

General Removal & Installation Procedures for Most Heavy Duty Alternators

A. Removal Procedures

1. Disconnect negative battery cable. Note: there may be more than one negative battery cable if there are multiple batteries.
2. Remove wires from the alternator. If the alternator has more wires than simply an output and ground, make a note on the location of these extra wires (very important). (Figure 1)
3. If the vehicle is equipped with an automatic belt tensioner (Figure 2), using appropriate tools, loosen the tensioner and simply slide the belt off the alternator pulley and lay it aside so it is out of the way.
4. If the vehicle is not equipped with a belt tensioner, loosen the alternator mounting bolts but do not remove them at this time. This will allow the alternator to slide forward enough to slide the belt off the pulley.
5. Once the belt is off, remove the alternator mounting bolts.
6. Simply work the alternator away from the bracket, hoses and other surrounding items, and remove it from the engine.

Mark the wire as "BAT"

Mark the wire as "R"

Mark the wire as "I"



Figure 1



Figure 2

B. Installation Procedures

- 1. Inspect the old alternator to the new one and compare the following key items:**
 - a) Compare the dimensions of the original alternator to replacement. Review mounting dimensions and size of overall alternator.**
 - b) Compare the locations of the output post and any other terminals on the original alternator.**
 - c) Compare the pulley size and spacing.**
- 2. If you have to reuse the old pulley, make sure it is intact and shows no wear or damaged grooves.**
- 3. Removing the old pulley requires removing the nut and sliding the pulley off the shaft. If the pulley does not slide off, heat and a puller may be required for removal. Be careful not to damage the shaft in the process.**
- 4. If you think the old pulley cannot be removed easily and will be damaged during the process, make sure you order a new pulley from your supplier.**
- 5. Inspect the belt(s) for wear and integrity. Replace serpentine belts if there are more than 2 or 3 cracks per each inch of length of the belt and/or have chunks missing.**

B. Installation Procedures

6. V-belts must be replaced if they show any signs of glazing on the sidewalls or excessive cracks. For best results, replace the belt or belts during an alternator replacement. (Figure 3)
7. If the vehicle is equipped with an automatic belt tensioner, use a special tool (Figure 4) and be sure it can be moved through its entire deflection range without any binding. The idler pulley should spin freely and not be noisy.
8. Replace belt tensioner if any of the above problems exist. If ignored, the alternator may fail prematurely.
9. Maneuver the alternator into position and install mounting bolts but do not apply the final torque yet.
10. If the alternator has a SAE J-180 mount (two legs and one top bolt – Figure 5), make sure the front bolts (the ones closer to the fan) are tightened first and then tighten the rear bolt. The tightening of the rear bolt in most applications incorporates a sliding bushing. (Figure 6)



Figure 3



Figure 4



Figure 5



Figure 6

B. Installation Procedures

11. The previous procedures will prevent unnecessary pressure to the alternator's rear (SRE) housing and prevent breakage from improper torque sequence.
12. While installing quad-mount alternators (they have 4 mounting bolts – [Figure 7](#)), stagger the tightening sequence in an “X” pattern to even out the pressure on the alternator housing. ([Figure 8](#))
13. Check the alignment of the belts, alternator, and the drive pulley to ensure they are on the same plane of rotation and are not staggered.
14. Tighten the alternator output cable, ground wire and any other wires that you have taken off during the removal.
15. Ensure battery voltage (+B) is present at the output post with a voltmeter.
16. Start the engine and make sure the voltmeter on the instrument cluster is in the green range.
17. Check battery voltage with a voltmeter. Be sure the voltmeter reading is 13.8V or higher for the 12 volt system and 27.5V or higher for the 24 volt system.
18. Make sure the batteries are fully charged and do not allow the alternator to charge them. This will cause premature failure to the alternator.



Figure 7

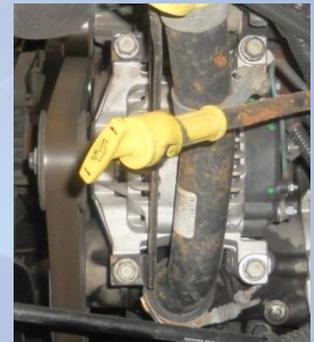


Figure 8