C.E. Niehoff & Co.
CHARGING AND POWER MANAGEMENT SOLUTIONS®

C736/C736L Alternator

Installation Instructions

C736/C736L Alternator Installation

CEN models C736/C736L are negative ground, custom flange-mount alternators, rated at 28V/370A. Follow these instructions to ensure proper alternator installation.

1. Alternators not shipped with pulley are shipped with cardboard shaft collar, disc spring washer, and flange nut installed. Remove and discard shaft collar. Make sure Woodruff key is securely wedged and level in shaft slot.
2. Install pulley with furnished disc spring washer (with beveled side facing pulley) and flange nut. 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 lock washers. Mounting bolts should be property class 10.9, minimum.

CAUTION ***Slip bushings in rear mounting foot must be tightened against mounting bracket to prevent damage to mounting feet and bracket. See Figure 1 detail image.***

4. Tension belt to vehicle manufacturer's specifications. Typical belt tension is between 80-120 lbs. nominal.
5. Connect vehicle B+ cable to alternator B+ terminal following stacking sequence shown in Figure 2. Torque to 30 Nm/22 lb. ft.
6. Connect vehicle B– cable to alternator B– terminal following stacking sequence shown in Figure 3. Torque to 15 Nm/11 lb. ft.

NOTICE *Wire gauge for alternator output and interconnect cables must be capable of handling maximum alternator output with minimum voltage drop. All cables must be supported within 305 mm (12 in.) to prevent twisting, loosening, and damage to terminals.*

