

DTC	P0325	Knock Sensor 1 Circuit Malfunction
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DTC	P0330	Knock Sensor 2 Circuit Malfunction
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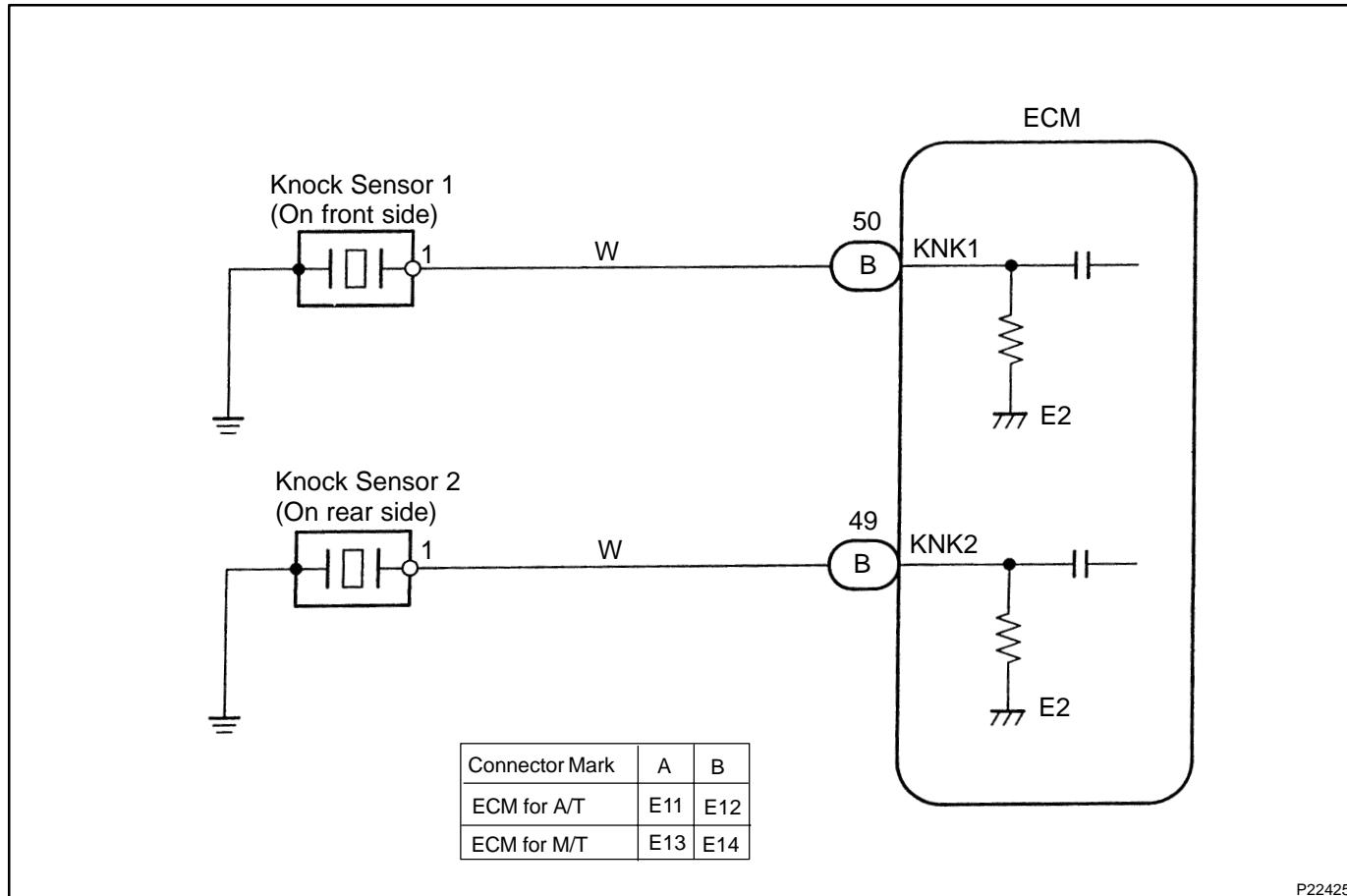
CIRCUIT DESCRIPTION

Knock sensors are fitted one each to the front and rear of the left side of the cylinder block to detect engine knocking. This sensor contains a piezoelectric element which generates a voltage when it becomes deformed, which occurs when the cylinder block vibrates due to knocking. If engine knocking occurs, ignition timing is retarded to suppress it.

