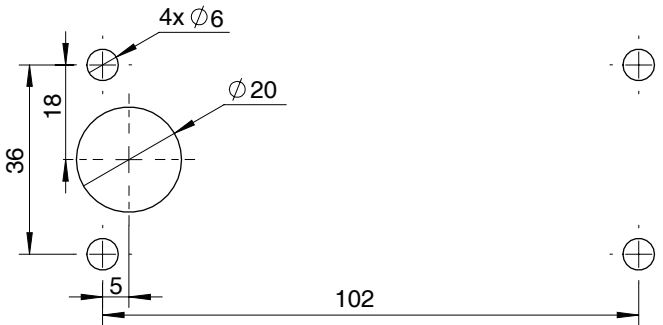


Figure 2-5

② Fix the display panel to the boat referring to the figure 2-6.

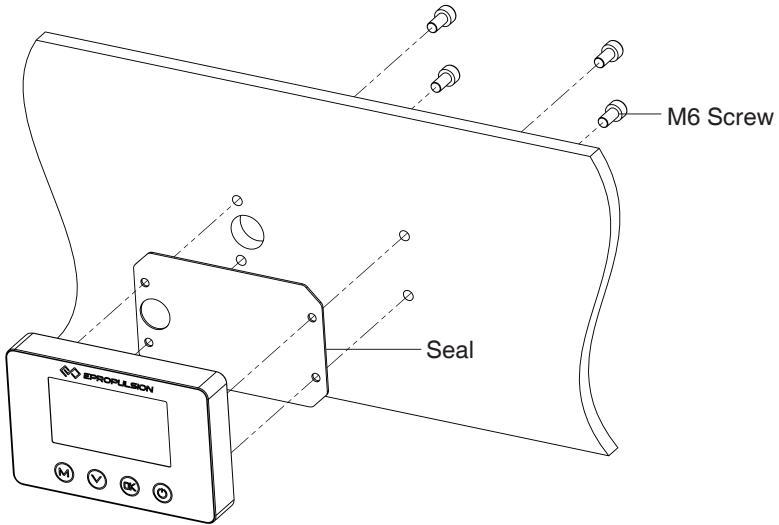


Figure 2-6

### 2.2.2 Mounting from the front side

① Drill holes on the hull through the fixing guide referring to the figure 2-7.

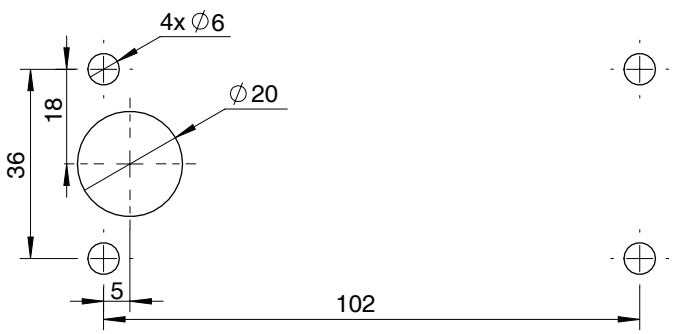


Figure 2-7

② Tear the film of the display panel, then fix the display panel to the boat referring to the figure 2-8.

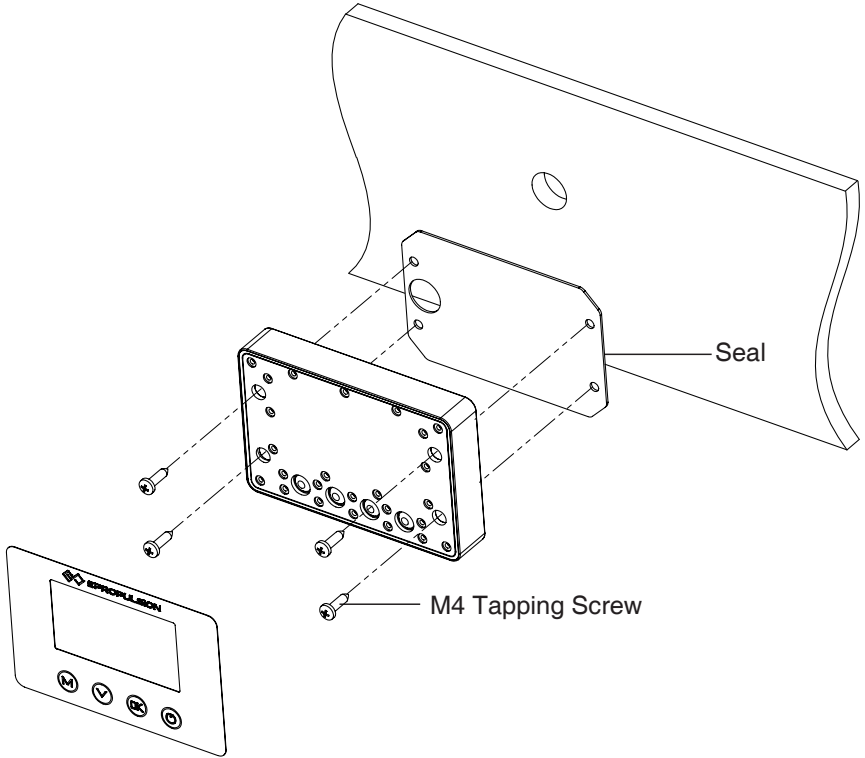


Figure 2-8

③ Paste a new film which is in the package.

## 2.3 Connection

The Side Mount Control communicates with the motor via communication cables. Please follow the steps below to complete the connection:

1. Connect the throttle and display panel with a communication cable;
2. If using a NAVY battery, connect the Side Mount Control to the battery with a communication cable; If not using a NAVY battery, connect the Side Mount Control to the motor with a communication cable;
2. Connect the motor to the battery.

