

RHINO 1000 Electric Outboard User manual

Version 1.0

Rhino Motor Technologies Inc. provides customers with comprehensive technical support. Users can contact the nearest customer service center of the Rhino Motor Technologies Inc, or directly contact the company headquarters.

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Preface

Thank you for purchasing the RHINO 1000 Electric Outboard. The RHINO 1000 Electric Outboard system produced by Rhino Motor Technologies Inc. embodies the most advanced driving technology and efficiency and undergoes extensive testing before delivery.

Rhino Motor Technologies Inc. welcomes your feedback on the design and use of our products.

This manual will be updated periodically, please visit company's website at <https://rhinomotor.ca/> for the latest information.

Please read this manual carefully before using the RHINO 1000 Electric Outboard.

If you carefully follow these instructions, you will be able to:

- Avoid danger and injury.
- Save maintenance costs and reduce downtime.
- Increase the reliability and service life of the system.

Symbols



Danger: Situations where death or serious injury may occur due to failure to follow instructions.



Warning: Situations where moderate or minor injury, or damage to property may occur due to failure to follow instructions.



Reminder: Useful information or tips.

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1 Product Overview

1.1 Names of system main components

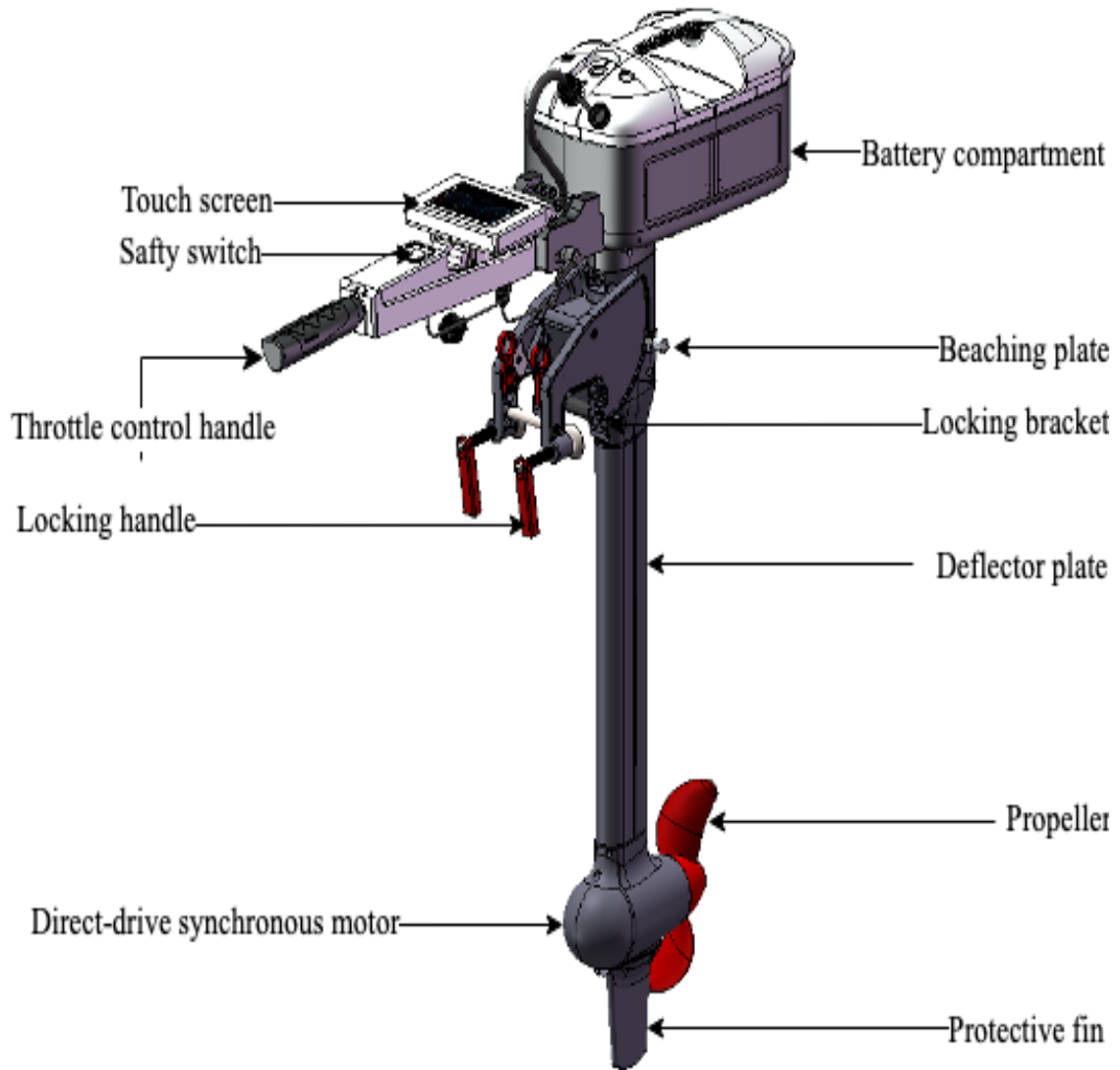


Figure 1-1

1.2 Specifications

Outboard Main Engine	Main Engine Model	RHINO1000
	Input power	1kW
	Rated current	20A
	Equivalent gasoline engine propulsion power	65Lbs(3Hp)
	Rated speed of the electric motor	1200rpm
	Electric motor maximum efficiency	92%
	The highest efficiency of the whole machine	55%
	Shaft Length	750mm
	Weight	18kg
	Size (Length*Width*Thickness)	1250*830*220mm
	Propeller diameter/pitch	11"/5.6"
	Trim angle adjustment	0°、9.5°、19°、28.5°、38°、 47.5°、89°
Battery	Battery model	4825Li
	Battery type	Ternary lithium
	Rated capacity	1440Wh
	Rated voltage	48V
	Combination method	13S6P
	Maximum charging current	12 A (10~35°C)
	Maximum discharge current	30A
	Charge cut-off voltage	54.6V
	Discharge cut-off voltage	36.4V
	Charging time	8 Hours (54.6V/3A) / 3Hours(Fast)
	Battery weight	8.4KG
	Size	340*170*200mm
Use and storage temperature (environment)	Charge:0°C~45°C Discharge:-20°C~55°C Storage:-10°C~35°C	
Battery Charger	Charger model	XSG5463000
	Rated Power	163.8W
	Output Voltage	54.6V
	Output current	3.0A
	Charge termination current	≤0.3A
	Rated input voltage (frequency)	100~240V(50/60Hz)
	Maximum input current	1.9A@220V

	Operating and storage temperature (environment)	working:-10°C~45°C storage:-30°C~70°C
	Efficiency	≥87%
	Weight	0.72kg

