



N1245 Alternator Installation Instructions

CEN alternator model N1245 is a hinge mount, negative ground alternator rated at 28 volts/ 260 amps. N1245 alternators may ship in configurations (N1245-x) that will include any combination of regulator, pulley, fan guard, etc. installed. To insure proper installation, follow instructions below.

1. N1245 alternator will ship with fan guard installed in one of two configurations. See Figure 1. If your application requires the fan to be moved to the other location before installation:
 - a. Carefully remove the three screws, flat washers, and spacers securing fan guard to alternator anti-drive end (ADE) housing. Be careful not to let any of the hardware fall into alternator.
 - b. Reposition fan guard as required with hardware stacked as shown in Figure 2. Apply a threadlocker such as Loctite® 222 or equivalent on screw threads per manufacturer's instructions. Torque screws to 7.4 Nm/65 lb. in.
2. Alternators shipped without pulley are shipped with shaft collar, flat washer, and lock nut installed. If pulley is already installed, skip to step 3. Otherwise:
 - a. Remove and discard shaft collar. Make sure Woodruff key is level and securely wedged in slot in shaft.
 - b. Install pulley with flat washer and lock nut. Torque pulley nut to 163 Nm/120 lb. ft. See Figure 3.

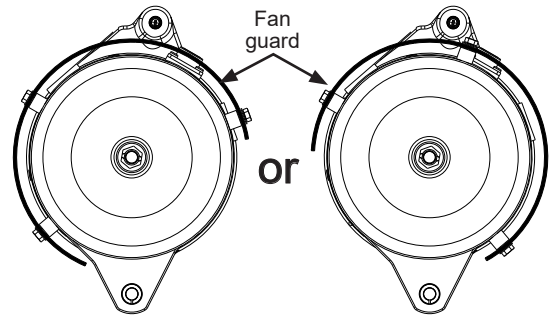


Figure 1: N1245 Fan Guard Mounting Options Anti-Drive End (ADE) View

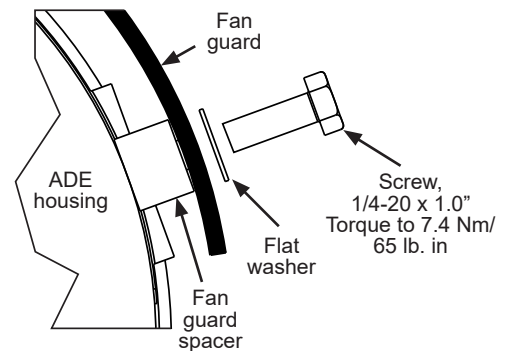


Figure 2: N1245 Fan Guard Hardware Stacking Order

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/engine manufacturer's instructions and specifications. Use hardened flat washers between mounting surfaces and bolt heads or lock washers.

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

NOTICE See CEN service bulletin SB48 for instructions if split bushing needs to be reset or moved to other side of mounting foot prior to installation.

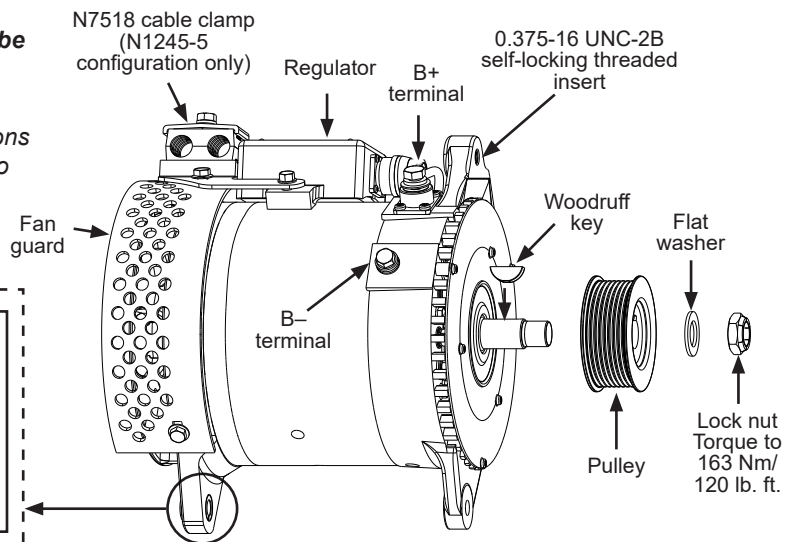
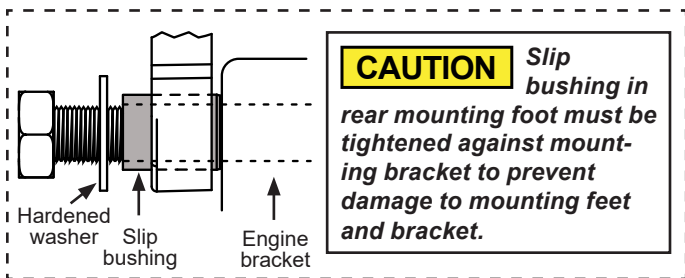