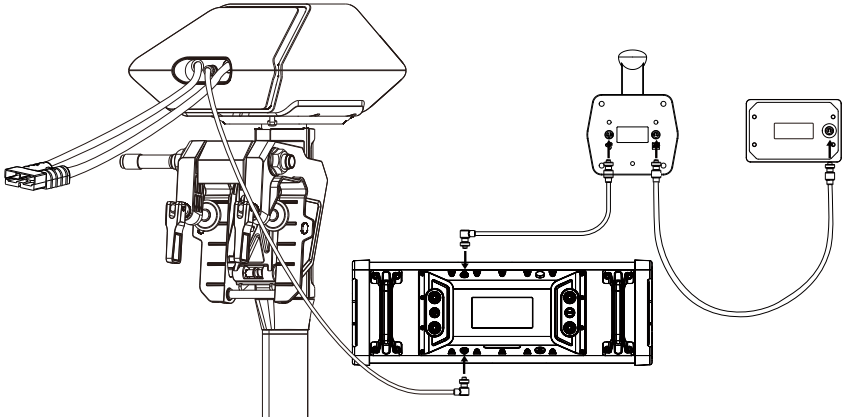


Figure 2-9

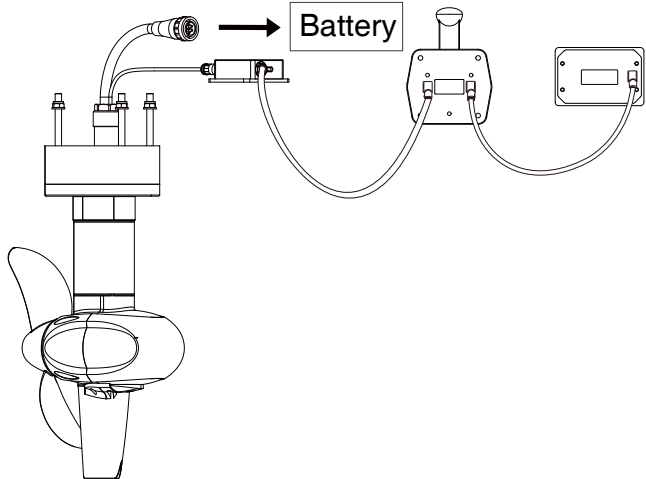



Figure 2-10



 Please using a communication cable to connect the motor or the battery to the connector with the sign "⚙" on the Side Mount Control and use another communication cable to connect the display panel to the other connector with the sign "🏠".

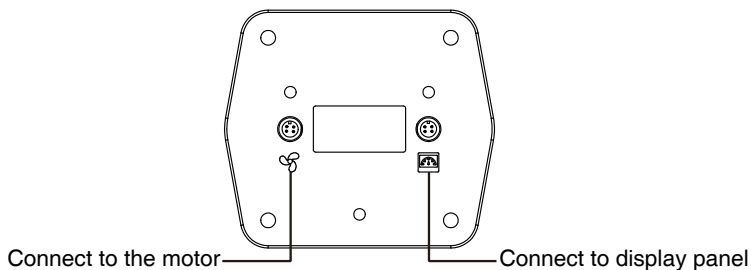



Figure 2-11

## 2.4 Version Setting


Side Mount Control is Spirit1.0 version by default, which is suitable for SPIRIT 1.0R and SPIRIT 1.0C outboards. If you need to connect to NAVY outboard or Pod Drive, please switch to a different version according to the following steps:

 The option with a "<" pattern on the right is the option in use.

Version Setting Process	LCD Displaying
<p><b>Step1:</b> In power-on state, press the "M" button and hold for 3s to enter the preference setting page.</p>	<pre data-bbox="682 416 951 564">-&gt;PowerLimit UnitSetting BatterySetting Throttle Version</pre>
<p><b>Step2:</b> Press the "V" button to switch to "Version".</p>	<pre data-bbox="682 595 951 743">PowerLimit UnitSetting BatterySetting Throttle -&gt;Version</pre>
<p><b>Step3:</b> Press the "OK" button to enter Version Setting page. Press the "V" button to choose the version based on your motor model.</p>	<pre data-bbox="682 767 951 916">-&gt;Spirit1.0&lt; Navy3.0 Navy6.0 Pod1.0 Pod3.0</pre>
<p><b>Step4:</b> Press the "OK" button to save the setting. And it will return to preference setting page automatically.</p>	<pre data-bbox="682 940 951 1088">-&gt;PowerLimit UnitSetting BatterySetting Throttle Version</pre>

## 2.5 Port or Starboard Side Setting

Make sure the handle side setting is done correctly before use. The Side Mount Control is in starboard (right) side mode by default. If you need to switch between the port (left) or starboard (right) side, please refer to the following process for setting.

 The option with a "<" pattern on the right is the option in use.

Handle Side Setting Process	LCD Displaying
<p><b>Step1:</b> In power-on state, press the "M" button and hold for 3s to enter the preference setting page.</p>	<pre data-bbox="689 434 944 574">-&gt;PowerLimit UnitSetting BatterySetting Throttle Version</pre>
<p><b>Step2:</b> Press the "V" button to switch to "Throttle".</p>	<pre data-bbox="689 628 944 769">PowerLimit UnitSetting BatterySetting -&gt;Throttle Version</pre>
<p><b>Step3:</b> Press the "OK" button to enter throttle setting page.</p>	<pre data-bbox="689 833 944 973">-&gt;HandleSide Calibration</pre>
<p><b>Step4:</b> Press the "OK" button to enter "HandleSide" Setting page and set the port (left) or starboard (right) side control mode through the "V" button. Then press the "OK" button to save the settings.</p>	<pre data-bbox="689 1072 944 1209">-&gt;LeftSide RightSide &lt;</pre>
<p><b>Step5:</b> Press the "M" button to return to the throttle setting page.</p>	<pre data-bbox="689 1292 944 1433">-&gt;HandleSide Calibration</pre>