1.3 Packing list

Number	Name	Quantity
1	Electric outboard main unit	1
2	Battery pack	1
3	Charger	1
4	User manual	1
5	quality certificate	1



Please keep it properly for convenient use, inquiry, and maintenance

2 Installation Instructions

2.1 Installing the outboard onto the boat

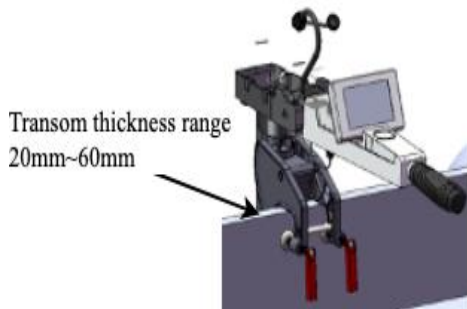


Figure 2-1

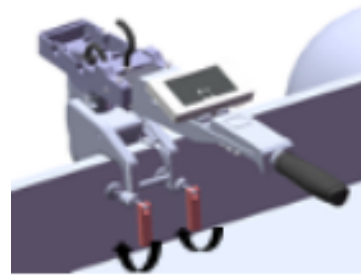


Figure 2-2

1. Use the electric outboard main unit to hang on the transom mounting plate. Refer to Figure 2-1.
2. Rotate the small red handle of the locking clamp to tighten the bolts. Refer to Figure 2-2
3. Check whether the outboard motor is securely installed



If using a single outboard motor, please fix the main unit at the center line position of the boat hull.



If using two or more outboard motors, the distance between the outboard motors should be no less than 600mm.

2.2 Install the battery onto the outboard

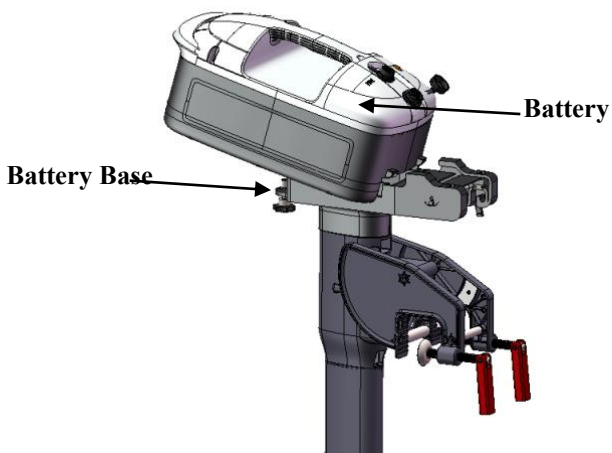


Figure 2-3

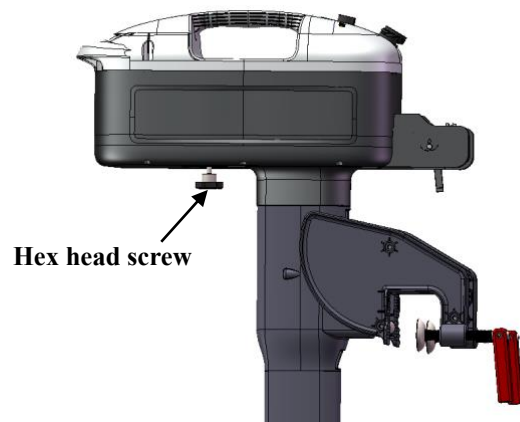


Figure 2-4

1. Lift the **battery**, align the front of the battery with the mounting holes of the main unit base, and lower it. Refer to Figure 2-3.
2. Rotate the **hex head screw** of **Battery base** at the bottom until the **battery** is fixed in a horizontal position. Refer to Figure 2-4.
3. Confirm whether the battery pack is securely installed.

😊 When installing the battery pack, be sure to hold the battery firmly to prevent it from slipping.
Do not place the cables under the battery pack.

2.3 Install the control handle.

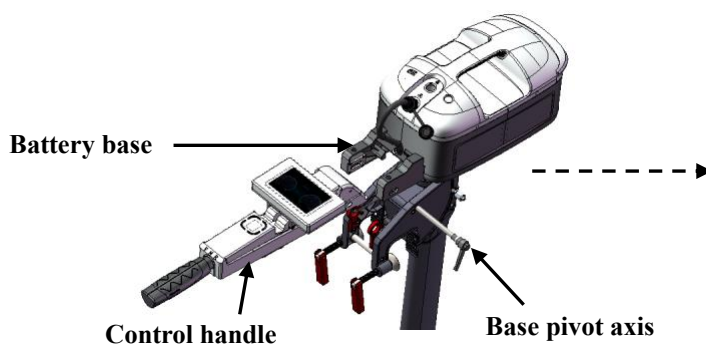


Figure 2-5

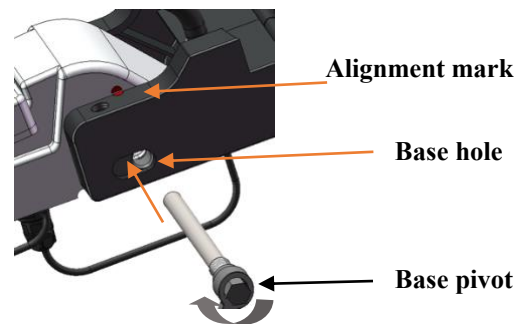


Figure 2-6

1. Insert the front part of the **control handle** into the middle of the **Battery base**, as shown in Figure 2-5, aligning the **alignment mark**, the red part in Figure 2-6. Insert the **base pivot axis**

into the **base hole** and tighten the thread clockwise.

2. Rock the **control handle** to confirm that it is securely installed.

☺ When installing the control handle be sure to grip it tightly to prevent it from slipping. Please do not fold or squeeze the control cable of the handle.

