

**Bulletin BES 05-11**

**Subject:** Voltage Drop Tests

**Vehicle Involved:** All Vehicles / All Electrical Components

**Condition:** Electrical System Failure

**Repair Procedure:** When a DVOM is used to measure resistance, it passes a known voltage through a circuit, measures the current flow and then calculates the resistance ( $R=V / I$ ). To do this the circuit must be isolated. A voltage drop test is often more reliable because the test is performed while the circuit is actually working.

Whether the circuit is carrying 1 amp or 200 amps any resistance in the wires, connections or load will cause voltage to “stack up” behind that resistance. By measuring voltage across each leg of the circuit in real life conditions, we can pinpoint resistance that might not be there when testing under artificial conditions with a DVOM.

While the voltage drop test can be used for any circuit it’s especially well suited for testing low-resistance high current draw circuits, especially those with motors. You can also check for hidden corrosion on the battery terminals by touching the battery post with one probe and the terminal itself with the other.

