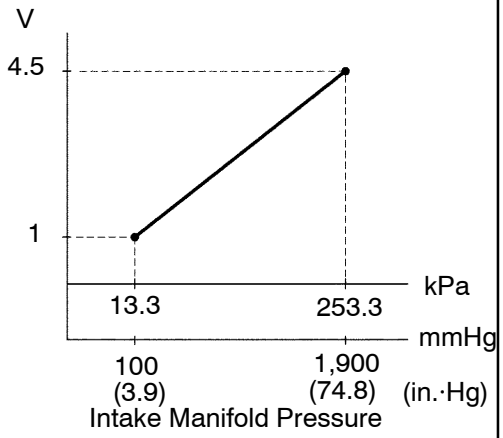
DTC	35	TURBO PRESSURE SENSOR CIRCUIT MALFUNCTION

CIRCUIT DESCRIPTION



The turbo pressure sensor is connected to the intake manifold. The ECM detects the intake manifold pressure as a voltage by the sensor. The ECM uses the intake manifold pressure signal for correction of injection volume control and injection timing control.

The VSV for turbo pressure sensor changes the atmosphere applied to the turbo pressure sensor into the intake manifold pressure. The turbo pressure sensor monitors both the atmospheric pressure and intake manifold pressure and transmits the output voltage to the ECM, and the ECM uses this atmospheric pressure value for correcting the injection volume.

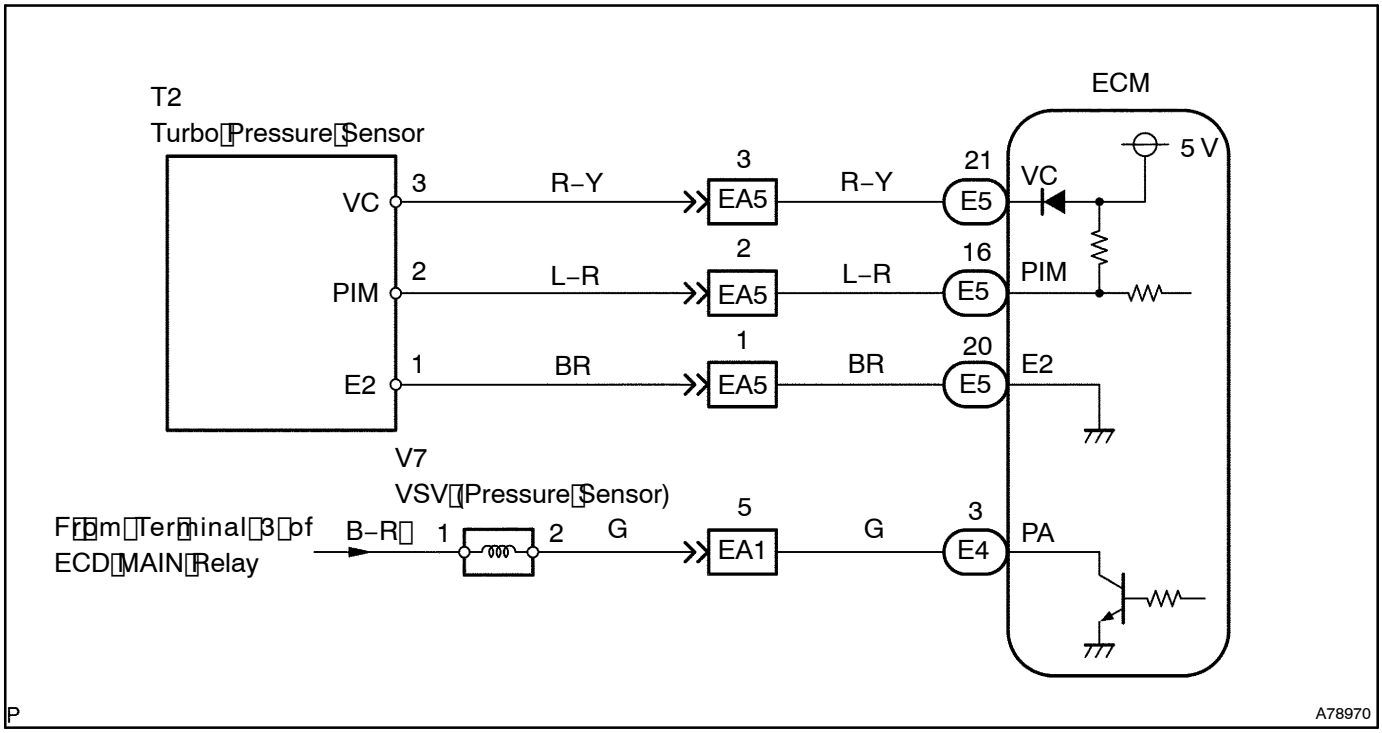
DTC No.	DTC Detection Condition	Trouble Area
35	Open or short in turbo pressure sensor circuit for 2 sec. or more	• Open or short in turbo pressure sensor circuit • Turbo pressure sensor • Open or short in VSV circuit for turbo pressure sensor • VSV for turbo pressure sensor • Vacuum hose disconnected or blocked • ECM

HINT:

After confirming DTC 35, use the hand–held tester to check the intake manifold pressure from the CURRENT DATA.

