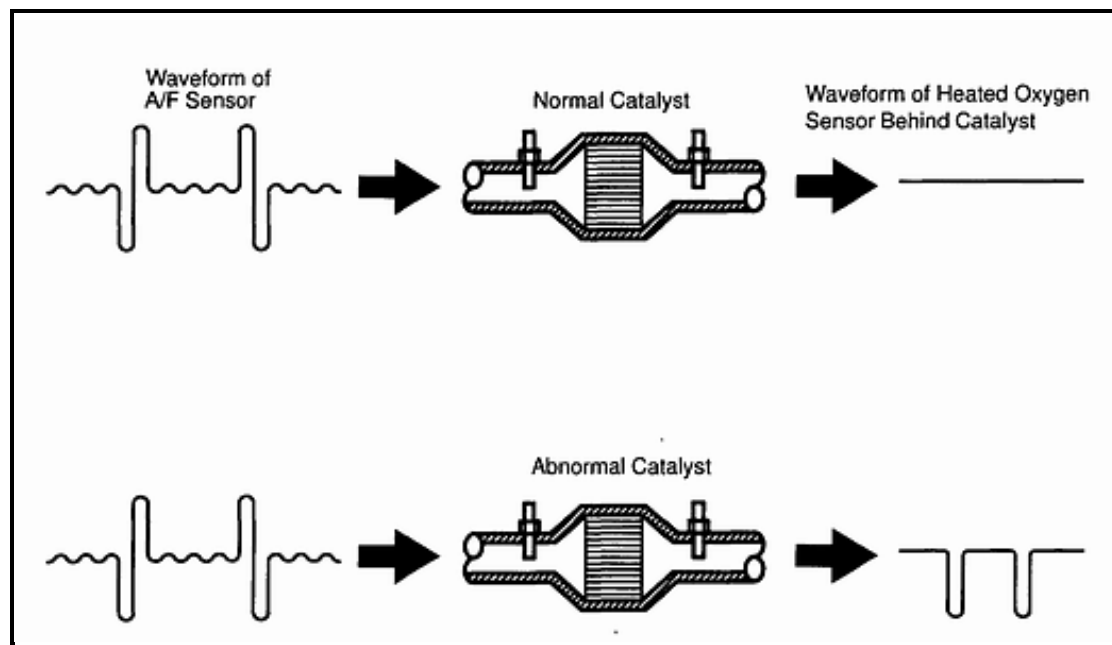
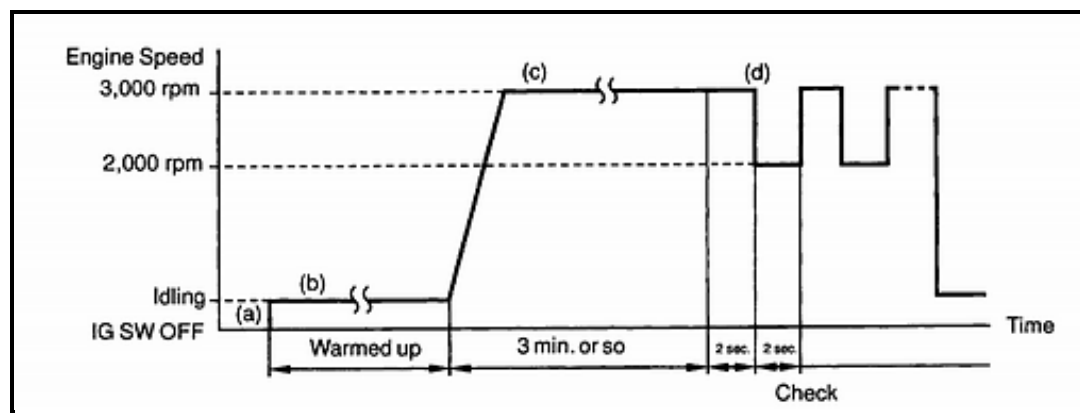


DTC P0420 - Catalyst System Efficiency Below Threshold

CIRCUIT DESCRIPTION

The ECM observes the waveform of the heated oxygen sensor located behind the catalyst to determine whether the catalyst performance has deteriorated. If the catalyst is functioning normally, the waveform of the heated oxygen sensor located behind the catalyst switches back and forth between rich and lean much more slowly. When the waveform of the heated oxygen sensor located behind the catalyst alternates flatteringly between rich and lean, it indicates that catalyst performance has deteriorated.

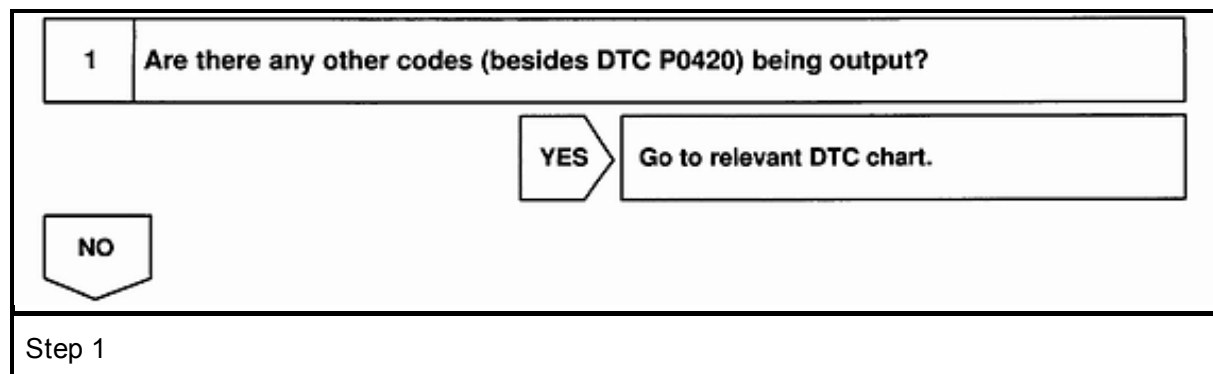
DTC No.	DTC Detecting Condition	Trouble Area
P0420	After engine and catalyst are warmed up, and while vehicle is driven within set vehicle and engine speed range, waveform of heated oxygen sensor (bank 1 sensor 2) alternates flatteringly between rich and lean (2 trip detection logic)	• Three-way catalytic converter • Open or short in heated oxygen sensor (bank 1 sensor 2) circuit • Heated oxygen sensor (bank 1 sensor 2) • Open or short in A/F sensor (bank 1 sensor 1) circuit • A/F sensor (bank 1 sensor 1)

DETECTING CONDITIONS



CONFIRMATION ENGINE RACING PATTERN

- Connect the OBD II scan tool or TOYOTA hand-held tester to the DLC3.
- Start engine and warm it up with all accessories switched **OFF** until water temp. is stable.
- Race the engine at **2,500 -3,000 rpm** for about **3 min.**
- When racing the engine at **3,000 rpm** for **2 sec.** and **2,000 rpm** for **2 sec.** alternately, check the waveform of the heated oxygen sensor (bank 1 sensor 2).



2	Check gas leakage on exhaust system.
OK	
NG	Repair or replace.
Step 2	

3	Check A/F sensor (bank 1 sensor 1)
OK	
NG	Repair or replace.
Step 3	

4	Check heated oxygen sensor (bank 1 sensor 2)
OK	
NG	Repair or replace.
Replace three-way catalytic converter.	
Step 4	

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.

© 2014 ALldata, LLC. All Rights Reserved. (Version 2.0.13637)