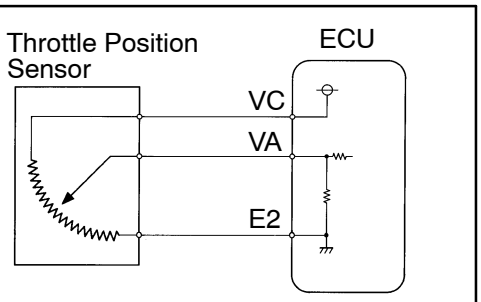
DI3UG–01

DTC	41	Throttle Position Sensor Circuit

CIRCUIT DESCRIPTION

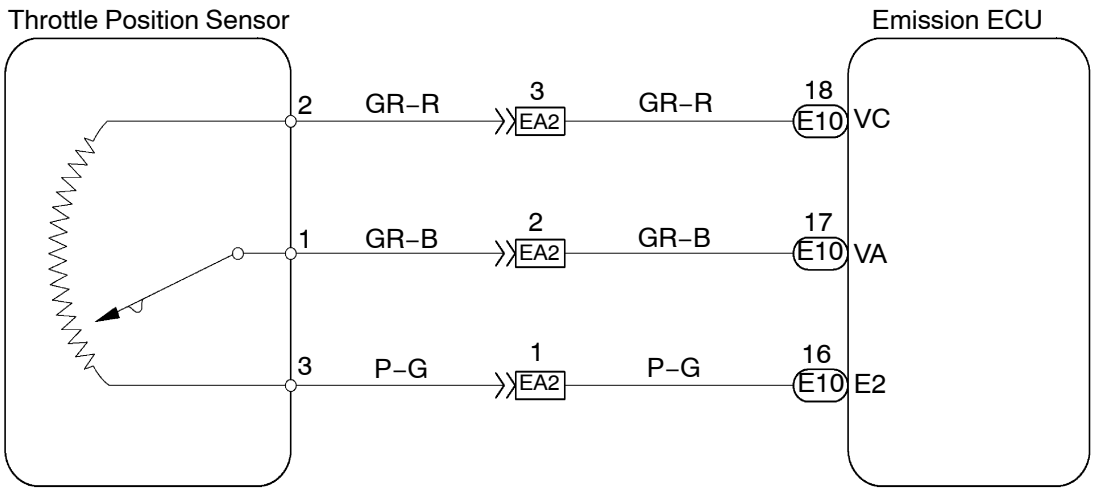


The throttle position sensor is mounted in the throttle body and detects the throttle valve opening angle. When the throttle valve is fully closed, a voltage of approximately 3.2 – 4.9 V is applied to the terminal VA of the ECU. When the throttle valve is opened, the voltage applied to the terminal VA of the ECU increases in proportion to the opening angle of the throttle valve and becomes approximately 0.2 – 1.6 V when the throttle valve is fully opened. The ECU judges the vehicle driving conditions from these signals input from the terminals VA, and uses them as one of the conditions for deciding the air–fuel ratio correction, power increase correction and fuel–cut control etc.

DTC No.	DTC Detecting Condition	Trouble Area
41	Open or short in throttle position sensor circuit for 0.5 sec. or more	• Open or short in throttle position sensor circuit • Throttle position sensor • Emission ECU

HINT:
When the connector for the throttle position sensor is disconnected, diagnostic trouble code 41 is not displayed. Diagnostic trouble code 41 is displayed only when there is an open or short in the VA signal circuit of the throttle position sensor.

WIRING DIAGRAM



Y

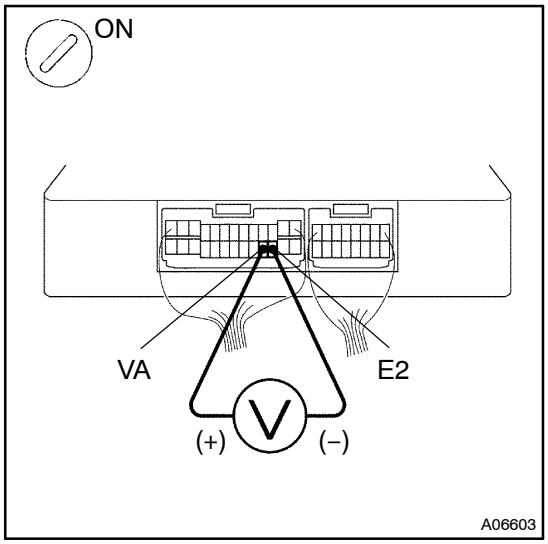
A06811

INSPECTION PROCEDURE

HINT:

If diagnostic trouble codes ”22” (water temperature sensor circuit), ”31” (vacuum sensor circuit) and ”41” (throttle position sensor circuit) are output simultaneously, E2 (sensor ground) may be open.

1	**Check voltage between terminals VA and E2 of emission ECU connector.**



PREPARATION:

(a) Disconnect the emission ECU from the body panel. (See page EC–10)

(b) Turn ignition switch ON.

CHECK:

Measure voltage between terminals VA and E2 of emission ECU connector when the adjusting lever is opened gradually from the closed condition.

OK:

Adjusting lever	Voltage
Fully closed	3.2 – 4.9 V
Fully open	0.2 – 1.6 V

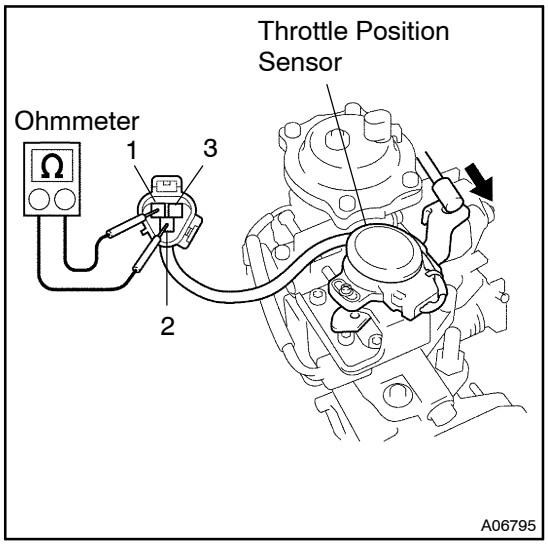
HINT:

The voltage should increase steadily in proportion to the throttle valve opening angle.

OK → **Check for problem symptoms table. (See page DI–12)**

NG

2	Check throttle position sensor.



PREPARATION:

Disconnect throttle position sensor connector.

CHECK:

Measure resistance between terminals 1, 3 and 2 of throttle position sensor connector when the adjusting lever is opened gradually from the closed condition.

OK:

Terminals	Adjusting lever	Resistance
1 – 2	–	1.84 – 3.42 kΩ
2 – 3	Fully closed	1.3 – 7.6 kΩ
	Fully open	0.2 – 6.0 kΩ

HINT:

Resistance between terminals 2 and 3 should increase gradually in accordance with the throttle valve opening angle.

NG → **Replace throttle position sensor.**

OK

3	Check for open and short in harness and connector between emission ECU and throttle position sensor. (See page IN–9)

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

OK

Check and replace emission ECU.