



N1602 Alternator Installation

CEN model N1602 is a hinge mount, negative ground alternator rated at 28V/400A. N1602 can provide dual voltage output (up to 400 amps on 28V circuit combined with 50A max on 14V circuit.) with compatible regulator. Follow these instructions to ensure proper installation.

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

NOTICE N4067 8-groove pulley requires N9789 spacer (not shown) between pulley and flat washer.
For N7164 clutch pulley, see installation instructions I1363.

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 grade 5 (metric grade 8.8), minimum.
4. Tension belt to vehicle manufacturer's specifications. Typical belt tension is between 80-120 lbs. nominal.
5. Connect vehicle B+ cables and an interconnect cable to alternator B+ terminals (2) as shown in Figure 1. Follow stacking sequence shown in Figure 2. Torque to 20 Nm/15 lb. ft.
6. Connect vehicle B- cables and an interconnect cable to alternator B- terminals (2) as shown in Figure 1. Follow stacking sequence shown in Figure 3. Torque to 9 Nm/80 lb. in.

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.

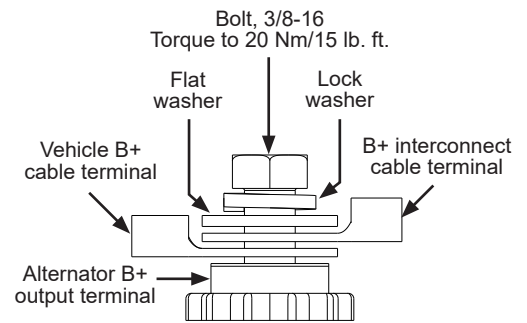
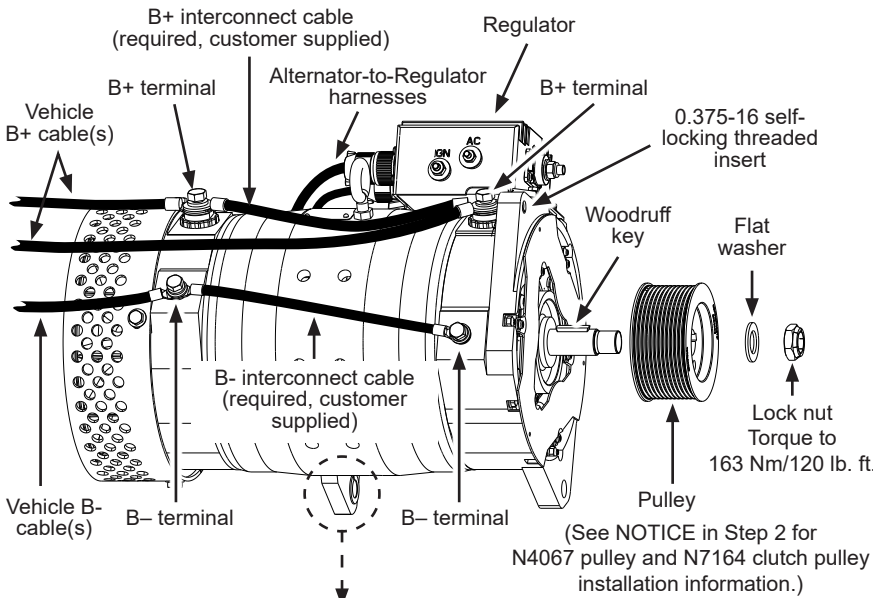


Figure 2: B+ Terminal Hardware Stacking Order

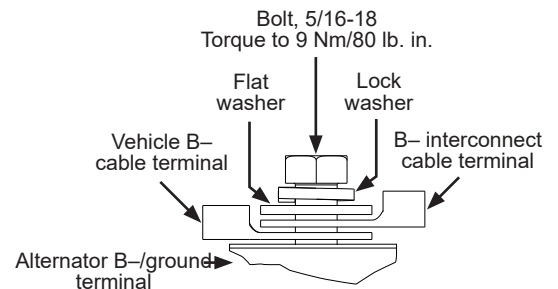
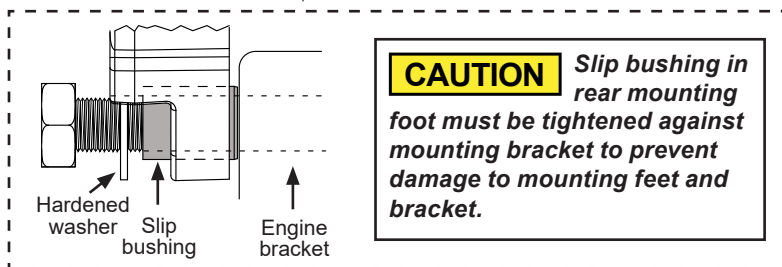


Figure 3: B- Terminal Hardware Stacking Order



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

Figure 1: N1602 Alternator Installation

Regulator Installation

N1602 may ship with different voltage regulator options. Contact CEN and see model-specific regulator drawings for a full list of features.

NOTICE For 32109 regulator, see installation instructions I1353, included with regulator.

