**Installation Instructions**

**INSTALLATION**

1. **MOUNT FAN AND PULLEY (Figure A).**
   Torque to 50 ft. lbs. using locknut and hardened washer (A1) supplied on alternator shaft.

2. **MOUNT AND CONNECT REGULATOR (Figures B and C).**
   a. Position regulator plug and secure regulator with screws (B1) provided in regulator package. Regulator plug must be securely held in place by regulator (B2).
   b. Connect alternator plug 10 regulator plug (C1).

3. **POSITION GROUND LINK (Figure C).**
   Units are shipped with ground link installed for negative ground as shown (C2). Reverse connections for positive ground as indicated by dotted line (C3).

4. **INSTALL ALTERNATOR (Figure A).**
   a. Attach belt adjusting bracket with bolt (A2) included in parts package.
   b. Insert mounting bolt and hand tighten nut (A3). Bolt should be new and SAE Grade 5 or better. Nut should be self-locking or coated with Loctite Lock and Seal or equivalent.

5. **SET BELT TENSION (Figure A).**
   a. On engines where the belt drives only the alternator, use a belt tension gauge and set tension at 40 to 50 lbs. New belts should be set at 75 lbs. On engines where the belt also drives other accessories, consult manufacturer’s specifications. If belt tension gauge is not available, set tension so that fan cannot be turned by hand.
   b. Tighten bolt (A2) on belt adjusting bracket. Torque to 17 ft. lbs.
   c. Tighten mounting bolt (A3). Torque to 35 ft. lbs.

**WIRING**

**CAUTION** Connecting alternator improperly can cause serious damage.

1. For negative ground systems, connect existing battery wire to “BAT+” (D1) on alternator. For positive ground systems, connect battery wire to “BA-” on alternator. Be sure ground link is positioned correctly (C2 or C3).

2. On negative ground applications where a warning light is used, connect wire from “R” (D2) terminal on alternator to A2-250 relay (D3).

**CAUTION** Do not ground REL or R terminal to frame.

**NOTICE:** For isolated ground applications, discard ground link. Attach positive and negative leads directly to alternator.
TROUBLESHOOTING

If, after installation, the system does not meet specifications, proceed as follows:

1. Review installation instructions step by step.
2. Check all wiring for clean and secure connections.
3. Excite field coil to re-establish magnetic field in rotor core. See instructions below for details.
4. If system still does not operate properly, connect ammeter and voltmeter to alternator output. Set engine rpm to 1500 - 2000. Read amps and voltage and compare to chart below.

**AMPS**

<table>
<thead>
<tr>
<th>LOW or 0</th>
<th>NORMAL</th>
<th>27.0 (36.0)* to 29.6 (39.2)*</th>
</tr>
</thead>
</table>

Charging system operating properly.

**LOW or 0**

<table>
<thead>
<tr>
<th>LOW</th>
<th>LESS THAN 27.0 (38.0)*</th>
</tr>
</thead>
</table>

1. Check belt tension.
2. Bypass regulator. See Figure E below.

**HIGH**

<table>
<thead>
<tr>
<th>HIGH</th>
<th>MORE THAN 29.6 (39.2)*</th>
</tr>
</thead>
</table>

1. Check regulator connections and grounds.
2. If voltage is still high, replace regulator.

**HIGH**

<table>
<thead>
<tr>
<th>LOW</th>
<th>LESS THAN 27.0 (36.08*)</th>
</tr>
</thead>
</table>

Discharged or faulty battery.

*On 32 volt systems.

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**SYSTEM SPECIFICATIONS**

<table>
<thead>
<tr>
<th>ALTERNATOR MODEL</th>
<th>REGULATOR MODEL</th>
<th>MINIMUM WIRE GAUGE (AWG)</th>
<th>VOLTS</th>
<th>AMPS</th>
<th>GROUND</th>
<th>MINIMUM RPM</th>
<th>REGULATOR</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1-101</td>
<td>A2-101</td>
<td>10</td>
<td>24</td>
<td>30</td>
<td>NORP</td>
<td>10,000</td>
<td>2</td>
<td>27.6/29.0</td>
</tr>
<tr>
<td>A1-101</td>
<td>A2-103</td>
<td>10</td>
<td>32</td>
<td>30</td>
<td>NORP</td>
<td>10,000</td>
<td>2</td>
<td>36.8/36.4</td>
</tr>
<tr>
<td>A1-103</td>
<td>A2-101</td>
<td>6</td>
<td>24</td>
<td>50</td>
<td>NORP</td>
<td>10,000</td>
<td>2</td>
<td>27.6/29.0</td>
</tr>
<tr>
<td>A1-105</td>
<td>A2-108</td>
<td>4</td>
<td>24</td>
<td>65</td>
<td>NORP</td>
<td>10,000</td>
<td>2</td>
<td>27.6/29.0</td>
</tr>
</tbody>
</table>

**RE-ESTABLISHING MAGNETIC FIELD**

There are several conditions which may cause the alternator to lose its magnetic field. To re-establish the magnetic field, perform the following procedure:

1. With engine running, disconnect plug between alternator and regulator and momentarily touch the male terminal (E1) from the alternator plug to the negative output stud (E2) on the alternator (Figure E).

**CAUTION** Touch regulator terminal to negative output stud only momentarily, to avoid possible alternator damage.

2. If no output is obtained, see Service Manual for specific alternator test.

**FAN AND PULLEY INFORMATION**

Use Fan & Pulley Assembly A3-300, A3-301, A3-302, A3-303, or Fan A3-101 with A3-403 Bushing and A3-202 or A3-203 Pulley. Any keyed alternator pulley with appropriate dimensions can be used with A3-403 Bushing and A3-101 Fan.