

INSTALLING 44MT™ GEAR REDUCTION HEAVY DUTY STARTING MOTORS

44MT STARTER FEATURES:

- ◆ SOLENOID HAS AN INTERNAL MAGNETIC SWITCH (RELAY) THAT REDUCES WIRING CONNECTIONS
- ◆ BUILT IN OVER CRANK PROTECTION (OCP) IN ALL STARTERS ELIMINATES OCP WIRING HARNESS
- ◆ ROTATABLE NOSE HOUSING REDUCES SERVICE PART NUMBERS
- ◆ MOST POWERFUL 12 VOLT STARTER IN THE INDUSTRY: 8.5kW and 14% faster cranking speed than the industry standard

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! The Delco Remy® gear reduction starters can replace starters with or without an attached magnetic switch (relay) and over crank protection (OCP). All 44MT™ starters have a magnetic switch (relay) internal to the solenoid and the OCP is pre-wired.

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

INSTALLATION AND MOUNTING

- ◆ If any shims and/or spacer washers were used with the old starter, between the starter and flywheel housings, they must be reinstalled in exactly the same location with this starter.
- ◆ Starter cable lengths must allow for normal engine movement in all operating ranges.
- ◆ **Solenoid position must be 10 degrees above horizontal to prevent moisture entry into the solenoid. See graphic, page 2.**

44MT STARTERS HAVE ROTATABLE POSITIONING DRIVE HOUSINGS (Figure 1, page 2)

- ◆ This starter is provided with multiple solenoid switch positions (SWP), so several models may be serviced with a few.
- ◆ The housing may need to be rotated to insure the solenoid is at least 15 degrees above the center line. See graphic, page 2.
- ◆ Reposition the solenoid by removing six (6) TORX drive housing bolts and rotating housing to a different set of holes.
- ◆ Reinstall the six (6) drive housing bolts and torque bolts to 17.6 - 29.8 Nm (13 - 22 lb ft).

MOUNTING FLANGE HOLES AND MOUNTING BOLTS (Figures 1, page 2)

- ◆ These starters have two (2) possible mounting flange diameter holes sizes [16.75 mm (5/8") & 13.5 mm (1/2")].
- ◆ **NOTICE! Starters with 16.75 mm (5/8") diameter flange mounting holes can also be mounted with 13.5 mm (1/2") mounting bolts. Hex Head Cap Screws (Grade 5) should always be used. If the hex head size is too small, use a hardened washer or special 12-point head cap screw (Grade 5).**

- ◆ Do not use any lock washers, star washers or soft washers with the starter mounting bolts.

ELECTRICAL CONNECTIONS (Figure 2, page 2)

- ◆ Identify and tag all leads when removing old starter so they can be properly connected on the new starter.
- ◆ Clean or wire brush all terminals so that bare metal is exposed for good electrical connections.

NOTE! If replacing a starter with over crank protection (OCP), the vehicle's OCP mating connector is not used. However, it is necessary to close the vehicle ground circuit for the vehicle to operate.

- ◆ Install the grounding plug (P/N 10528396), included in the shipping carton, into vehicle's OCP connector to close the circuit.
- ◆ Secure the OCP connector and grounding plug to prevent chafing and separation due to vibration.
- ◆ Verify main cranking circuit voltage drop is less than 0.5 volts at 500 amps [See TMC RP 129A]. If voltage drop exceeds this recommendation, appropriate corrections should be made prior to installing the 44MT starter.



THESE INSULATED STARTERS CAN REPLACE GROUNDED STARTERS (Figures 1 & 2, page 2)

Insulated starters have an insulated terminal on the commutator end. An insulated starter must have a cable connecting this terminal to a battery ground (-) connection for the starter to function. This grounding cable between the starter and battery should be a copper cable the same size as the positive (+) battery cable being used.