Intake Manifold Pressure (kPa)	Malfunction
Approx. 0	• PIM circuit short
130 or more	• VC circuit open or short • PIM circuit open • E2 circuit open

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

- If DTCs 22, 24, 35 and 39 are output simultaneously, terminal E2 (sensor ground) may be open.
- Read freeze frame data using the hand–held tester, as freeze frame data records the engine conditions when a 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	READ VALUE OF HAND–HELD TESTER

(a) Connect the hand–held tester to the DLC3.
(b) Turn the ignition switch ON and push the hand–held tester main switch ON.
(c) Read the intake manifold pressure value displayed on the hand–held tester.
Standard: The same as the atmospheric pressure.

OK	Go to step 5

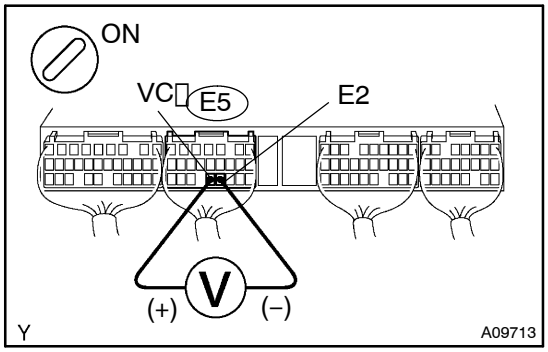
NG

2	CHECK TURBO PRESSURE SENSOR (See page 10–1)

NG	REPLACE TURBO PRESSURE SENSOR

OK

3	CHECK ECM

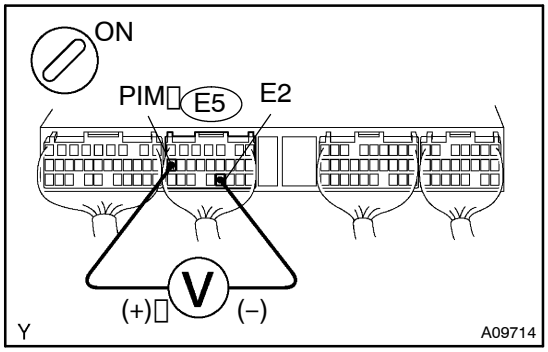


(a) Turn the ignition switch ON.
(b) Check the voltage between the terminals of shown in the illustration.
Voltage: 4.5 – 5.5 V

NG → **CHECK AND REPLACE ECM**

OK

4	CHECK ECM



(a) Turn the ignition switch ON.
(b) Check the voltage between the terminals of shown in the illustration.
Voltage: 4.5 – 5.5 V

NG → **CHECK AND REPLACE ECM**

OK

CHECK WIRE HARNESS (ECM ⇔ TURBO PRESSURE SENSOR) (See page 01–27)

5	CHECK CONNECTION OF VACUUM HOSE

(a) Check connection of the vacuum hose between turbo pressure sensor and VSV for turbo pressure sensor, and VSV for turbo pressure sensor and intake manifold.

NG → **REPAIR OR REPLACE VACUUM HOSE**

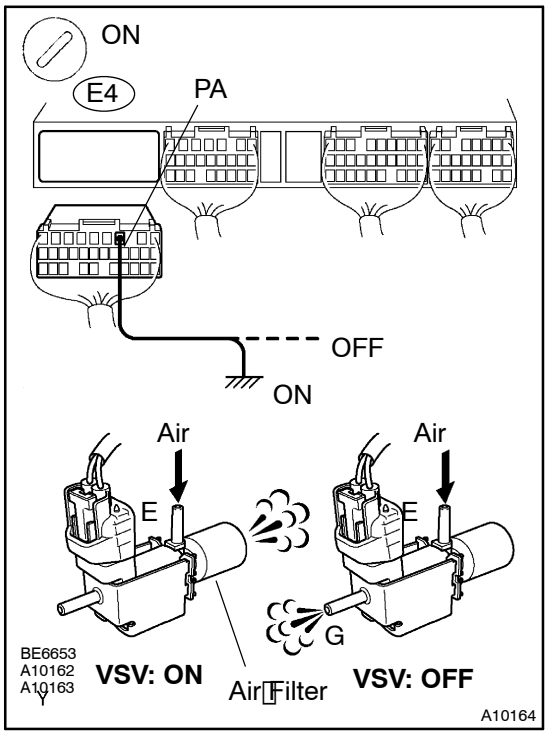
OK

6	CHECK VSV FOR TURBO PRESSURE SENSOR (See page 10–1)

NG → REPLACE VSV FOR TURBO PRESSURE SENSOR

OK

7	CHECK VSV FOR TURBO PRESSURE SENSOR



(a) Disconnect the E4 connector from the ECM.
(b) Turn the ignition switch ON.
(c) Check the VSV function.
(d) Connect terminal PA of the E4 ECM connector and the body ground (VSV is ON).
(e) Disconnect terminal PA of the ECM connector from the body ground (VSV is OFF).