2.4 Connection cables

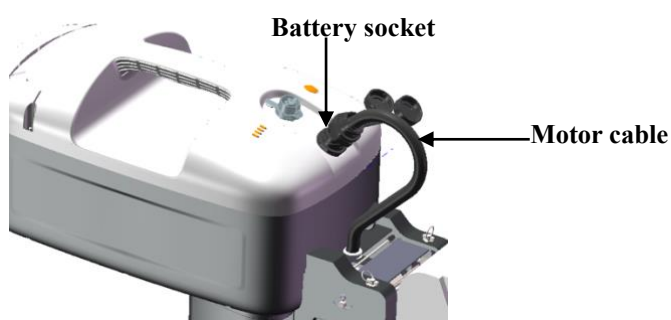


Figure2-7

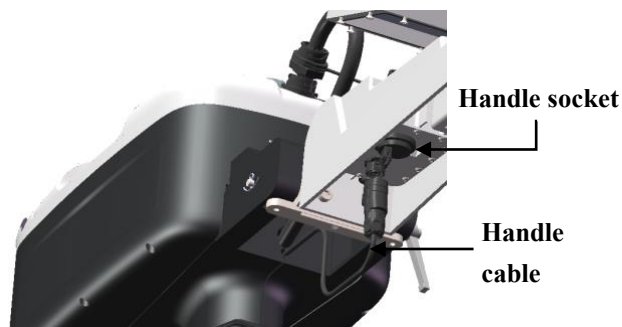


Figure2-8

1. Connect the **motor cable** to the **battery socket** on the battery pack, aligning it with the positioning groove on the socket, and rotate it clockwise to lock the cable. Refer to Figure 2-7.
2. Connect the **handle cable** to the **handle socket** under the outboard handle, align the positioning groove of the socket, rotate clockwise, and lock the cable. Refer to figure 2-8.
3. After the cable connection is completed, please gently shake, and pull out to confirm if the connection is secure.

☺ When connecting the cables, please align with the positioning holes and avoid applying excessive force. Keep the inside of the plug and socket dry. After installation, always check whether the components are firmly secured.

3 Operating Instructions

 Danger

- Ensure that the outboard motor is locked tightly.
- Ensure that the cables are free from damage.
- Ensure that the battery is securely installed.
- Ensure that the propeller is in the stopped position.
- Ensure that all personnel on board are wearing life jackets.

 Warning

- Check that the throttle handle rotates smoothly.
- Check that the battery has sufficient charge.
- Check that the throttle is in the 'N' position.

3.1 Start the outboard motor.

Place the **safety switch** in the designated position on the handle, as shown in Figure 3-1, and press the **power switch** on top of the battery pack, as shown in Figure 3-3. The battery indicator light will turn on, and after the system self-checks, the battery system will supply power to the propulsion system, and the touch screen will light up.

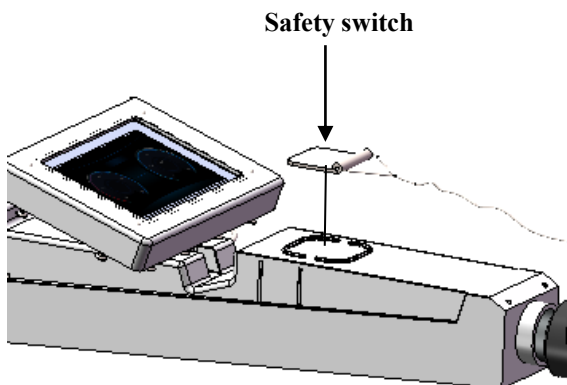


Figure 3-1



Figure3-2

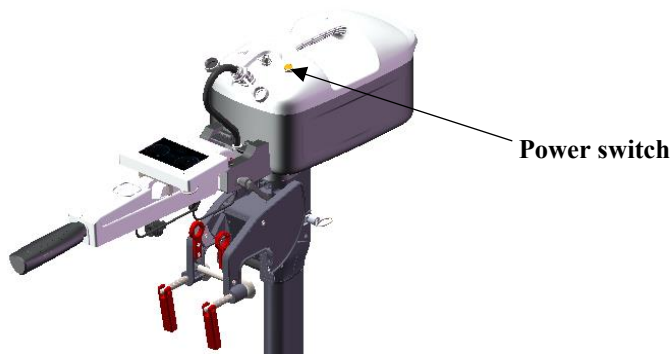


Figure 3-3

- ☺ The battery system has a malfunction, and the fault light is on.
- ⚠️ Securely always attach the safety switch lanyard to your wrist or life jacket.
- ⚠️ Do not place magnetic objects near the safety switch's dedicated position on the handle.

3.2 Test run of the outboard

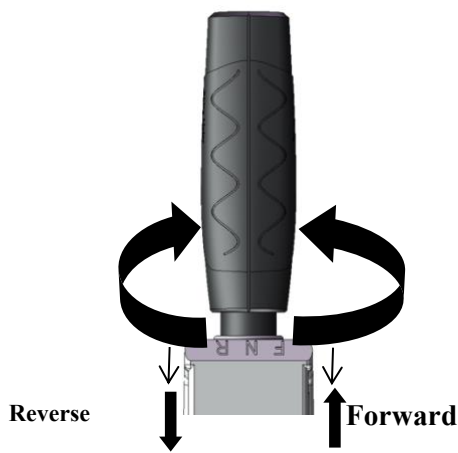


Figure 3-4

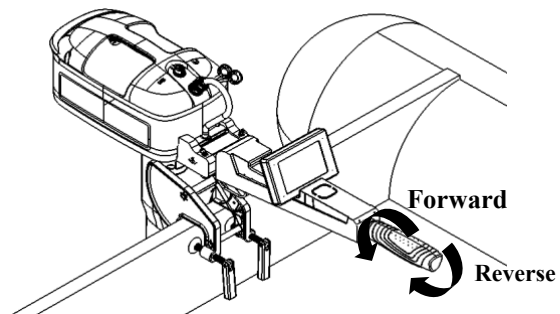


Figure 3-5


Gently rotate the throttle handle to confirm that forward/reverse is functioning properly, as shown in Figures 3-4 and 3-5.

Turn the control handle to the left and right to confirm that the boat is turning in the correct direction.

Only after confirming that the entire system is functioning properly and securely should you proceed with full-speed operation.

- ☺ When the handle is pushed to the right, the boat turns left; when the handle is pushed to

the left, the boat turns right. Keep the handle straight and still to move the boat forward.

 Between switching from forward to reverse, or vice versa, move the handle to the neutral position ('N'), bring the boat to a stop, and then switch to the opposite direction.

3.3 Outboard stopping method

1. Rotate the throttle handle to the neutral position ('N')	Figure 3-6
2. Unplug the safety switch	Figure 3-7
3. Press and hold the battery power switch 'POWER' until the power is cut off	Figure 3-8



Figure 3-6

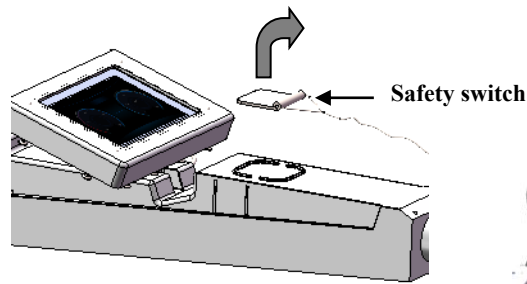


Figure 3-7



Figure3-8

3.4 Propeller lift method

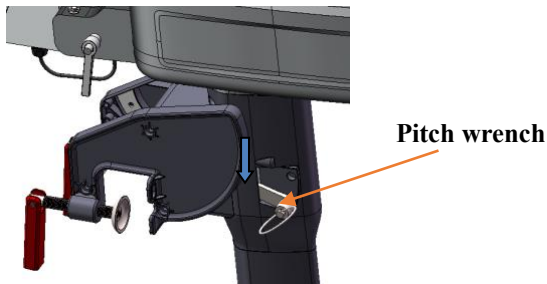


Figure 3-9

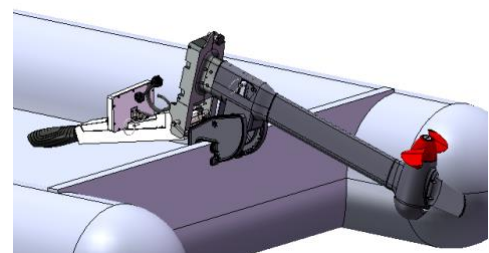


Figure 3-10

When the boat needs to be docked or debris such as water plants need to be cleared, the propeller needs to be lifted.

