

DTC	P0125	Insufficient Coolant Temp. for Closed Loop Fuel Control
------------	--------------	--

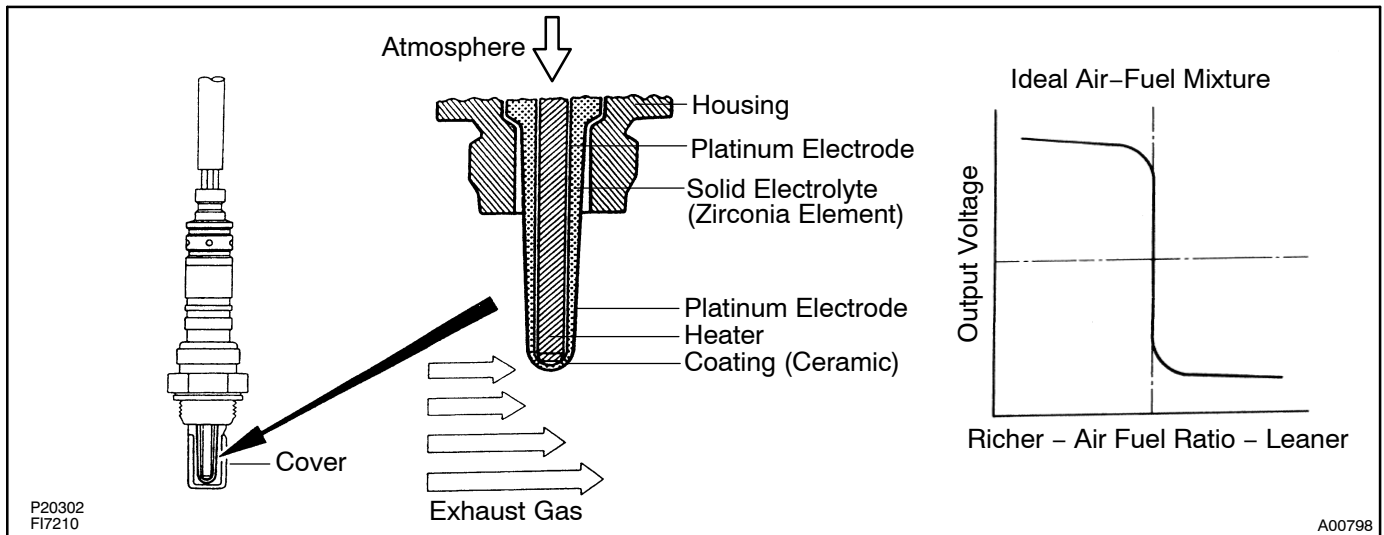
CIRCUIT DESCRIPTION

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 oxygen sensor 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 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 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: 1 V). 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 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.



