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› SCITOO Starter Motor User Manual

SCITOO 053755-5206-1038461

SCITOO Starter Motor User Manual

Model: 053755-5206-1038461

1. INTRODUCTION

This manual provides essential information for the installation, operation, maintenance, and troubleshooting of your SCITOO Starter Motor. Designed for marine outboard engines, this starter motor (Model: 053755-5206-1038461) ensures reliable engine starting. Please read this manual thoroughly before installation and use to ensure proper function and longevity of the product.



Figure 1.1: SCITOO Starter Motor, a 12-volt, counter-clockwise rotating unit with an 8-tooth pinion.

2. PRODUCT FEATURES

The SCITOO Starter Motor is engineered for superior performance and durability, incorporating advanced design elements for efficient and stable operation.

- **High Performance:** Utilizes premium components and undergoes strict quality control to ensure reliability.
- **Efficient Start:** Designed for quick and efficient engine ignition.
- **Stable Operation:** Contributes to the safety and stability of vehicle starting.
- **Reduced Noise:** Each component is precisely installed to minimize operational noise.
- **Durable Construction:** Features an all-copper motor and robust housing for extended lifespan.

MULTI FUNCTIONAL STARTER



 Quick start

 High stability

 Exquisite workmanship

 Strong power

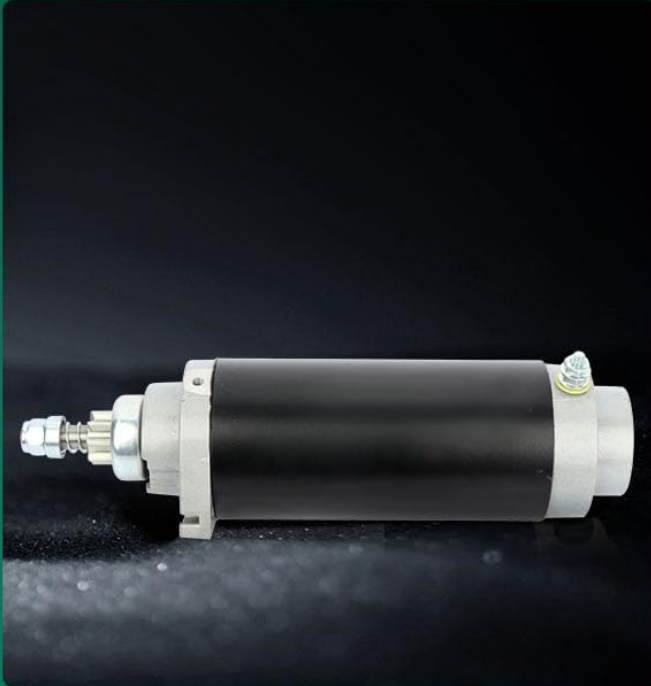
 Easy to install

 Comfortable driving

Figure 2.1: Key features of the SCITOO Starter Motor, highlighting quick start, high stability, strong power, and exquisite workmanship.

COMPARISON OF STARTER PRODUCTS

NEW



- ✓ Efficient start
- ✓ Ensure the safety and stability of the vehicle starting
- ✓ Excellent reversibility to start at any time
- ✓ Sufficient power and no noise

OLD MODEL



- ✗ Loud running noise
- ✗ High speed rotation but no response from the engine crankshaft
- ✗ Can't work drive gear doesn't turn
- ✗ Insufficient power output cannot drive the crankshaft

Figure 2.2: Comparison illustrating the advantages of the new SCITOO Starter Motor over older models, including efficient start and reduced noise.

3. COMPATIBILITY AND FITMENT

This starter motor is compatible with a range of Mariner and Mercury marine outboard engines. Please verify your engine's specifications against the list below and the provided reference numbers to ensure proper fitment.

3.1. Engine Compatibility

- 1992-1998 150 for Magnum EFI 2.5L-153.0ci-150 HP
- 1989-2000 150 for Magnum II 2.5L-153.0ci-150 HP
- 1989-1998 150CXL 2.0L-121.9ci-150 HP
- 1994-2000 150CXL EFI 2.5L-153.0ci-150 HP
- 1999-2000 150CXL Saltwater 2.5L-153.0ci-150 HP
- 1979-1988 150ELPT 2.0L-121.9ci-150 HP
- Also compatible with 135CXL, 135ELPTO, 135EXLPTO, 135L, 135XL models.