1. Grip the machine by hand, pull out the Pitch Wrench from the hole, and lift it up, as shown in Figure 3-9.

2. Slowly lower the machine to the raised angle (angle with the transom angle of about 89°), then

press down the **Pitch Wrench** to the corresponding hole, as shown in Figure 3-10.

3. To lower the motor, pull the **pitch wrench** again and slowly lower the motor back to its original position.

 The tilting function should only be operated when the entire system is in a stopped state.

3.5 Pitch angle of propeller blades adjustment

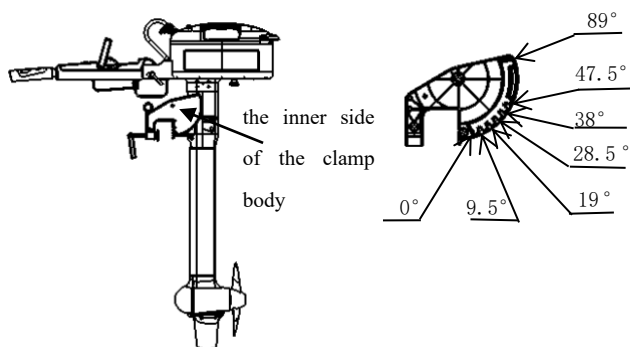


Figure 3-11

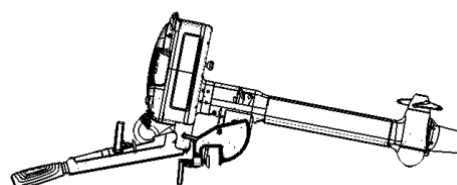



Figure3-12

The RHINO 1000 electric outboard has eight adjustable pitch angles: 0°, 9.5°, 19°, 28.5°, 38°, 47.5°, and 89° (see Figure 3-11).

During normal use, adjust the pitch angle to an appropriate position according to the actual situation.

 Manipulation is only allowed when the equipment is in a stopped state.

 When operating, please slowly raise or lower the pitch angle.

3.5.1 Operation steps

1. Raise the outboard motor to the highest position at 89°, as shown in Figure 3-12.
2. Pull out the Pitch Wrench, as shown in Figure 3-13.

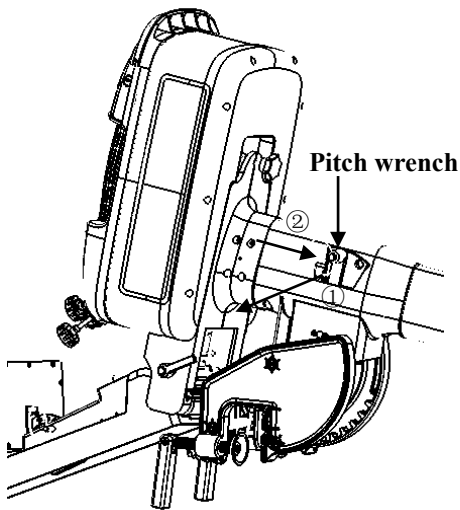


Figure 3-13

3. Lower the outboard to the desired pitch angle and then press down the propeller **pitch wrench** to the upper position, as shown in Figure 3-14.

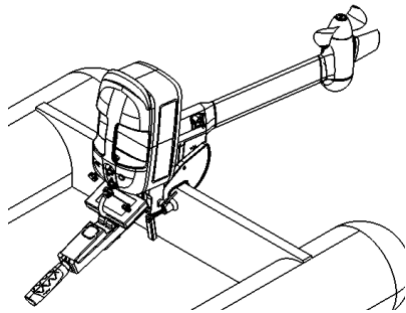


Figure 3-14

4. Lower the outboard motor to complete the pitch angle adjustment, as shown in Figure 3-15.

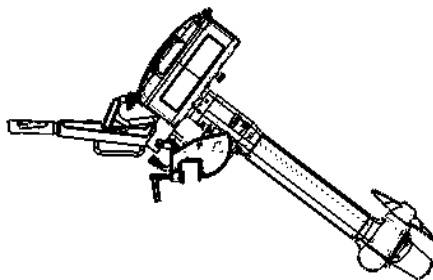



Figure 3-15

 When increasing speed, it is necessary to always observe the water flow at the stern of the boat. If abnormal water flow (such as cavitation) occurs, please stop the machine immediately and raise the outboard motor.

3.6 Beaching mode setting

When a boat with an outboard motor navigates in shallow waters with complex underwater conditions, collisions or entanglement with underwater plants may occur, which can interfere with the normal operation of the outboard motor and even damage it. Before navigating in waters with complex or unclear underwater conditions, the outboard motor can be set to beaching mode to protect the outboard motor and operators. When set to beaching mode, the outboard motor can automatically tilt in the opposite direction of the forward direction after a collision, cushioning the impact and reducing damage.

As shown in Figure 3-16, pull the **Pitch Wrench** outward from the hole, then move the **pitch wrench** to the lowest position and then press to complete the setting. To cancel the beaching mode, pull the **Pitch Wrench** outward from the hole, then move the **pitch wrench** to the fully up position and press to the hole to cancel the beach mode.

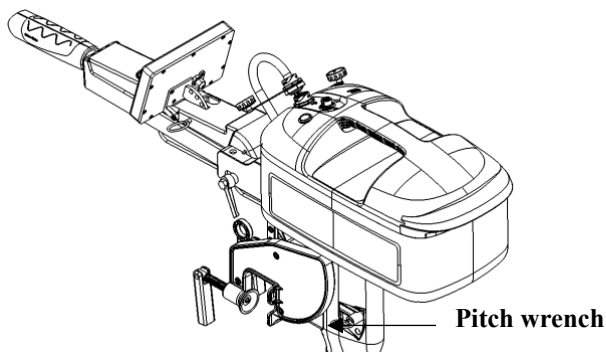





Figure 3-16

-  Reverse gears are prohibited in beaching mode, otherwise it poses a certain safety hazard.
-  Be sure to set and cancel the beach mode while the engine is in the stopped state.
-  Under normal circumstances, it is generally not necessary to set the outboard motor to beach mode. Beach mode should be considered when navigating in complex environments with underwater obstacles such as dense vegetation, reefs, or shallow water.

