



C811 Alternator Installation

The C811 alternator is a 28 volt, 525 amp, hinge mount alternator. C811 alternators are compatible with conventional and smart regulators. Smart regulators are capable of temperature/voltage compensation and J1939 communication. Follow these instructions to ensure proper installation.

1. If alternator does not include a factory-installed pulley, remove factory-installed shaft collar, flange nut, and disc spring washer. Discard shaft collar. Make sure Woodruff key is securely wedged in slot in shaft.
2. Ensure fan is fully seated and spins freely. Then install pulley on shaft. Install pulley on shaft and secure with disc spring washer and flange nut. Torque flange nut to 163 Nm/120 lb ft.

CAUTION Do not hammer pulley when installing it on shaft. Carefully slip-fit pulley to prevent shaft from moving out of place.

3. Install alternator on mount according to vehicle manufacturer's specifications. Use hardened washers between mounting surfaces and bolt heads or lock washers. Bolts should be grade 5, minimum.

4. Tension belt to vehicle manufacturer's recommendation. If an automatic belt tensioner is used, 80–120 lbs. of tension is typical.

CAUTION All cables and wires must be supported within 305 mm in (12 in.) of 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.

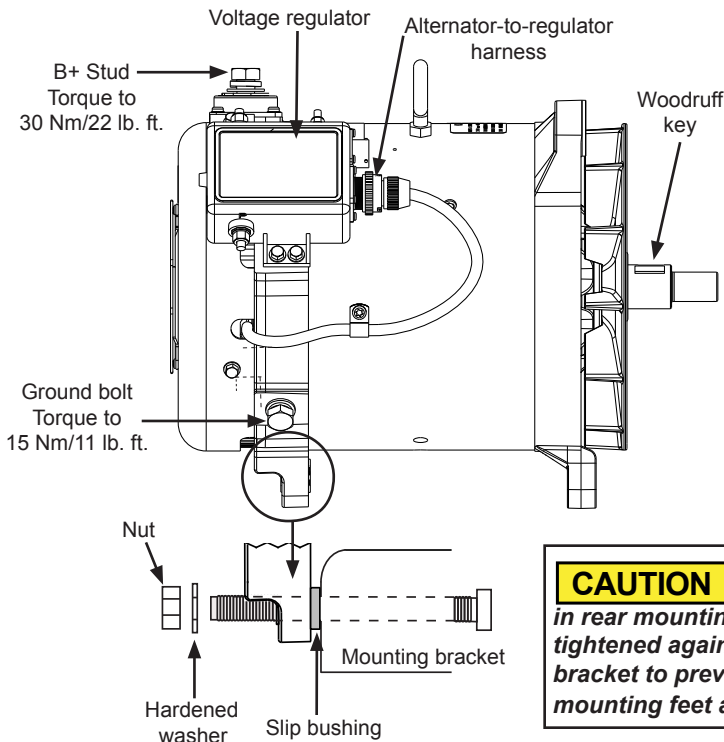


Figure 1: C811 Alternator Installation

CAUTION Slip bushing in rear mounting foot must be tightened against mounting bracket to prevent damage to mounting feet and bracket.

