

DTC	P0420	Catalyst System Efficiency Below Threshold (Bank 1)
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DTC	P0430	Catalyst System Efficiency Below Threshold (Bank 2)
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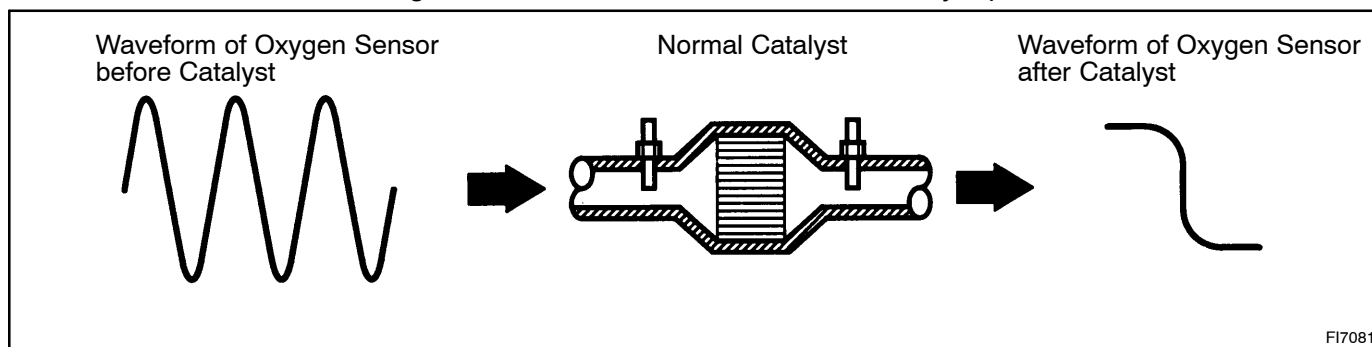
CIRCUIT DESCRIPTION

The ECM compares the waveform of the oxygen sensor located before the catalyst with the waveform of the oxygen sensor located after the catalyst to determine whether or not catalyst performance has deteriorated.

Air–fuel ratio feedback compensation keeps the waveform of the oxygen sensor before the catalyst repeatedly changing back and forth from rich to lean.

If the catalyst is functioning normally, the waveform of the oxygen sensor after the catalyst switches back and forth between rich and lean much more slowly than the waveform of the oxygen sensor before the catalyst.

But when both waveform change at a similar rate, it indicates that catalyst performance has deteriorated.



DTC No.	DTC Detecting Condition	Trouble Area
P0420	Bank 1 catalyst deterioration level exceeds malfunction threshold while vehicle is being driven under specified conditions (2 trip detection logic).	• LH front exhaust pipe (front and rear catalysts) • Gas leakage on exhaust system • Heated oxygen sensor (bank 1 sensor 1) • Heated oxygen sensor (bank 1 sensor 2)
P0430	Bank 2 catalyst deterioration level exceeds malfunction threshold while vehicle is being driven under specified conditions (2 trip detection logic).	• RH front exhaust pipe (front and rear catalysts) • Gas leakage on exhaust system • Heated oxygen sensor (bank 2 sensor 1) • Heated oxygen sensor (bank 2 sensor 2)

The diagram shows engine speed on the vertical axis and time on the horizontal axis. The vertical axis has two marked levels: 'Idling' and '2,500 ~ 3,000 rpm'. The horizontal axis has four marked intervals: (1) 'IG SW OFF', (2) 'Warmed up', (3) '3 min. or so', and (4) 'Check'. The engine speed starts at 'Idling' during (1), rises to '2,500 ~ 3,000 rpm' during (2), remains at that level during (3), and drops back to 'Idling' during (4).

- OX Signal Waveform (Oscilloscope)**
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- 1.0 V
- 0 V
- 200 msec./Division
- FI6514

If there is a malfunction in the system, the waveform of the heated oxygen sensor (bank 1, 2 sensor 2 (OXL2, OXR2)) is almost the same as that of the heated oxygen sensor (bank 1, 2 sensor 1 (OXL1, OXR1)) on the left.

Read freeze frame data using LEXUS 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 was warmed up or not, the air-fuel ratio was lean or rich, etc. at the time of the malfunction.

1	Are there any other codes (besides DTC P0420 or P0430) being output?
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Go to relevant DTC chart (See page [DI-15](#)).

2002 LEXUS LX470 (RM914U)

2	Check gas leakage on exhaust system.
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NG

Repair or replace.

OK

3	Check heated oxygen sensor (bank 1, 2 sensor 1) (See page DI-52).
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NG

Repair or replace.

OK

4	Check heated oxygen sensor (bank 1, 2 sensor 2) (See page DI-61).
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NG

Repair or replace.

OK

Replace front and rear catalysts (See page [EC-9](#)).

If DTC P0420 is present, replace the LH front exhaust pipe (front and rear catalysts).

If DTC P0430 is present, replace the RH front exhaust pipe (front and rear catalysts).