3.7 Horizontal lock method of control handle

To fix the running direction of the boat, you can horizontally lock the control handle. As shown in Figure 3-17, insert the **positioning pin** into the hole shown in the diagram. When the **positioning pin** is inserted, the operating handle cannot be horizontally rotated. To cancel the lock mode, you can only pull out the **position pin**.

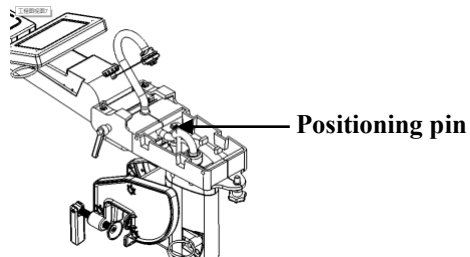



Figure 3-17

 It is necessary to set and cancel the fixed running direction mode while the outboard motor is in the stopped state.

3.8 Vertical adjustment method of control handle

The control handle can be adjusted in the upward, and downward directions for user convenience.

Raise the handle, as shown in Figure 3-18:

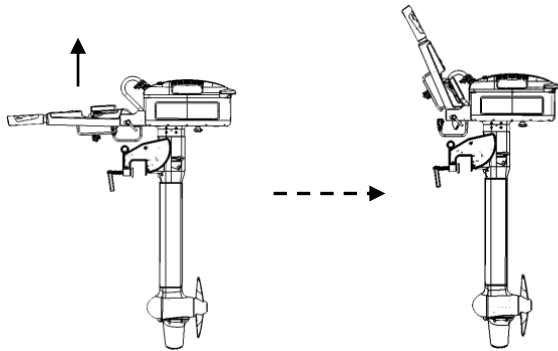


Figure 3-18

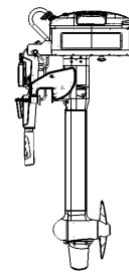



Figure 3-19

Fold up the handle, as shown in Figure 3-19:

Pull the handle to the left with force until it reaches its limit position, then push it down.

 Fold down the handle for easy storage and transportation.

4 Electric Control System

RHINO 1000 electric outboard motors are equipped with intelligent control electrical systems, which perfectly realize functions such as throttle control, safety checks, battery information interaction and GPS positioning.

4.1 System power-up

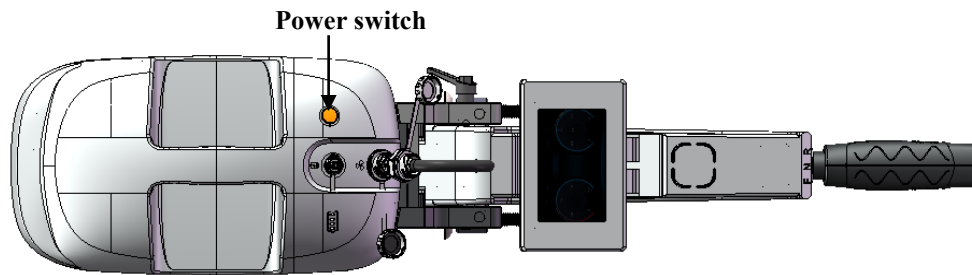






Figure 4-1

Touch the **power switch** lightly, the indicator light will light up. After the battery system self-test is completed, the electrical system will start to supply power, as shown in Figure 4-1.

-  The outboard should be securely fixed, and the battery should be tightly installed.
-  Ensure that the cable connections are secure, and that the operator is wearing a life jacket.
-  Ensure the stability of the boat.
-  Please read the user manual carefully and familiarize yourself with the operating procedures.

4.2 Touch screen









User can choose "Manual" or "Smart" operation interface from the bottom tabs on the touch screen.

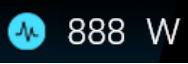
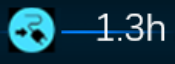
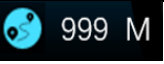




4.2.1 Manual interface



Figure 4-2

The Icons on the screen are explained as followings.

Number	Screen Icon	Explanation
1		Display real-time power consumption
2		The Bluetooth icon is displayed when a Bluetooth device is connected.
3		The GPS icon will be displayed after the GPS device has successfully positioned
4		The safety switch icon will be displayed when the safety switch is in place. If the safety switch is not in place, the system cannot be started.
5		The bracelet icon will be displayed when a bracelet device is detected.
6		This is a description of the system status display. "F" represents the propulsion system pushing the boat forward, "R" represents the propulsion system pushing the boat backward, "N" represents the system being shut down. 1, 2, 3, 4 represent the actual operating speed gears of the system.
7		As the battery management system (BMS) status display, 27% in the figure represents the accurate state of charge (SOC) value.
8		This is the display for the boat's system speed. Unit: knots

9		This is the display of the battery system output power during actual operation
10		Remaining runtime or mileage (optional).
11		Cumulative mileage of this trip.
12		When a temperature alarm is detected in the BMS or the drive system, this image will be displayed along with the message 'Please get professional maintenance technicians'.
13		When there is a system fault alarm, this image will be displayed. It will also display the message 'please get professional maintenance technicians'.
14		When the system is powered on for the first time, if the throttle handle is not in the '0' position, the handle icon and reset icon will be displayed, and display 'Please Reset'. After the throttle handle returns to the '0' position, the handle icon will disappear. Press reset icon and then the user could operate the throttle handle again.
15		When the SOC is detected to be lower than 20%, the red battery icon and reset icon will be displayed , and also "Please reset" will be displayed. The user can reset and continue to operate at low speed.



When there is a fault, please operate with caution to ensure personal safety.

4.2.2 Smart Interface



Figure 4-3

The RHINO 1000 electric outboard motor is equipped with an intelligent operating mode: in the Smart interface, the operator selects either Speed or Range (only one option can be selected). After the selection is completed, the system selects the corresponding mileage and speed based on the battery level to ensure that it meets the operational needs of the user.

Once this function is enabled, the throttle mode on the handle will be disabled, and the system will automatically determine the speed and mileage.

This mode can reduce the tediousness of frequent throttle operation for the operator.

With the 3.7 directional lock mode, simple autopilot functions can be achieved.