3.2. Reference Numbers

This starter motor is a replacement for the following part numbers:

- JOHNSon Electric: 4820540
- Mercury Marine: 50-44414, 50-44415, 50-77141, 50-79472, 50-79472-1, 50-79472T2, 50-884238T
- Original Reference Number: 1491624, 1718328, 4820440, 4820540
- Prestolite: 20513542TBA
- United Technologies: 1491624-M030SM, 1491624MO30SM, 1718328-M030SM
- SCITOO Model: 5389N

VEHICLE FITMENT

For Mariner Engines-For Marine Outboard 135CXL 135ELPTO 135EXLPTO
135L 135XL 150 Magnum EFI 150 Magnum II 150 Magnum III 150CXL
150CXL EFI 150CXL Saltwater

OO • Reference Number:

5389,5388,50-44414,50-44415,50-77141,50-79472,50-79472-1,
50-79472T2,50-884238T,18-5608,18-5643,1491624-M030SM,
1718328-M030SM,4820440-M030SM,4820540-M030SM,SM14916,
SM17183,SM48204,SM48205,5389

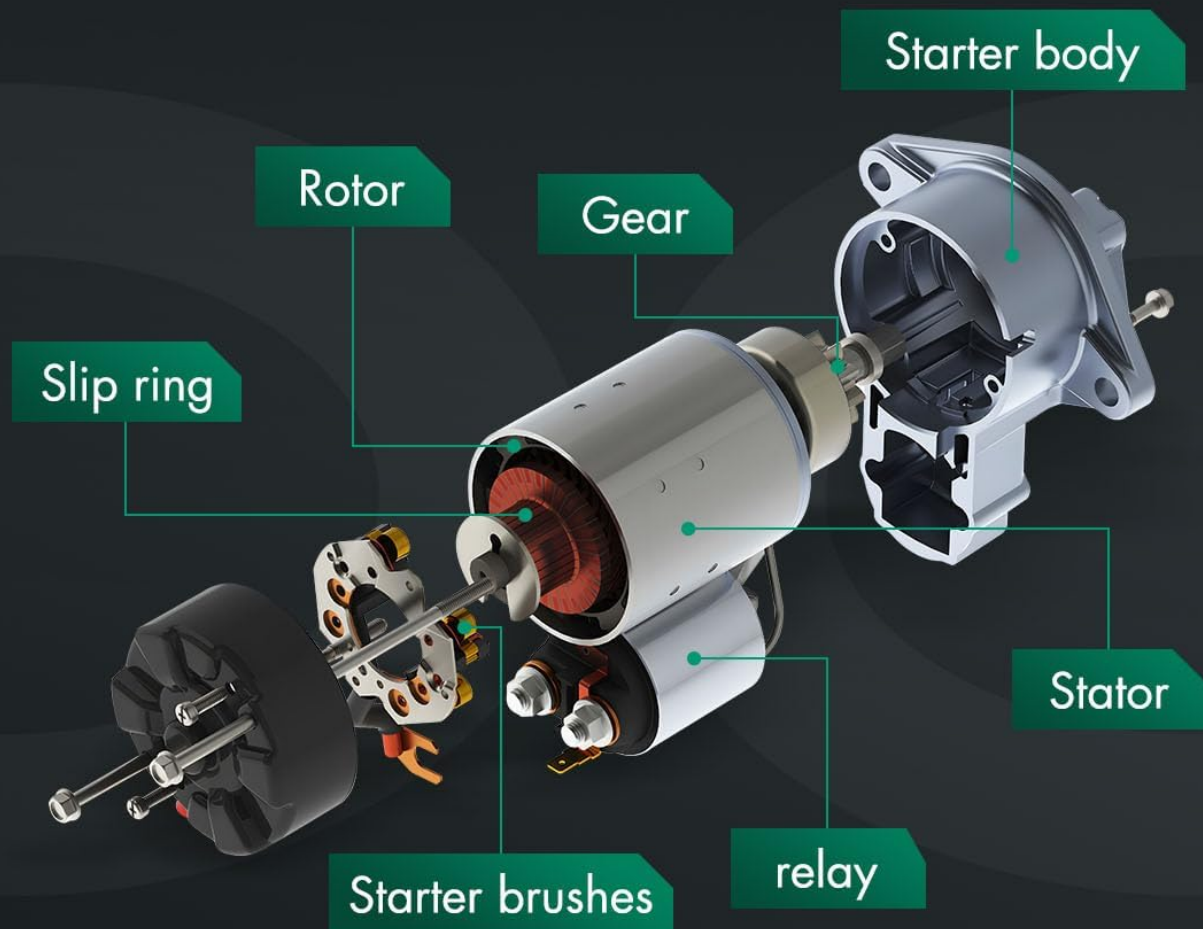


Figure 3.1: Visual representation of vehicle fitment, emphasizing the importance of checking compatibility.

