

### 50MT Motor 12V and 24V Semi-Solid Link Solenoid Installation Instructions

**Notice!** Starting Motor must be removed from vehicle before the Semi-Solid Link Solenoid can be removed and replaced. Read all of the removal and replacement instructions before proceeding.

**WARNING!!!** ALWAYS USE PROPER EYE PROTECTION WHEN PERFORMING ANY MECHANICAL REPAIRS TO A VEHICLE – INCLUDING, BUT NOT LIMITED TO, ANY INSTALLATION AND OR REPAIRS TO THE DELCO REMY STARTING MOTORS. FAILURE TO USE PROPER EYE PROTECTION CAN LEAD TO SERIOUS AND PERMANENT EYE DAMAGE.

Only perform the mechanical functions that you are properly qualified to perform. A professional installation specialist should handle mechanical repairs that are beyond your technical capabilities.

**DANGER!!!** ALWAYS DISCONNECT BATTERY GROUND BEFORE REMOVING OR REPLACING CABLES AT THE STARTER. FAILURE TO DISCONNECT THE BATTERY GROUND CABLE CAN LEAD TO SERIOUS INJURY.

**NOTICE!** FOLLOW ENGINE AND/OR VEHICLE MANUFACTURER'S INSTRUCTIONS CAREFULLY WHEN REMOVING AND INSTALLING THE STARTERS.

These instructions describe the removal process for 50MT Conventional and Semi-Solid Link Solenoids and the installation of Semi-Solid Link Solenoids.

**Determine the solenoid type on the starter by the part number stamped on the solenoid metal mounting bracket and proceed to the instructions for that type of solenoid.**

- Conventional solenoid part numbers will be 1115662 or lower (Follow instructions A)
- Semi-Solid Link solenoid part numbers will be 1115714 or higher (Follow instructions B)

**Fasteners, in this document, are referred to by wrench size rather than thread size.**

#### **A. Conventional Solenoid Removal Instructions** (See illustrations Pg. 2)

1. Remove 3/4" nut [1] on solenoid motor terminal "MTR".
2. Remove 3/4" field terminal nut [2] at the frame.
3. Remove the stamped metal connector strap [3].
4. Remove the 3/8" nut [4] from ground terminal "G".
5. Disconnect the flexible ground cable [5] from the "G" terminal.
6. For models with a boot clamp [8], remove clamp by inserting screwdriver into serrated portion of clamp and prying upward. Save the clamp for reuse.
7. Remove four E8 Torx Head screws [7] that mount solenoid to motor frame.
8. Remove solenoid from lever housing. Plunger and boot will remain on starter.
9. Remove access plug [9] and gasket [10] from front of lever housing, ensuring gasket is removed.
10. Remove 1/2" plunger nut [11], carefully so it does not drop into motor, while holding the plunger securely to prevent rotation. Dispose of nut.
11. Remove plunger and boot assembly.

#### **B. Semi-Solid Link Solenoid Removal Instructions** (See illustrations Pg. 2)

1. Remove 3/4" nut [1] on solenoid motor terminal "MTR".
2. Remove 3/4" field terminal nut [2] at the motor frame.
3. Remove the stamped metal connector strap [3].
4. Remove the 3/8" nut [4] from ground terminal "G".
5. Disconnect the flexible ground cable [5] from the "G" terminal.
6. Remove access plug [9] and gasket [10] from front of lever housing, ensuring gasket is removed.
7. Remove 1/2" plunger nut [11] carefully by following the steps outlined below. **Proper care must be exercised when completing this step to avoid personal injury and property damage. Also, to avoid overheating and possible damage to the solenoid, power should not be applied in excess of one minute.**
  - a) Solenoid must be energized for removal of 1/2" plunger nut [11] to prevent plunger from rotating and damaging the rubber boot. **Warning: Ensure stamped metal connector strap [3] is disconnected to prevent motor from rotating.**
    - i. Check required voltage (12V or 24V) stamped on solenoid bracket to energize solenoid.
    - ii. Apply appropriate power (12V or 24V) to solenoid between "S" [6] (positive lead) and ground [5] (negative lead) terminals. Seat the plunger by simultaneously pushing on 1/2" plunger nut [11]. **Note:** 24 volts can be obtained by connecting two 12V batteries in series.
  - b) Remove 1/2" plunger nut [11], carefully so it does not drop into motor, and dispose.
  - c) **Remove power immediately after nut is removed.**

