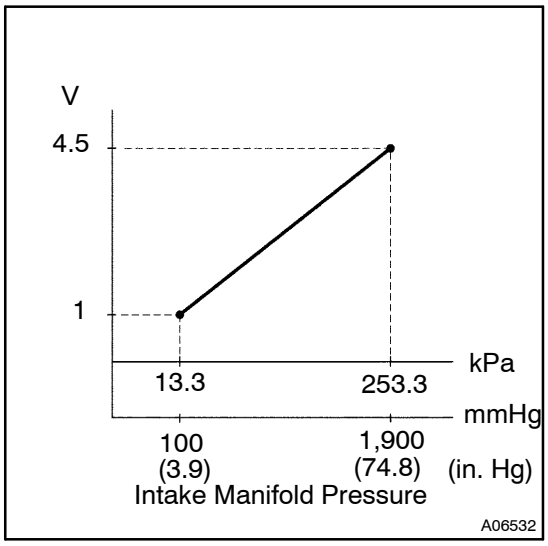
DIDY8–01

DTC	P0105/35	Manifold Absolute Pressure/Barometric Pressure Circuit

CIRCUIT DESCRIPTION



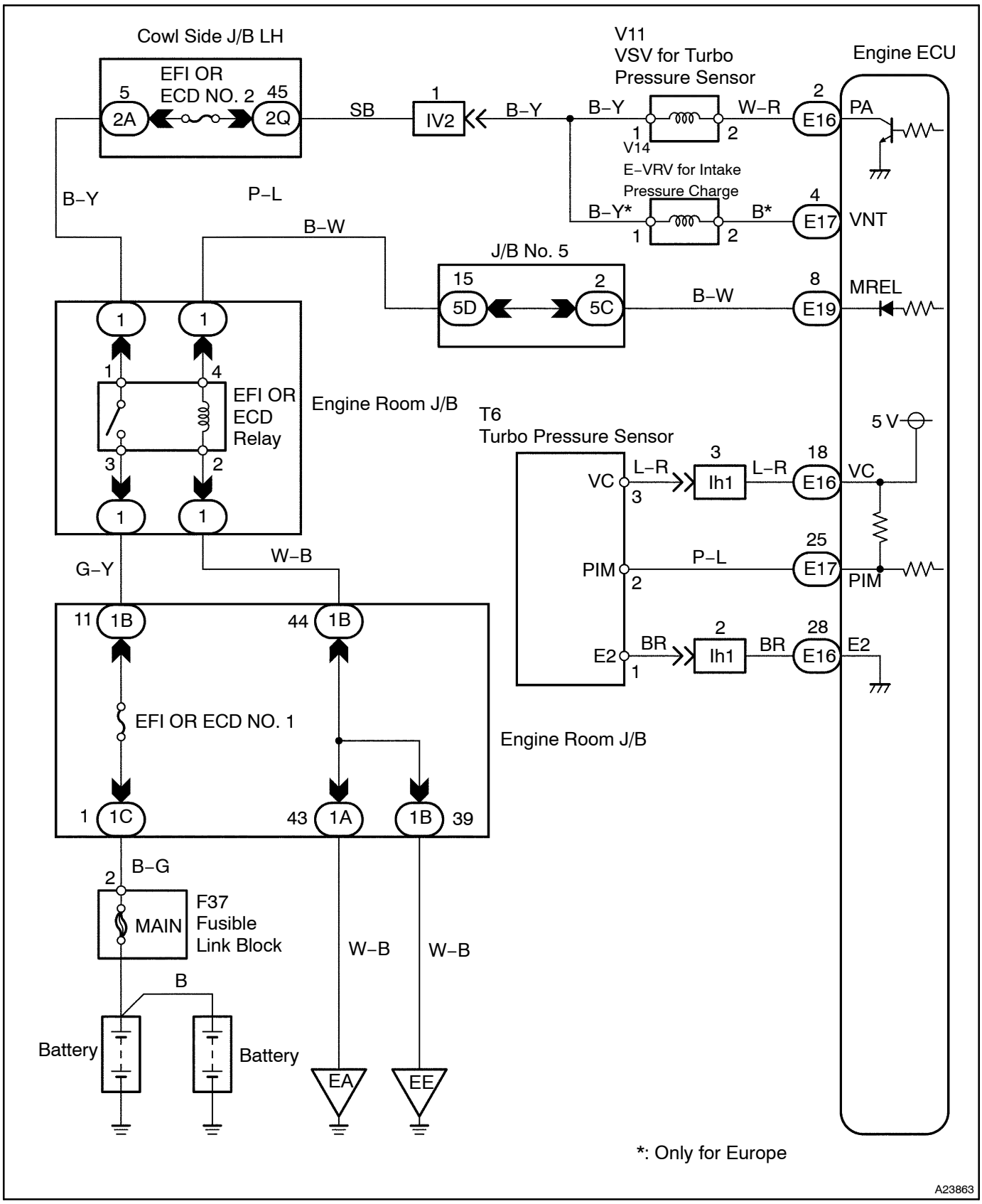
The turbo pressure sensor is connected to the intake manifold. The engine ECU detects the intake manifold pressure as a voltage by the sensor. The engine ECU uses the intake manifold pressure signal for correction of injection volume control and injection timing control.
The VSV for turbo pressure sensor switches the atmosphere applied to the turbo pressure sensor to the intake manifold pressure. The turbo pressure sensor monitors both the atmospheric pressure and intake manifold pressure and transmits the output voltage to the engine ECU. Then the engine ECU uses this atmospheric pressure value for correcting the injection volume.

