SouthMarine 803702

Instruction Manual: Exciter Coil Assy

Model: **803702** | Brand: **SouthMarine**

For Mercury Marine, Mercruiser, Quicksilver Outboard Engines (15HP, 18HP)

1. Introduction

This manual provides essential information for the proper installation, function, maintenance, and troubleshooting of the SouthMarine 803702 Exciter Coil Assy. This component is designed as a direct replacement for specific Mercury Marine, Mercruiser, and Quicksilver outboard engines, ensuring reliable ignition performance. Please read this manual thoroughly before attempting any installation or maintenance.

2. Product Overview

The exciter coil is a critical component within an outboard engine's ignition system. It generates the necessary electrical pulse to trigger the power pack (CDI unit), which then sends high voltage to the ignition coils for spark plug firing. The SouthMarine 803702 Exciter Coil Assy is manufactured to meet or exceed OEM specifications, ensuring compatibility and performance.

Key Features:

- Engine Position: Outboard
- Engine Compatibility: 15HP, 18HP
- Replaces Part OEM Number#: 803702
- Designed for Mercury Marine, Mercruiser, and Quicksilver Outboard Engines



Figure 2.1: Top view of the SouthMarine 803702 Exciter Coil Assy, showing the coil winding and wiring.



Figure 2.2: Angled view of the exciter coil, highlighting the connection points and mounting brackets.



Figure 2.3: Exciter coil with an overlay indicating a key dimension of 67.97mm / 2.68in.

3. Installation

Installation of the exciter coil requires careful attention to detail and adherence to safety procedures. It is recommended that this procedure be performed by a qualified marine technician if you are not familiar with outboard engine electrical systems.

Safety Precautions:

- Always disconnect the battery before working on any electrical components of the engine.
- Ensure the engine is cool to the touch before beginning work.
- Wear appropriate personal protective equipment (PPE), such as gloves and eye protection.
- Refer to your specific engine's service manual for detailed wiring diagrams and torque specifications.

General Installation Steps:

1. Locate the existing exciter coil on your engine. It is typically found under the flywheel.
2. Carefully disconnect the wiring harness from the old exciter coil. Note the orientation and connection points.
3. Unbolt and remove the old exciter coil.
4. Position the new SouthMarine 803702 Exciter Coil Assy in place, ensuring proper alignment with mounting holes.
5. Secure the new coil with the appropriate fasteners. Torque to manufacturer's specifications if available.
6. Reconnect the wiring harness, ensuring all connections are secure and correctly matched.

7. Before starting the engine, double-check all connections and ensure no tools or debris are left in the engine compartment.
8. Reconnect the battery.

4. Operating Principles

The exciter coil operates on the principle of electromagnetic induction. As the engine's flywheel rotates, magnets embedded within it pass over the exciter coil. This movement induces an electrical current within the coil's windings. This induced current, typically an AC signal, is then sent to the power pack (CDI unit). The power pack uses this signal to determine engine timing and to charge capacitors, which are then discharged to the ignition coils, creating the high voltage spark required for combustion in the engine cylinders. A properly functioning exciter coil is essential for consistent engine starting and smooth operation.

5. Maintenance

The exciter coil is a sealed unit and generally requires minimal maintenance. However, periodic inspection of its connections and surrounding area can help ensure its longevity and reliable performance.

Maintenance Tips:

- **Visual Inspection:** Annually inspect the exciter coil and its wiring for any signs of corrosion, fraying, or physical damage. Ensure the mounting bolts are secure.
- **Cleanliness:** Keep the area around the exciter coil clean and free of dirt, oil, and debris, which can interfere with its operation or cause overheating.
- **Connection Integrity:** Periodically check that the electrical connectors are clean, tight, and free from oxidation. Loose or corroded connections can lead to intermittent ignition issues.
- **Avoid Overheating:** Ensure proper engine cooling system function to prevent excessive heat buildup, which can degrade electrical components over time.

6. Troubleshooting

If your outboard engine experiences ignition problems, the exciter coil may be a contributing factor. Below are common symptoms and basic troubleshooting steps. Always consult a qualified marine technician for complex diagnostics and repairs.

Common Symptoms of a Faulty Exciter Coil:

- Engine cranks but does not start.
- Intermittent spark or no spark at the spark plugs.
- Engine misfires or runs rough.
- Loss of power at higher RPMs.

Basic Troubleshooting Steps:

1. **Check Connections:** Ensure all wiring connections to the exciter coil and power pack are clean, tight, and free of corrosion.
2. **Visual Inspection:** Look for any obvious signs of damage to the coil, such as burnt spots, cracked insulation, or frayed wires.
3. **Resistance Test (Requires Multimeter):** Disconnect the exciter coil from the power pack. Using a multimeter, measure the resistance across the exciter coil's terminals. Compare the reading to the specifications provided in your engine's service manual. A reading significantly outside the specified range indicates a faulty coil.

4. **Spark Test:** If you suspect a no-spark condition, use an inline spark tester on each spark plug wire. If there is no spark, or a weak spark, further investigation of the ignition system (including the exciter coil, power pack, and ignition coils) is necessary.

Note: *If you are unsure about performing these tests, it is highly recommended to seek professional assistance.*

7. Specifications

The following table outlines the key specifications for the SouthMarine 803702 Exciter Coil Assy:

Attribute	Value
Brand	SouthMarine
Model Number	803702
Engine Position	Outboard
Engine Horsepower Compatibility	15HP, 18HP
Replaces OEM Part Number	803702
Item Weight	0.17 Kilograms (approx. 5.9 ounces)
Operation Mode	Electric
Recommended Uses	For Marine Boats
Mounting Type	Transom Mount (refers to engine type)
Fuel Type	Gasoline
Package Dimensions	4.96 x 2.87 x 1.22 inches

8. Warranty Information

For specific warranty terms and conditions regarding the SouthMarine 803702 Exciter Coil Assy, please refer to the product packaging or contact the seller directly. Warranty coverage typically addresses manufacturing defects under normal use conditions.

9. Support

If you require further assistance, have questions regarding installation, or need to troubleshoot an issue not covered in this manual, please contact the seller or the manufacturer, SouthMarine, through their official channels. When contacting support, please have your product model number (803702) and engine serial number readily available. You can visit the SouthMarine Store on Amazon for more information or to find contact details.

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