DTC	19 (2)	Accelerator Pedal Position Sensor Circuit Malfunction (IDL Switch/Range)

CIRCUIT DESCRIPTION

Refer to DTC 19 (1) on page DI–29.

DTC No.	DTC Detecting Condition	Trouble Area
19(2)	Condition (a) or (b) continues 0.05 sec. or more: (a) IDL ON and VA > 1.4 V (b) IDL ON and VAS >1.4 V	• Open or short in accelerator pedal position sensor circuit • Accelerator pedal position sensor • Engine ECU
	Condition (a) or (b) continues 0.5 sec. or more: (a) IDL OFF and VA < 0.6 V (b) IDL OFF and VAS < 0.6 V	
	Conditions (a) and (b) continue 0.05 sec. or more: (a) 0.6 V < VA < 4.4 V and 0.6 V < VAS < 4.4 V (b) VA – VAS > 0.5 V	

WIRING DIAGRAM

Refer to DTC 19 (1) on page DI–29.

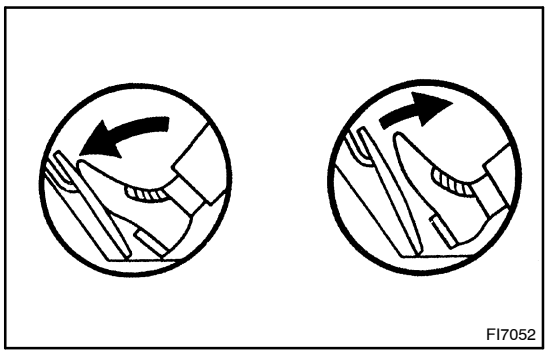
INSPECTION PROCEDURE

HINT:

Read freeze frame data using the hand–held tester. 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.

When using hand–held tester:

1	Connect hand–held tester, and read IDL signal.



PREPARATION:

(a) Connect the hand–held tester to the DLC3.

(b) Turn the ignition switch ON and push the hand–held tester main switch ON.

CHECK:

Read the IDL signal.

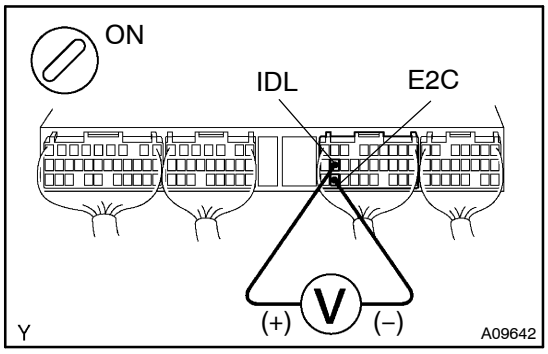
OK:

Accelerator Pedal	IDL Signal
Fully open	OFF
Fully closed	ON

OK	Go to step 4.

NG

2	**Check voltage between terminals IDL and E2C of engine ECU connector.**



PREPARATION:

(a) Disconnect the engine ECU from the body bracket (See page ED–30).

(b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals IDL and E2C of the engine ECU connector.

OK:

Accelerator Pedal	Voltage
Fully closed	13 – 18 V
Fully open	0 – 3 V

OK → **Check and replace engine ECU (See page IN–20).**

NG

3	**Check for open and short in harness and connector in IDL circuit between engine ECU and accelerator pedal position sensor (See page IN–20).**

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

OK

Replace accelerator pedal position sensor.

4	**Connect hand–held tester, and read accelerator pedal operating percentage (See page DI–29, step 1).**

OK → **Check for intermittent problems (See page DI–4).**

NG

5	Check voltage between terminal VCC of accelerator pedal position sensor connector and body ground (See page DI–29, step 2).

NG → Go to step 8.

OK ↓

6	Check voltage between terminals VA and E2C, and VAS and E2C of engine ECU connector (See page DI–29, step 3).

OK → Check and replace engine ECU (See page IN–20).

NG ↓

7	Check for open and short in harness and connector in VA and VAS circuits between engine ECU and accelerator pedal position sensor (See page IN–20).

NG → Repair or replace harness or connector.

OK ↓

Replace accelerator pedal.

8	Check voltage between terminals VCC and E2C of engine ECU connector (See page DI–29, step 5).

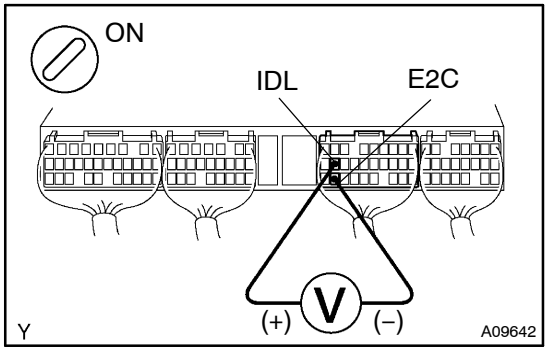
NG → Check and replace engine ECU (See page IN–20).

OK ↓

Check for open in harness and connecter in VCC circuit between engine ECU and accelerator pedal position sensor (See page IN–20).

When not using hand–held tester:

1	**Check voltage between terminals IDL and E2C of engine ECU connector.**



PREPARATION:

(a) Disconnect the engine ECU from the body bracket (See page ED–30).

(b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals IDL and E2C of the engine ECU connector.

OK:

Accelerator Pedal	Voltage
Fully closed	13 – 18 V
Fully open	0 – 3 V

OK	**Go to step 3.**

NG

2	**Check for open and short in harness and connector in IDL circuit between engine ECU and accelerator pedal position sensor (See page IN–20).**

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

OK

Replace accelerator pedal.

3	**Check voltage between terminal 4 of accelerator pedal position sensor connector and body ground (See page DI–29, step 2).**

NG	**Go to step 6.**

OK

4	**Check voltage between terminals VA and E2C, and VAS and E2C of engine ECU connector (See page DI–29, step 3).**

OK → Check and replace engine ECU (See page IN–20).

NG

5	Check for open and short in harness and connector in VA and VAS circuits between engine ECU and accelerator pedal position sensor (See page IN–20).

NG → Repair or replace harness or connector.

OK

Replace accelerator pedal.

6	Check voltage between terminals VCC and E2C of engine ECU connector (See page DI–29, step 5).

NG → Check and replace engine ECU (See page IN–20).

OK

Check for open in harness and connector in VCC circuit between engine ECU and accelerator pedal position sensor (See page IN–20).