TECH TIPS

Solenoids and Relays

Checking non-pulsed or modulated computer controlled solenoids and relays

SYMPTOM: Repeated computer failure, seemingly without cause.

CAUSE: A solenoid or relay with an intermittent low resistance or a partial short.

DIAGNOSIS: It is not enough to check the resistance of a solenoid or a relay to see if there is a short in it. OHM meters do not apply enough current to turn them on, therefore, the OHM meter results are not a reflection of what is happening under operating conditions. A milli-amp meter reading is the best indication of circuit conditions. However, the correct procedure must be followed.

Get out the wiring diagrams to determine where to hook the meter. Most computers complete the ground in the circuit. With the computer disconnected and the ignition switch on, ground the output circuits through the milli-amp meter. The readings obtained on a GM, for example, will typically be 300-400 milli-amps on a good solenoid or relay and 750 milli-amps is max. Here's the trick! Leave the meter connected for at least 90 seconds and watch the reading. Normally it should decrease as the solenoid or relay heats up. If after 90 seconds the reading has increased, a partial short is present that only occurs when the solenoid or relay heats up.

REPAIR: In most cases, solenoids and relays are less expensive to replace than computers. Don't take chances. If a solenoid or relay fails the above test, replace it even if it is still working. It's good insurance against a comeback!

Always check to make sure that the ground straps are in place and complete connections are made.