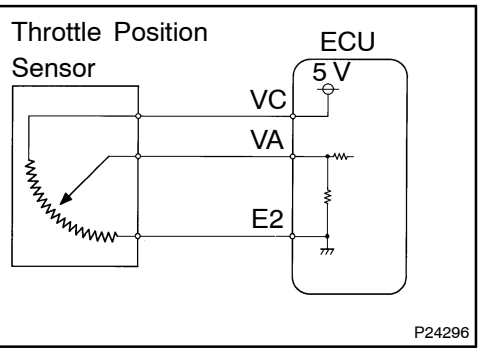
DI3WR–02

DTC	41	Throttle Position Sensor Circuit

CIRCUIT DESCRIPTION



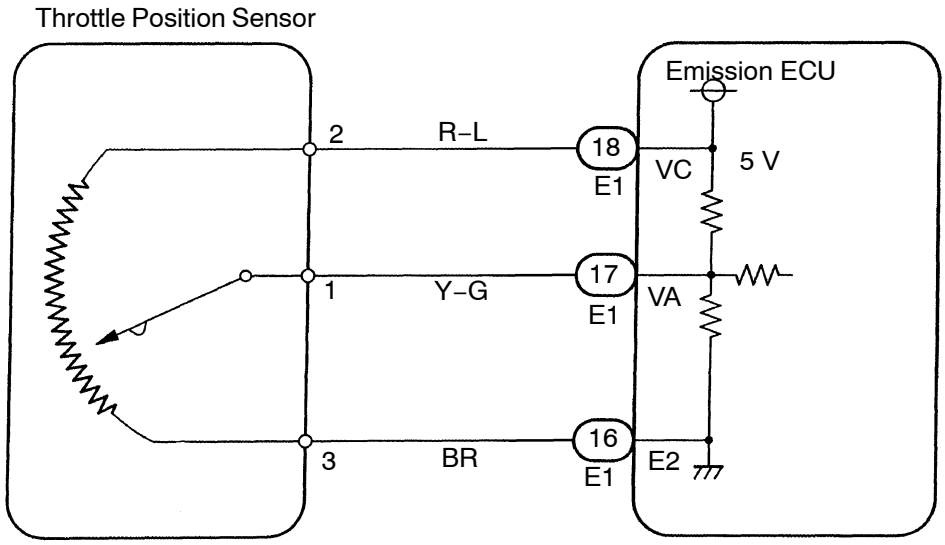
The throttle position sensor is mounted on the injection pump with the bracket and detects the adjusting lever angle. When the adjusting lever is at the idle speed side, a voltage of approximately 0.3 – 0.8 V is applied to terminal VA of the ECU. When the adjusting lever is opened, the voltage applied to the terminal VA of the ECU increases in proportion to the angle of the adjusting lever and becomes approximately 3.2 – 4.9 V when the adjusting lever is at the maximum speed side. The ECU judges the vehicle driving conditions from these signals input from 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

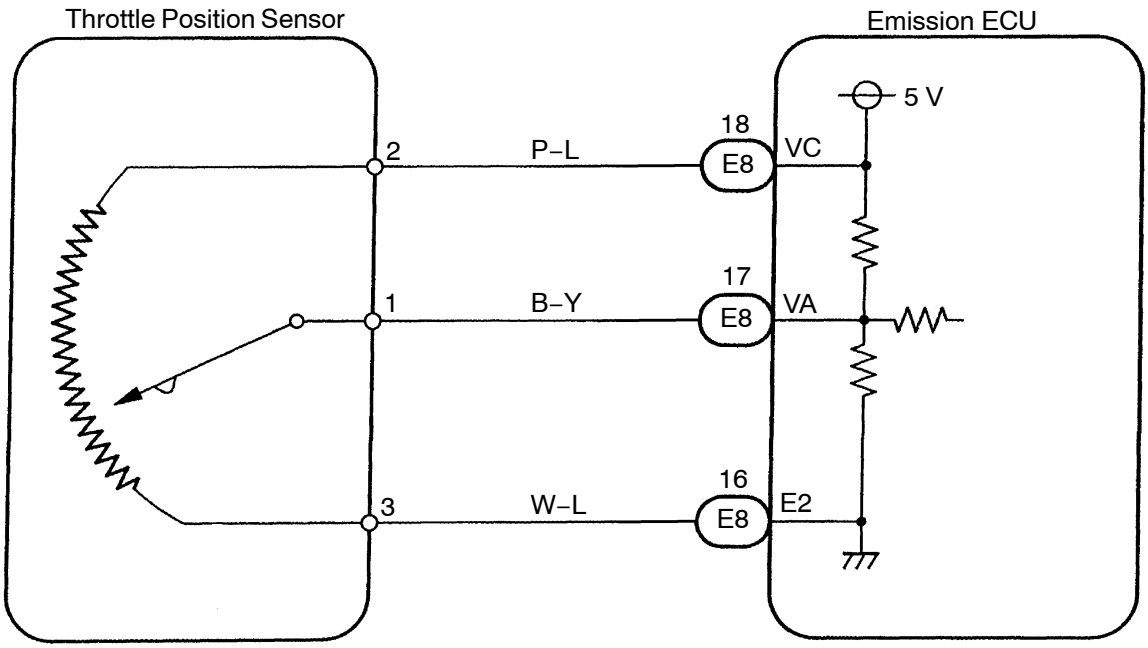
HINT:
When the connector for the throttle position sensor is disconnected, diagnostic trouble code 41 is not displayed. Diagnostic trouble code 41 is displayed only when there is an open or short in the VA signal circuit of the throttle position sensor.

