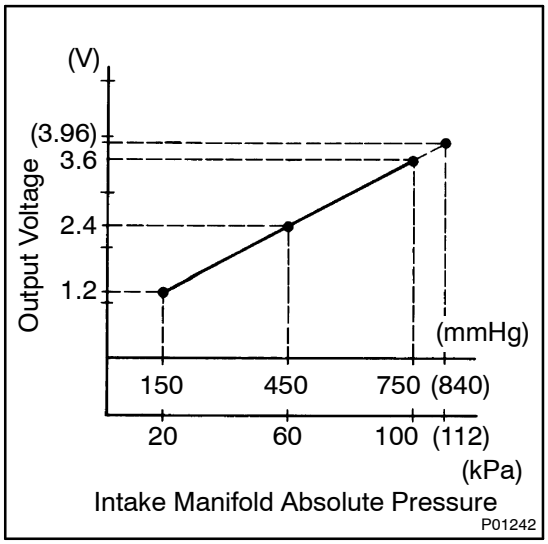
DTC 31 VACUUM SENSOR CIRCUIT

CIRCUIT DESCRIPTION

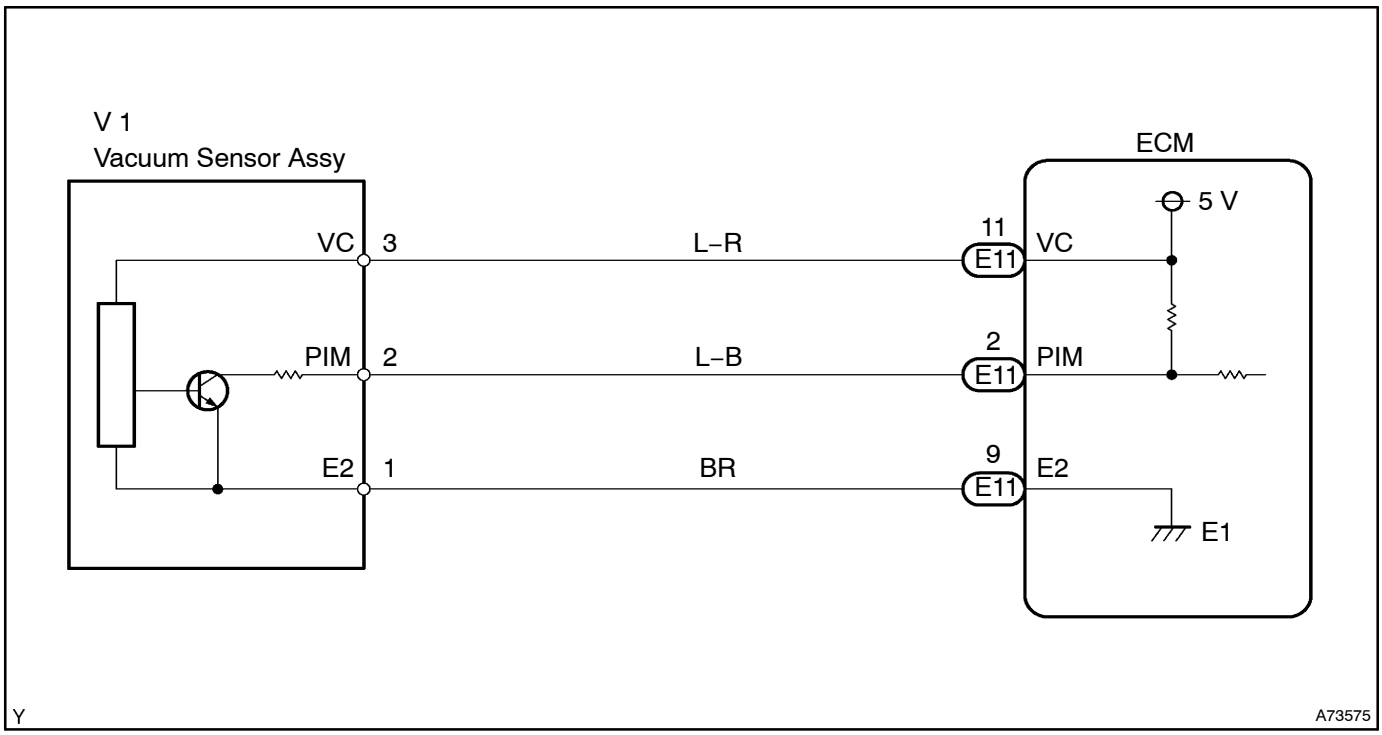


By a built–in sensor unit, the vacuum sensor detects the intake manifold pressure as a voltage. The ECM the determines the basic injection duration basic ignition advance angle based on this voltage.

Since the vacuum sensor does not use the atmospheric pressure as a criterion, but senses the absolute pressure inside the intake manifold (the pressure in proportion to the preset absolute vacuum 0), it is not influenced by fluctuations in the atmospheric pressure due to high altitude and other factors. this permits it to control the air–fuel ratio at the proper level under all conditions.