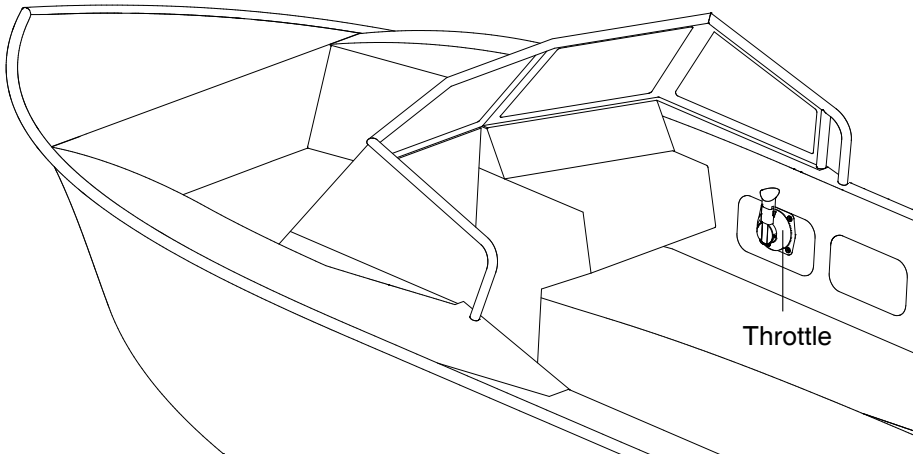


Figure 2-12 Starboard (right) Side

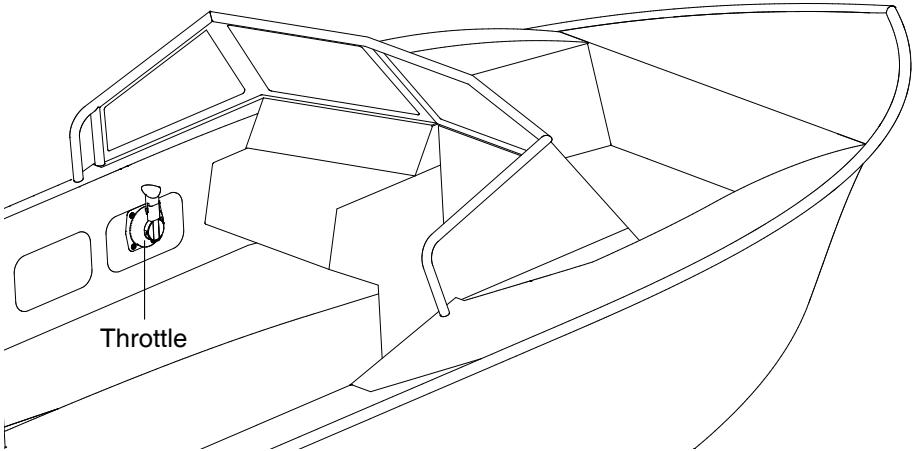


Figure 2-13 Port (left) Side

# 3 Features of Components

The Side Mount Control is connected to the motor by wire, and used for starting and stopping the motor, adjusting the motor speed, configuring the battery parameters, displaying the system information and messages, etc.

## 3.1 Detachable Throttle

### 3.1.1 Detach the Handle

In the original package, the handle of the throttle is an assembly, and it's detachable to change the length of the handle for easier use. If you need to detach the handle of the throttle, please press and hold the release button on the handle and then pull the handle up and out. Refer to the figure below.

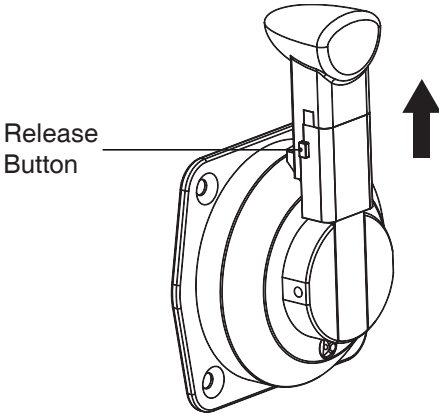
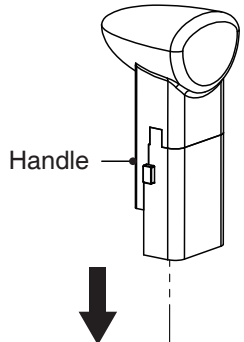


Figure 3-1



### 3.1.2 Install the Handle

If you need to install the handle to the throttle, please push the handle in the slot to the end then the release button on the handle is stuck.

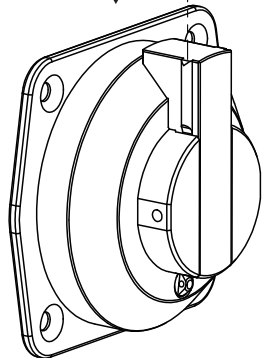














Figure 3-2













## 3.2 Display Panel




Buttons	Functions
 "Power"	<ol style="list-style-type: none"> <li>1. When the display panel is turned off, press and hold the power button to power on the display panel.</li> <li>2. When the display panel is turned on, press and hold the power button to power off the display panel.</li> </ol>
 "OK"	On setting pages, press the "  " button to save the current settings and switch to the next item.
 "Down"	<ol style="list-style-type: none"> <li>1. On home page, press "  " button to switch between battery voltage and battery level.</li> <li>2. On any setting page, press "  " button to view options for current setting, or adjust configuration parameters.</li> </ol>
 "Menu"	<ol style="list-style-type: none"> <li>1. In power-on state, press and hold "  " button to enter the preference setting page.</li> <li>2. On setting pages, press "  " button to return to the home page.</li> <li>3. When in NAVY3.0, NAVY6.0 or Pod3.0 version, short press "  " button on the main page to switch between 4 different display interfaces. In the case of Spirit1.0 and Pod1.0, there is only one interface.</li> </ol>

 All operations on the display panel need to be done in power-on state.

