Pre-Diagnostic Information (Warnings, schematics, etc.)

Fuel Control	Pinpoint Test	H

H40 DTCS P1131, P1151, P1132 AND P1152: UPSTREAM HO2S(S) NOT SWITCHING. DTCS P1130 AND P1150: HO2S NOT SWITCHING, FUEL SYSTEM AT THE ADAPTIVE LIMITS (RICH OR LEAN) P0172, P0174, P0171 AND P0175: FUEL SYSTEM AT ADAPTIVE LIMITS

NOTE:
Before servicing DTCs P0171, P0172, P0174 and P0175, verify with the customer that before the "Check Engine Light" came on, the vehicle did not run out of fuel.

Diagnostic Trouble Codes (DTCs) P1131 and P1151 indicate the system is correcting rich for an overly lean condition. The HO2S voltage is less than 0.45 volt.

DTCs P1132 and P1152 indicate the system is correcting lean for an overly rich condition. The HO2S voltage is greater than 0.45 volt.

DTCs P1130 and P1150 indicate the fuel control system has reached its maximum compensation for a lean or rich condition and HO2S is not switching.

DTC P0171, left bank, and DTC P0174, right bank, indicate the fuel/air ratio is too lean. The system is at the rich limit.

DTC P0172, left bank, and DTC P0175, right bank, indicate the fuel/air ratio is too rich. The system is at the lean limit.

DTC/HO2S Reference List

-- HO2S-11 = DTCs P1130, P1131, P1132, P0171 and P0172

-- HO2S-21 = DTCs P1150, P1151, P1152, P0174 and P0175

Possible causes:

Fuel System

-- Excessive fuel pressure.

-- Leaking fuel injector(s).

-- Leaking fuel pressure regulator.

-- Low fuel pressure.

-- Plugged injector(s).

-- Damaged/disconnected HO2S circuit.

Induction System

-- Air leaks after MAF.

-- Vacuum leaks.

-- Restricted air inlet.

-- PCV system.

Base Engine

-- Oil overfill.

-- Cam timing.

-- Compression.

Ignition

-- Coil and secondary side of ignition system.

- Check air intake for leaks, obstructions, and damage.
- Check air filter, air filter housing for blockage.
- Check positive crankcase ventilation system integrity.
- Check engine vacuum integrity.
- **Are there any obvious concerns?**

Yes
REPAIR any of the problems found in the visual inspection. RERUN «Quick Test».

No
GO to «H41».

Pre-Diagnostic Information
(Warnings, schematics, etc.)

Fuel Control	Pinpoint Test	H

H42 CHECK FUEL PRESSURE

WARNING:
THE FUEL SYSTEM IS PRESSURIZED WHEN THE ENGINE IS NOT RUNNING. TO PREVENT INJURY OR FIRE, USE CAUTION WHEN WORKING ON THE FUEL SYSTEM.

- Key off.
- Install fuel pressure gauge.
- Verify vacuum source to fuel pressure regulator.

If engine will start:

- Start engine and idle. Record fuel pressure.
- Increase engine speed to 2500 rpm and maintain for one minute. Record fuel pressure.

No Start:

- Cycle key on and off several times. Record fuel pressure.
- **Is the fuel pressure between 30-45 psi (210-310 kPa)?**

Yes
Fuel system is capable of required fuel pressure. GO to «H43».

No
Fuel pressure out of specification. GO to Group 10 of the Service Manual.

Pre-Diagnostic Information
(Warnings, schematics, etc.)

Fuel Control	Pinpoint Test	H

H43 CHECK SYSTEM ABILITY TO HOLD FUEL PRESSURE

- Fuel pressure gauge installed.
- Cycle key on and off several times.
- Verify there are no external leaks (repair as necessary).
- **Does the fuel pressure remain within 5 psi of the highest reading after one minute?**

Yes

For DTCs P1130, P1150, P0171, P0172, P0174 and P0175:
GO to «H44».
For No Starts:
GO to «H45».
All other DTCs:
GO to «H50».

No

Excessive pressure loss. Follow fuel system diagnostic procedure outlined in Group 10 (Fuel Group) of the Service Manual.

Pre-Diagnostic Information
(Warnings, schematics, etc.)

Fuel Control	Pinpoint Test	H

H44 CHECK SYSTEM ABILITY TO HOLD FUEL PRESSURE WITH KEY ON

- Fuel pressure gauge installed.
- Cycle key on then off several times.
- Turn key on and engine off, monitor fuel pressure gauge.
- **Does the fuel pressure remain within 5 psi of the highest reading after 10 seconds?**

Yes

For DTCs P1130, P1150, P0171 and P0174:
GO to «H46».

No

For DTCs P0172 and P0175:
GO to «H48».

Pre-Diagnostic Information (Warnings, schematics, etc.)

Fuel Control	Pinpoint Test	H

H46 CHECK RESISTANCE OF INJECTOR(S) AND HARNESS

- Key off.
- Disconnect PCM. Inspect for damaged or pushed out pins, corrosion, loose wires, etc. Service as necessary.

NOTE:
This erases Continuous Memory DTCs.

- Install breakout box, leave PCM disconnected.
- Measure resistance between suspect injector Test Pin(s) and Test Pin 71 or 97 at the breakout box using the chart below.

NOTE:
If a misfire DTC(s) are displayed with the Fuel Control DTC(s), use the misfire DTC(s) to determine the injector(s) requiring testing.

Cyl. No.	Test Pin	Cyl. No.	Test Pin
1	75	5	73
2	101	6	99
3	74	7	72
4	100	8	98

- For No Starts:

Pick any fuel injector and measure resistance between injector Test Pin and Test Pin 71 or 97 at the breakout box.

- **Is the resistance between 11.0-18.0 ohms?**

Yes
Fuel injector and harness resistance is OK.
For No Start and DTCs:
GO to «H49».

No
GO to «H47».