



CODE 45

RICH EXHAUST INDICATION

5.7L "Y" SERIES FUEL INJECTION (PORT)

The ECM supplies a voltage of about .45 volt between terminals "D7 and D6". (If measured with a 10 megohm digital voltmeter, this may read as low as .32 volts.) The O₂ sensor varies the voltage within a range of about 1 volt if the exhaust is rich, down through about .10 volt if exhaust is lean.

The sensor is like an open circuit and produces no voltage when it is below about 360°C (600°F) An open sensor circuit or cold sensor causes open loop operation..

Code 45 is set when the O₂ sensor signal voltage at the ECM C-D connector terminal D-7

- Remains above .7 volt for 30 seconds; and
- Engine time after start is 1 minute or more.

1. Grounding the diagnostic terminal with the engine running, enables the "Field Service Mode" and allows the ECM to confirm either open or closed loop operation using the "SERVICE ENGINE SOON" light.

2. A steady light "On" or "Open Loop" indicates the fault is present. Grounding CKT 412 causes a low O₂ signal voltage. If the ECM and wiring are OK, The ECM should recognize the low voltage and confirm the lean signal by turning off the "SERVICE ENGINE SOON" light for about 30 seconds. The light may flash open loop for a few seconds after starting engine.

3. DIAGNOSTIC AIDS:

- Fuel Pressure. System will go rich if pressure is too high. The ECM can compensate for some increase. However, if it gets too high, a Code 45 may be set.

See Fuel System diagnosis Chart A-7A.

- Rich injector(s). Perform injector balance test Chart C-2A.

- Leaking injectors. See Chart A-7A.

● HEI Shielding. An open ground CKT 453 may result in EMI, or induced electrical "noise". The ECM looks at this "noise" as distributor pulses. The additional pulses result in a higher than actual engine speed signal. The ECM then delivers too much fuel, causing system to go rich. Engine tachometer will also show higher than actual engine speed, which can help in diagnosing this problem.

● Canister purge. Check for fuel saturation. If full of fuel, check canister control and hoses. See canister purge section and chart C-3.

● MAF sensor. An output that causes the ECM to sense a higher than normal airflow can cause the system to go rich. Disconnecting the MAF sensor will allow the ECM to use a default value for the sensor. Substitute a different MAF sensor if the the rich condition is gone while the sensor is disconnected.

● Check for leaking fuel pressure regulator diaphragm by checking vacuum line to regulator for fuel.

● TPS. An intermittent TPS output will cause the system to go rich, due to a false indication of the engine accelerating.

● Inspect Oxygen Sensor for silicone contamination from fuel, or use of improper RTV sealant. The sensor may have a white, powdery coating and result in a high but false signal voltage (rich exhaust indication). The ECM will then reduce the amount of fuel delivered to the engine, causing a severe driveability problem.

"SCAN" STEP ONLY ■

CODE 45

RICH EXHAUST INDICATION

5.7L "Y" SERIES FUEL INJECTION (PORT)

START
NON-SCAN

1

- GROUND DIAGNOSTIC TERMINAL TO ENABLE "FIELD SERVICE MODE".
- RUN WARM ENGINE AT APPROX. 1200 TO 1800 RPM FOR 1 MINUTE AND NOTE "SERVICE ENGINE SOON" LIGHT.

LIGHT STAYING "ON" MORE THAN "OFF" OR FLASHING "OPEN LOOP".

FLASHING "CLOSED LOOP"

2

- IGNITION "OFF".
- DIAGNOSTIC TERMINAL GROUNDED.
- DISCONNECT OXYGEN SENSOR CONNECTOR AND JUMPER HARNESS CONNECTOR SIGNAL CKT 412 TO GROUND.
- START ENGINE AND IMMEDIATELY NOTE "SERVICE ENGINE SOON" LIGHT.

CODE IS INTERMITTENT. IF NO ADDITIONAL CODES WERE STORED, REFER TO FACING PAGE DIAGNOSTIC AIDS FOR POSSIBLE CAUSES OF CODE 45. IF ALL OK, REFER TO INTERMITTENTS SECTION B.

START
SCAN

- IF O₂ VOLTAGE IS FIXED ABOVE .55 VOLTS, WITH ENGINE RUNNING.
- DISCONNECT OXYGEN SENSOR AND JUMPER HARNESS CKT 412 TO GROUND, START ENGINE AND NOTE VOLTAGE

"SERVICE ENGINE SOON" LIGHT WENT OFF FOR AT LEAST 30 SECONDS.

- VOLTAGE LESS THAN .35 VOLTS

STEADY LIGHT

- VOLTAGE OVER .55 VOLTS

IT IS A
FAULTY ECM

SYSTEM RICH

3

SEE - DIAGNOSTIC AIDS
INFORMATION ON FACING PAGE

FIELD SERVICE MODE;

- ENGINE RUNNING, DIAGNOSTIC TERMINAL GROUNDED.
- OPEN - LOOP, "SERVICE ENGINE SOON" LIGHT FLASHES AT A RATE OF 2.5 TIMES PER SECOND.
- CLOSED LOOP, "SERVICE ENGINE SOON" LIGHT FLASHES AT A RATE OF 1 TIME PER SECOND.

CLEAR CODES AND CONFIRM "CLOSED LOOP" OPERATION AND NO "SERVICE ENGINE SOON" LIGHT.

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