DTC No	DTC Detecting Condition	Trouble Area
31	Open or short in vacuum sensor circuit 0.5 sec. or more	• Open or short in vacuum sensor circuit • Vacuum sensor assy • ECM

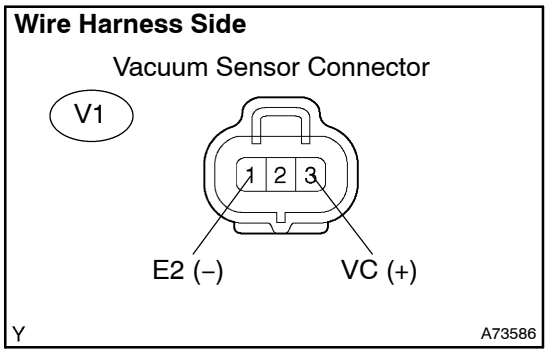
WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:
If different DTCs that are related to different systems are output simultaneously while terminal E2 is used as a ground terminal, terminal E2 may be open.

1 CHECK HARNESS AND CONNECTOR (VACUUM SENSOR POWER SOURCE)



(a) Disconnect V1 vacuum sensor connector.
(b) Turn the ignition switch ON.
(c) Measure the voltage between the wire harness side connector.

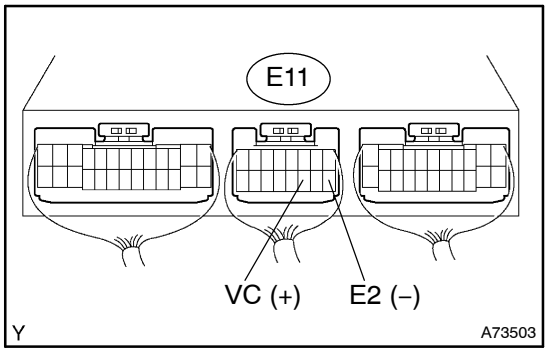
Voltage:

Symbols (Terminal No.)	Specified condition
VC (V1–3) ⇔ E2 (V1–1)	4.5 – 5.5 V

NG → **Go to step 5**

OK

2 CHECK ECM (VC VOLTAGE)



(a) Turn the ignition switch ON.
(b) Measure the voltage between the terminals of E11 ECM connector.

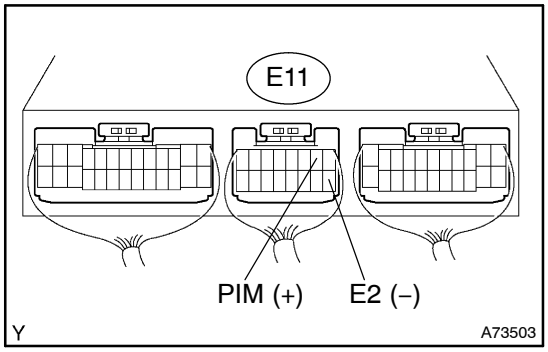
Standard:

Symbols (Terminal No.)	Specified Condition
VC (E11–11) ⇔ E2 (11–9)	4.5 – 5.5 V

NG → **CHECK AND REPLACE ECM (See page 01–36)**

OK

3 CHECK ECM (PIM VOLTAGE)



(a) Turn the ignition switch ON.
(b) Measure the voltage between the terminals of E11 ECM connector.

Standard:

Symbols (Terminal No.)	Specified condition
PIM (E11–2) ⇔ E2 (E11–9)	3.3 – 3.9 V

OK → **Go to step 5**

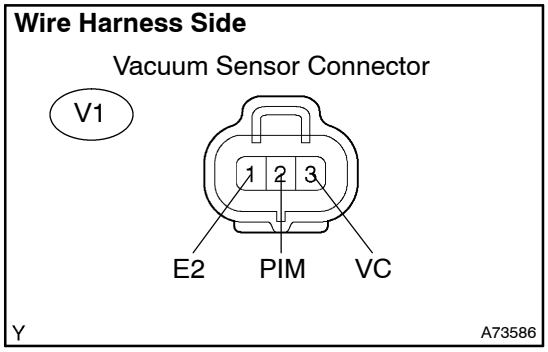
OK

4	CHECK VACUUM SENSOR ASSY (SUPPLY POWER) (See page 10–5)

NG → REPLACE VACUUM SENSOR ASSY

OK

5	CHECK AND REPLACE HARNESS AND CONNECTOR (VACUUM SENSOR ASSY ⇔ ECM)



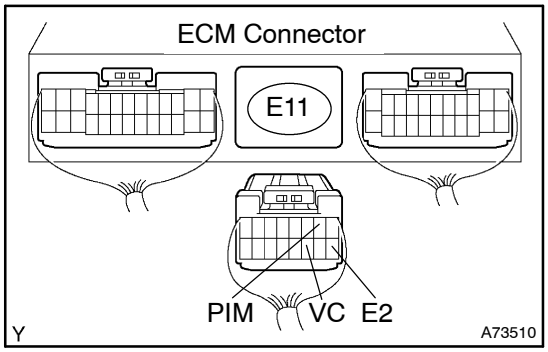
(a) Disconnect V1 vacuum sensor connector.
(b) Disconnect the E11 ECM connector
(c) Check the continuity between the wire harness side connector.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
VC (V1–3) ⇔ VC (E11–11)	Continuity
PIM (V1–2) ⇔ PIM (E11–2)	
E2 (V1–1) ⇔ E2 (E11–9)	

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
VC (V1–3) or VC (E11–11) ⇔ Other terminals and body ground	No continuity
PIM (V1–2) or PIM (E11–2) ⇔ Other terminals and body ground	



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

CHECK AND REPLACE ECM (See page 01–36)