

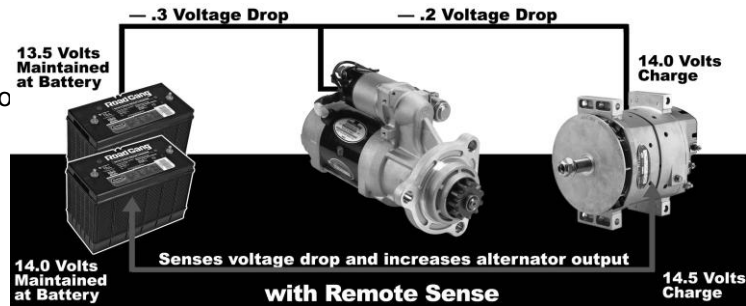
31SI ALTERNATOR INSTALLATION INSTRUCTIONS

The 31SI Alternators have Remote Sense Technology that is highly recommended for improved Battery Monitoring and Charging Performance.

Remote Sense Technology senses the voltage level at the batteries or similar location where battery system voltage can be read and adjusts alternator output accordingly. A direct connection from the alternator's remote sense terminal to the batteries provides highly accurate voltage readings and optimizes state of charge.

Typical Alternator Battery Charge Circuit without a Remote Sense line is only **14.0 volts**, with normal voltage drops in the circuit.

Alternator Battery Charge Circuit with a Remote Sense line is **14.5 Volts**. Voltage is always adjusted to specific battery requirements.



14.5 Alternator Volts
 - **.2** Voltage Drop
 - **.3** Voltage Drop
14.0 Volts Sensed at Alternator
 + **.5** Voltage Adjustment with sense Line
14.5 Charge Voltage

If the Remote Sense Line is not connected to the Remote Sense Terminal, the alternator will regulate at a voltage above the external sense setting to compensate for the voltage drop between the alternator output terminal and the batteries.

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 ALTERNATORS. 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!!! To avoid injury or damage, always disconnect the negative cable at the battery before removing or replacing the alternator. The alternator output terminal is always live (“hot”). If the battery is not disconnected, a tool accidentally touching this terminal and ground can quickly get hot enough to burn skin or damage to the tools and surrounding parts.

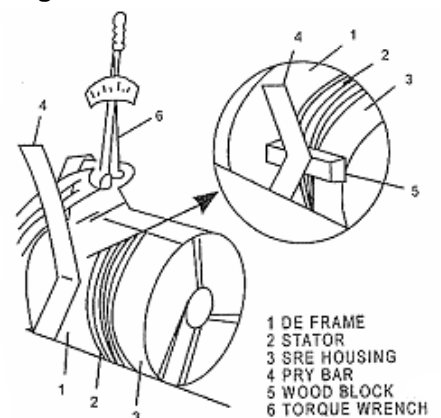
FOLLOW ENGINE OR VEHICLE MANUFACTURER’S INSTRUCTIONS FOR REMOVING THE OLD ALTERNATOR FROM THE ENGINE AND INSTALLING THE NEW ALTERNATOR.

PULLEY INSTRUCTIONS: Use pulley from old alternator if this alternator does not have a pulley or pulley supplied is different from the one on alternator being replaced. **NOTICE! When changing the pulley, keep the alternator in the horizontal position and do not apply any pressure to end of the shaft. Internal damage will occur if the shaft is pushed back and turned.** If there were spacers, when the fan and pulley were removed, make sure all spacers are replaced when installing fan and pulley on this alternator. Hold the shaft by placing an 8.01 mm (5/16”) hex wrench in the hexagonal hole in the shaft while removing or installing the pulley. **Tighten the pulley nut to 95-108 Nm (70-80 lb ft).**

BELT TENSIONING INSTRUCTIONS: Improper belt tension can cause premature alternator failure. If the belt must be tightened manually, place a wood block between the alternator and pry bar (See illustration). Pry as close to the center of the unit as possible. Use a torque wrench to tighten mounting bolts to specified torque. Follow vehicle or engine manufacturer’s specifications carefully for belt tension and mounting bolts torque. **DO NOT OVER TIGHTEN BELT!**

INSTALLATION INSTRUCTIONS (See illustration, page 2):

- ◆ Disconnect the negative (-) cable at the batteries.
- ◆ Identify and tag all leads when removing the old Alternator and install them on the same terminals of the new 31SI Alternator.



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- ◆ Insure all leads are hooked back up or contained where they can not ground.
- ◆ **Torque all fasteners as labeled on the illustration** (page 2).
- ◆ This 31SI may have more terminals than the alternator it is replacing had or used. It will function properly by only hooking up the leads that were used on the alternator being replaced.

TERMINAL DESCRIPTIONS (See illustration):

“+” **BATTERY Terminal** - Output (+) terminal connects to the Positive (+) Battery terminal and charges the Battery.

