



Technical Training Tip of the Month

Starting Your Vehicle is the Toughest Job Your Battery has to Perform!

By Antoinette Mayes

Today's automotive electrical systems are continuously pushing technology to the limits because today's vehicles function with more complex electrical systems. The electrical systems generate, store and distribute the energy needed for operation. The battery provides the primary means of electrical energy that is used in vehicles. It is essential to recognize that a battery does not store electricity; rather it stores a series of chemicals, therefore, producing electricity through this chemical process. Starting your vehicle is not only the toughest, but most important job your battery has to perform. Therefore, it is essential to maintain your battery for optimal performance.

Batteries are rated by Cold Cranking Amps (CCA) and Reserve Capacity (RC). CCA, which refers to how many amps a battery can supply at 0° F, measures if the battery can adequately produce the high current flow necessary for cranking a vehicle. Batteries are also rated by RC, which represents the length of time a battery can maintain the vehicle's electrical needs. RC is a measure of how well a battery can supply a smaller current flow in the event the alternator fails and the vehicle must continue to be driven.

Which is more damaging to a battery, heat or cold? Battery problems surface under both conditions. Heat is the number one cause of battery failure. Extreme heat causes the water in the battery to evaporate faster than under normal temperatures. Further, heat internally accelerates corrosion and other deterioration factors, which lead to a shortened battery life. Extreme cold temperatures within the battery may result in a reduction of battery efficiency level, which reduces short-term performance. Batteries that are neglected in a discharged state are also subject to freezing, which alters internal components.

Performing preventative maintenance is strongly suggested, preferably during warm weather. The leading contributors to battery failures are heat, vibration and faulty electrical systems. When visually inspecting a battery, look for obvious problems such as corroded terminals, damaged cases, leaks, and loose holding clamps or cable terminals. In the colder climates, higher CCA ratings are more important due to the amount of current required to crank a sluggish engine. In hot climates, higher RC ratings are more important; however, consult your vehicle's manual to verify what the original equipment manufacturer recommends for the battery's Group Size, CCA and RC requirements for your car or truck. Or, refer to a battery application chart for a recommended fit. A battery's group size is a direct measurement of the battery's physical dimension. This measurement has no association to the battery's electrical capacity. However, if two batteries have identical CCA and RC ratings, the two batteries are equal in power regardless of their physical dimension. Never use a battery with a CCA lower than the manufacturer's recommendation.

Remember, when working with batteries, it is in your best interest to have plenty of ventilation and protective gear (i.e. eyewear, gloves, etc.).

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