Figure 3: Typical N1245 Alternator Installation (side view)

- Install drive belt per engine manufacturer's instructions. Typical belt tension is between 80-120 lbs nominal.
- Connect vehicle B+ cable to alternator B+ terminal (see Figure 3 for terminal location). Install hardware on B+ terminal in stacking order shown in Figure 4. Torque to 15 Nm / 11 lb. ft..
- Connect vehicle B- cable to alternator B- terminal (see Figure 3 for terminal location). Install hardware on B- terminal in stacking order shown in Figure 5. Torque to 9 Nm / 80 lb. in.

NOTICE Wire gauge 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.

- Install regulator according to the following:
 - For N3044 regulator, see instructions below.
 - For N3043 regulator, see instructions on page 3.
 - For N3261 regulator, see instructions on page 4.

N3044 Regulator Installation

- N3044 regulator has four selectable set points. Before installing regulator, verify appropriate switch setting for your application on bottom of regulator and change if necessary. See Figure 6 and Table 1 for fixed voltage set point options. **Contact battery manufacturer or vehicle OEM for charging set point recommendations for your environment or application if necessary.**
- Mount regulator on alternator shell with included screws and lock washers in location best suited to the application. See Figure 7. Torque mounting screws to 8.5 Nm/75 lb. in.
- Plug alternator-to-regulator harness into receptacle on regulator. See Figure 8 for receptacle location.
- Connect regulator terminals as required by vehicle:
 - Regulator IGN terminal (required) must receive voltage from vehicle DC ignition source or multiplex system in order to energize charging system. Torque to 3.4 Nm/30 lb. in. See Figure 8.

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.

- Regulator D+ terminal (if required by vehicle) provides DC system battery voltage to vehicle (5A maximum) for charge indicator lamp, relay, or multiplex while alternator is producing output. Torque terminal hardware to 3.4 Nm/30 lb. in. See Figure 8.
- Regulator P/AC/R terminal (if required by vehicle) taps AC voltage from alternator, typically half the charge voltage (5A 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 Figure 8.

