

FUEL INJECTOR COIL TEST

CIRCUIT DESCRIPTION

The [control module](#) enables the appropriate fuel injector pulse for each cylinder. Ignition voltage is supplied directly to the fuel injectors. The control module controls each fuel injector by grounding the control circuit via a solid state device called a driver. A fuel injector coil winding resistance that is too high or too low will affect engine driveability. A fuel injector control circuit DTC may not set, but a misfire may be apparent. The fuel injector coil windings are affected by temperature. The resistance of the fuel injector coil windings will increase as the temperature of the fuel injector increases.

DIAGNOSTIC AIDS

- The use of Dielectric compound GM P/N 12377900 (Canadian P/N 10953529) in the fuel injector electrical connector may eliminate a corrosion condition.
- Monitoring the misfire current counters, or misfire graph, may help isolate the fuel injector that is causing the condition.
- Operating the vehicle over a wide temperature range may help isolate the fuel injector that is causing the condition.
- Perform the fuel injector coil test within the conditions of the customers concern. A fuel injector condition may only be apparent at a certain temperature, or under certain conditions. [See: Computers and Control Systems\Testing and Inspection\Component Tests and General Diagnostics](#)

TEST

Step	Action	Values	Yes	No
1	Did you perform the Diagnostic System Check – Vehicle?	—	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	Observe the ECT sensor parameter with a scan tool. Is the ECT sensor parameter within the specified range?	10–32°C (50–90°F)	Go to Step 3	Go to Step 4
3	Measure the resistance of each fuel injector with a DMM. Do any of the fuel injectors display a resistance outside the specified range?	11–14 ohm	Go to Step 6	Go to Diagnostic Aids
4	1. Measure the resistance of each fuel injector with a DMM. 2. Record each fuel injector value. 3. Subtract the lowest resistance value from the highest resistance value. Is the difference equal to, or less than, the specified value?	3 ohm	Go to MTR Injector Balance Test with Special Tool or MTR Injector Balance Test with Tech 2	Go to Step 5
5	1. Add all of the fuel injector resistance values, to obtain a total resistance value. 2. Divide the total resistance value by the number of fuel injectors, to obtain an average resistance value. 3. Subtract the lowest individual fuel injector resistance value from the average resistance value. 4. Compute the difference between the highest individual fuel injector resistance value and the average resistance value. 5. Replace the fuel injector that displays the greatest resistance difference, above or below the average. Did you complete the replacement?	—	Go to Step 7	—
6	Replace the fuel injector or fuel injectors with resistance that is out of the specified range. Did you complete the replacement?	11–14 ohm	Go to Step 7	—
7	Operate the system in order to verify the repair. Did you correct the condition?	—	System OK	Go to Step 2