7. Install regulator according to instructions on page 2.

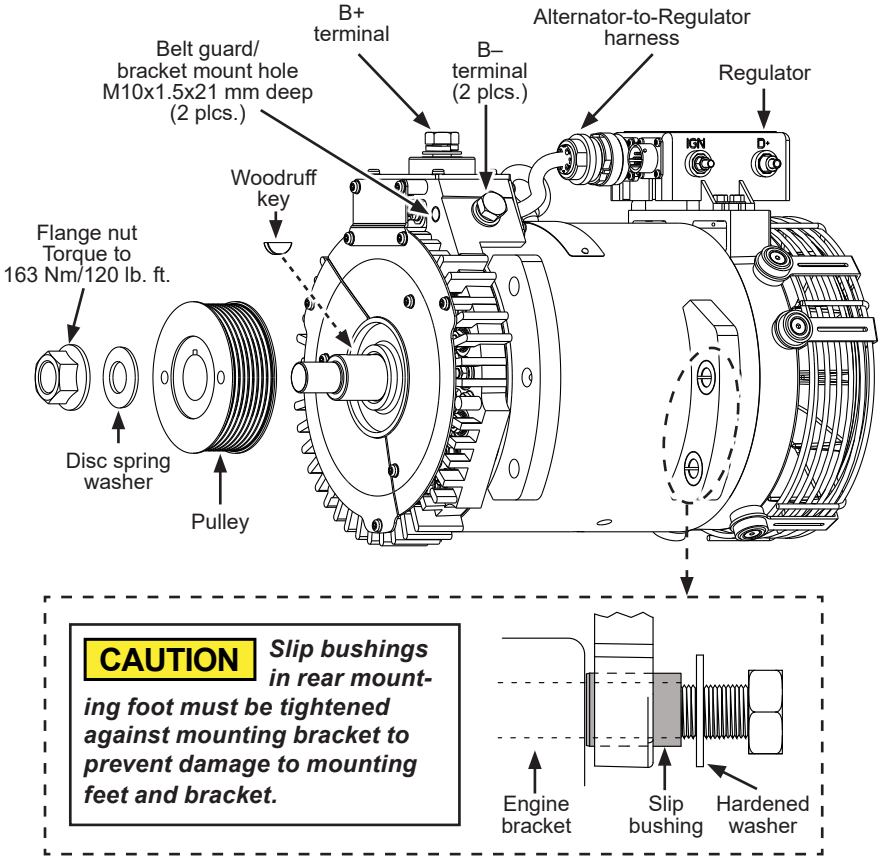

Figure 1: C736/C736L Alternator Installation

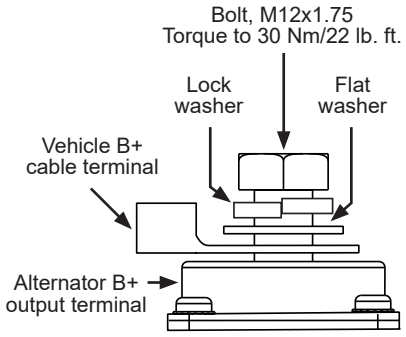

Figure 2: B+ Terminal Hardware Stacking Order

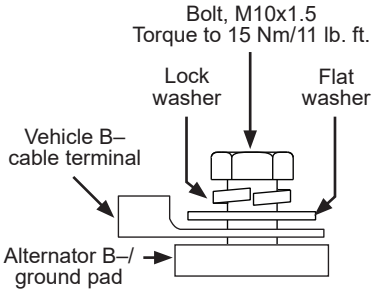

Figure 3: B– Terminal Hardware Stacking Order

Regulator Installation

C736/C736L may ship with voltage regulator already installed. If regulator is provided separately, follow instructions below for proper 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 anti-drive end (ADE) housing as shown in Figure 1 with included hardware shown in Figure 5. Alternatively, regulator may be mounted remotely with compatible extension harness[1]. Torque screws to 8.5 Nm/75 lb. in.
3. Securely plug alternator-to-regulator harness from alternator into receptacle on regulator. See Figure 5 for receptacle locations.

Figure 4: Battery Voltage/Charge Profile Select Switch (on bottom of regulator)

Table 1: Regulator Fixed Voltage Switch Settings	
Switch Position	Voltage Set Point for Smart Series Regulators ***with no Sensor/Harness Connected***
1	27.5 V
2	28.0 V
3	28.5 V
4	29.0 V

Table 2: Regulator Battery Profile Switch Settings	
Switch Position	Battery Profile for Smart Series Regulators ***with Sensor/Harness Connected***[2]
1	Maintenance (D category)
2	Maintenance-free (Group 31)
3	AGM
4	29.0 fixed

4. Connect regulator terminals as required by vehicle, starting with ring terminal, followed by disc spring washer and nut:
   - **IGN/E terminal** (required) must receive battery voltage from vehicle switched DC ignition source or multiplex in order to energize regulator. Torque terminal hardware 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.*

   - **D+ terminal** (if required) 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) taps AC voltage from alternator, typically half the charge voltage (5A maximum). P 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 P/AC circuit, appropriate coil suppression may be necessary depending on relay type and application.*

   - If using a J1939/temperature/voltage sense harness, plug J1939/sense harness into J1939/sense receptacle on regulator. See Figure 5 for receptacle location. Refer to instructions included with harness for more information. Harness/sensors available separately[2].

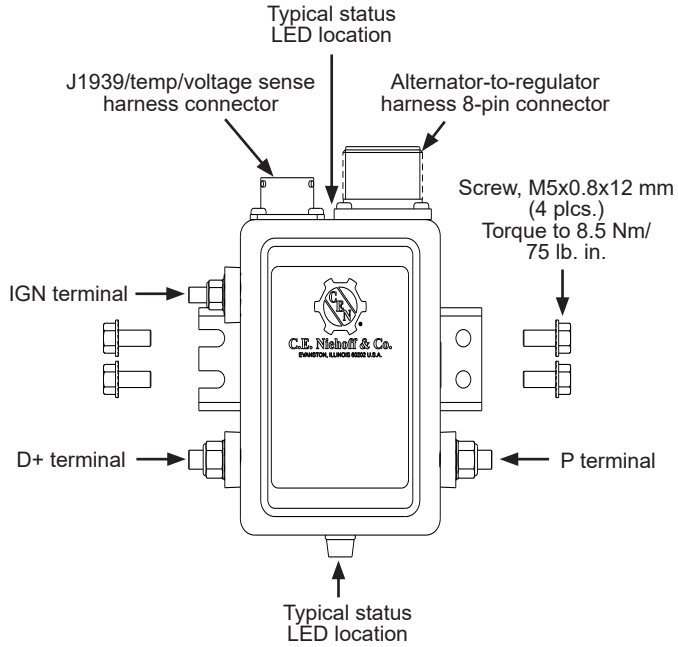

Figure 5: Typical 28V Regulator Connections/Features

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:
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