4. COMPONENTS

The SCITOO Starter Motor is composed of several key components working in unison to provide reliable starting power.

QUALITY COMPONENTS



12Volt



8-Tooth
Pinion



CCW



PMDD

Figure 4.1: Diagram illustrating the internal components of the starter motor, including the starter body, rotor, gear, slip ring, stator, starter brushes, and relay.

- **Starter Body:** The main housing protecting internal components.
- **Rotor:** The rotating part of the motor.
- **Gear (Pinion):** Engages with the engine's flywheel to crank the engine.
- **Slip Ring:** Transfers electrical current to the rotating parts.
- **Stator:** The stationary part of the motor that creates a magnetic field.

- **Starter Brushes:** Conduct electricity to the commutator on the rotor.
- **Relay (Solenoid):** An electromagnetic switch that engages the pinion and supplies power to the motor.

5. SETUP AND INSTALLATION

Proper installation is crucial for the performance and safety of your starter motor. While the design allows for original position installation with OE standard mounting holes, professional installation is highly recommended.

5.1. Installation Guidelines

- **Compatibility Check:** Always confirm the starter's compatibility with your specific vehicle year, make, model, and trim before beginning installation.
- **Professional Installation:** Due to the complexity and safety considerations, professional installation by a qualified technician is strongly advised.
- **Original Position Fit:** The starter is designed to fit the original equipment (OE) mounting holes, ensuring a perfect match and straightforward replacement.
- **Secure Installation:** Ensure all components are installed tightly to prevent issues and reduce operational noise.



Original Position to Install:

OE Starter, Same Mounting Holes.



Safety and Stable:

High Standard Material Used.
Giving You a Safety and Stable
Driving Experience.



Lower Noise:

Each Component of the
Starter is Installed Tightly,
Making the Noise Lower



Figure 5.1: Features supporting easy and safe installation, including original position fit and design for lower noise.



PERFECT MATCH

Original interface, in situ installation - OE standard template production ensures in situ installation, and can be used normally without any debugging or modifications

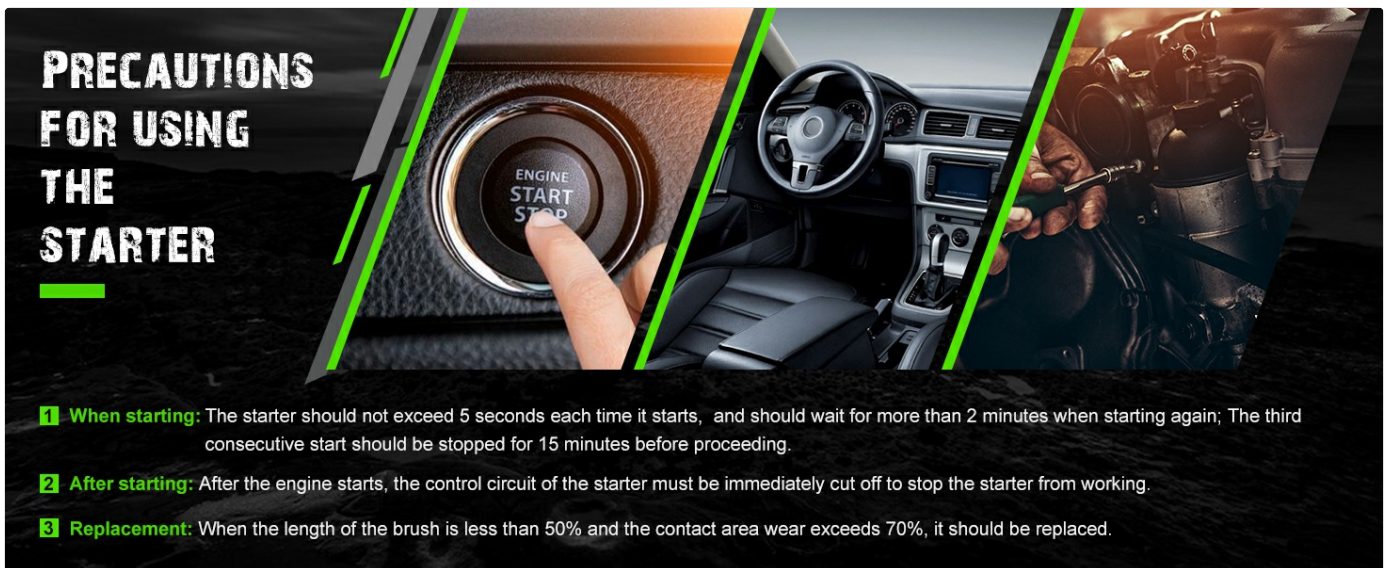
Figure 5.2: The starter is designed for a perfect match with original interfaces, ensuring in-situ installation without debugging or modifications.