-  Please set it when the boat is stopped.
-  Please ensure that the operator is wearing a life jacket and seated properly in their seat.
-  Please ensure that the safety switch is properly connected to the wrist or life jacket.
-  Please read the user manual carefully and familiarize yourself with the operating procedures.



Figure 4-4

On the Smart page, click on the highlighted area within the Speed or Range box, and the highlighting will disappear, indicating that the Smart mode has been exited and switched to the handle throttle mode.

4.3 Throttle operation

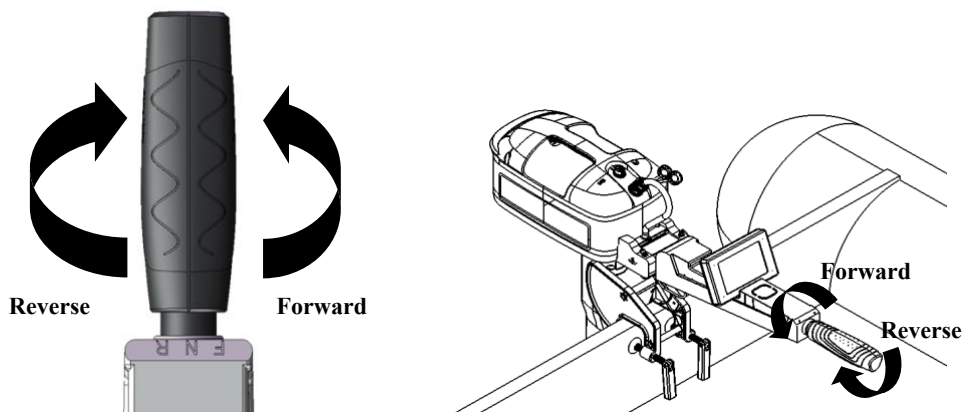


Figure 4-5

Figure 4-6

While in operation, rotating the throttle handle can adjust the throttle size. The 'N' position in the middle indicates the stop state, as shown in figure 4-5. Turning the handle counterclockwise accelerates forward, and turning it clockwise accelerates backward (facing the handle direction), as shown in figure 4-6.



When increasing the throttle, please ask the operator to sit firmly in their seat. Please ensure that the safety switch is connected to the wrist or life jacket.

5 Battery Charging and Charger Usage

When the battery level is low, the battery needs to be charged. The battery system supports ‘charging while using’.

It is recommended to remove the battery from the main unit before charging.

5.1 Remove battery

As shown in Figure 5-1, rotate the **Motor cable** connector counterclockwise and unplug the battery output cable from the main unit, As shown in Figure 5.2, rotate the rear **Hex head screw** counterclockwise to loosen the base, grip the battery handle firmly, and remove the battery.

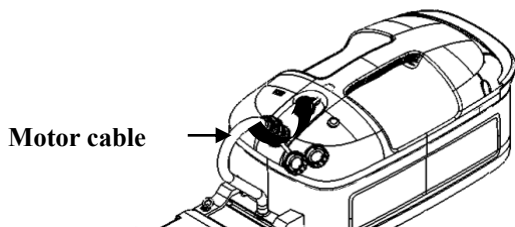


Figure 5-1

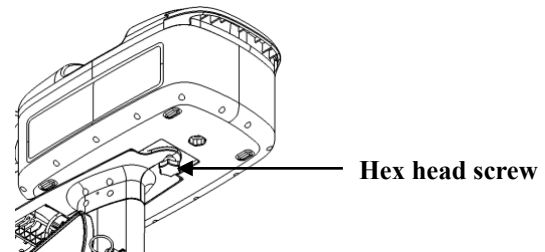


Figure 5-2

5.2 Charging

As shown in Figure 5-3, connect the charger to the plug and the **Battery charging port** respectively for charging.

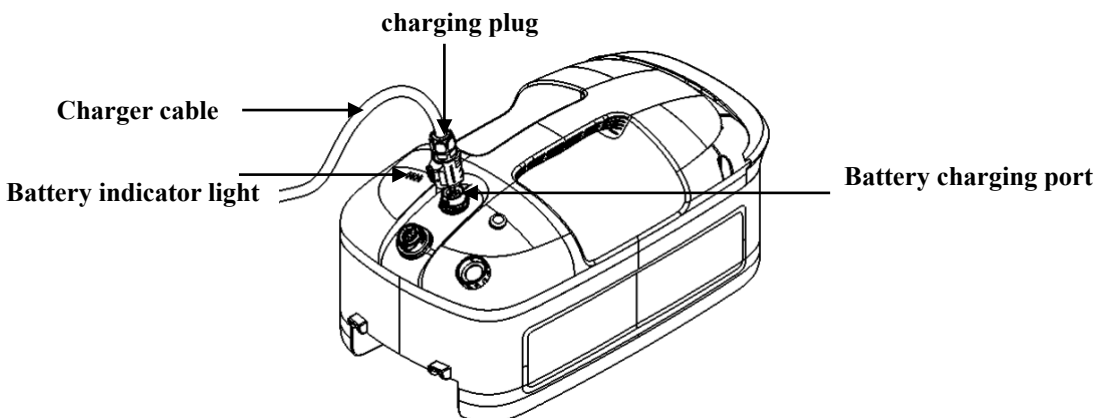


Figure 5-3

The charger and the battery indicator light characteristics during charging are explained as the following table.

Charger output characteristics				
Charging status	Charging stage	Output current (A)	Output voltage (V)	Indicator light
Charging	Constant current	3A±0.2A	32.5V-54.6V	Red
	Constant voltage	3A >0.3A	54.6V±3%	Red
Fully charged	Trickle current	0.3A >0	54.6V	Green
Battery indicator light status during charging				
Battery level	Green indicator light 1	Green indicator light 2	Red indicator light	
SOC≤10%	off	off	off	
10%≤SOC≤80%	on	off	off	
80%≤SOC	on	on	off	
Malfunction	off	off	on	

6 Maintenance

6.1 Routine maintenance of outboard

- Keep it clean, after each use please lift the outboard out of the water.
- After use in seawater or poor water quality, please lift the outboard motor and rinse it clean with fresh water.
 - Avoid contact of plugs, connectors, switches, etc. with water.
 - Regularly check and replace sacrificial anode zinc blocks.
 - Regularly replace the propeller shaft seal.
 - Do not rotate the outboard motor when the propeller is out of the water. In a dry state, the propeller shaft seal is prone to damage and can cause water leakage.
 - When shifting between forward and reverse, pause in neutral gear until the propeller stops turning before engaging the next gear.
 - The entire machine meets the IP67 waterproof requirements (no damage when submerged in 1 meter of water for 30 minutes). Submerging the machine in water deeper than 1 meter or for too long can cause water damage.
 - The propeller part meets the IP68 waterproof requirements (no damage when immersed in 1 meter of water for a long time).

