

DTC	P0125	Insufficient Temp. for Closed Loop Fuel Control
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CIRCUIT DESCRIPTION

To obtain a high purification rate for the CO, HC and NOx components of the exhaust gas, a three-way catalytic converter is used, but for the most efficient use of the three-way catalytic converter, the air-fuel ratio must be precisely controlled so that it is always close to the stoichiometric air-fuel ratio.

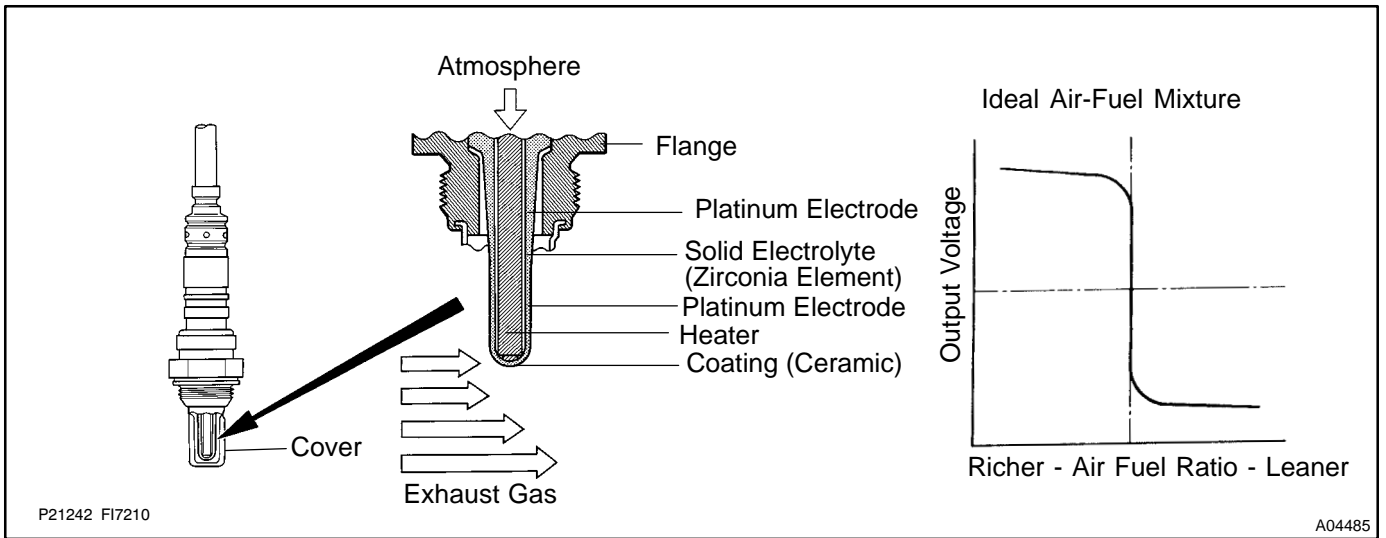
The oxygen sensor has the characteristic whereby its output voltage changes suddenly in the vicinity of the stoichiometric air-fuel ratio. This is used to detect the oxygen concentration in the exhaust gas and provide feedback to the computer for control of the air-fuel ratio.

When the air-fuel ratio becomes LEAN, the oxygen concentration in the exhaust increases and the oxygen sensor informs the ECM of the LEAN condition (small electromotive force: < 0.45 V).

When the air-fuel ratio is RICHER than the stoichiometric air-fuel ratio the oxygen concentration in the exhaust gas is reduced and the oxygen sensor informs the ECM of the RICH condition (large electromotive force: > 0.45V).

The ECM judges by the electromotive force from the oxygen sensor whether the air-fuel ratio is RICH or LEAN and controls the injection time accordingly. However, if malfunction of the oxygen sensor causes output of abnormal electromotive force, the ECM is unable to perform accurate air-fuel ratio control.

The oxygen sensors include a heater which heats the zirconia element. The heater is controlled by the ECM. When the intake air volume is low (the temp. of the exhaust gas is low) current flows to the heater to heat the sensor for accurate oxygen concentration detection.



