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› [Gladiator Starter Motor Instruction Manual for Mazda M4-121G, TCM FCG15-FCG30, and Hyster Lift Trucks H-25 to H-60](#)

## Gladiator 4893-18-400D, 4893-18-400E, FESE-18-400

# Gladiator Starter Motor Instruction Manual

Model: 4893-18-400D, 4893-18-400E, FESE-18-400

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## 1. INTRODUCTION

This instruction manual provides essential information for the proper installation, operation, and maintenance of your Gladiator Starter Motor. Please read this manual thoroughly before attempting any installation or service to ensure safety and optimal performance. This starter motor is designed to meet or exceed OEM specifications for various compatible vehicles and equipment.

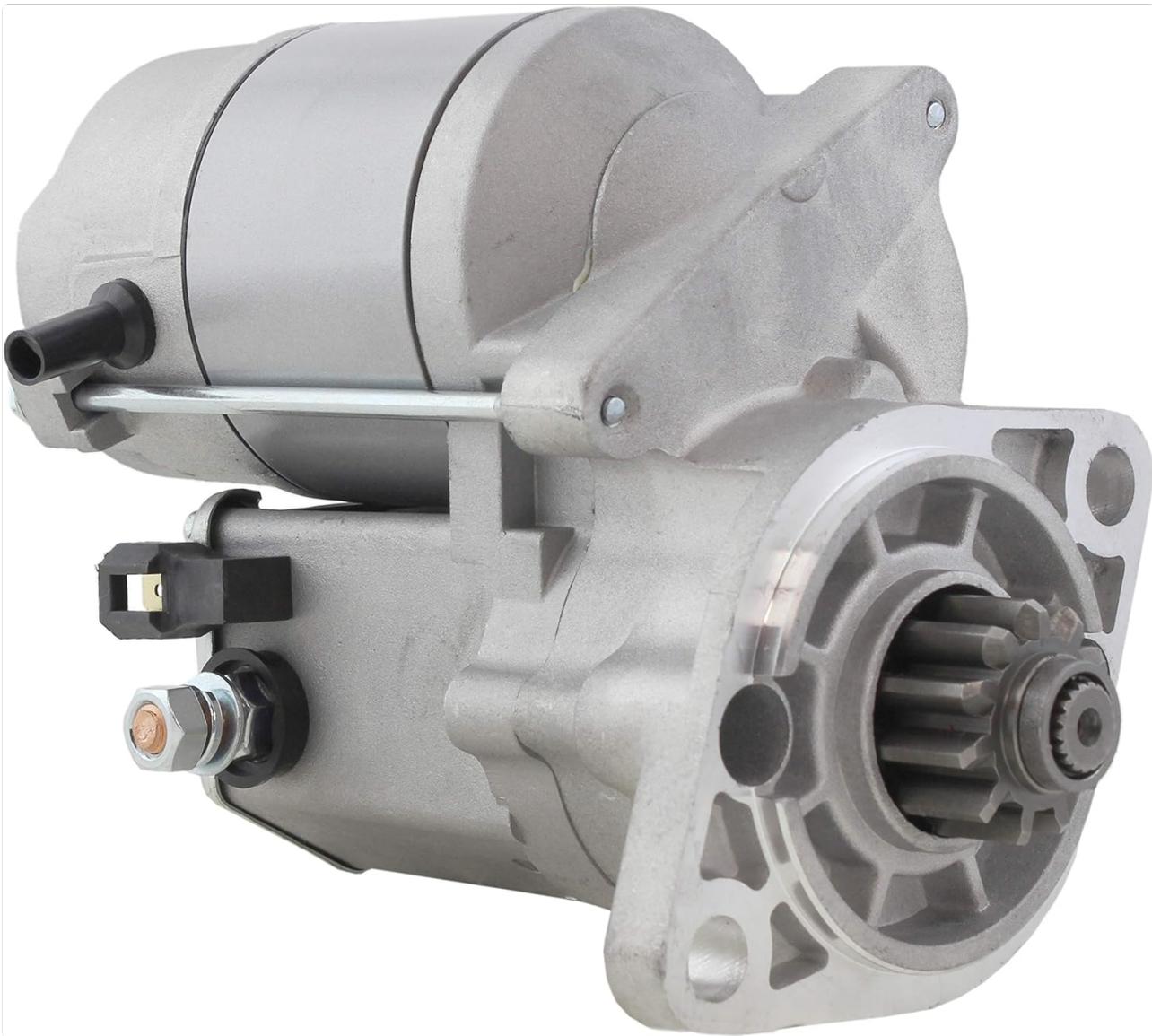
## 2. SAFETY INFORMATION

**WARNING:** Always disconnect the vehicle's battery before working on the electrical system to prevent electrical shock or damage to components.