 If users enter the page without setting any parameters, the current parameters displayed on the page will be saved as user parameters by default.

Icons	Functions	
	Battery level indicator	Indicating battery level.

Icons	Functions	
<p><b>48.0V</b> <b>100%</b></p>	<p>Battery voltage / level</p>	<p>Indicating accurate current battery voltage / battery level percentage which is configurable in preference setting page. For example:  <b>48.0V</b> : indicates current battery voltage.  <b>100%</b> : indicates current battery level.</p>
	<p>GPS status indicator</p>	<ul style="list-style-type: none"> <li> Hidden: no satellite signal is received or GPS does not work.</li> <li> Blink: GPS is connecting to satellites.</li> <li> Shown constantly: GPS is in use.</li> <li> If in Spirit1.0 or Pod1.0 version, GPS status indicator will be always hidden.</li> </ul>
	<p>Over-heat alert</p>	<ul style="list-style-type: none"> <li> Hidden: system temperature is in normal range.</li> <li> Blink: system temperature is a little high and the maximum input power of motor has been lowered than rated maximum power.</li> <li> Shown constantly: system is over temperature and the outboard will stop working. The outboard motor can't be started until the system temperature drops to a certain level.</li> </ul>
	<p>Kill switch status indicator</p>	<ul style="list-style-type: none"> <li> Hidden: kill switch is well attached and works well.</li> <li> Shown constantly: the kill switch is detached.</li> </ul>
<p><b>99.9</b><sub>KMH</sub></p>	<p>Current speed</p>	<p>Displaying real time cruising speed. Set units (KM/H, MPH or KNOTS) in preference setting page.</p>

Icons	Functions	
<b>9:59</b> ●	Time display	Displaying real time travel time.
	Travelled distance/time or remaining distance/time	 : Remaining distance or time that outboard can travel.  : Travelled distance or time. Set units (MILE, KM (kilometer) and NM (nautical mile)) in preference setting page.
<b>6000<sub>w</sub></b>	Throttle Power	Displaying real time input power to the system.
<b>RESET</b>	Throttle reset indicator	A blinking " <b>RESET</b> " indicating the throttle should be reset to the neutral position.




# 4 Operation Guide

## 4.1 System Settings

### 4.1.1 Version Setting

Side Mount Control is Spirit1.0 version by default, which is suitable for SPIRIT 1.0R and SPIRIT 1.0C outboards. If you need to connect to NAVY outboard or Pod Drive, please switch to other versions according to the following steps:

 The option with a "<" pattern on the right is the option in use.


Version Setting Process	LCD Displaying
<b>Step1:</b> In power-on state, press the "M" button and hold for 3s to enter the preference setting page.	->PowerLimit UnitSetting BatterySetting Throttle Version
<b>Step2:</b> Press the "V" button to switch to "Version".	PowerLimit UnitSetting BatterySetting Throttle ->Version
<b>Step3:</b> Press the "OK" button to enter Version Setting page. Press the "V" button to choose the version you need.	->Spirit1.0< Navy3.0 Navy6.0 Pod1.0 Pod3.0
<b>Step4:</b> Press the "OK" button to save the setting. And it will return to preference setting page automatically.	->PowerLimit UnitSetting BatterySetting Throttle Version

## 4.1.2 Power Limit

Power Limit Process	LCD Displaying
<p><b>Step1:</b> In power-on state, press the " M " button and hold for 3s to enter the preference setting page.</p>	<div data-bbox="692 212 962 363" style="border: 1px solid black; padding: 5px;">           →PowerLimit            UnitSetting            BatterySetting            Throttle            Version         </div>
<p><b>Step2:</b> When the arrow points to "PowerLimit", press the " OK " button to enter the power limit page.</p> <p>Use the " V " button to select the power you want to set. "Forward" is the forward power and "Backward" is the backward power.</p>	<div data-bbox="692 461 962 612" style="border: 1px solid black; padding: 5px;">           →Forward:            Backward:         </div>
<p><b>Step3:</b> Press the " OK " button to enter this power limit page.</p>	<div data-bbox="692 718 962 869" style="border: 1px solid black; padding: 5px;">           →Forward: 000%         </div>
<p><b>Step4:</b> Please set the three-digit value from left to right through the " V " button. Each time you set a value, press the " OK " button to move to the next digit.</p> <p>The flashing value is the value being edited.</p> <p>The power is limited to 0%-100%.</p>	<div data-bbox="692 963 962 1115" style="border: 1px solid black; padding: 5px;">           →Forward: 090%         </div>
<p><b>Step5:</b> Press the " M " button to return to the main page after all values are set.</p>	<div data-bbox="692 1201 962 1353" style="border: 1px solid black; padding: 5px;">           →Forward:            Backward:         </div>

### 4.1.3 NAVY Preference Settings

If the version setting is in Navy 3.0, Navy 6.0 or Pod 3.0, it's advised to set display preference by these steps before operation.


 The option with a "<" pattern on the right is the option in use.