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

Switch Position	Set point
1	27.5 V
2	28.0 V
3	28.5 V
4	29.0 V

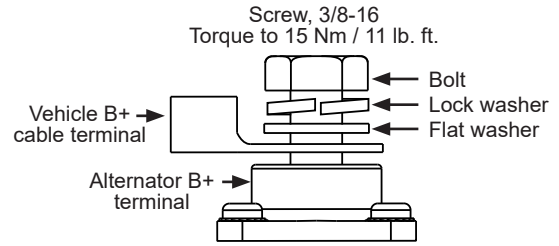


Figure 4: B+ Terminal Hardware Stacking Order

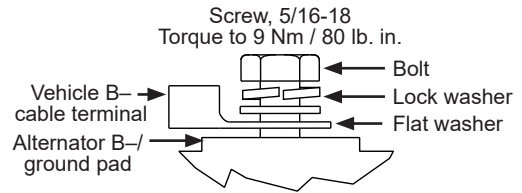


Figure 5: B- Terminal Hardware Stacking Order

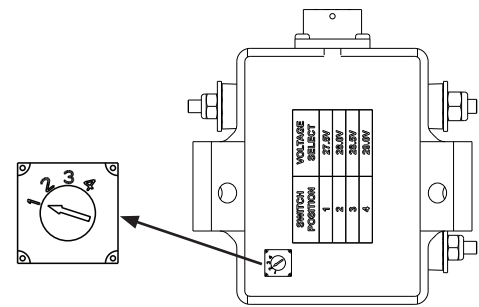


Figure 6: N3044 Regulator Voltage Selection Switch (on bottom of regulator)

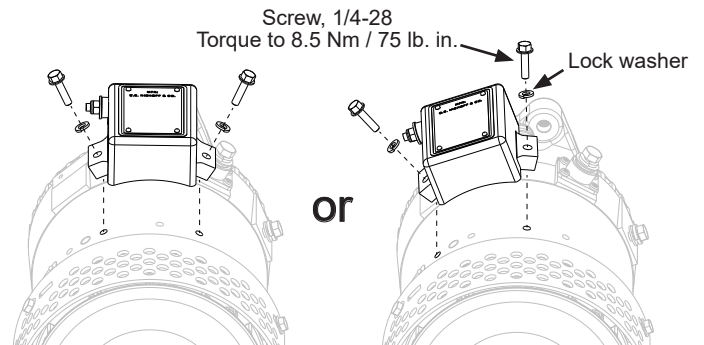


Figure 7: Regulator Mounting Location Options (drive-end view)

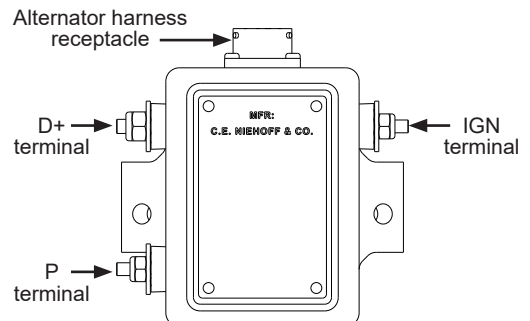


Figure 8: N3044 Regulator Connections

N3043 Regulator Installation

- N3043 Regulator has four selectable set points. Before installing regulator, verify appropriate switch setting for your application on bottom of regulator and change if necessary. See Figure 9 and Table 2 for fixed voltage set point options. Contact battery manufacturer or vehicle OEM for charging set point recommendations for your environment or application if necessary.
- Mount regulator on alternator shell in location best suited to the application:
 - If installing regulator without N7518 cable clamp bracket, Install regulator in appropriate location using screws and lock washers included with regulator as shown in Figure 10. Torque screws to 8.5 Nm/75 lb. in.
 - If installing regulator with N7518 cable clamp bracket:
 - Remove screw and flat washer from fan guard location as shown in Figure 11. Make sure spacer between fan guard and ADE housing doesn't fall into alternator.
 - Place regulator on shell with N7518 bracket positioned on top as shown in Figure 11. Fasten regulator and bracket to shell with the two 1/4-28 screws and lock washers included with the regulator. Torque screws to 8.5 Nm/75 lb. in.
 - Make sure fan guard spacer is in place and fasten other bracket mounting hole with fan guard to ADE housing with previously removed 1/4-20 screw and flat washer. Torque screw to 7.4 Nm/65 lb. in.
 - Route vehicle B+ and B- cables between the two plastic inserts on N7518 bracket. Place cover plate on top and torque 5/16-18 screw and lock washer to 5 Nm/45 lb. in.
- Plug alternator-to-regulator harness into receptacle on regulator. See Figure 8 for receptacle location.
- Connect regulator D+ terminal (if required by vehicle). D+ terminal provides DC system battery voltage to vehicle (5A maximum) for charge indicator lamp, relay, or multiplex while alternator is producing output. Torque terminal hardware to 3.4 Nm/30 lb. in. See Figure 9.