6.2 Lithium battery daily maintenance

- To extend the battery life, please avoid prolonged exposure to sunlight and high temperature environments.
- If the lithium battery is not used for a long time, please press and hold the power button for more than 5 seconds to turn off the battery.
- If the battery is not used for six months, please charge it to 50% before storage; if the battery is not used for one year, please charge it to 100% before storage; if the battery is stored for more than one year, please check the battery level every 12 months to prevent discharge. Before storing a lithium battery, please make sure it is turned off (press and hold the power button for more than 5 seconds until the power indicator goes off).
- It is recommended to recharge the battery immediately after each use, regardless of how much

power is remaining, to prevent over-discharging and damaging the battery.

- Please use a dedicated lithium-ion battery charger during charging.
- Do not throw the battery into fire or a heater.
- Do not hit, throw, or step on the battery.
- Do not directly solder or puncture the battery with nails or other sharp objects.
- Prohibited to connect two or more batteries in parallel or series for use ! ! !
- If the battery emits an odor, heats up, changes color, deforms, or exhibits any abnormalities during use, storage, or charging, immediately remove the battery from the device or charger and stop using it.
- Used batteries should be wrapped with insulating paper to prevent fire or explosion.
- If the battery leaks and the electrolyte enter the eyes, do not rub them. Rinse the eyes with water immediately and seek medical attention, as it can cause eye injury.

6.3 Replace or repair propeller.

At any time when inspecting, removing, or installing the propeller, please make sure to disconnect the outboard motor power to prevent it from accidentally starting up. Otherwise, it may cause serious injury to the operator or nearby individuals.

Do not touch the propeller directly with your hands during operation. It is recommended to wear protective gloves to prevent injury.

The inspection steps for the propeller are as follows:

1. Inspect the wear and corrosion of the propeller blades.
2. Check for damage to the propeller mounting shaft and holes, and for wear of the drive pin.
3. Remove any debris wrapped around the propeller, such as fishing nets, fishing lines, and water plants.

Figure 6-1 shows an installation diagram of the propeller. To remove the propeller, follow the reverse steps of the diagram.

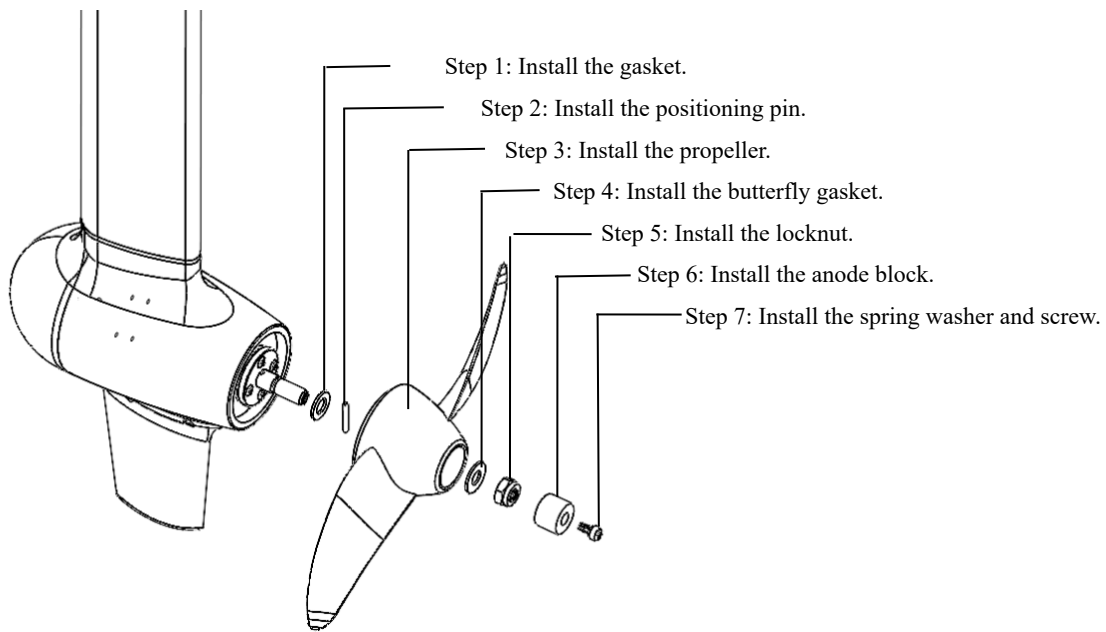


Figure 6-1

6.4 Replace sacrificial anode zinc block

Always observe the corrosion condition of the sacrificial zinc anode block. If the corrosion is severe, it should be replaced in a timely manner to protect the electric outboard motor. See figure 6-2, figure 6-3, and figure 6-4.

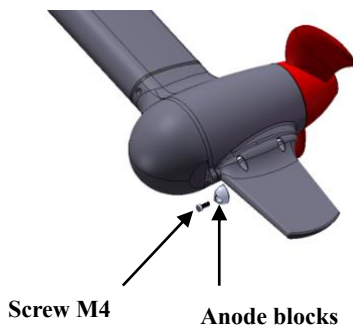


Figure 6-2

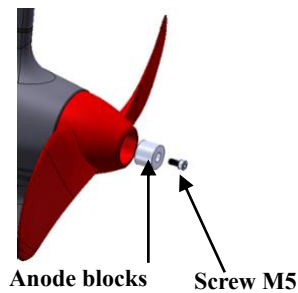


Figure 6-3

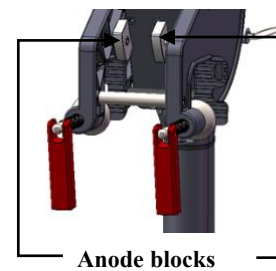


Figure 6-4

6.5 Replace the stern fin

There are 4 steps to replace the stern fin which shown in Figure 6-5

1. Loosen the **Fin screws** on both sides of the **Stern fin**, there are a total of 4 screws.
2. Remove the **Stern fin**.
3. Insert the new **Stern fin**.

- Secure the **stern fin** with two **Fin screws** on each side.