RING GEAR TEETH CONDITION

If the ring gear is damaged, it must be replaced to avoid a potential premature failure and risk rejection of a warranty claim.

- ◆ Inspect ring gear for being fractured, bent, chipped, excessive wear, milled, etc.
- ◆ Bar over ring gear and inspect 360 degrees for damage.

BATTERY COLD CRANKING AMPERES (CCA)

Excessive available CCA can damage starters. CCA rating is the current a battery can supply at "0" degree F (-18C) [See TMC RP 109A]. **Following is the maximum battery CCA recommendations for Delco Remy 44MT starters:**

Reference: Service Bulletin 1B-216, 1M-153

12 volt 3600 CCA
24 volt 1800 CCA

Bad - Replace



OK - Normal Wear



NOTICE - Only licensed Remy International, Inc. product and component parts should be used, and the use of other parts or modifications not approved by Remy International, Inc. will void all applicable warranties. The failure to carefully follow these Installation Instructions, set forth above, will void all applicable warranties. DELCO REMY is a registered trademark of General Motors Corporation, licensed to Remy International, Inc. Pendleton, IN 46064.

ELECTRICAL INSTALLATION INSTRUCTIONS (Figures 1 & 2 below 2)

44MT™ STARTERS CAN REPLACE THE VARIOUS STARTERS IN THE MARKET BY CONNECTING TO ONLY THREE (3) TERMINALS [SOLENOID POSITIVE (+) BATTERY TERMINAL - SOLENOID SWITCH TERMINAL - COMMUTATOR END (CE) INSULATED/GROUND (-) TERMINAL]. **NOTE!** THIS STARTER MAY ALSO BE VERY DIFFERENT IN SIZE AND APPEARANCE THAN THE ONE BEING REPLACED.

OLD STARTER	44MT STARTER SOLENOIDS ALL HAVE AN INTERNAL MAGNETIC SWITCH AND ARE PRE-WIRED WITH OVER CRANK PROTECTION (OCP)
A	Magnetic switch (relay) not attached and may or may not have OCP*
B	Magnetic Switch (Relay) attached and may or may not have OCP*

* See electrical connections, page one (1) if it has OCP. The vehicle's OCP harness is not used; however, it is necessary to close the vehicle ground circuit for the vehicle to operate. Install the grounding plug, included in the shipping carton, into vehicle's OCP connector to close the circuit. Secure the OCP connector and grounding plug to prevent chafing and separation due to vibration.

A	Starter being replaced doesn't have an attached magnetic switch (relay). It may or may not have OCP*
	<ol style="list-style-type: none"> 1. Connect lead from the solenoid switch terminal to 44MT solenoid switch terminal. Torque the nut to 2.0 - 2.5 Nm (18 - 22 lb in). 2. Connect cables from old starter solenoid battery (+) terminal to the 44MT solenoid battery (+) terminal. Torque the terminal nut to 24.5 - 27.5 Nm (18 - 20 lb ft). 3. Connect ground (-) cable to insulated/ground terminal on the 44MT and torque nut assembly to 24.5 - 27.5 Nm (18 - 20 lb ft). Starters with this terminal will not function without being connected to ground. 4. If there was not a ground cable to the old starter (grounded), a cable must be added to ground the 44MT. It should be the same size as the battery cable to the solenoid.
B	Starter being replaced has an attached magnetic switch (relay). It may or may not have OCP*
	<ol style="list-style-type: none"> 1. Connect lead from the starter magnetic switch (relay) terminal to 44MT solenoid switch terminal. Torque the nut to 2.0 - 2.5 Nm (18 - 22 lb in). 2. Connect cables from old starter solenoid battery (+) terminal to the 44MT solenoid battery (+) terminal. Torque the terminal nut to 24.5 - 27.5 Nm (18 - 20 lb ft). 3. Connect ground (-) cable to insulated/ground terminal on the 44MT and torque nut assembly to 24.5 - 27.5 Nm (18 - 20 lb ft). Starters with this terminal will not function without being connected to ground. 4. If there was not a ground cable to the old starter (grounded), a cable must be added to ground the 44MT. It should be the same size as the battery cable to the solenoid.