NAVY Preference Settings	LCD Displaying
<p><b>Step1:</b> In power-on state, press the "M" button and hold for 3s to enter the preference setting page.</p>	<div style="border: 1px solid black; padding: 5px;">           →PowerLimit            UnitSetting            BatterySetting            Throttle            Version         </div>
<p><b>Step2:</b> Press the "▼" button to switch to "UnitSetting".</p>	<div style="border: 1px solid black; padding: 5px;">           PowerLimit            →UnitSetting            BatterySetting            Throttle            Version         </div>
<p><b>Step3:</b> Press the "OK" button to enter the unit setting page.</p>	<div style="border: 1px solid black; padding: 5px;">           →DisplayType:            DistanceUnit:            SpeedUnit:         </div>
<p><b>Step4:</b> Press the "OK" button to enter one of the unit setting pages. Press the "▼" button to choose the unit you want to display.</p>	<div style="border: 1px solid black; padding: 5px;">           →Voltage&lt;            SOC         </div>


NAVY Preference Settings	LCD Displaying
<p><b>Step4:</b> Press the " <b>OK</b> " button to save the setting for the current item and press the " <b>M</b> " button to return to previous setting page.</p>	<div style="border: 1px solid black; padding: 5px;">           -&gt;DisplayType:            DistanceUnit:            SpeedUnit:         </div>
<p><b>Step5:</b> Press the " <b>M</b> " button to return to preference setting page.</p>	<div style="border: 1px solid black; padding: 5px;">           -&gt;PowerLimit            UnitSetting            BatterySetting            Throttle            Version         </div>

### 4.1.4 Battery Configuration

Accurate battery configuration helps achieve precise estimation of the battery's discharging state. When using an ePropulsion Battery (standard), battery configuration is self-configured after all the communication cables are well connected. When not using ePropulsion Batteries, users should manually configure the batteries via Side Mount Control at the first time use, so the battery level will display more accurate.

 Battery configuration should be carried out if a battery with different type/capacity/voltage is connected to motor for the first time.


 There are some calculation errors in battery level display. Please plan the journey, reserve more than 15% of the endurance power to avoid midway power exhaustion, or prepare enough spare batteries.


 The option with a "<" pattern on the right is the option in use.

Battery Setting Process	LCD Displaying
<p><b>Step1:</b> In power-on state, press the " <b>M</b> " button and hold for 3s to enter the preference setting page.</p>	<div style="border: 1px solid black; padding: 5px;">           -&gt;PowerLimit            UnitSetting            BatterySetting            Throttle            Version         </div>


Battery Setting Process	LCD Displaying
<p><b>Step2:</b> Press the " <b>▼</b> " button to switch to "BatterySetting".</p>	<div style="border: 1px solid black; padding: 5px;">           PowerLimit            UnitSetting            →BatterySetting            Throttle            Version         </div>
<p><b>Step3:</b> Press the " <b>OK</b> " button to enter the battery setting page.</p>	<div style="border: 1px solid black; padding: 5px;">           →Type:            Voltage:            Capacity:         </div>
<p><b>Step4:</b> When the arrow points to "Type", then press the " <b>OK</b> " button, and choose the battery type according to the battery you use.</p> <p>Press the " <b>▼</b> " button to switch the battery type options between Li-ion, LiFePO4 and Lead acid.</p> <p>Li-ion: lithium-ion battery</p> <p>LiFePO4: Lithium-ion ferrous phosphate battery</p> <p>Lead acid: Lead-acid battery</p> <p>Press the " <b>OK</b> " button to save the setting for the current item.</p>	<div style="border: 1px solid black; padding: 5px;">           →Li-ion            LiFePO4            Lead acid &lt;         </div>
<p><b>Step5:</b> Press the " <b>M</b> " button to return to previous setting page, and press the " <b>▼</b> " button to switch to "Voltage".</p>	<div style="border: 1px solid black; padding: 5px;">           Type:            →Voltage:            Capacity:         </div>
<p><b>Step6:</b> Press the " <b>OK</b> " button to set the rated voltage of the battery.</p> <p>The voltage options are varied according to the battery types. Press the " <b>▼</b> " button to view the options then press the " <b>OK</b> " button to save current setting.</p>	<div style="border: 1px solid black; padding: 5px;">           →44.0V            46.0V            48.0V            50.0V &lt;            52.0V         </div>

Battery Setting Process	LCD Displaying
<p><b>Step7:</b> Press the " M " button to return to previous setting page, and press the " V " button to switch to "Capacity".</p>	<div style="border: 1px solid black; padding: 5px;">           Type:            Voltage:            →Capacity:         </div>
<p><b>Step8:</b> Press the " OK " button to enter the battery capacity setting.</p> <p>Please set the four-digit value from left to right through the " V " button. Each time you set a value, press the " OK " button to move to the next digit.</p> <p>Note that the unit of capacity is "Ah", usually the capacity of battery is expressed in "Wh", and we can get the capacity in "Ah" by following the below formula:</p> $\text{Capacity in Ah} = \frac{\text{Capacity in Wh}}{\text{Nominal voltage in V}}$ <p>Eg. if users use a 3000Wh Lithium battery with 48.1V nominal voltage, then the battery is about 62.37Ah, so you can set 62Ah as the capacity setting.</p>	<div style="border: 1px solid black; padding: 5px;">           →Capacity: 0130AH         </div>
<p><b>Step9:</b> After all the values are set, press the " M " button to return to the battery setting page.</p>	<div style="border: 1px solid black; padding: 5px;">           →Type:            Voltage:            Capacity:         </div>
<p><b>Step10:</b> After battery setting is completed, press the " M " button to return to the preference setting page.</p>	<div style="border: 1px solid black; padding: 5px;">           →PowerLimit            UnitSetting            BatterySetting            Throttle            Version         </div>

 Lithium batteries, lead acid batteries and lithium iron phosphate batteries are recommended to use with NAVY outboard or Pod Drive 3.0. Other types of battery may fail to make the motor work properly.

 When you use the below batteries, please set battery type and rated voltage value based on the parameters in the following table.