WIRING DIAGRAM

LXH Series

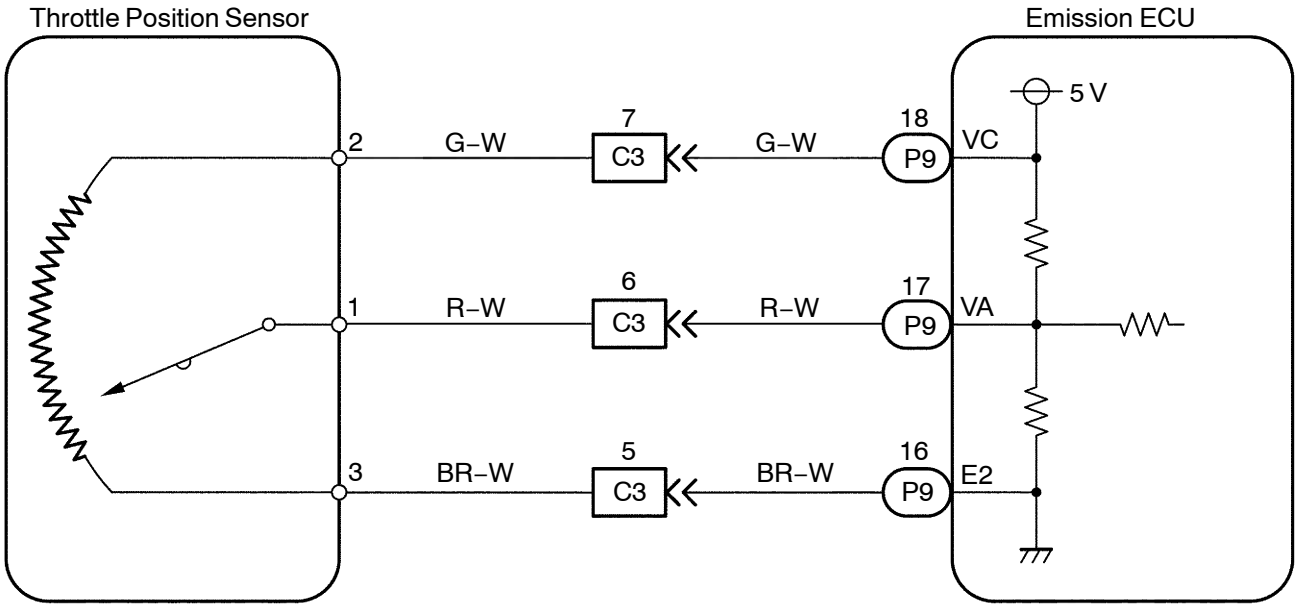


LN Series



A00374

LY Series



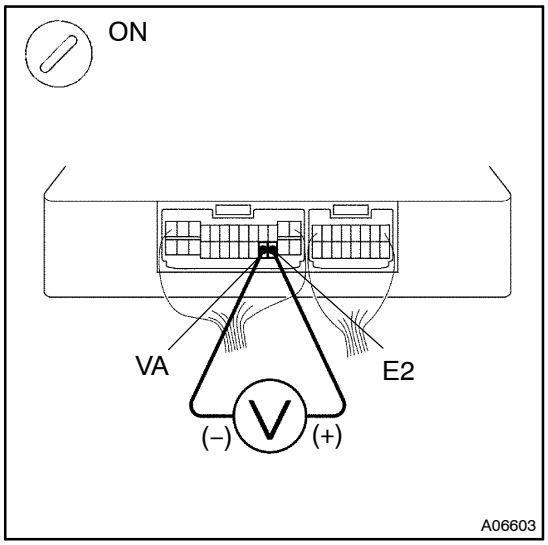
P

A07477

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.**



PREPARATION:

(a) Disconnect the emission ECU from the body panel (See page EC–6).

(b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals VA and E2 of the emission ECU when the adjusting lever is turning to the maximum speed side gradually from the idle speed side.

OK:

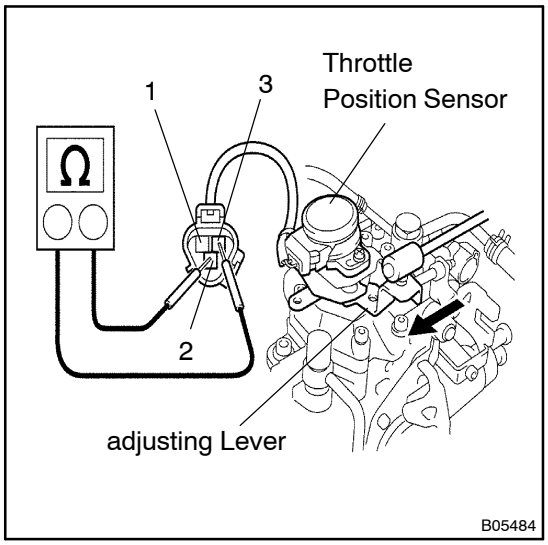
Adjusting lever	Voltage
Idle speed side	0.3 – 1.0 V
Maximum speed side	2.7 – 5.2 V

HINT:
The voltage should increase steadily in proportion to the adjusting valve opening angle.

OK → **Check for problem symptoms table (See page DI–16).**

NG

2	Check throttle position sensor.



PREPARATION:

Disconnect the throttle position sensor connector.

CHECK:

Measure the resistance between terminals 1, 3 and 2 of the throttle position sensor connector when the adjusting lever is turning to the maximum speed side. gradually from the idle speed side.

OK:

Terminals	Adjusting lever	Resistance
1 – 2	–	1.84 – 3.42 kΩ
2 – 3	Idle speed side	1.3 – 7.6 kΩ
	Maximum speed side	0.2 – 6.0 kΩ

HINT:

The resistance between terminals 2 and 3 should increase gradually in accordance with the adjusting valve 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–19).

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

OK

Check and replace emission ECU.