

Connections and Intermittent Problems

Intermittent electrical / electronic problems in a vehicle can cause you to spend lots and lots of time before you go crazy trying to figure out the cause.

If you could put your finger on the single most common cause of the elusive *intermittent*, it would have to be *connections*. *Connections Are Critical*. Not only am I talking about the physical connection between the pin and its' mate, or fuse leg and the female receptacle when first assembled, but also about what happens to the initial connection over time.

A lot of research has gone into getting the connections right, and connector position assurance as well as terminal position assurance locks are installed to keep it right. Some times its wrong from the start and a bulletin will be issued to correct it. If you don't check TSB (technical service bulletins), you will never even know it. Sometimes, over time, with all the flexing and movement of the vehicle, a connection will loosen up under driving, vibration, temperature conditions.

40% of vehicles that approach the "fix it or buy it back" stage are repaired by finding:

- a loose fitting terminal
- a loose ground connections
- an open in a wiring harness.

Test suspected terminals with a "drag test", there should be:

- a *slight drag*
- no deformities
- no corrosion.

Wiring is getting smaller.

22 gage is becoming standard.

Wire this small has a tendency to break *inside the insulation* close to the connector ends.

A big problem today is *intermittent opens* in the harnesses themselves.

Wiggle test under load is necessary.

Wiggle it, don't deform it.

Use a peak min/max feature in a meter to find these.

Try to find an intermittent by:

Wiggling the suspect harness

Disconnecting a connector and reconnecting - key off.

Pulling on a harness to try to locate a break inside insulation.

Relocating a harness or wire - let customer drive again to see if it worked.

Load the vehicle, weight, jack, whatever.

High moisture with high or low temperature

Salt water spray - 12oz water 1 tablespoon salt.

Spray harness, etc, then load and wiggle test.

User heat from a hair dryer or heat gun

Fan, ice or venture type nozzle (0+F one end 160+F other)

One of the biggest problems is that connections are not mated properly.

www.Vestest.com The Vehicle Voltage Drop Website