- Wear appropriate personal protective equipment (PPE), including safety glasses and gloves.
- Ensure the vehicle is securely supported on jack stands if working underneath.
- Do not attempt installation if you are unfamiliar with automotive electrical systems. Consult a qualified technician.
- Keep all tools and loose clothing away from moving parts.
- Verify correct polarity when reconnecting battery terminals.

## 3. PRODUCT OVERVIEW AND SPECIFICATIONS

The Gladiator Starter Motor is a high-quality replacement component engineered for reliable engine starting. It features a 12-volt system with an offset gear reduction design, delivering 1.4KW of power.



**Figure 1:** Front-side view of the Gladiator Starter Motor, showing the main housing, solenoid, and pinion gear.

### Key Features:

- Meets or Exceeds OEM Specifications
- 100% Computer Load Tested for Reliability
- 12 Volt Off Set Gear Reduction
- 11-Tooth Pinion Gear
- 1.4KW Power Output

### Technical Specifications:

Specification	Value
Brand	Gladiator
Voltage	12 Volts
Wattage	1.4 KW
Item Weight	9.01 pounds
Product Dimensions	8 x 7 x 6 inches
Manufacturer Part Numbers	4893-18-400D, 4893-18-400E, FESE-18-400

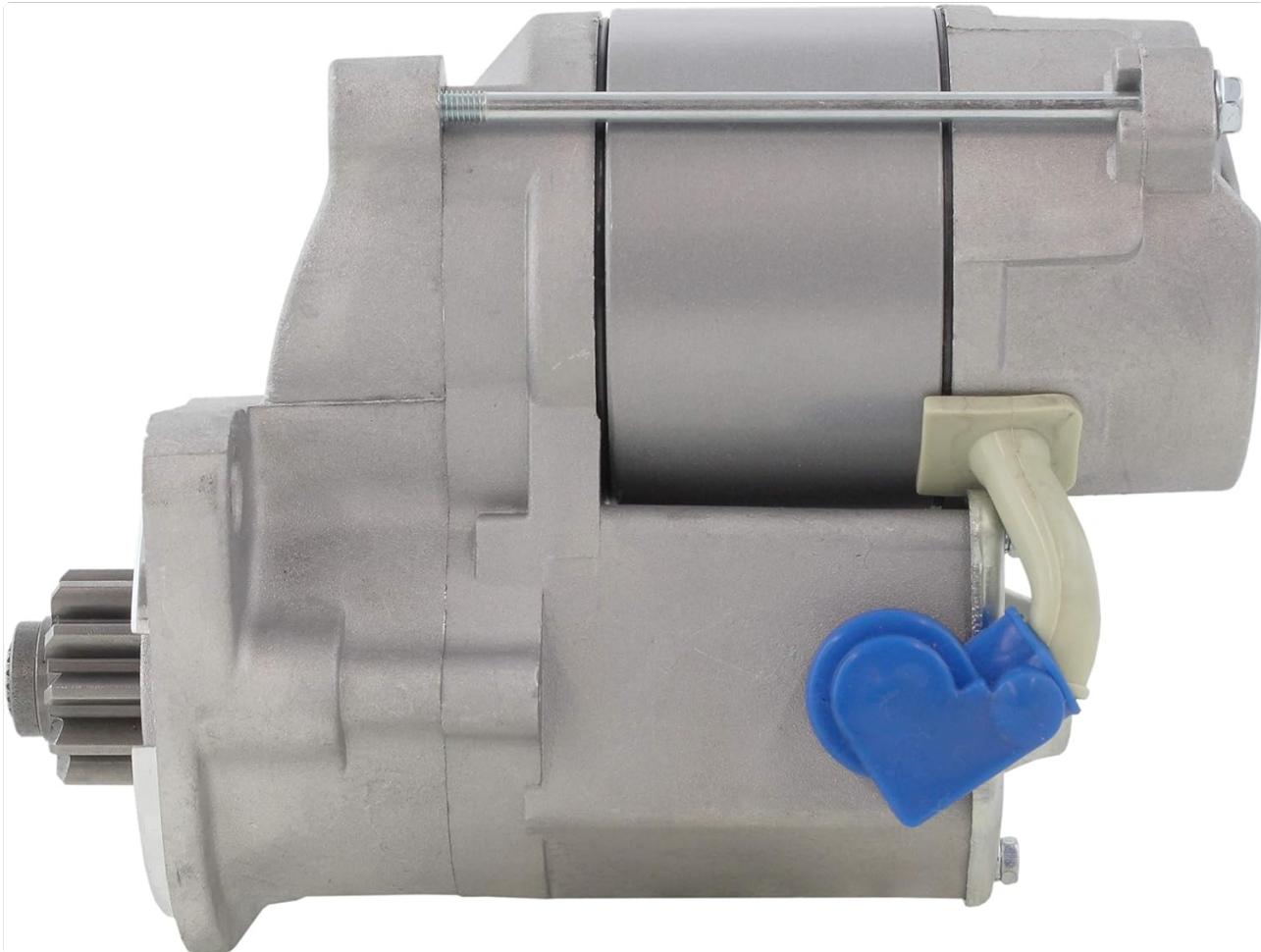


Figure 2: Side view of the starter motor, highlighting the compact design and electrical connections.

## 4. COMPATIBILITY

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This Gladiator Starter Motor is compatible with a wide range of vehicles and equipment. Please verify your specific application against the following list and cross-reference with your original part number.

