

First Steps in Electrical Fault Diagnosis

Electrical diagnostic testing: **battery health check.**

Modern motor vehicles with all the increased electrical comforts and accessories are putting the battery under great strain to perform its function as required, and to do so for periods that consumers expect to be fair and reasonable.

It's important to determine if the battery is still in a condition to continue supplying the power to start the engine under both hot and cold conditions until the next service. Suitable battery test equipment must be used to assist the technician in quickly determining if this is the case.

The first piece of equipment that is required for any electrical diagnostic testing would be an easy to use light-weight battery tester, such as the PlusQuip EQP-113.

This battery tester can help determine if the battery is in a healthy condition or needs charging and retesting, or requires replacing. The EQP-113 is extremely accurate and features an illuminated LED display.

The PlusQuip EQP-114 Battery Analyser and Printer goes a couple of steps further, it not only performs the functions of the PlusQuip EQP-113 but also can assist in the testing of:

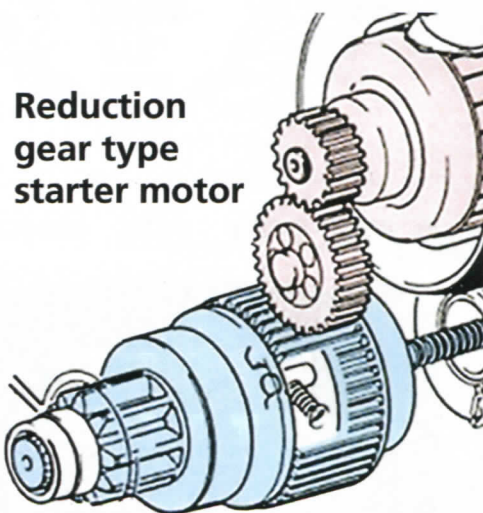
- ✓ The ground circuit (engine to chassis)
- ✓ The starter circuit (under load)
- ✓ The alternator charging circuit
- ✓ Most battery types, including: conventional wet types / low maintenance / flat spiral / maintenance free and gel cell batteries

The PlusQuip EQP-114 is extremely fast and accurate, and delivers consistent results with the ability to print and save your results to your PC via a USB link. It includes an integrated printer and the reports are easily customised, ideal for giving to your customers.

We all know that the battery will power the starter motor and other electrical loads during the engine cranking process. Once the engine starts, the alternator takes over and ensures that the battery is ready for the next start. What about a cold morning "no start" condition?

During very cold first morning starts where the engine oil is at its thickest and the battery is at its most vulnerable, and many of the personal comforts are switched on to give you that warm, fuzzy feeling, you crank the engine and expect it to come alive, only to find that it continues to turn over but with no starting success.

With reduction gear type starter motors, even with a poor battery, the engine may still turn over sufficiently to fool the technician in thinking that the battery is not the source of the problem. This is still a very common occurrence. It is not a guessing game. Use the test equipment to ensure the battery is not the culprit.



Reduction gear type starter motor

There is a minimum voltage / power supply that the ECM requires to carry out its duties. A supply below the minimum may result in a no go condition.

A common occurrence may be the battery electrically draining overnight due to one of multiple electrical circuits or components



