

Auto Alternator Check and Replacement

Mike Bumbeck



The electrical system in an automobile is comprised of three parts that must all function individually for the system to operate in balance. The battery is the first part. The battery stores electricity to spin the starter and start the engine when the ignition key is turned. The alternator is next in line.

Middle Manager

The alternator produces electricity once the engine is running. It gets its juice for making juice from a belt and pulley system driven by engine power. As well as producing electricity for heated seats, turn signals, and the four in-seat DVD players, the alternator also sends extra electricity to the battery for storage. The battery can also help out during times of heavy electrical demand. The third component is the voltage regulator. The aptly named component tells the alternator how hard to work depending on electrical demand, and regulates the flow of electricity coming from the alternator and going to the battery and accessories.

If all goes well, there will be electricity in wait when the key is turned, as well as when the engine is running. If any one of these parts wears out or fails, the symbiotic relationship of the automotive electrical system goes pell-mell. A number of unwanted things can happen to you by way of an out-of-commission electrical system, from having no radio to absolutely no electrical power to get the engine going again.



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The trick to determining whether or not a new alternator is required lies in testing. When the electricity stops flowing, a common error is to assume that the battery is dead. You can replace it with a new one, only to have it quickly discharge because the alternator had already breathed its last breath and is no longer making electricity to charge up the battery. Conversely, one could replace a perfectly good alternator when in fact it is the battery that has lost its ability to store electricity. A finicky voltage regulator can also cause problems. The classic symptoms of a dying alternator are lights getting dimmer and sluggish electrical accessories while driving around after dark.

This situation occurs because the alternator is no longer making enough electricity to run the show, and the vehicle is drawing power off the slowly dying battery. If driven around long enough, the vehicle will use up all the battery's electricity and everything will come to a halt. Since getting stranded at night is not the world's best motoring experience, it pays off in the long run to maintain and check batteries, belts, voltage regulators and alternators. The good news is that determining which part of the system is doing its part and which part is a little tired or about to quit altogether is easier than ever. Many auto parts stores now have portable diagnostic equipment that can sniff out in minutes what's going on with the electrical system. If the alternator has gone out to lunch permanently, replacing it is usually a relatively easy job. Follow along with the step-by-steps for some alternator replacement tips.



Step 1: Disconnect the battery negative. This is an especially important first step, as all the electricity for the entire vehicle goes through the alternator. A wrench or a screwdriver across connectors can quickly fry voltage regulators, expensive engine computers, and cause injury.



Step 2: On a v-belt vehicle there are usually two bolts holding an alternator to its mounts. One bolt or assembly maintains tension on the belts, and the other holds the alternator in place. First loosen and remove the tension bolt or assembly.



Step 3: Next, loosen the pivot bolt.



Step 4: Remove the pivot bolt. Remove electrical connections and slide the pivot bolt through the mount. Remove the alternator. This is a good time to check and replace worn belts.



Step 5: Compare the old and new alternators to make sure everything is the same. Transfer any connectors or bolts from the old to the new.



Step 6: Reverse the removal procedure and install the new alternator.



Step 7: Check belt tension. A little under an inch of deflection is ideal. Too much tension will quickly destroy bearings. Better a slightly loose belt than one too tight.



Step 8: On this vehicle, the alternator and the engine-driven accessories rely on one serpentine belt. A spring-loaded tensioner holds the belt in place. Slack allows the belt and the alternator to be removed.



Step 9: Start the vehicle and check alternator output with a multimeter.



Step 10: Re-check belt tension after about 500 miles. Adjust tension if required.

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