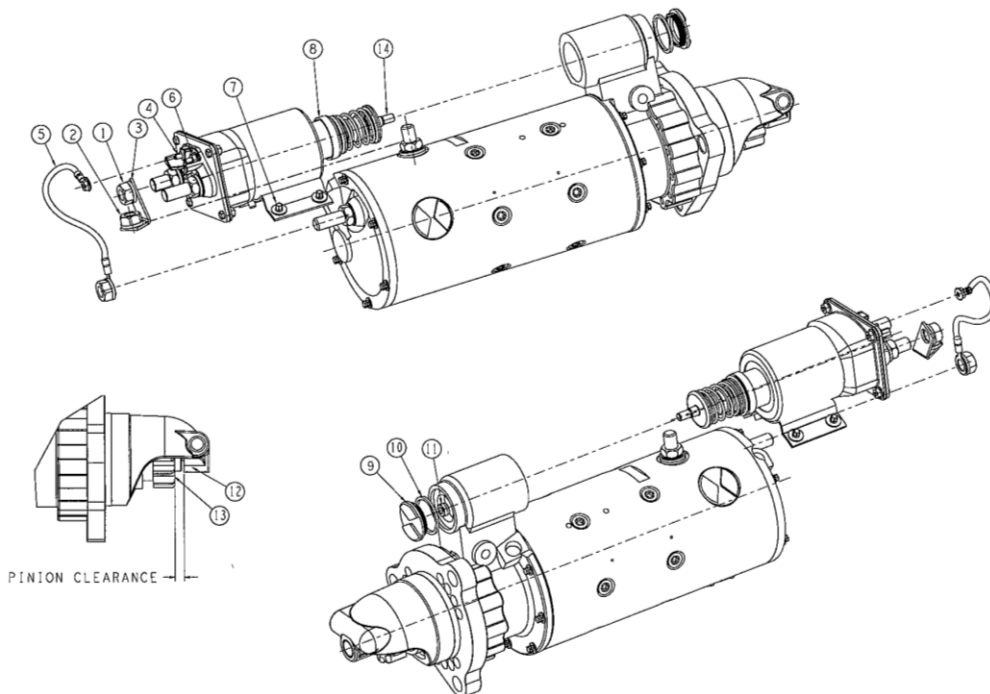
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8. Remove four E8 Torx Head screws [7] that mount solenoid to frame.
9. Remove complete solenoid and plunger assembly from lever housing.
10. For models with a boot clamp [8], remove clamp by inserting screwdriver into serrated portion of clamp and prying upward. Save the clamp for reinstallation.

### **C. Installation Instructions for Semi-Solid Link Solenoid** (See illustrations)

#### **Using replacement semi-solid link solenoid:**

1. For boot clamp applications, install the boot clamp [8] and tighten with a pair of pliers.
2. Place new solenoid onto motor by sliding plunger boot into lever housing hole, making sure the threaded plunger rod [14] goes through the hole in the shift lever.
3. Install new 1/2" plunger nut [11] by hand finger tight. **Use of force can rotate the plunger and damage the rubber boot.**
4. Push the solenoid forward until the four solenoid bracket and motor frame holes line up.
5. Install the four E8 Torx Head mounting screws [7] and torque them to **14.1-21.5 Nm (125-190 lb in)**.
6. Install the flexible ground cable [5] to "G" terminal [4].
7. Install the "G" terminal 3/8" nut [4] and torque to **1.8-4.29 Nm (16-38 lb in)**.
8. Check and adjust pinion clearance. **Proper care must be exercised when completing this step to avoid personal injury and property damage. Also, to avoid overheating and possible damage to the solenoid, power should not be applied in excess of one minute.**
  - a) Solenoid must be energized to prevent plunger from rotating and damaging the rubber boot while tightening 1/2" plunger nut [11] to adjust pinion clearance. **Warning: Ensure stamped metal strap [3] is disconnected to prevent motor from rotating.**
    - i. Check required voltage (12V or 24V) stamped on the solenoid bracket.
    - ii. Apply appropriate power (12V or 24V) to solenoid between "S" [6] (positive lead) and "G" [4] (negative lead) terminals. Seat the plunger by simultaneously pushing on 1/2" plunger nut [11]. **Note:** 24 volts can be obtained by connecting two 12 volt batteries in series.
  - b) Adjust 1/2" plunger nut [11] until the distance between pinion face [13] and the inside of the machined surface of the nose housing [12] is .328 to .390 inches. While measuring, apply slight pressure against the pinion [13] to take out the slack. **This distance must conform to product specifications in order for the starter to function properly.**
  - c) **Remove the power immediately after adjustment is completed.**
9. Install access plug [9] and gasket [10] to front of lever housing and tighten to a minimum of **8.1 Nm (72 lb in)**.
10. Install the stamped metal connector strap [3].
11. Install 3/4" solenoid "MTR" terminal nut [1] and the 3/4" motor frame nut [2] and tighten both nuts to **27.1-33.9 Nm (240-300 lb in)**.
12. Check motor for proper function before installation.



**Technical support: USA 800 854 0076, Mexico 01 800 000 7378, Brazil 0800 703 3526, South America 55 11 2106 6510 or visit [delcoremy.com](http://delcoremy.com)**

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