Some regulators have adjustable charge profile switch set points. If applicable, set switch on bottom of regulator to proper position for the application before installation. See Figure 4 and Table 1.

1. Mount regulator on alternator with included hardware as shown in Figure 5. Torque 0.25-28 screw to 8.5 Nm/75 lb. in and 10-32 screws (2) to 3.4 Nm/30 lb. in.
2. Securely plug alternator-to-regulator harnesses into receptacles on regulator. See Figures 6 and 7 for receptacle locations.
3. Connect regulator terminals as required by vehicle:
 - **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 3.4 Nm/30 lb. in. See Figures 6 and 7.

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.



Figure 4: Battery Charge Profile Select Switch (some models)

| Position | Battery Type and Location |
|----------|---------------------------|
| 1 | Hawker/6TAGM Only |
| 2 | 6TMF Only |
| 3 | Hawker/6TAGM & 6TMF |
| 4 | Other Types |

- **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 3.4 Nm/30 lb. in. See Figures 6 and 7.

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

- **+14V terminal** (dual voltage regulators only) must be connected to battery +14V stud to equalize battery pack where both 28V and 14V loads are used. Torque terminal hardware to 5.7 Nm/50 lb. in. See Figure 7.
- If using a J1939/temperature/voltage sense harness, plug J1939/sense harness into J1939/sense receptacle on regulator. See Figures 6 and 7 for receptacle locations. Refer to instructions included with harness for more information. Harness available separately*.

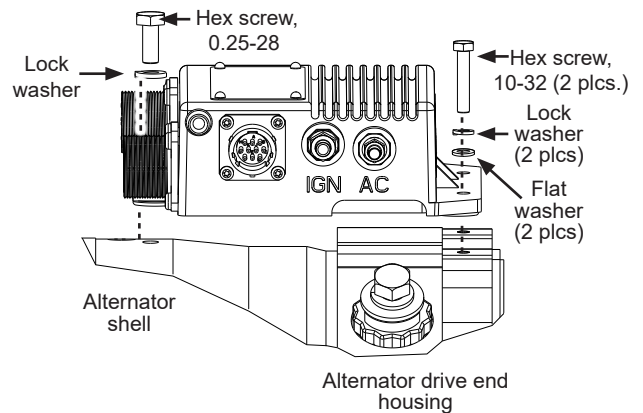


Figure 5: Regulator Mounting Hardware

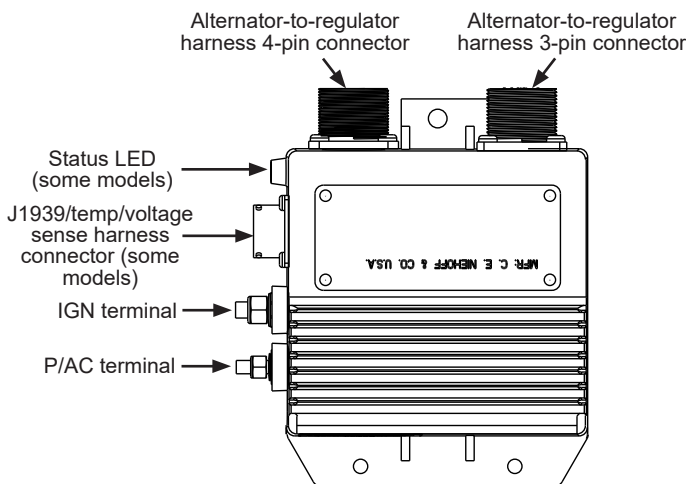


Figure 6: Typical 28V Regulator Connections

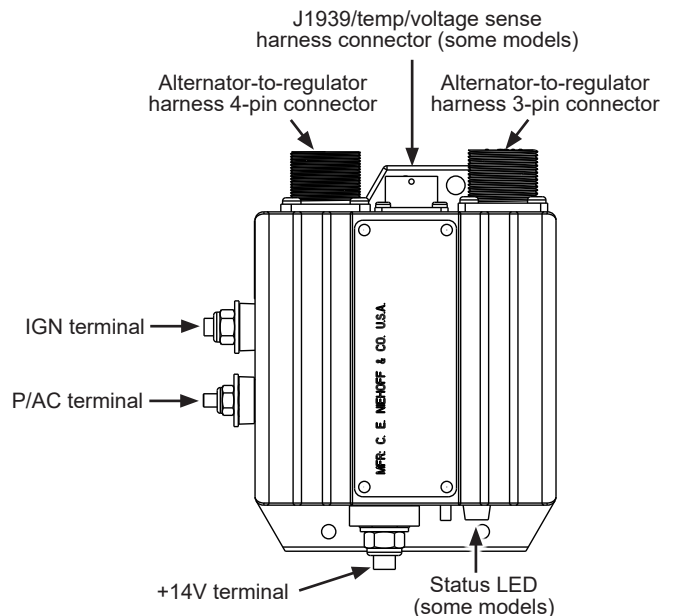


Figure 7: Typical Dual Voltage (28/14V) Regulator Connections

*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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