<b>Battery type</b>	<b>Nominal Voltage options</b>									
LI-ion	43.2V	44.4V	45.6V	46.8V	48.1V	49.4V	50.4V	51.8V	53.2V	
Lead acid	44.0V	46.0V	48.0V	50.0V	52.0V	54.0V				
LiFePO4	44.8V	48.0V	51.2V							

 Update the battery configuration is necessary if a different type of battery has been applied.

# 4.2 Throttle Operation

## 4.2.1 Power Adjusting

Side Mount Control is used to adjust the input power of the motor. When the battery is properly connected, power on the motor, and then start the Side Mount Control. When the throttle is in the neutral position, first pull the handle away from its base plate along a horizontal direction, then rotate the handle forward or backward to increase the power. Please refer to figure 4-1 and 4-2. When the throttle returns to the neutral position, it will lock automatically. Then need to pull out to continue turning the throttle.

💡 Before power on the Side Mount Control, please reset the throttle to the neutral position. If you find a flickering “RESET” on the display, you are reminded to reset the throttle to the neutral position.

💡 The handle is locked only in the neutral position, there is no need to pull the handle towards outside once it's not in the neutral position.

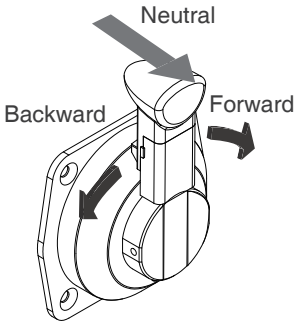


Figure 4-1 Port (left) side mode

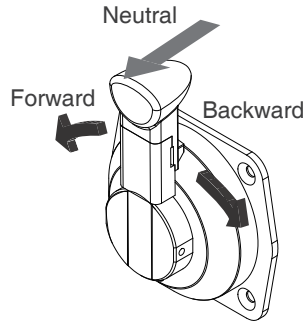


Figure 4-2 Starboard (right) side mode




## 4.2.2 Recalibration

The throttle position sensor should be recalibrated if the below error code displays.



Figure 4-3

 Before calibration, if there is no handle side setting, please refer to *2.5 Handle Side Setting* to set the handle side and then carry out the throttle calibration procedures.

Recalibration process	LCD Displaying
<p><b>Step1:</b> In power-on state, press the " M " button and hold for 3s to enter the preference setting page.</p>	<div style="border: 1px solid black; padding: 5px;">           -&gt;PowerLimit            UnitSetting            BatterySetting            Throttle            Version         </div>
<p><b>Step2:</b> Press the " V " button to switch to the "Throttle".</p>	<div style="border: 1px solid black; padding: 5px;">           PowerLimit            UnitSetting            BatterySetting            -&gt;Throttle            Version         </div>
<p><b>Step3:</b> Press the " OK " button to enter throttle setting page.</p>	<div style="border: 1px solid black; padding: 5px;">           -&gt;HandleSide            Calibration         </div>
<p><b>Step4:</b> Press the " V " button to switch to the "Calibration".</p>	<div style="border: 1px solid black; padding: 5px;">           HandleSide            -&gt;Calibration         </div>

Recalibration process	LCD Displaying
<p><b>Step5:</b> Press the " OK " button to enter calibration setting page.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Push forward to the end then press OK</p> </div>
<p><b>Step6:</b> Push the throttle to the maximum forward power position, and then press the " OK " button.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Pull to the neutral then press OK</p> </div>
<p><b>Step7:</b> Pull the throttle to the neutral position, then press the " OK " button.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Pull back to the end then press OK</p> </div>
<p><b>Step8:</b> Pull the throttle to the maximum backward power position, and then press the " OK " button.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Calibration complete press OK</p> </div>
<p><b>Step9:</b> Calibration is completed. Then press " OK " button to return to throttle setting page.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>HandleSide -&gt;Calibration</p> </div>

### 4.3 Use of Kill Switch

Locate the kill switch to the right place on the Side Mount Control and tie its lanyard to your wrist or life jacket. Stop the outboard in emergency by detaching the kill switch.

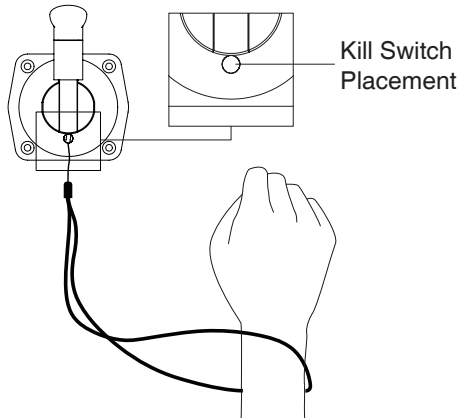





Figure 4-7

-  The kill switch generates magnetic field. Keep it 50cm / 20inches away from medical implants like pacemakers and magnetic cards (e.g. credit card) as well as other magnetic media.
-  The magnetic field of the kill switch may interfere with some electronic instruments. Keep it away from these electronic instruments.


## 4.4 Checklist before Use


1. Ensure the Side Mount Control and steering wheel are installed in proper position before turning on the power.
2. Ensure the Side Mount Control travels smoothly with no obstructions.
3. Before connecting the battery, check and make sure there is no poor contacts or defects in cables.
4. Before connecting to NAVY outboard or Pod Drive 3.0, please check and ensure the main power switch is able to power on and off normally. After that, turn off the main power switch.
- 5. Ensure the version setting of the Side Mount Control is correspond to the model of the motor.**
6. Ensure the battery has enough power.
7. When not using ePropulsion Batteries, ensure the batteries is configured before use.



 Start the motor only when the propeller is beneath water, as the rotating propeller is dangerous.

 If the cable is immersed in water, please dry it completely before connecting it to the battery or power on the system.