### Compatible Models and Years:

- **Mazda Engines:** Various Models (1970-1992, 1978-1987)
- **Hyster Lift Trucks:**
  - H-25XL (Mazda Gas 1963-1966, Mazda M4-121G 1985-2006)
  - H-35XL (Mazda Gas 1985-2001, Mazda M4-121G 1985-2006)
  - H-40XL (Gas Eng. 1996-2006, Mazda M4-121G 1985-2001)
  - H-50XL / H-60XL (Gas Eng. 1996-2006, Mazda M4-121G 2002-2006)
  - S-25XL (Mazda Gas 1963-1976, Mazda M4-121G 1985-1991, 1999-2006)
  - S-30XL / S-30XM (Mazda Gas 1992-2005)
  - S-35XL (Mazda Gas 1992-2005, Mazda M4-121G 1985-1991, 1999-2006)
  - S-40XL (Mazda M4-121G 1985-2001)
  - S-50XL (Mazda M4-121G 1985-2001)
  - S-60XL (Mazda M4-121G 1985-2001)
- **Sumitomo Yale Lift Trucks:**
  - DB FE Engine (1992-1999)
  - GE FE Engine (1985-2006)
  - GE VA Engine (1976-1979)
  - Various Models (FE Engine 1985-2006, VA Engine 1976-1979)

- **TCM Equipment Lift Trucks:**

- FCG15T, FCG15T8, FCG18T, FCG20T, FCG23T, FCG25T, FCG28T, FCG30T (FS2M Mazda Engine 1985-2006, FCG28T until 2002)

- **Yale Lift Trucks:**

- Various Models (F2 Engine 1985-1994, FE Engine 1985-1994, UA Engine 1980-1999, VA Engine 1985-1994)

## Replaces Part Numbers:

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

- 326875, 1362069, 3021367, 3068345, 3126282R, 3126282RX
- 4893-18-400B, 4893-18-400D, 4893-18-400E, FESE18400
- 1500023-05, 1500130-50, 1500242-13, 2200709-79
- 9005408-49, 9005408-57, 9129786-00, 246-14126, 19651

## 5. INSTALLATION INSTRUCTIONS

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Installation of a starter motor requires mechanical aptitude and adherence to safety protocols. If you are unsure, seek professional assistance.

