

TROUBLESHOOTING ELECTRICAL FAILURES

SECTION OBJECTIVES

1. Is It The Lamp, Or The Harness?
2. Wiring Connections
3. Continuity & Resistance

1. Is It The Lamp, Or The Harness?

The first step in locating the source of your electrical malfunction is to determine that the J560 connector (as shown on the right) has the proper voltage where the system power comes in.

Use a multi-meter to test for adequate power. If a multi-meter is not available, use a test lamp (a new, or problem-free lamp) to check for power in the malfunctioning unit.



If the lamp is receiving appropriate power, the next step is to check the lamp itself. Remove the lamp from its mounting application, unplug it from the harness, and test the lamp using a lamp checker or meter. It is recommended to first use a test lamp to ensure that the testing device is in working order.



Review the lamp's plug connection to be sure that it is in good, working condition. Lamps can be easily damaged at the connection, causing an otherwise working lamp to malfunction.



If it is found that the lamp failure is not the result of a malfunctioning lamp, check to see that the harness pigtail is in working condition.



Check for evidence of corrosion and clean all contacts to ensure a good contact with the conductor. Be sure the lamp is properly grounded and test the exposed terminals on the harness pigtail with a multi-meter. Testing should also be performed with a working test light.



2. Wiring Connections

When it is determined that the lamp and pigtail are not the problem, move to the nearest wire connection. Follow the wiring harness to the next plugged connection or junction box. Begin by unplugging the harness and test for proper voltage on exposed terminals. The terminals and junction box should be checked as well. In this case, do not use a test probe to check the wires; probes can puncture an otherwise healthy wire, opening the door for future failure.

3. Continuity & Resistance

After testing and finding no faults with the wiring connections and lamps, testing should be performed at the J560 (nose box) connection. At this point, the cause of the fault is likely a problem with the main cable.

The best way to identify a problem within the harness system is to evaluate the system's continuity and resistance. Use a multi-meter to test the system for continuity and resistance. Be sure the vehicle system is not powered on when using a multi-meter.

First, check for shorts between all of the pins. There should be infinite resistance (ohms). Then connect a jumper between the ground and one of the hot leads, such as stop on the J560 connector. Then go to the stop lamps, remove the plug from the lamp and check the continuity between the stop power terminal and ground terminal. This should be close to zero ohms. A high reading can indicate a problem and likely represents damage from corrosion or a break. Repeat for all other wires in the connector at the appropriate light.