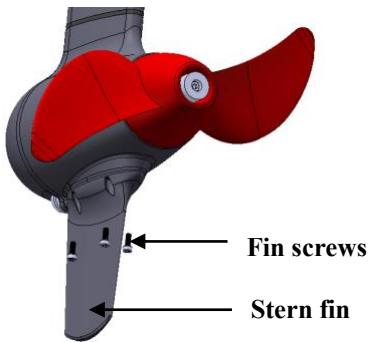


Figure 6-5

6.6 Maintain the touch screen

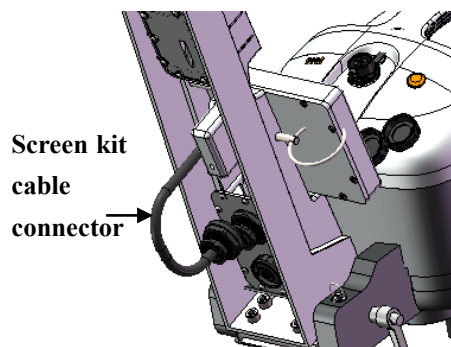


Figure 6-7

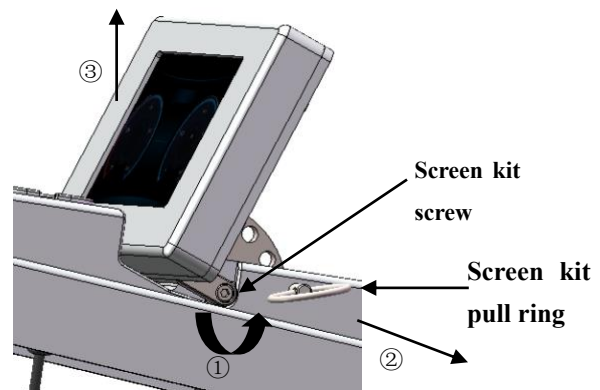


Figure 6-8

- Lift the control handle and unplug the **screen kit cable connector** located underneath the handle, as shown in Figure 6-7.
- Rotate the **Screen kit screw** counter clockwise, pull out the **Screen kit pull ring**, and lift the screen upwards, as shown in Figure 6-8.

7 Transportation and Storage

7.1 Transportation

During long-distance transportation, it is recommended to use the original packaging of the equipment as much as possible. If the original packaging is damaged, it must be secured and protected against collisions.

The equipment should be placed on a flat surface, with sufficient thickness and width of pearl cotton or foam padding at the bottom of the machine to prevent rolling or sliding during transportation, to avoid damage to the outboard motor and other injuries to people or cargo due to inadequate fixation.

For transportation, it is recommended to use the packaging methods shown in Figure 7-1 and Figure 7-2:

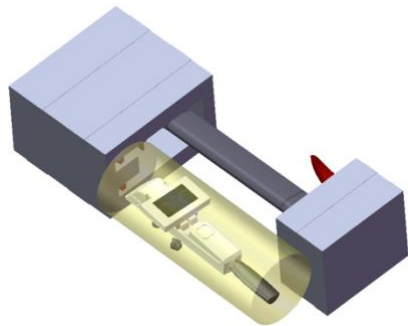


Figure 7-1 Packaging method for transporting the main engine

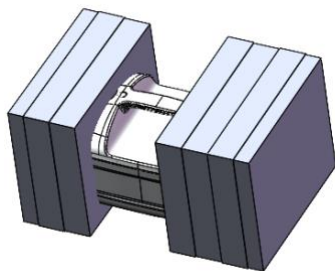


Figure 7-2. Packaging method for transporting battery



- Battery transportation must comply with relevant regulations in the user's country or region.
- It is strictly prohibited to subject battery to violent impacts or collisions.
- Damaged battery must not be transported.
- The protective outer casing of the battery must not be removed to transport the exposed battery core.
- It is strictly prohibited to transport sharp objects together with batteries during

7.2 Storage of outboard motor main unit

If the user needs to store the outboard motor main unit for a long time (more than a month), the main unit needs to be thoroughly cleaned, and any seawater or debris on the exterior should be cleaned to prevent corrosion or damage caused by seawater or debris.

Place sufficient desiccant inside the packaging box.

Ensure that the main unit is placed flat and there is no localized force.

After packaging, please place it in a dry and ventilated environment, and avoid direct sunlight.

7.3 Storage of the Outboard Battery

The storage voltage of the battery should be between 46.8V to 49.4V, and it is recommended to charge and discharge the battery every 3 months.

Do not store the battery in areas with strong static electricity or strong magnetic fields, as it may damage the battery's safety protection device and cause safety hazards.

Do not store the battery together with metal objects such as hairpins or necklaces.

When storing the battery for a long time, it should be placed in a space with good air circulation that is moisture-proof, corrosion-resistant, and dust-proof, with a relative humidity not exceeding 80% and a temperature between 0°C and 45°C. A long-term storage temperature above 45°C will have a corresponding impact on the service life of the lithium battery.

Avoid direct sunlight.

8 Warranty

Rhino Motor Technologies Inc warrants the RHINO 1000 electric outboard against any defect in parts and workmanship in a certain warranty period. This warranty operates in addition to your statutory rights under your local consumer law.

8.1 Warranty Policies

- Rhino Motor Technologies Inc. warrants that the RHINO 1000 product will be free from defects in workmanship and material under normal usage and proper installation and maintenance for a period of **2 years** (or 24 months) from date of delivery to the first user.
- Customer can return RHINO 1000 product within 30 days as long as the condition of the product does not affect its secondary sales.
- In the case of repair or replacement, defective spare parts are replaced by new or reconditioned parts. Replaced spare parts are the property of Rhino Motor Technologies Inc., while replacement spare parts become the property of the user.

8.2 Situation not covered by the warranty

Rhino Motor Technologies Inc. is entitled to refuse a warranty claim if:

1. The product is not used in accordance with the instructions.
2. Failure to comply with the safety, operation, and maintenance instructions in the manual.
3. The purchased outboard has been modified, altered, or equipped with other components in other ways.
4. Previous maintenance or repair was performed by an unauthorized repairer's or non-our dealer's parts were used.
5. Minor defects and normal wear and tear are not covered by the warranty.

8.3 Warranty Claim Process

Purchaser must follow the warranty claim process to make a warranty claim. If Purchaser does not submit the claim properly, the warranty is void. Purchaser must take the following steps:

1. Contact a Rhino Motor Technologies' dealer, who you bought it from, by phone, email, or mail. You can also find a list of our dealers on our website under the service section.
2. To submit a warranty claim and to process a warranty, we require a proof of purchase.
 - The warranty claim must include purchaser's contact details, product details, serial number, purchase date, a brief description of the problem, and what kind of warranty request (return, repair or replace) the user prefer.
 - Proof of purchase must indicate the Product purchased and the date of purchase (e.g. photo of transaction receipt).
 - For returning the motor to the dealer, we recommend keeping the original product packaging. If this is no longer available, packaging that protects against transport damage must be used. The warranty excludes any damage caused during transport.

3. Send the defective product or returned product to dealer after getting the confirmation. Note that the label should be kept intact.
4. The defective components or parts will be either repaired or replaced according to the diagnosis made by the dealer.
5. 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.



If warranty expires, you can still enjoy maintenance services or buy spare parts from dealers with minimum maintenance charge.