



DTC 45

BANK 1 (LEFT) HEATED OXYGEN SENSOR (HO2S) CIRCUIT (RICH EXHAUST INDICATED) 5.7L (VIN P) "F" CARLINE (SFI)

Circuit Description:

The PCM supplies a voltage of about 450 mV between terminals "C20" and "C19". (If measured with a 10 megohm digital voltmeter, this may read as low as 320 mV.) The Heated Oxygen Sensor (HO2S) varies the voltage within a range of about 1000 mV if the exhaust is rich down through about 10 mV if exhaust is lean.

The sensor is like an open circuit and produces no voltage when it is below 315°C (600°F). An open sensor circuit or cold sensor causes "Open Loop" operation. Whenever the ignition is "ON" voltage is supplied to the HO2S heaters on CKT 541. Even with the engine not running, the HO2S will reach operating temperature and indicate the oxygen content of the exhaust gas at the sensor. Typically the signal voltage will be near 450 mV at key-up. The signal voltage will then rise or drop as the sensor becomes active, depending on the oxygen content of the air near the sensor.

DTC 45 Will Set When: System is operating in "Closed Loop," not in power enrichment, signal voltage remaining above 700 mV for 50 seconds and throttle angle is greater than 4%.

Action Taken (PCM will default to): The Malfunction Indicator Lamp (MIL) will illuminate and the fuel control system will go into "Open Loop."

DTC Chart Test Description: Number(s) below refer to circled number(s) on the diagnostic chart.

1. Engine must be at normal operating temperature before performing this test.

Diagnostic Aids: Using the Tech 1, observe the long term fuel trim values at different RPM and load conditions. The Tech 1 also displays the fuel trim cells, so the long term fuel trim values can be checked in each of the cells to determine when the DTC 45 may have been set. If the conditions for DTC 45 exist, the long term fuel trim values will be near 108.

- **Fuel pressure.** System will go rich if pressure is too high. The PCM can compensate for some increase. However, if it gets too high, a DTC 45 may be set. Refer to "Fuel System Diagnosis," CHART A-7.
- **Rich injector.** Perform "Injector Balance Test," using Tech 1 or CHART C-2A.
- **Leaking injector.** Refer to "Fuel System Diagnosis," CHART A-7.
- Check for fuel contaminated oil.
- **Evaporative Emission (EVAP) canister purge.** Check for fuel saturation. If full of fuel, check canister control and hoses. Refer to "Evaporative Emission (EVAP) Control System," Section "6E3-C3".

- **MAF sensor.** Disconnect the MAF sensor and see if rich condition is corrected. If so, check for proper installation. If installed OK, replace MAF sensor. If the MAF sensor is installed backwards, the system will go rich. The plastic portion of the sensor has arrows cast into it indicating proper air flow direction. The arrows must point toward the engine.
- Check for leaking fuel pressure regulator diaphragm by checking vacuum line to regulator for fuel.
- **TP sensor.** An intermittent TP sensor output will cause the system to go rich, due to a false indication of the engine accelerating.
- **EGR.** An EGR valve staying open (especially at idle) will cause the oxygen sensor to indicate a rich exhaust, and this could result in a DTC 45.
- **Heated oxygen sensor.** An oxygen supply inside the HO2S is necessary for proper HO2S operation. This supply of oxygen is supplied through the HO2S wires. All HO2S wires and connections should be inspected for breaks or contamination that could prevent reference oxygen from reaching the HO2S.