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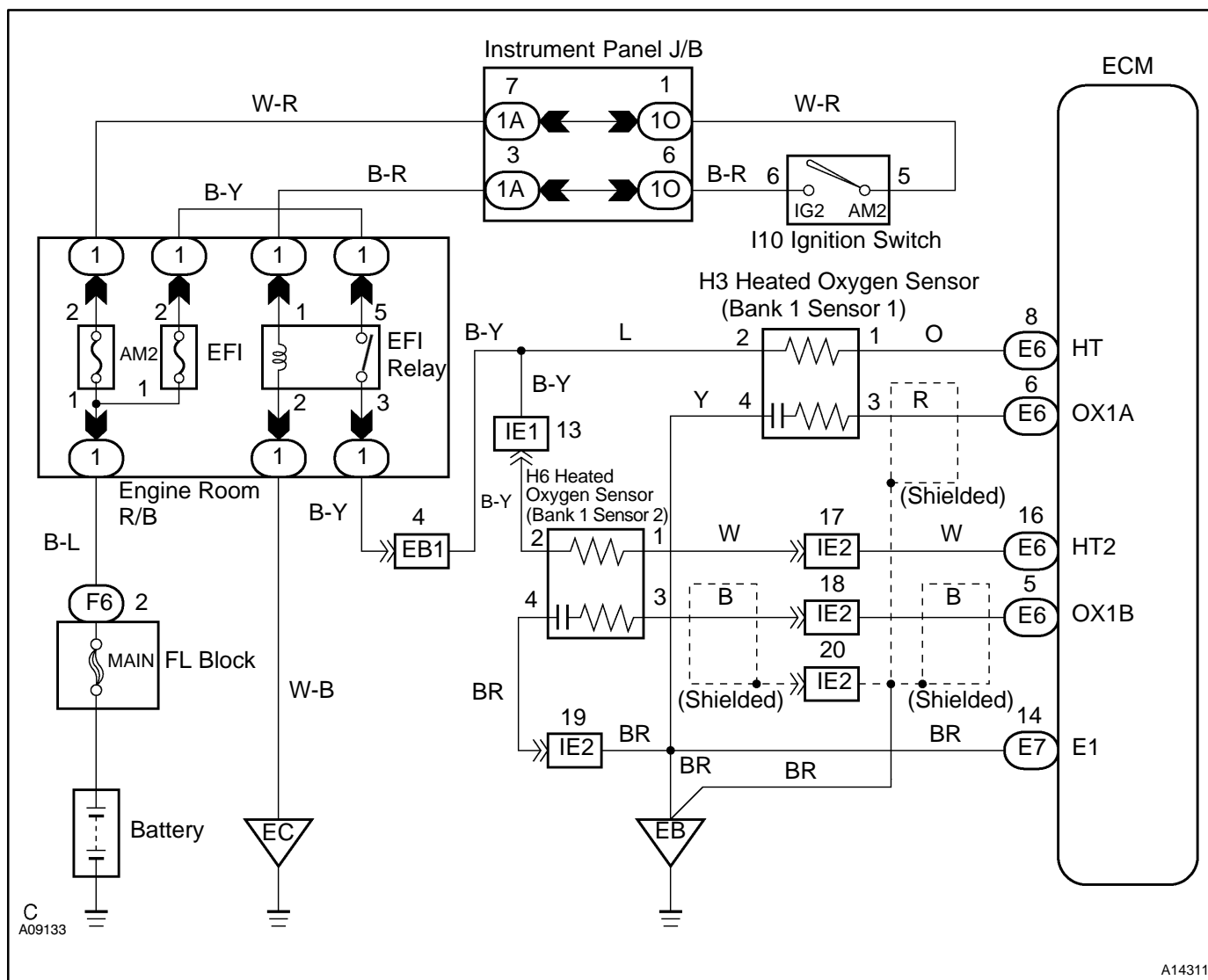
A04485

DTC No.	DTC Detecting Condition	Trouble Area
P0125	After the engine is warmed up, oxygen sensor (bank 1 sensor 1) output does not indicate RICH (≥ 0.45 V) even once when conditions (a), (b), and (c) continue for at least 1.5 min. (a) Engine speed: 1,500 rpm or more (b) Vehicle speed: 40 - 100 km/h (25 - 62 mph) (c) Throttle valve does not fully closed	<ul style="list-style-type: none"> • Fuel system • Air induction system • Injector • Ignition system • Gas leakage on exhaust system • Open or short in heated oxygen sensor (bank 1 sensor 1) circuit • Heated oxygen sensor (bank 1 sensor 1) • ECM • PCV piping

HINT:

After confirming DTC P0125, use the OBD II scan tool or TOYOTA hand-held tester to confirm voltage output of oxygen sensor (bank 1 sensor 1) from "CURRENT DATA".

If voltage output of oxygen sensor (bank 1 sensor 1) is less than 0.1 V, oxygen sensor (bank 1 sensor 1) circuit may be open or short.

WIRING DIAGRAM

INSPECTION PROCEDURE

HINT:

- If the vehicle run out of fuel, the air-fuel ratio is LEAN and DTC P0125 will be recorded . The MIL then comes on.
- Read freeze frame data using TOYOTA hand-held tester or OBD II scan tool. Because freeze frame records the engine conditions when the malfunction is detected, when troubleshooting it is useful for determining whether the vehicle was running or stopped, the engine warmed up or not, the air-fuel ratio lean or rich, etc at the time of the malfunction.

1	Are there any other codes (besides DTC P0125) being output ?
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YES	Go to relevant DTC chart (See page DI-14).
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NO

2	Check connection of PCV piping.
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NG	Repair or replace PCV piping.
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OK

3	Connect the OBD II scan tool or TOYOTA hand-held tester and read value for voltage output of oxygen sensor (bank 1 sensor 1).
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PREPARATION:

- (a) Connect the OBD II scan tool or TOYOTA hand-held tester to the DLC3.
- (b) Warm up engine to normal operating temp (above 75°C).

CHECK:

Read voltage output of the oxygen sensor (bank 1 sensor 1) when engine is suddenly raced.

HINT:

Perform quick racing to 4,000 rpm 3 times using accelerator pedal.

OK:

Both oxygen sensor (bank 1 sensor 1) output a RICH signal (0.45 V or more) at least once.

OK	Go to step 10.
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NG

4 Check for open and short in harness and connector between ECM and oxygen sensor (bank 1 sensor 1) (See page [IN-29](#)).

NG

Repair or replace harness or connector.

OK

5 Check whether misfire is occurred or not by monitoring DTC and data list.

NG

Perform troubleshooting for misfire (See page [DI-63](#)).

OK

6 Check air induction system (See page [SF-1](#)).

NG

Repair or replace induction system.

OK

7 Check fuel pressure (See page [SF-6](#)).

NG

Check and repair fuel pump, fuel pipe line and filter (See page [SF-1](#)).

OK

8 Check injector injection (See page [SF-21](#)).

NG

Replace injector.

OK

9 Check gas leakade on exhaust system.

NG Repair or replace.

OK

Replace oxygen sensor (bank 1 sensor 1).

10 Perform confirmation driving pattern (See page [DI-48](#)).

Go

11 Is there DTC P0125 being output again?

YES Check and replace ECM (See page [IN-29](#)).

NO

12 Did vehicle runs out of fuel in the past?

NO Check for intermittent problems.

YES

DTC P0125 is caused by running out of fuel.