FIGURE 1- 44MT STARTER WITH ROTATABLE DRIVE HOUSING

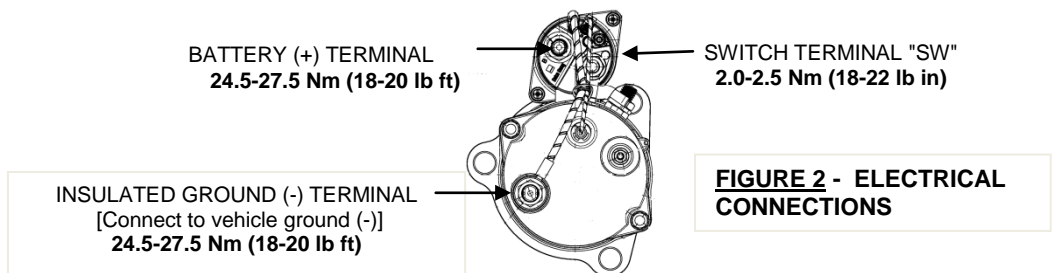
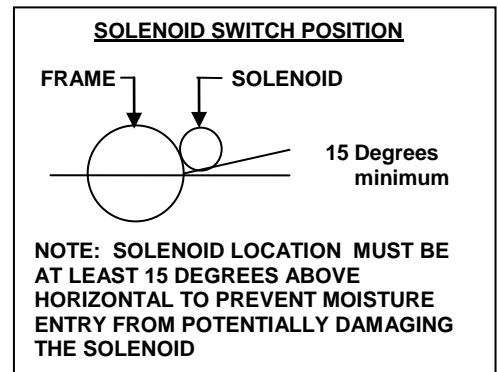
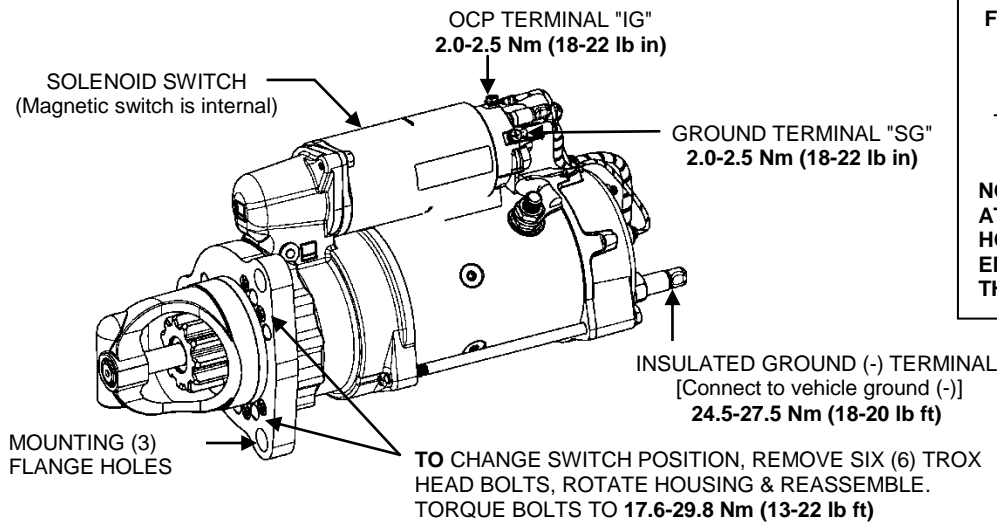


FIGURE 2 - ELECTRICAL CONNECTIONS

Technical support: USA 800 854 0076, Mexico 01 800 000 7378, Brazil 0800 703 3526, South America 55 11 2106 6510 or visit www.delcoremy.com

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