

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

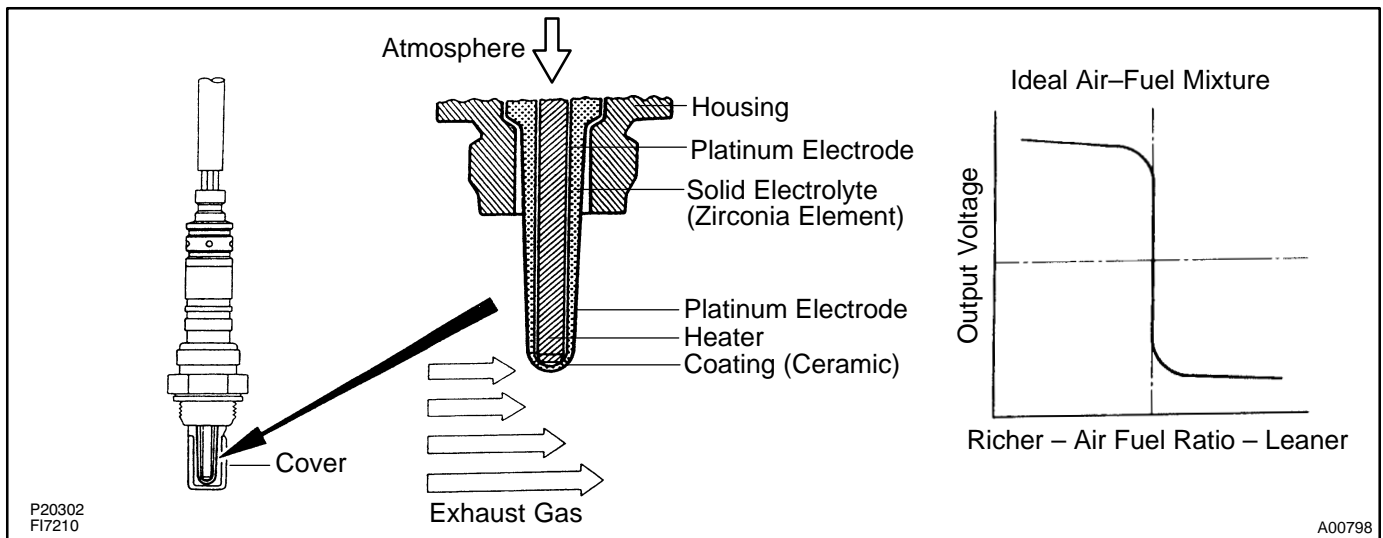
To obtain a high purification rate for the CO, HC and NO_x components of the exhaust gas, a three-way catalytic converter is used, but for the most efficient use of the three-way catalytic converter, the air–fuel ratio must be precisely controlled so that it is always close to the stoichiometric air–fuel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

The heated oxygen sensor (bank 1, 2 sensor 1) has the characteristic whereby its output voltage changes suddenly in the vicinity of the stoichiometric air–fuel ratio. This characteristic is used to detect the oxygen concentration in the exhaust gas and provide the ECM with feedback to control the air–fuel ratio.

When the air–fuel ratio becomes LEAN, the oxygen concentration in the exhaust increases and the heated 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 heated oxygen sensor informs the ECM of the RICH condition (large electromotive force: > 0.45 V). The ECM judges by the electromotive force from the heated oxygen sensor whether the air–fuel ratio is RICH or LEAN and controls the injection time accordingly. However, if malfunction of the heated oxygen sensor causes output of abnormal electromotive force, the ECM is unable to perform accurate air–fuel ratio control.

The heated 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 temperature of the exhaust gas is low) current flows to the heater to heat the sensor for accurate oxygen concentration detection.



DTC No.	DTC Detecting Condition	Trouble Area
P0125	<p>After engine is warmed up, heated oxygen sensors (bank 1, 2 sensor 1) output does not indicate RICH (≥ 0.45 V) even once when conditions (a), (b), (c) and (d) continue for at least 90 sec.:</p> <p>(a) Engine speed: 1,400 rpm or more</p> <p>(b) Vehicle speed: 40 – 100 km</p> <p>(c) Throttle valve does not fully closed</p> <p>(d) 180 sec. or more after starting engine</p>	<ul style="list-style-type: none"> • Open or short in heated oxygen sensor (bank 1, 2 sensor 1) circuit • Heated oxygen sensor (bank 1, 2 sensor 1) • Air induction system • Fuel pressure • Injector • Gas leakage on exhaust system • ECM

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| 2 | Connect the OBD II scan tool or LEXUS hand-held tester, and read value for voltage output of heated oxygen sensors (bank 1, 2 sensor 1). |
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PREPARATION:

- (a) Connect the OBD II scan tool or LEXUS hand-held tester to the DLC3.
 (b) Warm up the engine to normal operating temperature (above 75°C (169°F)).

CHECK:

Read the voltage output of the heated oxygen sensors when the engine is suddenly raced.

HINT:

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

OK:

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

OK

Go to step 9.

NG

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|----------|---|
| 3 | Check for open and short in harness and connector between ECM and heated oxygen sensors (bank 1, 2 sensor 1) (See page IN-32). |
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NG

Repair or replace harness or connector.

OK

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| 4 | Check whether misfire is occurred or not by monitoring DTC and data list. |
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NG

Perform troubleshooting for misfire (See page [DI-21](#)).

OK

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| 5 | Check air induction system (See page SF-1). |
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NG

Repair or replace.

OK

6 Check fuel pressure (See page SF-6).

NG

Check and repair fuel pump, pressure regulator, fuel pipe line and filter (See page SF-1).

OK

7 Check injector injection (See page SF-22).

NG

Replace injector.

OK

8 Check gas leakage on exhaust system.

NG

Repair or replace.

OK

Replace heated oxygen sensor (bank 1, 2 sensor 1).

9 Perform confirmation driving pattern (See page DI-48).

GO

10 Is there DTC P0125 being output again?

YES

Check and replace ECM (See page IN-32).

NO

11	Did vehicle runs out of fuel in past?
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NO

Check for intermittent problems
(See page [DI-3](#)).

YES

DTC P0125 is caused by running out of fuel.