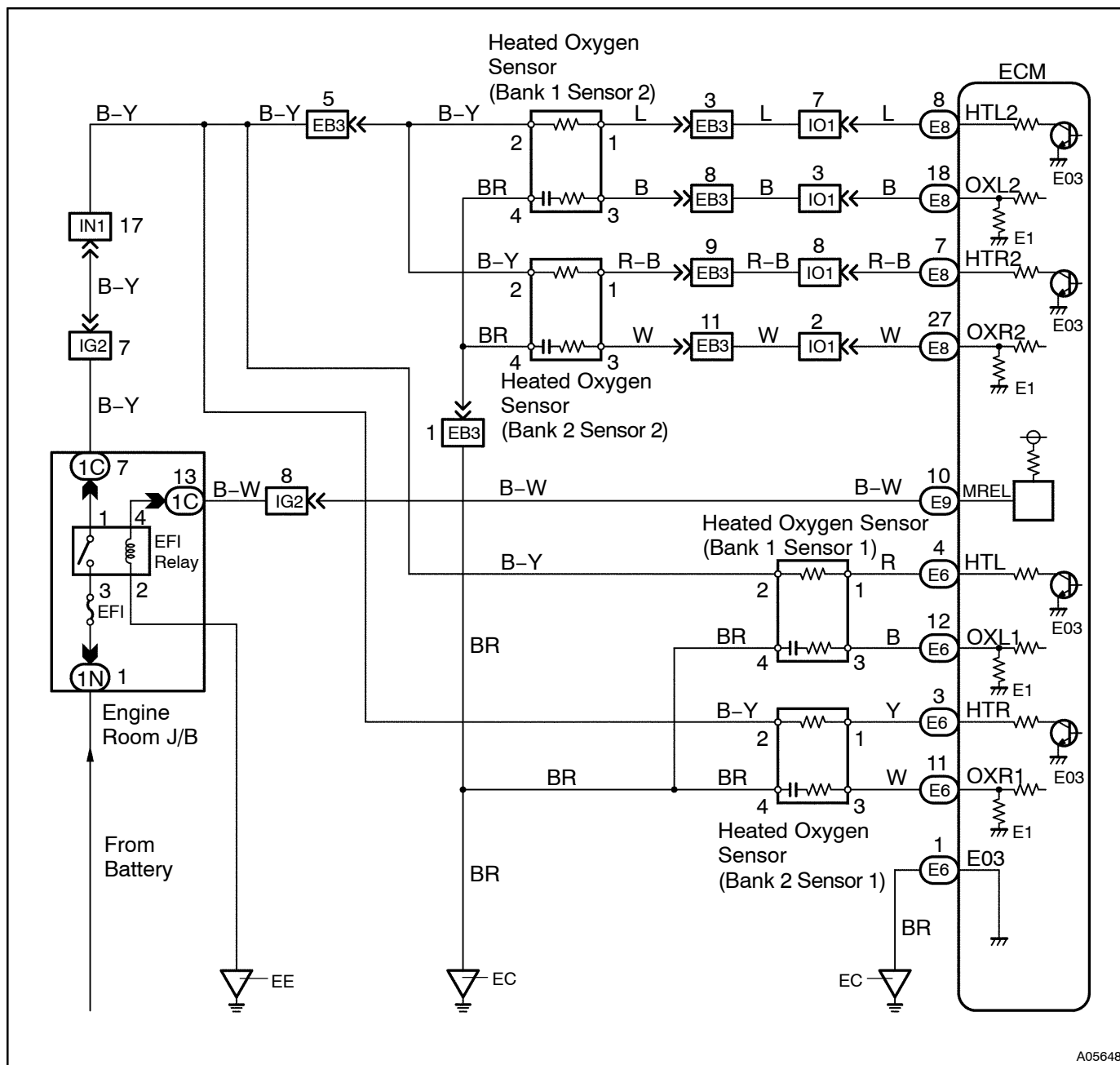
DTC No.	DTC Detecting Condition	Trouble Area
P0125	After the engine is warmed up, heated oxygen sensor (bank1, 2 sensor 1) output does not indicate RICH even once when conditions (a), (b), (c) and (d) continue for at least 1.5 min.: (a) Engine speed: 1,500 rpm or more (b) Vehicle speed: 40 ~ 100 km/h (25 ~ 62 mph) (c) Throttle valve does not fully closed (d) 140 sec. or more after starting engine	• Fuel system • Injector • Ignition system • Gas leakage on exhaust sytem • Open or short in heated oxygen sensor circuit • Heated oxygen sensor

HINT:

After confirming DTC P0125 use the OBD II scan tool or TOYOTA hand-held tester to confirm voltage output of the heated oxygen sensor from CURRENT DATA.

If voltage output of the heated oxygen sensor is 0 V, heated oxygen sensor circuit may be open or short.

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

- 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.
- If the vehicle run out of fuel, the air-fuel ratio is LEAN and DTC P0125 will be recorded. The MIL then comes on.

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

PREPARATION:

- Connect the OBD II scan tool or TOYOTA hand-held tester to the DLC3.
- Warm up the engine to normal operating temperature.

CHECK:

Read voltage output of the heated oxygen sensor (bank 1, 2 sensor 1) when the engine is suddenly raced.

HINT:

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

OK:

Heated oxygen sensor (bank 1, 2 sensor 1) output a RICH signal (0.45 V or more) at least once.

OK

Check and replace ECM (See page [IN-34](#)).

NG

2	Check for open and short in harness and connector between ECM and heated oxygen sensor (bank 1, 2 sensor 1) (See page IN-34).
---	--

NG

Repair or replace harness or connector.

OK

3	Perform diagnosis for misfire (See page DI-61).
---	--

NG

Repair or replace.

OK

4	Check gas leakage on exhaust system.
---	--------------------------------------

NG

Repair or replace.

OK

Replace heated oxygen sensor.