# 4.5 Starting the Motor

1. Complete the check list.
2. Remove the kill switch from the Side Mount Control.
3. Set the throttle in the neutral position.
4. Connect the battery to the motor.
5. If using the outboard, fix the outboard with a proper trim angle.
6. Turn on the main power switch when using the NAVY outboard or Pod Drive 3.0. If the outboard is connected to a NAVY battery, please also press the battery power button to power on.
7. Press "  " button to turn on the display panel, then the main page will display.
8. Carry out preference setting and battery configuration if necessary.
9. Tie the kill switch to your wrist or life vest, then attach the kill switch on the Side Mount Control.
10. Pull out the throttle in the neutral position, then push the throttle slowly to start your motor.


 If the display panel displays "Check the cable connection":

1. Please using a communication cable to connect the motor or the battery to the connector with the sign "  " on the Side Mount Control and use another communication cable to connect the display panel to the other connector with the sign "  ".
2. If the connection is correct after double check, there may be the communication fault between the display panel and the throttle. Please check whether the communication cable is loosen or damaged.


# 4.6 Stopping the Motor

Usually, it's recommended to stop the motor as the following procedures.

1. Return the throttle to the neutral position, then the throttle will lock automatically.
2. Wait until the motor stops, then detach the kill switch from the Side Mount Control.
3. Press and hold the " ⏻ " button until the Side Mount Control is powered off.
4. If using the NAVY outboard or Pod Drive 3.0, turn off the main power switch. If the outboard is connected to a NAVY battery, please also press the battery power button to power off.
5. If using outboard, tilt the outboard above water surface or detach it from boat.

 The motor will stop if one of the situations occurs.

- 1) The throttle is in the neutral position.
- 2) The kill switch is not in the kill switch placement of Side Mount Control.
- 3) The main power switch is off, while using a NAVY outboard or Pod Drive 3.0.
- 4) The communication between Side Mount Control and the motor breaks.
- 5) The connection between battery and the motor breaks.
- 6) Failure exists in the control system (e.g. motor is blocked or the low battery voltage level is detected).

 In case of emergency, the motor can be stopped by following operations:

- 1) Detach the kill switch.
- 2) Turn the throttle back to the neutral position.

# 5 Warning Messages



Before conducting warning checks, please check the version of the motor in use.

When the motor is running in abnormal conditions or out of order, a warning message with an error code will display on the display panel. Figure 5-1 is an example. Please find more error codes and corresponding solutions in the below table.



Figure 5-1

## a.Warning Messages (Spirit1.0 & Pod1.0 Version)


The following error codes and solutions are applicable only to SPIRIT 1.0 outboard motor and Pod Drive 1.0.

Code	Cause	Solution
E01	Motor Over Voltage	Stop the motor and wait until the error message disappears. If the problem still exists, contact your dealer for repairing.
E02	Motor Over Current	Disconnect the battery and check if the motor is blocked. If not, continue driving at low speed. If this issue cannot be solved, please contact your dealer.
E03/ E04	Motor Overheating	Wait a few minutes until the motor cools down and the warning message disappears.
E05	Motor Under Voltage	Indicate the battery level is extremely low. The motor can probably be restarted at lower speed after the message is dismissed.
E10	Motor Blocked	Disconnect the battery and remove anything that is blocking the motor. Make sure the propeller can be rotated by hand smoothly.

Code	Cause	Solution
E20	Battery Communication Fault	<p>Please check whether the version of Side Mount Control corresponds to the motor version first. If not, please refer to <i>2.4 Version Setting</i> for version switching.</p> <p>If the version is correct, turn off the motor and reconnect the battery cable. If this issue cannot be solved, please contact your dealer.</p>
E21	Motor Communication Fault	<p>Turn off the motor and reconnect the battery cable. If this issue cannot be solved please contact your dealer.</p>
E30	Throttle Calibration Required	<p>Please refer to section <i>4.2.2 Recalibration</i> to recalibrate the throttle position sensor.</p>
E51	Battery Charging Temperature Fault	<p>Make sure the environment temperature is within 0°C to 45°C. Charging will continue when cell temperature is in that range.</p>
E54	Battery Discharging Temperature Fault	<p>Detach the battery and contact your dealer.</p>
E55	Battery Pack Over Voltage	<p>Stop the motor and wait until the error message disappears. If the problem persists, contact your dealer for repair.</p>
E56	Battery Empty	<p>Indicating the battery is empty. The motor can probably be restarted at lower speed after the message is dismissed.</p>
E57	Battery Charging Over Current	<p>Please contact your dealer.</p>



Code	Cause	Solution
E58	Battery Discharging Over Current	Please contact your dealer.
E59	Battery Hardware Fault	Battery has encountered serious hardware breakdown. Please replace the battery and contact your dealer.
Other	Battery Cell Fault	Battery cell fault occurs, please replace the battery and contact your dealer to repair the problematic battery.

 If the problem persists, please consult your ePropulsion authorized dealer for assistance.

#### **b.Warning Messages (Navy3.0, Navy6.0 & Pod3.0 Version)**

The following error codes and solutions are applicable only to NAVY 3.0, NAVY 6.0 outboard motor and Pod Drive 3.0.

Code	Cause	Solution
E01	Battery voltage is over the operating range.	Replace a battery based on suggested operation specifications.
E02	Propeller may be blocked, causing motor overcurrent	Please refer to the solution to E10.
	Motor fails or circuit board fails causing motor overcurrent	Try to turn off the main power switch and wait for 10 seconds then turn on the switch again.
E06	The battery voltage level is too low.	Operate the motor at low power. Please charge the battery as soon as possible.