### Required Tools:

- Socket/Wrench Set
- Battery Terminal Wrench
- Wire Brush (for cleaning terminals)
- Jack and Jack Stands (if working underneath)

### Step-by-Step Guide:

1. **Disconnect Battery:** Locate the vehicle's battery and disconnect the negative (-) terminal first, followed by the positive (+) terminal. This prevents accidental short circuits.
2. **Locate Old Starter:** Identify the existing starter motor, typically mounted on the engine block near the transmission bell housing.
3. **Disconnect Wiring:** Carefully disconnect all electrical connections from the old starter. This usually includes a large battery cable and a smaller solenoid wire. Note their positions for reinstallation.
4. **Remove Mounting Bolts:** Remove the bolts securing the old starter motor to the engine or transmission. Support the starter as you remove the last bolt to prevent it from falling.
5. **Remove Old Starter:** Carefully maneuver and remove the old starter motor from its position.
6. **Prepare New Starter:** Compare the new Gladiator starter motor with the old one to ensure they are identical in mounting and electrical connections.
7. **Install New Starter:** Position the new starter motor and loosely install the mounting bolts. Ensure proper alignment before tightening the bolts to the manufacturer's specified torque (refer to vehicle service manual).
8. **Reconnect Wiring:** Reconnect the electrical wires to the new starter motor. Ensure connections are clean and tight. The large battery cable connects to the main terminal, and the smaller wire connects to the solenoid terminal.
9. **Reconnect Battery:** Reconnect the positive (+) battery terminal first, then the negative (-) terminal.
10. **Test Operation:** Attempt to start the engine to verify proper operation of the new starter motor.