Switch Position	Set Point
1	27.5 V
2	28.0 V
3	28.5 V
4	29.0 V

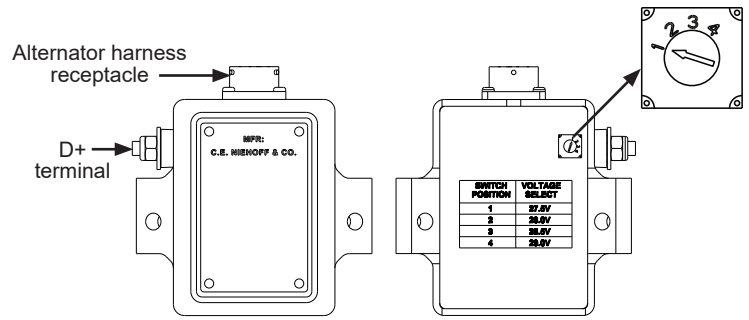


Figure 9: N3043 Regulator Connections and Voltage Selection Switch

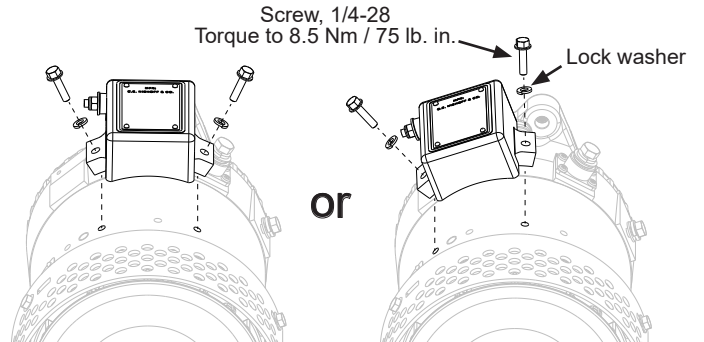


Figure 10: Regulator Mounting Location Options (anti-drive end view)

