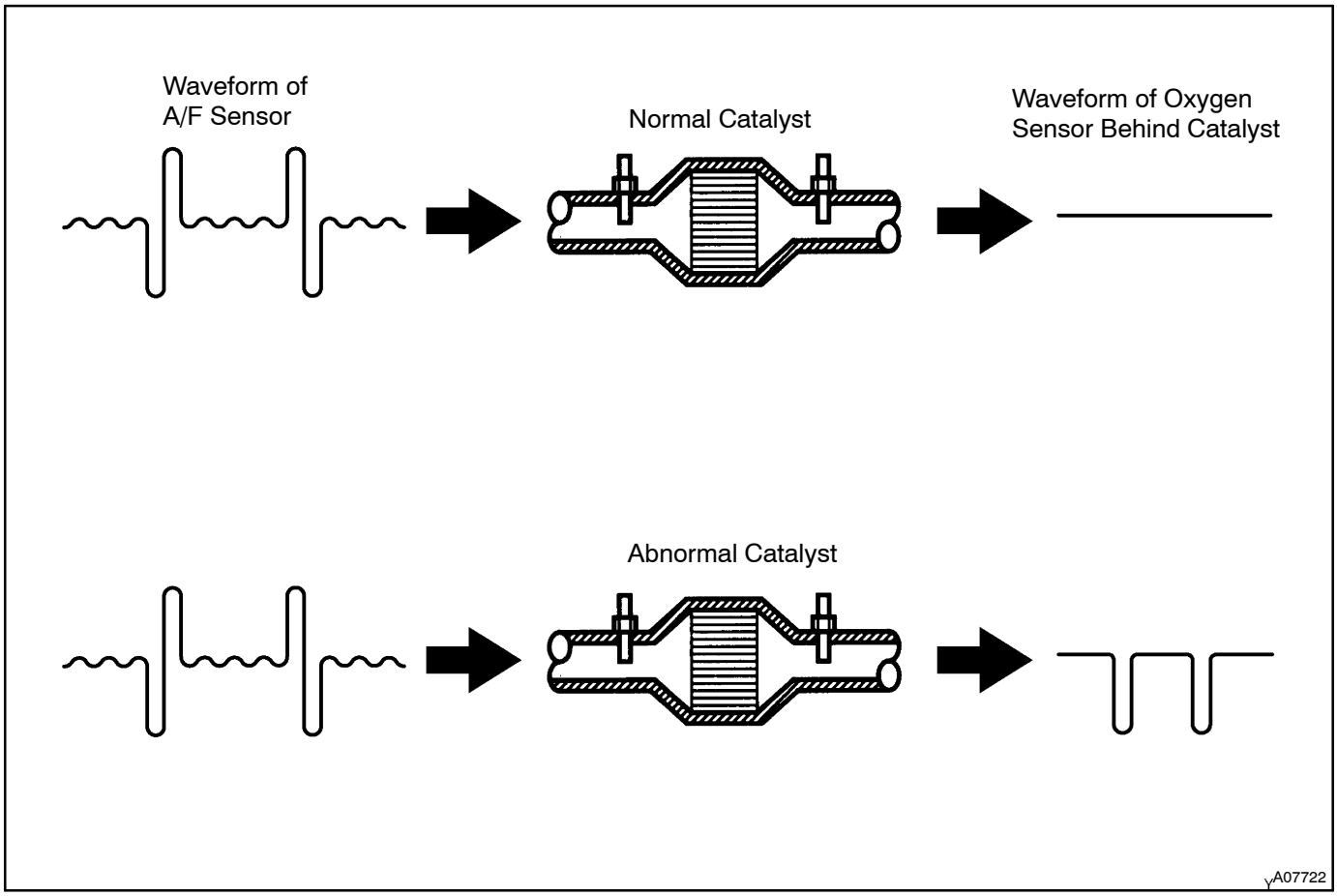
DI6WV–03

DTC	P0420	Catalyst System Efficiency Below Threshold (Bank 1)

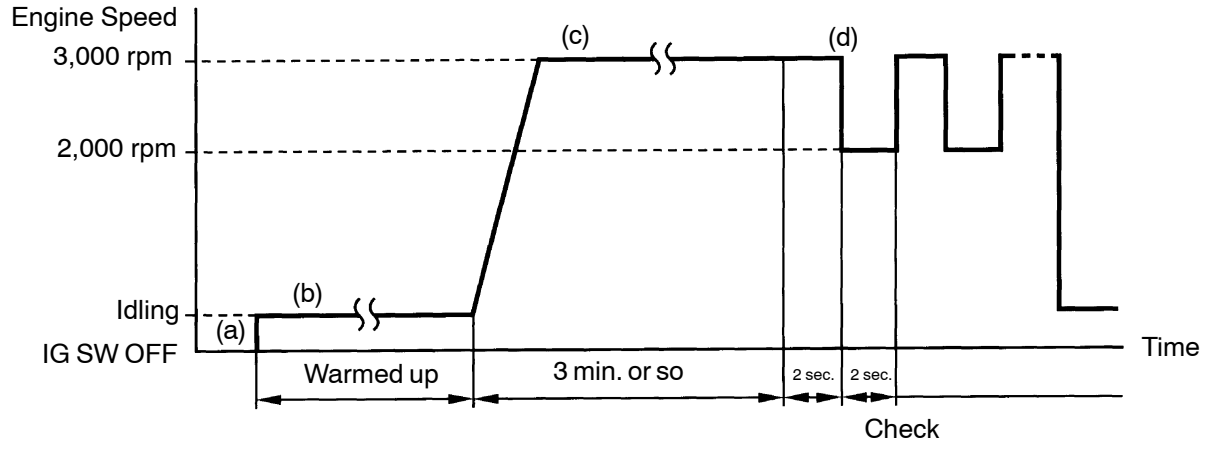
CIRCUIT DESCRIPTION

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



DTC No.	DTC Detection 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 oxygen sensor (bank 1 sensor 1) alternates flatteringly between rich and lean (2 trip detection logic)	• Gas leakage on exhaust system • A/F sensor (bank 1 sensor 1) • Oxygen sensor (bank 1 sensor 1) • Three–way catalytic converter

CONFIRMATION ENGINE RACING PATTERN



(a) Connect the hand–held tester to the DLC3.
(b) Start the engine and warm it up with all the accessories switched OFF until the water temperature is stable.
(c) Race the engine at 2,500 – 3,000 rpm for about 3 minutes.
(d) When racing the engine at 3,000 rpm for 2 seconds and 2,000 rpm for 2 seconds alternately, check the waveform of the oxygen sensor (bank 1 sensor 1).

INSPECTION PROCEDURE

HINT:
Read freeze frame data using the hand–held tester. Because freeze frame data records the engine conditions when a 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) being output?**

YES → **Go to relevant DTC chart (See page DI–13).**

NO

2	**Check gas leakage on exhaust system.**

NG → **Repair or replace.**

OK

3	Check A/F sensor (bank 1 sensor 1) (See page FI–2).

NG → Repair or replace.

OK

4	Check oxygen sensor (bank 1 sensor 1) (See page FI–4).

NG → Repair or replace.

OK

Replace three–way catalytic converter.