C804 Alternator Installation

The C804 alternator is a 28 volt, 525 amp alternator. Follow these instructions to ensure proper installation.

1. If alternator does not include a factory-installed pulley, remove factory-installed pulley nut, disc spring washer, and shaft collar. Discard shaft collar. Make sure Woodruff key is securely wedged in slot in shaft.
2. Install pulley on shaft and secure with disc spring washer and flange nut. Torque flange nut to 63 Nm/120 lb ft.

**CAUTION** Do not hammer pulley when installing it on shaft. Damage to alternator may occur.

3. Install alternator on mount according to vehicle manufacturer specifications. Use hardened flat washers between mounting surfaces and bolt heads or lockwashers. Mounting bolts should be SAE property class Grade 5, minimum.
4. Tension belt to vehicle manufacturer recommendation.

**CAUTION** All cables and wires must be supported within 300 mm in (12 in.) or terminals to prevent rotation, loosening, and damage to terminals.

5. Connect B+ battery cable from vehicle to B+ terminal on alternator as shown in Figure 1. Secure it with mounting hardware in stacking order shown in Figure 2. Torque hardware to 30 Nm/22 lb ft.
6. Connect B- battery ground cable to ground terminal on alternator as shown in Figure 1. Secure it with mounting hardware in stacking order shown in Figure 3. Torque hardware to 15 Nm/11 lb ft.
7. If replacing regulator, or if regulator was supplied separately, follow regulator installation instructions on page 2.

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**Figure 1:** C804 Alternator (with smart regulator installed)

**Figure 2:** B+ Terminal Hardware Stacking Order

**Figure 3:** B- Terminal Hardware Stacking Order
Regulator Installation

Smart regulators can control multiple alternators in parallel and automatically optimize charge voltage for battery type, based on temperature if connected to a temperature-voltage sense/J1939 harness. If a temperature-voltage sense/J1939 harness is not connected to a smart regulator, regulator will operate at a fixed voltage determined by setpoint of voltage selection switch located on bottom of regulator. See Figure 4. Conventional regulators do not have temperature-voltage sense/1939 capability.

**CAUTION** All cables and wires must be supported within 300 mm in (12 in.) to prevent rotation, loosening, and damage to terminals.

1. Before installing regulator, turn it over and make sure setpoint of voltage switch on bottom of regulator is appropriate for type of battery used. If necessary, change switch setpoint. See column 2 in Table 1 for setpoint options. Factory setpoint is position 1.

<table>
<thead>
<tr>
<th>Switch Setting</th>
<th>Voltage (Harness Not Connected)</th>
<th>Battery Type (Harness Connected)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position 1</td>
<td>27.5V</td>
<td>Maintenance (D Category)</td>
</tr>
<tr>
<td>Position 2</td>
<td>28.0V</td>
<td>Maintenance-Free (Group 31)</td>
</tr>
<tr>
<td>Position 3</td>
<td>28.5V</td>
<td>AGM</td>
</tr>
<tr>
<td>Position 4</td>
<td>29.0V</td>
<td>29.0V Flat</td>
</tr>
</tbody>
</table>

2. Connect alternator-to-regulator harness to connector 1 on regulator. See Figures 5 and 6.

3. If installing alternators in parallel applications, install an interconnect harness between smart regulators at connector 2. Make sure voltage switch setpoint is the same for both regulators. Interconnect harness sold separately.

4. Mount regulator on alternator and secure with 4 flange lock screws. Torque screws to 8.5 Nm/75 lb. in. See Figures 5 and 6.

5. Refer to Figures 5 and 6 and connect regulator to charging system as follows:
   a. Connect switchable ignition to IGN terminal if required to energize regulator.

   **NOTICE** Voltage should be present at IGN terminal when ignition is on or engine is running. No voltage should be present when ignition is off or engine is not running.

   b. Connect D+ wire to D+ terminal, if required (DC voltage source, 5A maximum).

   c. Connect tachometer to P terminal, if required. P terminal taps AC voltage, typically half the charge voltage (3A maximum).

   **NOTICE** If using a controller, controller relay coil must be diode-protected and properly rated.

   d. Plug alternator-to-regulator harness into connector 1.

   e. If installing a smart regulator with a temperature-voltage sense/J1939 harness, plug harness into connector 2. Harness sold separately.