



C681 Alternator Installation

CEN model C681 is a custom pad mount, negative ground alternator rated at 14V/430A. Follow these instructions to ensure proper installation.

1. Alternators not shipped with pulley are shipped with shaft collar, disc spring washer, and nut installed. Remove and discard shaft collar. Make sure Woodruff key is securely wedged in slot in shaft.
2. Install pulley and furnished disc spring washer with beveled side facing pulley. Torque pulley nut to 163 Nm/120 lb. ft. See Figure 1.

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

3. Install alternator on mounting bracket according to vehicle manufacturer's specifications. Use hardened flat washers between mounting surfaces and bolt heads or lockwashers. Mounting bolts should be Grade 5, minimum.

4. Tension belt to vehicle manufacturer's specifications.
5. Connect vehicle B+ cable to alternator B+ terminal. Install hardware on B+ terminal in stacking order shown in Figure 2. Torque to 30 Nm/22 lb. ft.
6. Connect vehicle B- cable to alternator B- terminal. Install B- hardware in stacking order shown in Figure 3. Torque to 15 Nm/11 lb. in.

NOTICE Wire gauge must be capable of handling maximum alternator output with minimum voltage drop. All cables must be supported within 300 mm (12 in.) to prevent twisting, loosening, and damage to terminals.

7. Connect alternator-to-regulator harness to regulator as shown in Figure 1.
8. If regulator was supplied separately, install regulator according to instructions on page 2.

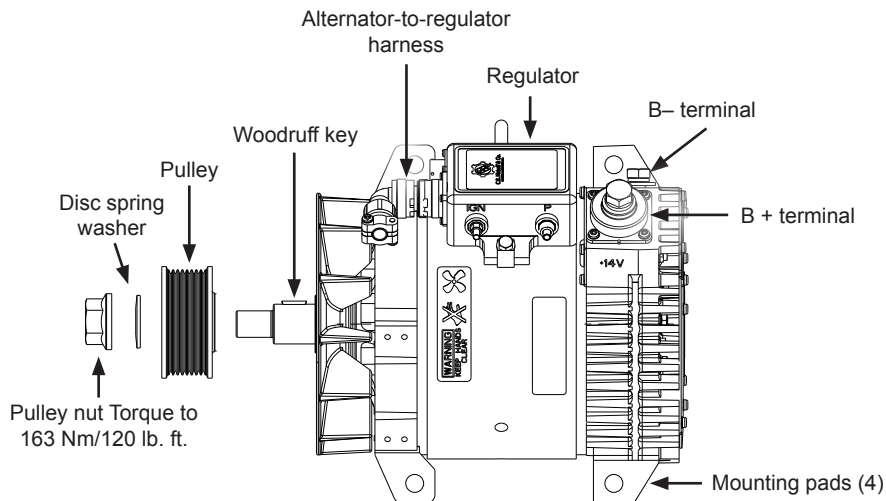


Figure 1: C681 Alternator Connections

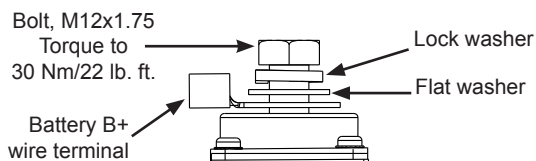


Figure 2: B+ Terminal Hardware Stacking Order

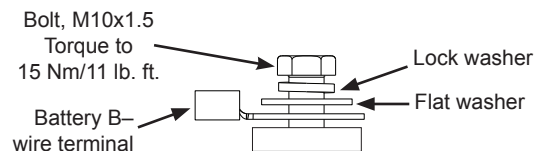


Figure 3: B- Terminal Hardware Stacking Order

Regulator Installation

1. Turn regulator over and make sure set point of switch at bottom of regulator is appropriate for type of battery used in vehicle . If necessary, change switch set point. See Figure 4 and Table 1 for voltage set point options.
2. Mount regulator on alternator or remotely¹ if applicable. Torque mounting screws to 8.5 Nm/75 lb. in.
3. Securely plug alternator-to-regulator harness into receptacle on regulator. See Figure 5 for receptacle location.
4. Connect regulator terminals as required by vehicle:
 - **IGN terminal** (required) must receive voltage from vehicle switched DC ignition source or multiplex in order to energize regulator. Torque to 4.5 Nm/40 lb. in. See Figure 5.

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.

- **P/AC terminal** (if required) taps AC voltage from alternator, typically half the charge voltage (3A maximum). P/AC terminal provides alternator RPM frequency at 10:1 ratio for use with tachometer. Torque terminal hardware to 4.5 Nm/40 lb. in. See Figure 5.

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 J1939 harness into J1939 receptacle on regulator. See Figure 5 for receptacle location. Reference installation instructions included with harness for more information. Harness sold separately^{2,3}.

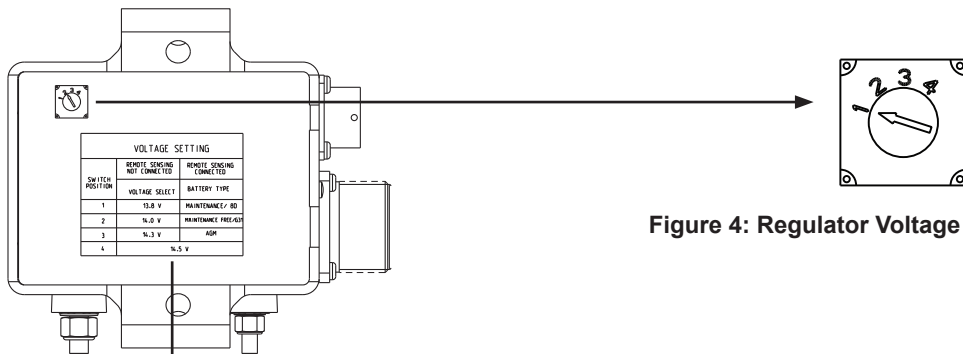


Figure 4: Regulator Voltage Selection Switch

Table 1: Regulator Switch Settings		
Position	Remote Sensing Not Connected	Remote Sensing Connected ¹
1	13.8 V	Maintenance (8D)
2	14.0 V	Maintenance-free (G31)
3	14.3 V	AGM
4	14.5 V Flat	

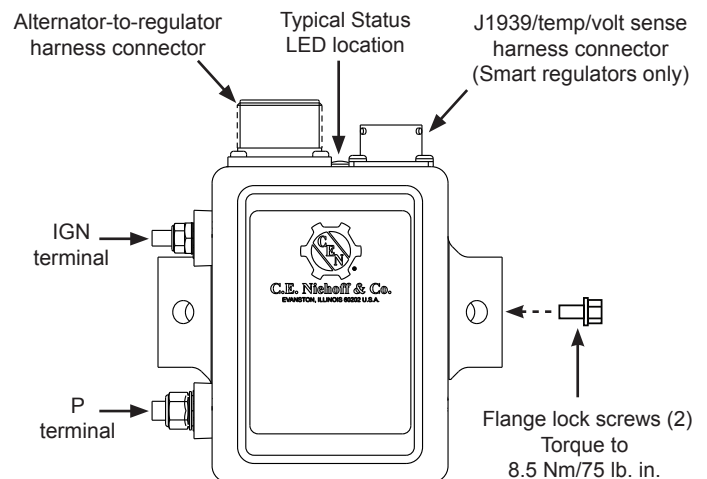


Figure 5: Typical Regulator Connections

1. Contact CEN for regulator extension harness options.
2. Contact CEN for alternative sensor/harness options

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