DTC No.	DTC Detecting Condition	Trouble Area
P0325	No knock sensor 1 signal to ECM with engine speed between 1,700 rpm and 5,200 rpm	<ul style="list-style-type: none"> • Open or short in knock sensor 1 circuit • Knock sensor 1 (looseness) • ECM
P0330	No knock sensor 2 signal to ECM with engine speed between 1,700 rpm and 5,200 rpm	<ul style="list-style-type: none"> • Open or short in knock sensor 2 circuit • Knock sensor 2 (looseness) • ECM

If the ECM detects the above diagnosis conditions, it operates the fail safe function in which the corrective retard angle value is set to the maximum value.

WIRING DIAGRAM



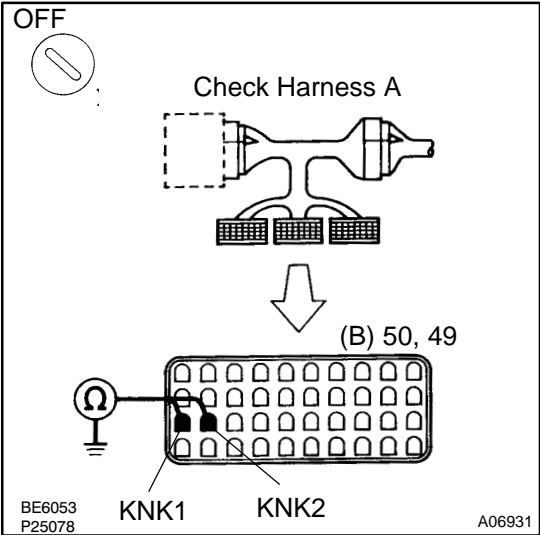
P22425

INSPECTION PROCEDURE

HINT:

- DTC P0325 is for the knock sensor circuit on the front side.
- DTC P0330 is for the knock sensor circuit on the rear side.

1	Check continuity between terminal KNK1, KNK2 of ECM connector and body ground.
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PREPARATION:

Connect Check Harness A to the connectors on the wire harness side. (See page DI-18)

HINT:

The other side of Check Harness A is not connected to the ECM terminals.

CHECK:

Measure resistance between terminal KNK1, KNK2 of ECM connector and body ground.

HINT:

- Connect terminal KNK1 to knock sensor 1.
- Connect terminal KNK2 to knock sensor 2.

OK:

Resistance: 1 MΩ or higher

OK	Go to step 3.
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NG

2	Check knock sensor 1, 2 (See page SF-75).
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NG	Replace knock sensor 1, 2.
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OK

3	Check for open and short in harness and connector between ECM and knock sensor 1, 2 (See page IN-29).
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NG	Repair or replace harness or connector.
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OK

4

Does malfunction disappear when a good knock sensor is installed?

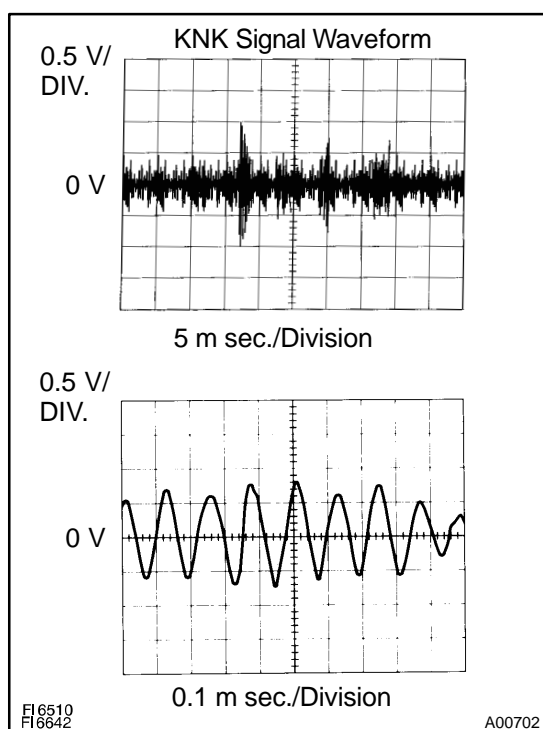
YES

Replace knock sensor 1, 2.

NO

Check and replace ECM
(See page [IN-29](#)).

Reference INSPECTION USING OSCILLOSCOPE



- With the engine racing (4,000 rpm) measure waveform between terminals KNK1, KNK2 of ECM and body ground.

HINT:

The correct waveform is as shown.

- Spread the time on the horizontal axis, and confirm that period of the wave is 123 $\frac{1}{3}$ sec.
(Normal mode vibration frequency of knock sensor: 8.1 KHz).

HINT:

If normal mode vibration frequency is not 8.1 KHz, the sensor is malfunctioning.