

Battery Testing

Make It a Part of Your Vehicle Inspection



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If testing the battery is not a part of your vehicle inspection...it should be. A heads-up notice on a failing battery can save your customer a lot of grief.

During a recent oil and filter change the technician performed a vehicle inspection that included a complimentary battery check. The test reflected a battery that had met its useful life and was in need of replacement. When the lady contacted her husband, accompanied by a printout reflecting the condition of the battery, he challenged the need to have it replaced. The vehicle had been starting perfectly, so he made the decision not to have it replaced.

Days later and 100 miles away from home at a travel ball event, the lady encounters a no start condition due to a dead battery. This was not a fun encounter, especially with an SUV full of kids. The weather was scorching hot, but not as hot as the verbal exchange between the stranded lady and her husband, who had elected not to follow the technician's recommendation. The cost of the battery replacement had now escalated, as a service call was encountered. In fact, the service call would have covered the cost of the battery replacement, if it had been installed when initially recommended.

WITH NO WARNING

Unlike in the past where a warning symptom such as a change in the cranking speed of the engine made it obvious that the battery should be tested, today's systems often function normally until the next starting event and then totally fail. Heat is a major contributor to battery failure. Gassing occurs within the battery, promoting a loss of electrolyte, plate corrosion and internal shorts. Often, newer vehicles will have an insulation wrap around the battery to shield it from intense under-hood temperatures, which is a major cause of battery failure. Cold conditions also contribute to battery failure, as increased amperage is necessary to start a cold engine with a thick oil viscosity. In addition, a battery is less efficient at cold temperatures.

SULFATION

Sulfation of the plates occurs when the battery is allowed to sit for extended periods of time in a discharged state. When the battery state of charge is be-

low 80%, sulfation can occur in a two week period. In this low state of charge, lead sulfate will form on the battery plates. This contamination insulates the plates' reactive material, resulting in a reduced capacity and the ability of the battery to accept a charge. A battery in this condition can be permanently damaged in a two month period.

Troubleshooting on a Hotline and in a repair shop has impressed upon me one important time-saving diagnostic procedure, and that is when diagnosing an electrical related problem always start with the source of power first. That would be the battery. Low voltage or a voltage drop can create some major challenges, especially with the myriad of electronics and accessory components on today's vehicles.



THE TECH HAD URGED THE MAN TO INSTALL A NEW BATTERY BUT HE 'KNEW BETTER' AND TURNED HIM DOWN.

BATTERY DRAIN

Due to parasitic current drains, which are necessary to keep computer and accessory memories alive, a vehicle that has been parked for 2-3 weeks can result in a low voltage condition that can present some difficult challenges for the technician diagnosing an electrical complaint. Short trip driven vehicles equipped with a maze of electronics often encounter battery failure due to the battery never becoming fully charged, resulting in sulfation. Often, more energy is taken from the battery than the alternator can replenish during these driving conditions.

Summary: Make battery testing a part of your vehicle inspection. Provide the customer a printout reflecting the condition of their battery. Today's battery testers will identify a soon-to-fail battery before it becomes a major difficult-to-diagnose issue or leaves the customer stranded.

In addition to a no-start symptom, low battery voltage can create some difficult to diagnose symptoms, especially in those applications with numerous electronic systems and creature comforts. The symptoms may occur before the voltage drops to a level that prevents the starter from cranking the engine. For some interesting troubleshooting tips involving low voltage and electrical interference symptoms, review Mighty Tech Tip #163 BATTERY FACTS.