DI6JI–01

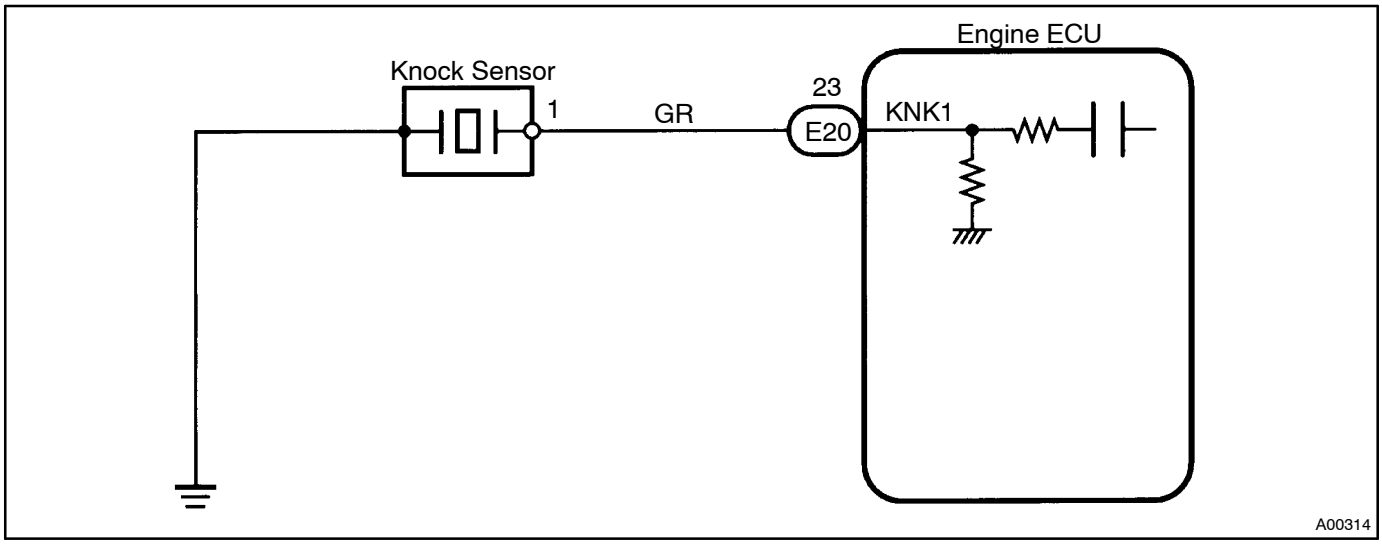
DTC	52	Knock Sensor Circuit

CIRCUIT DESCRIPTION

Knock sensor is fitted to 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.

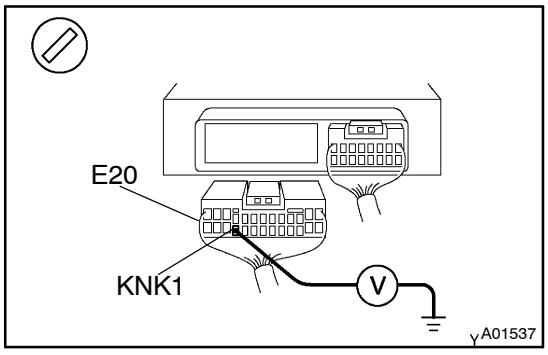
DTC No.	DTC Detecting Condition	Trouble Area
52	No knock sensor signal to engine ECU with engine speed 1,200 rpm or more	• Open or short in knock sensor circuit • Knock sensor (looseness) • Engine ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

1	**Check continuity between terminal KNK1 of engine ECU connector and body ground.**



PREPARATION:

(a) Disconnect the engine ECU from the bracket (See page FI–36).

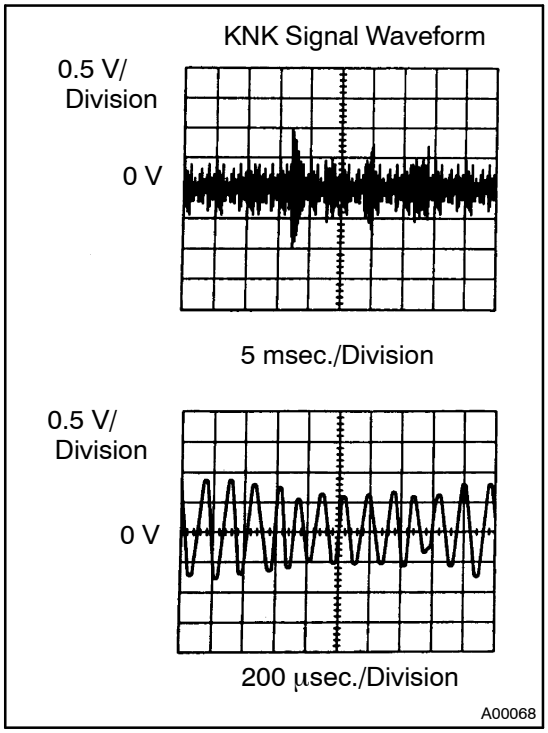
(b) Disconnect the E20 connector from the engine ECU.

CHECK:

Measure the resistance between terminal KNK1 of engine ECU connector and body ground.

OK:

Resistance: 1 MΩ or higher



Reference: INSPECTION USING OSCILLOSCOPE

- With the engine racing (4,000 rpm), check the waveform between terminal KNK of the engine ECU connector 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 151 μsec. (Normal mode vibration frequency of knock sensor: 6.6 kHz).

HINT:
If normal mode vibration frequency is not 6.6 kHz, the sensor is malfunctioning.

OK	**Go to step 3.**

NG

2	**Check knock sensor (See page FI–35).**

NG	**Replace knock sensor.**

OK

3	**Check for open and short in harness and connector between engine ECU and knock sensor (See page IN–19).**

NG	**Repair or replace harness or connector.**

OK

4	**Does malfunction disappear when a good knock sensor is installed?**

YES	**Replace knock sensor.**

NO

Check and replace engine ECU (See page IN–19).