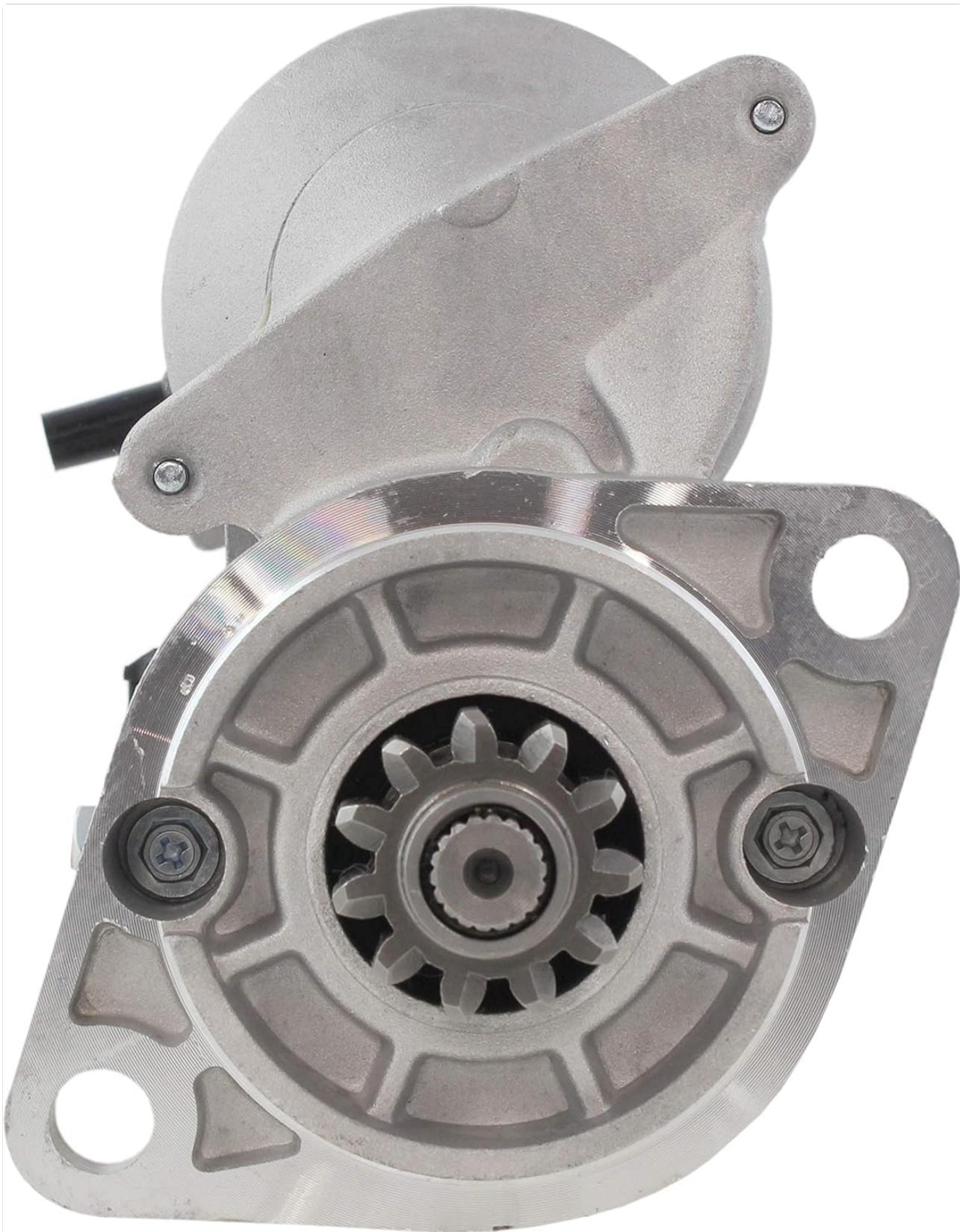


Figure 3: Front view of the starter motor, showing the 11-tooth pinion gear and mounting flange.

## 6. OPERATING INSTRUCTIONS

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The starter motor is an integral part of your vehicle's starting system. Its operation is automatic upon turning the ignition key.

1. Ensure the vehicle is in Park (P) or Neutral (N) for automatic transmissions, or the clutch pedal is fully depressed for manual transmissions.
2. Insert the ignition key and turn it to the "START" position. The starter motor will engage the engine's flywheel and crank the engine.
3. Once the engine starts, immediately release the ignition key. Prolonged cranking after the engine has started can damage the

starter motor.

4. If the engine does not start after a few seconds of cranking, release the key, wait for 10-15 seconds, and attempt to start again. Avoid continuous cranking to prevent overheating the starter.

## 7. MAINTENANCE

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The Gladiator Starter Motor is designed for minimal maintenance. However, periodic checks can help ensure its longevity and reliable performance.

- **Battery Condition:** Ensure your vehicle's battery is in good condition and fully charged. A weak battery can strain the starter motor.
- **Cable Connections:** Periodically inspect the battery cables and starter motor connections for corrosion or looseness. Clean any corrosion with a wire brush and ensure all connections are tight.
- **Mounting Security:** Check that the starter motor mounting bolts are secure. Vibrations can sometimes loosen fasteners over time.
- **Avoid Over-Cranking:** Do not continuously crank the engine for extended periods if it fails to start. This can overheat and damage the starter.

