Rareelectrical 8970958112

RAREELECTRICAL 24V Starter Motor User Manual

Model: **8970958112** | Brand: **Rareelectrical**

1. Product Overview

This manual provides essential information for the proper installation, operation, and maintenance of your new RAREELECTRICAL 24V Starter Motor. This unit is designed as a direct replacement for specific Isuzu truck models and engines, ensuring reliable starting performance. Please read this manual thoroughly before attempting any installation or service.

Figure 1: Front view of the RAREELECTRICAL 24V Starter Motor. This image shows the main body of the starter motor, including the solenoid and the drive gear (pinion) at the front, which engages with the engine's flywheel.

2. Key Features and Compatibility

The RAREELECTRICAL 24V Starter Motor is engineered for durability and performance, offering a reliable solution for your vehicle's starting system.

Key Features:

- **Voltage:** 24 Volts, suitable for heavy-duty applications.
- **Rotation:** Counter-Clockwise (CCW) rotation, typically used on non-USA models.
- **Teeth:** 11 teeth on the drive pinion for optimal engagement.
- **Power Output:** 4.5 Kilowatts (KW) for strong cranking power.
- **Construction:** Durable metal construction for longevity.
- **Compatibility:** Designed as a direct replacement for specific OEM part numbers.

Compatibility:

This starter motor is compatible with the following Isuzu truck models and engines. It is crucial to verify your original equipment manufacturer (OEM) part number to ensure proper fitment.

- Isuzu Truck NKR with 4HF1 Engine
- Isuzu Truck NKR with 4HG1 Engine
- Isuzu Truck NKR with 4HJ1 Engine
- Isuzu Truck NPR with 4HF1 Engine
- Isuzu Truck NPR with 4HG1 Engine
- Isuzu Truck NPR with 4HJ1 Engine
- Elf Trucks (specific models may vary, verify OEM part number)

Replaces OEM Part Numbers:

Hitachi: S25-163G, S25-163, S25163G

Isuzu: 8970958112, 8970958111, 8-97095-811-2, 8-97095-811-1

3. Installation Guidelines

Installation of a starter motor requires mechanical knowledge and proper tools. It is highly recommended that installation be performed by a qualified professional to ensure safety and correct functionality. Incorrect installation can lead to damage to the starter motor, vehicle, or personal injury.

Safety Precautions:

- Always disconnect the vehicle's battery (negative terminal first) before beginning any work on the electrical system.
- Wear appropriate personal protective equipment (PPE), including safety glasses and gloves.
- Ensure the vehicle is securely supported on jack stands or a lift.
- Allow the engine to cool down completely before starting work.
- Do not overtighten fasteners, as this can strip threads or damage components.
- Verify all electrical connections are clean, tight, and free from corrosion.

Basic Installation Steps (General):

1. **Preparation:** Disconnect the battery. Locate the existing starter motor.
2. **Removal:** Disconnect the electrical wiring from the old starter motor (battery cable, solenoid wire). Remove the mounting bolts securing the starter motor to the engine or transmission bell housing. Carefully remove the old starter motor.
3. **Inspection:** Inspect the mounting surface for cleanliness and any damage. Compare the new starter motor with the old one to confirm it is the correct replacement.
4. **Installation:** Position the new RAREELECTRICAL starter motor into place. Secure it with the mounting bolts, tightening them to the manufacturer's specified torque (refer to your vehicle's service manual).
5. **Wiring:** Reconnect the electrical wiring to the new starter motor. Ensure the battery cable is securely fastened to the main terminal and the solenoid wire to the appropriate terminal.
6. **Final Check:** Double-check all connections and mounting bolts. Reconnect the vehicle's battery (positive terminal first, then negative).
7. **Testing:** Attempt to start the vehicle. Listen for proper engagement and cranking.

Figure 2: Rear view of the RAREELECTRICAL 24V Starter Motor, showing the electrical terminals and mounting points. This view is helpful for identifying wiring connections during installation.

4. Operation

The starter motor is an electric motor that rotates the engine's flywheel, initiating the combustion process. When the ignition key is turned to the "start" position, electrical current flows from the battery to the starter motor's solenoid. The solenoid then engages the starter pinion gear with the engine's flywheel and simultaneously sends power to the starter motor, causing it to spin. Once the engine starts, the starter motor disengages from the flywheel, and the ignition key returns to the "run" position.
Proper operation is characterized by a quick and consistent cranking of the engine when the ignition is engaged.

5. Maintenance

Starter motors are generally low-maintenance components. However, periodic checks can help ensure their longevity and reliable performance.

- **Battery Condition:** Ensure your vehicle's battery is in good condition and fully charged. A weak battery can put excessive strain on the starter motor.
- **Electrical Connections:** Periodically inspect all electrical connections to the starter motor (battery cable, solenoid wire) for corrosion, looseness, or damage. Clean any corrosion and ensure connections are tight.

- **Mounting Bolts:** Check that the starter motor's mounting bolts are secure and properly torqued. Vibrations can sometimes loosen fasteners over time.
- **Cable Integrity:** Inspect the battery cables and ground straps for fraying, cracks, or excessive resistance. Damaged cables can impede current flow to the starter.

6. Troubleshooting

If you experience issues with your vehicle's starting system, consult the table below for common symptoms and potential solutions. Always ensure safety precautions are followed before attempting any diagnostic or repair work.

Symptom	Possible Cause	Solution
Engine does not crank or cranks slowly	Weak or dead battery, corroded battery terminals, loose battery cables, faulty starter solenoid, faulty starter motor.	Check battery charge and terminals. Clean and tighten connections. Test battery. If battery is good, test starter motor and solenoid.
Starter motor spins but engine does not crank	Faulty starter drive (bendix), damaged flywheel teeth.	Inspect starter drive for proper engagement. Check flywheel teeth for wear or damage. Replacement of starter or flywheel may be necessary.
Clicking sound when trying to start	Low battery voltage, faulty starter solenoid, loose electrical connections.	Charge or replace battery. Check and tighten all electrical connections to the starter. Test solenoid.
Starter motor makes grinding noise	Misalignment, worn starter drive gear, damaged flywheel teeth.	Inspect mounting, starter drive, and flywheel. Professional inspection recommended.

7. Technical Specifications

Specification	Value
Unit Type	Hitachi (Compatible)
Voltage	24V
Rotation	Counter-Clockwise (CCW)
Teeth on Drive / Splines	11
Kilowatts (KW)	4.5 KW
Material	Metal
Product Dimensions (L x W x H)	14 x 8 x 8 inches
Item Weight	16 Pounds

Specification	Value
Model Number	8970958112
Manufacturer	RAREELECTRICAL

8. Warranty and Support

For information regarding warranty coverage, please refer to the terms and conditions provided at the time of purchase or contact RAREELECTRICAL directly.

Return Policy: This product is subject to a 30-day return policy for refund or replacement, as per the seller's terms.

For technical assistance, compatibility verification, or any other inquiries, please contact the manufacturer, RAREELECTRICAL, through their official channels or the retailer from whom the product was purchased.

You can visit the official Rareelectrical store on Amazon for more information: Rareelectrical Amazon Store.