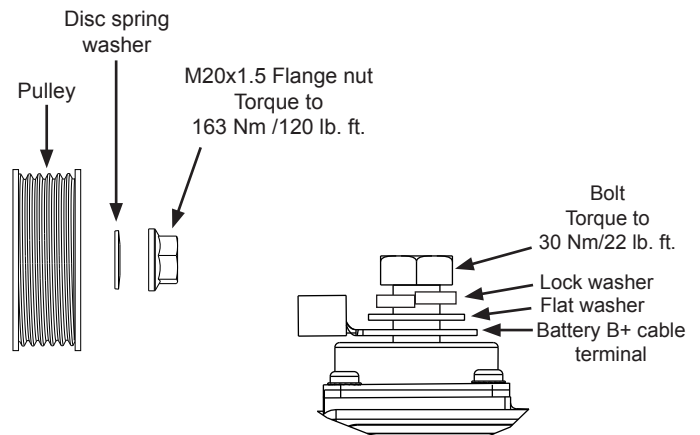


Figure 2: Alternator B+ Terminal Hardware Stacking Order

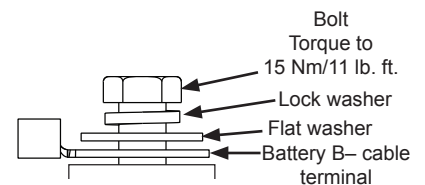


Figure 3: Alternator B– Terminal Hardware Stacking Order

CEN Regulator Installation

1. Regulator has four selectable set points. Before installing regulator, verify appropriate switch setting for your application and change if necessary. See Figure 4 and Table 1 for fixed voltage set point options when used without battery sensor/harness. See Table 2 for battery chemistry-based charge profiles when used with compatible CEN battery sensor/harness. **Contact battery manufacturer or vehicle OEM for charging set point recommendations for your environment or application, if necessary.**
2. Mount regulator on alternator or remotely¹ and torque mounting screws to 8.5 Nm/75 lb. in.
3. Plug alternator-to-regulator into receptacle on regulator. See Figures 5 and 6 for receptacle location.
4. Connect regulator terminals as required by vehicle:
 - **IGN terminal (required):** Regulator IGN terminal must receive voltage from vehicle DC ignition source, typically oil pressure switch or multiplex, in order to energize regulator. Torque terminal hardware to 4.5 Nm/40 lb. in.

- **D+ terminal (if required):** D+ terminal provides DC system battery voltage (5A maximum) to vehicle charge indicator lamp, relay, or multiplex while alternator is producing output. Torque terminal hardware to 4.5 Nm/40 lb. in.
- **P terminal (if required):** P terminal taps AC voltage from alternator, typically half the charge voltage (3A maximum), for use with a tachometer. Torque terminal hardware to 4.5 Nm/40 lb. in.

NOTICE If using relay for R/P/AC circuit, coil must be diode-protected and properly rated.

5. If using a J1939/temperature-voltage sense harness, plug it into J1939/sense harness connector on regulator. See Figure 6 for regulator connector location. Refer to installation instructions included with harness for more information. Harness sold separately².

¹Contact CEN for regulator extension harness options.

²Contact CEN for alternative sensor/harness options.

NOTICE Voltage should be present at regulator IGN terminal when ignition is on or engine is running.

No voltage should be present when ignition is off or engine is not running.

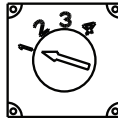


Figure 4: Voltage Setpoint Switch (Located on bottom of regulator)

Switch Position	Conventional Regulator Set Point or Smart Series with <u>no Sensor/Harness Connected</u>
1	27.5 V
2	28.0 V
3	28.5 V
4	29.0 V

Switch Position	Battery profile for Smart Series Regulators with <u>Sensor/Harness Connected</u> ²
1	Maintenance (D category)
2	Maintenance-free (Group 31)
3	AGM
4	29.0 fixed

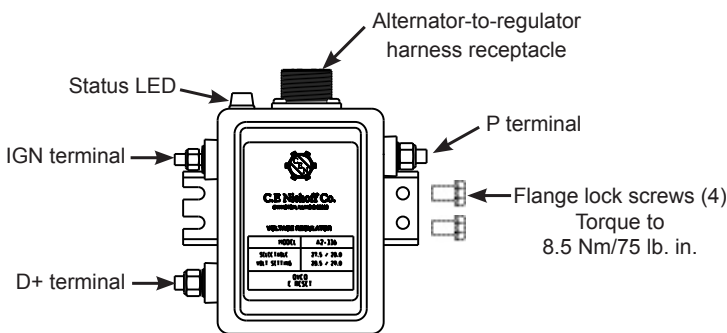


Figure 5: Conventional Regulator

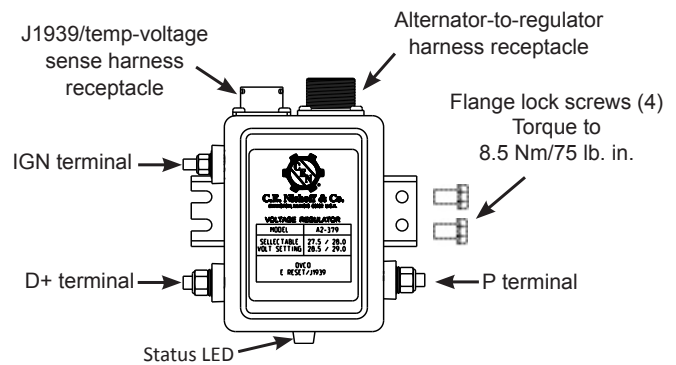


Figure 6: Smart Regulator

If you have questions about your alternator or any of these instructions, or if you need to locate a Factory authorized Service Distributor, please contact us at:
 C. E. Niehoff & Co. • 2021 Lee Street • Evanston, IL 60202 USA
 TEL: 800.643.4633 USA and Canada • TEL: 847.866.6030 outside USA and Canada • FAX: 847.492.1242
 E-mail us at service@CENiehoff.com