“R” **RELAY Terminal** - Relay terminal carries half systems voltage and may be used for certain types of control relays, charge indicators, tachometers or similar devices. The current draw should not exceed four (4) amperes. **Notice! Do not install the remote sense lead to this terminal.**

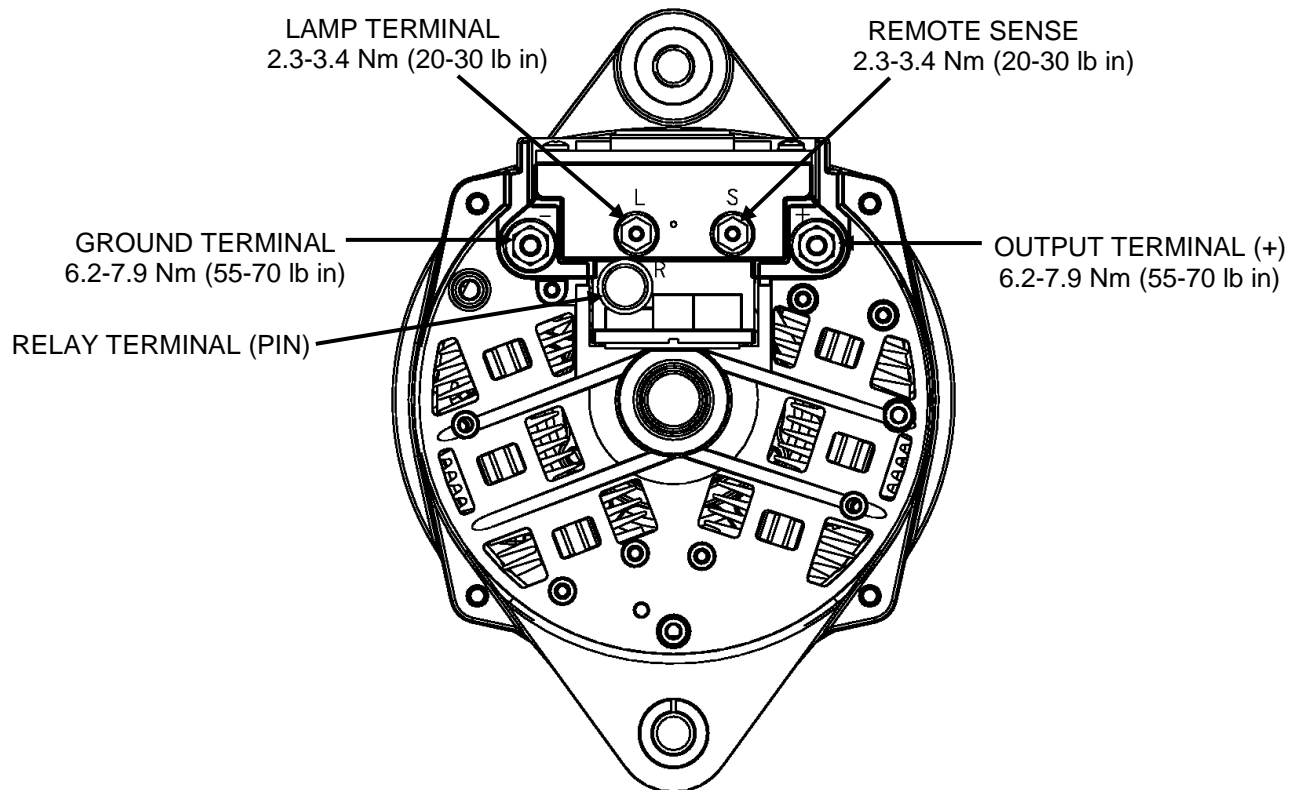
“L” **LAMP Terminal** – Lamp terminal becomes “GROUND” when a fault condition is present. At all other times the “L” terminal is open. Current draw should not exceed one (1) ampere. It is recommended that current is not drawn from this terminal.

“-” **GROUND Terminal** - Grounds the alternator. A Ground lead is strongly recommended for optimum performance.

“S” **REMOTE SENSE Terminal** - Monitors batteries system voltage at the Batteries or the common distribution point closest to the Battery Positive (+) terminal. Use of the Sense terminal is optional, however its use is highly recommended for improved charging performance. **Notice!** Do not connect anything but the remote sense line to this terminal.

- ◆ If installing a **remote sense alternator** in a vehicle that does not have a sense lead, connect the Voltage Sense terminal to the Positive (+) Battery terminal or common distribution point using the Delco Remy Remote Sense Kit (P/N 10515852) or equivalent. **DANGER!!!** This lead must have an inline five (5) ampere fuse for safety.
- ◆ If installing a **non-remote sense alternator** in a vehicle that has a remote sense lead, being careful not to ground the open end, disconnect the wire from the battery and secure it. This lead is often fused and should be deactivated.
- ◆ Only connect the remote sense line to the remote sense terminal. **The “R” Terminal is Not the Remote Sense Terminal!**

USE PULLEY FROM OLD ALTERNATOR
(SEE PULLY INSTRUCTIONS)



31SI ALTERNATOR

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