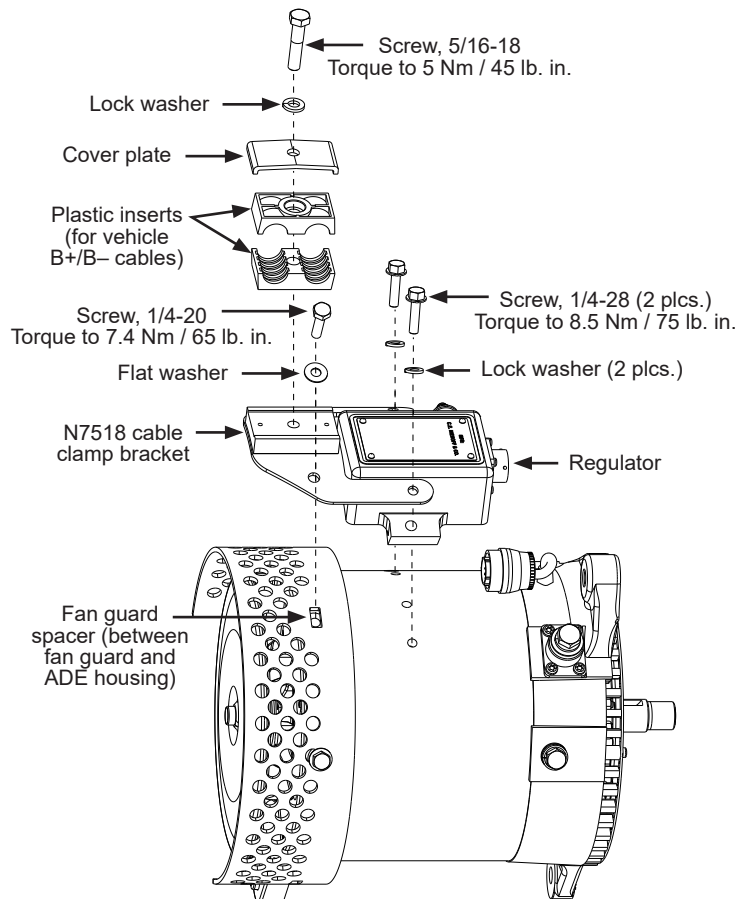


Figure 11: Regulator Installation with N7518 Bracket

N3261 Regulator Installation

N3261 regulator has a fixed voltage set point of 28.0 VDC unless connected to a compatible CEN temperature/voltage sensor or harness. When used with compatible CEN remote harness or sensor, regulator will automatically adjust voltage setting (continuously variable between 27.2 and 30.0 VDC) This regulator also broadcasts charging system data via J1939 when connected to regulator 10-pin connector. Contact CEN for regulator model-specific data sheet for complete list of regulator features and message table. Follow installations below for proper installation.

1. Mount regulator on alternator shell with included screws and lock washers in location best suited to the application. See Figure 12. Torque mounting screws to 8.5 Nm/75 lb. in.
2. Plug alternator-to-regulator harness into receptacle on regulator. See Figure 13 for receptacle location.
3. Connect regulator terminals as required by vehicle:
 - Regulator IGN terminal (required) must receive voltage from vehicle DC ignition source or multiplex system in order to energize charging system. Torque to 3.4 Nm/30 lb. in. See Figure 13.

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.*

- Regulator D+ terminal (if required by vehicle) provides DC system battery voltage to vehicle (5A maximum) for charge indicator lamp, relay, or multiplex while alternator is producing output. Torque terminal hardware to 3.4 Nm/30 lb. in. See Figure 13.
- Regulator P/AC/R terminal (if required by vehicle) taps AC voltage from alternator, typically half the charge voltage (5A 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 Figure 13.

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

4. If using a J1939/temperature/voltage sense harness:
 - a. Unscrew J1939/temperature/voltage receptacle connector cap and secure the chain to a nearby cable or bracket with a cable tie. See Figure 13 for receptacle location.
 - b. Plug vehicle J1939 harness into J1939/temperature/voltage receptacle on regulator. Refer to installation instructions included with harness or contact CEN for more information. Harness sold separately.

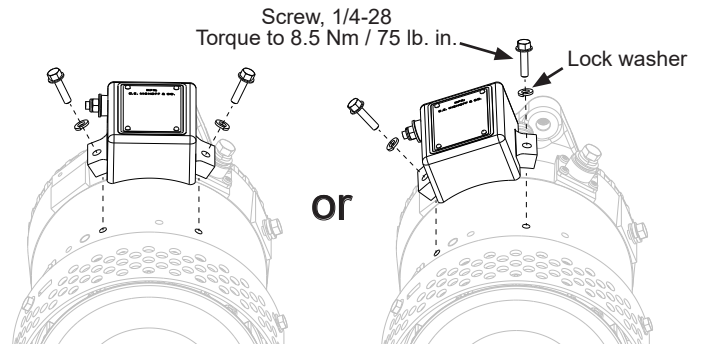


Figure 12: Regulator Mounting Location Options (anti-drive end view)

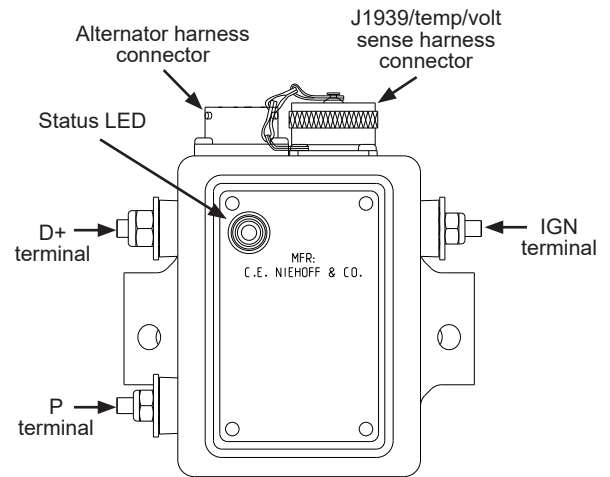


Figure 13: N3061 Regulator Connections

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