Standard:
VSV is ON:
Air from port E flows out through the air filter.
VSV is OFF:
Air from port E flows out through port G.

OK → CHECK AND REPLACE ECM

NG

8	CHECK WIRE HARNESS (ECM ⇔ VSV FOR TURBO PRESSURE SENSOR, VSV ⇔ ECD RELAY) (See page 01–27)

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE VSV FOR TURBO PRESSURE SENSOR

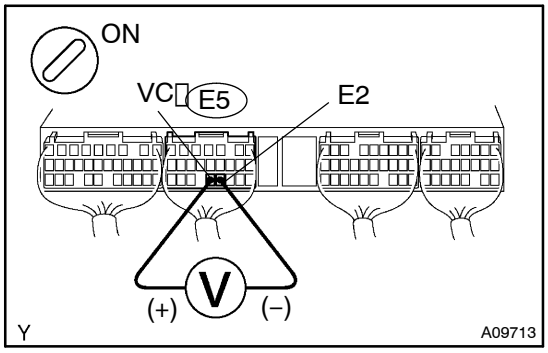
When not using hand–held tester:

1	CHECK TURBO PRESSURE SENSOR (See page 10–1)

NG → REPLACE TURBO PRESSURE SENSOR

OK

2	CHECK ECM

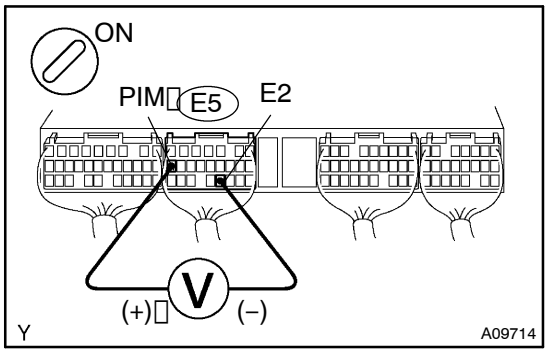


(a) Turn the ignition switch ON.
(b) Check the voltage between the terminals of shown in the illustration.
Voltage: 4.5 – 5.5 V

NG → CHECK AND REPLACE ECM

OK

3	CHECK ECM



(a) Turn the ignition switch ON.
(b) Check the voltage between the terminals of shown in the illustration.
Voltage: 1.7 – 2.9 V

OK → CHECK AND REPLACE ECM

NG

4	CHECK WIRE HARNESS (ECM ⇔ TURBO PRESSURE SENSOR) (See page 01–27)

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

5	CHECK CONNECTION OF VACUUM HOSE

(a) Check connection of the vacuum hose between turbo pressure sensor and VSV for turbo pressure sensor, and VSV for turbo pressure sensor and intake manifold.

NG → REPAIR OR REPLACE VACUUM HOSE

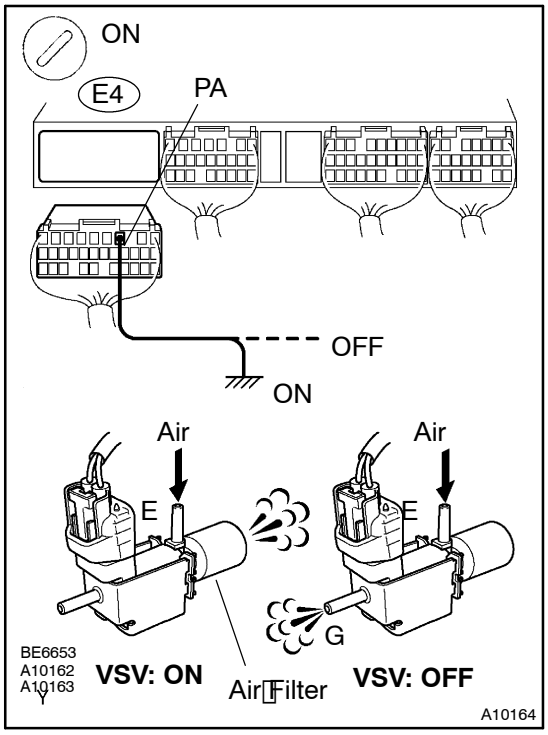
OK

6	CHECK VSV FOR TURBO PRESSURE SENSOR (See page 10–1)

NG → REPLACE VSV FOR TURBO PRESSURE SENSOR

OK

7	CHECK VSV FOR TURBO PRESSURE SENSOR



(a) Disconnect the E4 connector from the ECM.
(b) Turn the ignition switch ON.
(c) Check the VSV function.
(d) Connect terminal PA of the E4 ECM connector and the body ground (VSV is ON).
(e) Disconnect terminal PA of the E4 ECM connector from the body ground (VSV is OFF).

Standard:
VSV is ON:
Air from port E flows out through the air filter.
VSV is OFF:
Air from port E flows out through port G.

OK → CHECK AND REPLACE ECM

NG

8	CHECK WIRE HARNESS (ECM ⇔ VSV FOR TURBO PRESSURE SENSOR, VSV ⇔ ECD RELAY) (See page 01–27)

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE VSV FOR TURBO PRESSURE SENSOR