

Electrical System: Battery



Description: The battery is the backbone of the electrical system. Most cars use a lead-acid battery. The battery is made of a plastic case, containing an arrangement of positive and negative lead plates separated by synthetic plate separators. The plates are connected to a set of terminals, which provide connection to the vehicle. The battery is filled with electrolyte, a mixture of sulfuric acid and water. The electrolyte and lead plates provide the chemical action necessary to store and release energy.

Purpose: The battery converts chemical energy into electrical energy and vice versa. Given this unique ability, the battery: 1) supplies power to the starter and ignition system, 2) delivers the extra power needed when the electrical load exceeds the alternator's supply, and 3) stabilizes voltage in the electrical system

Maintenance Tips/Suggestions: Your vehicle's battery and its connections should be checked at every oil change. The battery should be mounted securely, as vibration takes a toll on battery life. On batteries with removable filler caps, the electrolyte should be checked and topped off with distilled water. Battery connections should be clean, tight and corrosion-free. To clean the battery case and terminals, use a mixture of baking soda and water. As an added measure to fight terminal corrosion, chemically treated felt rings can be placed over the battery posts. Batteries don't always give warning signs before they fail. If your vehicle's battery is three years old or more, it's wise to replace it. When choosing a replacement, there's no such thing as a one-size-fits-all battery. Make sure the new one has adequate capacity for your exact make, model and equipment. If you live in an extremely cold climate, consider upgrading to the largest capacity available for your vehicle. Battery efficiency drops off drastically in cold temperatures and the extra capacity can make the difference in starting on cold winter mornings. Avoid running your battery dead; deep-cycling (discharging and then charging) quickly takes its toll on battery life. For longest life, automotive batteries are intended to keep a relatively consistent charge. If you decide to change the battery yourself, be aware that many cars may need to "re-learn" certain electronic engine control habits, like idle speed. Disconnecting the battery may also erase the memory of radios and other creature comforts like memory mirrors and seats. Check your vehicle's owner's manual for more specifics on changing the battery. Never discard an old battery in the trash. Take the old battery to a recycling center that accepts automotive batteries.