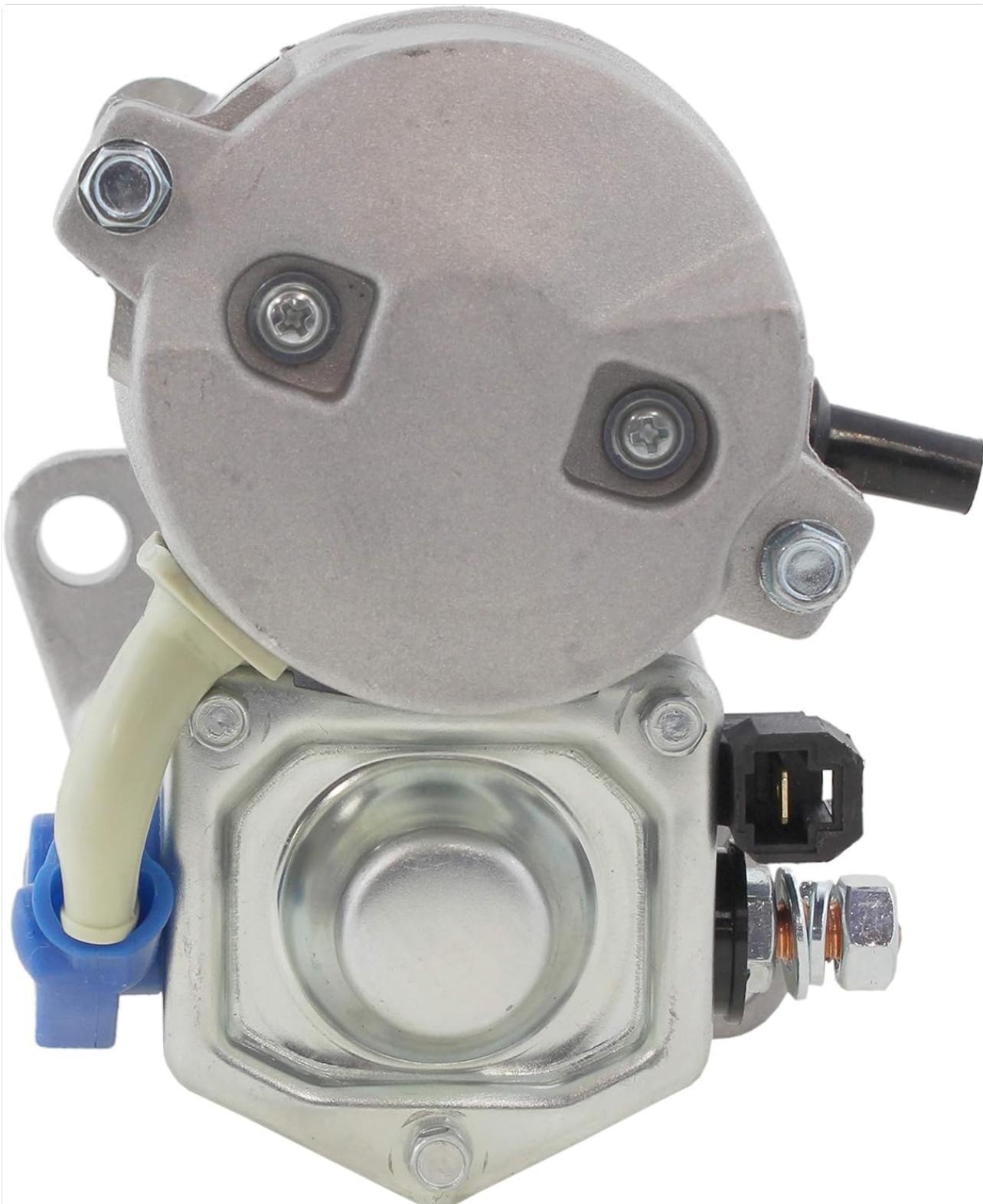


Figure 4: Rear view of the starter motor, showing the main battery terminal and solenoid connection point.

## 8. TROUBLESHOOTING

If you experience issues with your starter motor, consult the following common troubleshooting steps:

Symptom	Possible Cause	Solution
Starter clicks but engine does not crank	Weak or dead battery; Loose or corroded battery terminals; Faulty starter solenoid.	Check battery charge and terminals. Clean and tighten connections. Test battery. If battery is good, starter may need replacement.

Starter cranks slowly	Low battery charge; Excessive resistance in battery cables; Engine oil too thick (cold weather).	Charge or replace battery. Inspect and clean battery cables. Ensure appropriate engine oil viscosity for climate.
Starter makes grinding noise	Damaged starter pinion gear or flywheel teeth; Improper starter alignment.	Inspect starter pinion and flywheel for damage. Recheck starter mounting. Professional inspection recommended.
No sound or click when turning key	Completely dead battery; Faulty ignition switch; Open circuit in starter wiring; Faulty starter motor.	Check battery voltage. Inspect all wiring to the starter. Test ignition switch. If all else fails, starter motor may be defective.

## 9. WARRANTY AND SUPPORT

The Gladiator Starter Motor comes with a **One Year Warranty** from the date of purchase, covering defects in materials and workmanship under normal use.

For warranty claims, technical support, or further assistance, please contact your retailer or the Gladiator customer service department with your proof of purchase and product model information.

**Contact Information:** Please refer to your purchase documentation or the Gladiator official website for current contact details.

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