Code	Cause	Solution
E10	Motor stall, which may be caused by blocked propeller	Turn off power, then clean up the things winding around the propeller. Test if the propeller can be rotated by hand before operation.
E11	The temperature of motor is too high.	Stop operating the motor and wait until the temperature falls within the normal operating temperature range.
E12	The temperature of circuit board is too high.	Stop operating the motor and wait until the temperature falls within the normal operating temperature range.
E15	Failure was found in the circuit board temperature sensors.	Try to turn off the main power switch and wait for 10 seconds then turn on the switch again.
E16	Calibration Abnormality of Current Sensor	Please contact the dealer for help.
E21	Driver Communication Fault	Please check whether the version of Side Mount Control corresponds to the motor version first. If not, please refer to <i>2.4 Version Setting</i> for version switching. If the version is correct, check the communication cable connection and restart the motor. If the problem still arises, please contact the ePropulsion authorized dealer for assistance.
E22	MCU Communication Abnormality	Please restart to see if the error disappears, if not, please contact your dealer for help.

Code	Cause	Solution
E30	Throttle position sensor failure, should recalibrate the throttle position sensor.	Please refer to section 4.2.2 <i>Recalibration</i> to recalibrate the throttle position sensor.
E40	System running failure	Please restart the motor.
E56	Communication Error between NAVY outboard and NAVY battery	Check if the communication cable between NAVY outboard or Pod Drive 3.0 and NAVY battery is well connected, if yes, please restart the system.
E57	NAVY battery overcurrent	<ol style="list-style-type: none"> <li>1. Ensure the paralleled NAVY batteries have similar voltage with pressure difference within 2V.</li> <li>2. Ensure the power cable and battery are firmly connected to avoid poor contact.</li> <li>3. Restart the battery when the error occurs and keep the parallel state for 30 minutes to wait for the batteries to self-balance the voltage.</li> <li>4. If the error occurs, users can also continue operating after restarting the battery, but do not operate at full power state. The operating power is suggested to be lower than two thirds of full power. Please fully charge the battery after use.</li> </ol>



If the problem persists, please consult your ePropulsion authorized dealer for assistance.

# 6 Warranty

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The ePropulsion limited warranty is provided for the first end purchaser of an ePropulsion product. Consumers are entitled to a free repair or replacement of defective parts or parts which do not conform with the sales contract. This warranty operates in addition to your statutory rights under your local consumer law.

## 6.1 Warranty Policies

ePropulsion warrants its products to be free of defects in material and workmanship for a limited period since the date of purchase. Once a fault is discovered, the user has the right to make a warranty claim under the ePropulsion warranty policies.

Product	Warranty Expiry Date
Side Mount Control	<b>Two years</b> after the date of purchase.
Components have been repaired or replaced	<b>Three months</b> since the date of maintenance. Note: <ol style="list-style-type: none"><li>1. If the three-month period overlaps with the original warranty period, the warranty against these replaced or repaired parts still expires two years after the date of purchase.</li><li>2. If the three-month period exceeds the original warranty period, the repaired or replaced parts continue applying to warranty during the extended period.</li></ol>



In order to validate the warranty, users are required to fill in the Warranty Card in the package in advance.






Keep the product label in intact state and record the serial number on the label. Never tear the label off the product. An ePropulsion product without the original product label will not be applicable to warranty services provided by ePropulsion.



The warranty is valid only when the information is correct and complete.




Free warranty is only validated upon the presentation of legal serial number, Warranty Card, and evidence of purchase from an authorized ePropulsion dealer.


-  Valid date of purchase should be established by the first-hand purchaser with original sales slip.
-  Free warranty is not transferable and will not be reissued.
-  Within the limits of the applicable laws, the warranty policies of ePropulsion may update without prior notice. The latest version is available at our website [www.epropulsion.com](http://www.epropulsion.com).

## 6.2 Out of Warranty

Make sure the product is properly packed during delivery, the original ePropulsion package is recommended. If the product got further damaged due to improper packing during delivery, the furtherly damaged part will be deemed as out of warranty coverage.

In addition, faults or damages caused by the following reasons are also excluded from warranty scope within the covered period:


- Any improper operation contradicts the user manual.
  - Accident, misuse, wishful abuse, physical damage overcharging or unauthorized repair.
  - Dropping, improper care or storage.
-  You should be noted that minor faults like normal wear and tear that pose no influence on the intended function of the product are also not covered by the warranty.

 Consumables are out of warranty scope.

## 6.3 Warranty Claim Procedures

If you find your product defective, you can make a claim to your dealer following below procedures:

1. Fill in the Warranty Card correctly and completely in advance. Then make your warranty claim by sending it to your authorized ePropulsion service partner together with valid proof of purchase. Usually these documents are required when making a warranty claim: the Warranty Card, ex-factory serial number, and evidence of purchase.
2. Send the defective product to your authorized ePropulsion service point after getting the confirmation. Note that the label should be kept intact. You can also deliver the product to your authorized ePropulsion dealer after getting confirmation.

1. The defective components or parts will be either repaired or replaced according to the diagnosis made by the ePropulsion authorized service partner.
  2. If your warranty claim is accepted, the equipment will be repaired or replaced free of charge. Note that any delivery cost incurred in the process is at your charge.
  3. After careful examination and confirmation by ePropulsion authorized dealer, the defective or faulty components will be repaired or replaced with brand new ones against the actual condition.
  4. In case your warranty claim be rejected, an estimated repair charge with round trip delivery cost will be sent for confirmation. ePropulsion authorized service point will conduct maintenance accordingly only after your confirmation.
-  If warranty expires, you can still enjoy maintenance services from authorized ePropulsion service partners with minimum maintenance charge.



Thanks for reading this user manual.

If you have any concerns or find any problems while reading, please don't hesitate to contact us. We are delighted to offer service for you.

**Dongguan ePropulsion Intelligence Technology Limited**

**Website: [www.epropulsion.com](http://www.epropulsion.com)**

**Email: [service@epropulsion.com](mailto:service@epropulsion.com)**