6. OPERATING INSTRUCTIONS

The starter motor operates automatically when the ignition key is turned to the 'start' position. Adhere to the following precautions for optimal performance and longevity.

6.1. Starting Precautions

- **Starting Duration:** The starter should not be engaged for more than 5 seconds at a time.
- **Rest Period:** If the engine does not start, wait for more than 2 minutes before attempting to start again.
- **Consecutive Starts:** After three consecutive failed starting attempts, stop and wait for 15 minutes before trying again to prevent overheating and damage to the starter.
- **Disengagement:** Once the engine starts, the control circuit of the starter must immediately cut off power to stop the starter from working.



- 1 When starting:** The starter should not exceed 5 seconds each time it starts, and should wait for more than 2 minutes when starting again. The third consecutive start should be stopped for 15 minutes before proceeding.
- 2 After starting:** After the engine starts, the control circuit of the starter must be immediately cut off to stop the starter from working.
- 3 Replacement:** When the length of the brush is less than 50% and the contact area wear exceeds 70%, it should be replaced.

Figure 6.1: Important precautions for operating the starter motor, including recommended starting durations and rest periods.

7. MAINTENANCE

Regular inspection and timely replacement of worn components are essential for maintaining the starter motor's efficiency and extending its lifespan.

- **Brush Replacement:** The carbon brushes within the starter motor are subject to wear. They should be replaced when their length is less than 50% of the original or when the contact area exceeds 70% wear.
- **General Inspection:** Periodically inspect the starter motor for any loose connections, corrosion, or signs of physical damage.

8. TROUBLESHOOTING

If your starter motor is not functioning correctly, consider the following common issues and their potential causes.

8.1. Common Reasons for Starter Not Working

- **Severe Battery Loss:** Insufficient battery charge or a weak battery.
- **Poor Contact:** Issues with the starter circuit or switch connections.
- **Electrical Faults:** Short circuit, open circuit, or grounding issues in the excitation winding or armature winding.
- **Brush/Rectifier Contact:** Poor contact between the carbon brushes and the rectifier.
- **Solenoid Issues:** Electromagnetic switch coil short circuit or open circuit.
- **Faulty Control Circuit:** Problems within the vehicle's starter control system.



Figure 8.1: Common dashboard indicators and reasons for a starter motor not working.

8.2. Abnormal Starter Behavior

If you experience any of the following, professional inspection is recommended:

- The starter makes abnormal noise.
- The starter is idling (spinning without engaging).
- The starter has weak rotation.
- A collision sound between the gear and the flying gear ring is heard.

- A "da da da" sound during operation, which may indicate improper installation.



Figure 8.2: Various views of SCITOO starter motors, representing the range of products and quality.

9. SPECIFICATIONS

Detailed technical specifications for the SCITOO Starter Motor (Model: 053755-5206-1038461).

Specification	Value
Brand	SCITOO
Model Number	053755-5206-1038461
Item Weight	0.01 ounces
Product Dimensions	15.75 x 3.94 x 3.94 inches
Voltage	12 Volts
Wattage	1.4 KW
Rotation	CCW (Counter-Clockwise)
Number of Teeth	8-Tooth Pinion
Type	PMDD
Exterior	Machined

10. WARRANTY AND SUPPORT

SCITOO is committed to providing high-quality aftermarket auto parts. Every starter is manufactured under strict quality management system standards, from raw material inspection to final assembly and testing, ensuring reliability and performance.

10.1. Quality Assurance



Figure 10.1: SCITOO's commitment to quality, with every step controlled to ensure product integrity. For any inquiries or support, please visit the official SCITOO store or contact customer service through your purchase platform. You can find more information about SCITOO's vision and mission at their official store: [SCITOO Store](#).

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