DTC No.	DTC Detection Condition	Trouble Area
P0105/35	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 for turbo pressure sensor circuit • VSV for turbo pressure sensor • Vacuum hose disconnected or blocked • Engine ECU

HINT:
When DTC P0105/35 is detected, check the intake manifold pressure by entering the following menus on the intelligent tester II: Powertrain / Engine and ECT / Data List / MAP.

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

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

- If DTCs related to different systems that have terminal E2 as the ground terminal are output simultaneously, terminal E2 may have an open circuit.
- Read freeze frame data using the intelligent tester II. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, freeze frame data can help determine if the vehicle was running or stopped, if the engine was warmed up or not, and other data from the time the malfunction occurred.

When using intelligent tester II

1	**Connect intelligent tester II, and read value of intake manifold pressure.**

PREPARATION:

(a) Connect the intelligent tester II to the DLC3.

(b) Turn the ignition switch ON and push the intelligent tester II main switch ON.

CHECK:

Read value of the intake manifold pressure on the intelligent tester II.

OK:

Same as atmospheric pressure.

OK → **Go to step 5.**

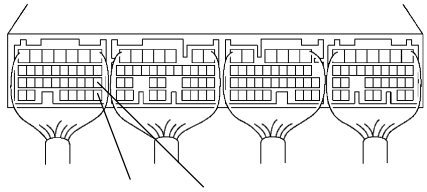
NG

2	**Check turbo pressure sensor (See Pub No. RM617E, page TC–17).**

NG → **Replace turbo pressure sensor.**

OK

3	**Check voltage between terminals VC and E2 of engine ECU.**



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PREPARATION:

(a) Remove the glove compartment door.

(b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals VC and E2 of the engine ECU.

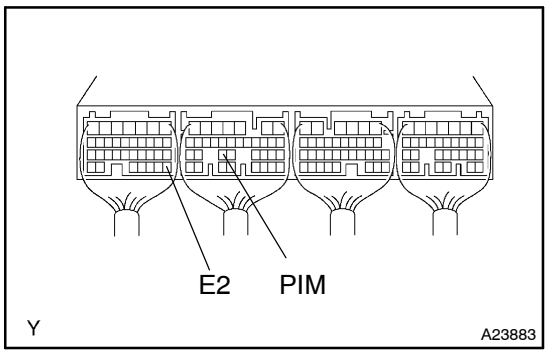
OK:

Voltage: 4.5 to 5.5 V

NG → **Check and replace engine ECU (See page IN–19).**

OK

4	Check voltage between terminals PIM and E2 of engine ECU.



PREPARATION:

(a) Remove the glove compartment door.

(b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals PIM and E2 of the engine ECU.

OK:

Voltage: 1.7 to 2.9 V

OK	Check and replace engine ECU (See page IN–19).

NG

Check for open and short in harness and connector between engine ECU and turbo pressure sensor (See page IN–19).

5	Check connection of vacuum hose between turbo pressure sensor and VSV for turbo pressure sensor, VSV for turbo pressure sensor and intake manifold.

NG	Repair or replace harness or connector.

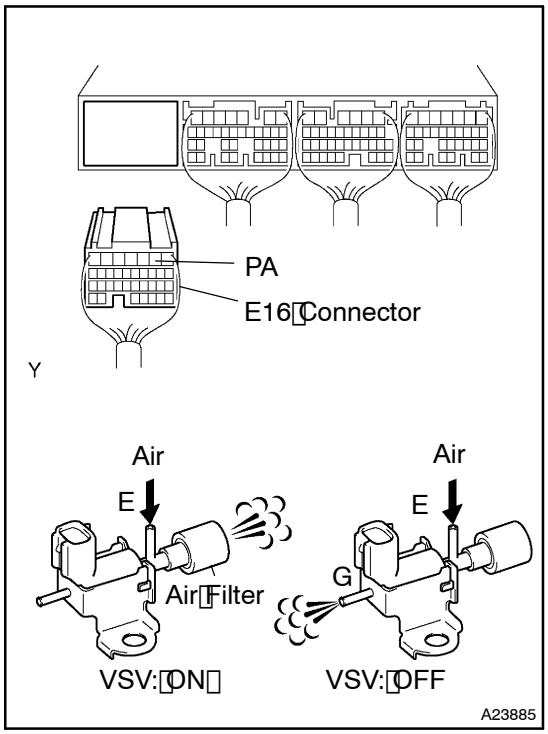
OK

6	Check resistance of VSV for turbo pressure sensor (See Pub No. RM617E, page TC–19).

NG	Replace VSV for turbo pressure sensor.

OK

7	Check VSV for turbo pressure sensor.



PREPARATION:

(a) Remove the glove compartment door.
(b) Disconnect the E16 connector of the engine ECU.
(c) Turn the ignition switch ON.

CHECK:

Check VSV function.

(a) Connect between terminal PA of the engine ECU and body ground (VSV is ON).
(b) Disconnect between terminal PA of the engine ECU and body ground (VSV is OFF).

OK:

VSV is ON:
Air from pipe E flows out through air filter.
VSV is OFF:
Air from pipe E flows out through pipe G.

OK	Check and replace engine ECU (See page IN–19).

NG

8	Check for open and short in harness and connector between engine ECU and VSV for turbo pressure sensor, VSV for turbo pressure sensor and EFI OR ECD relay (See page IN–19).

NG	Repair or replace harness or connector.

OK

Replace VSV for turbo pressure sensor.

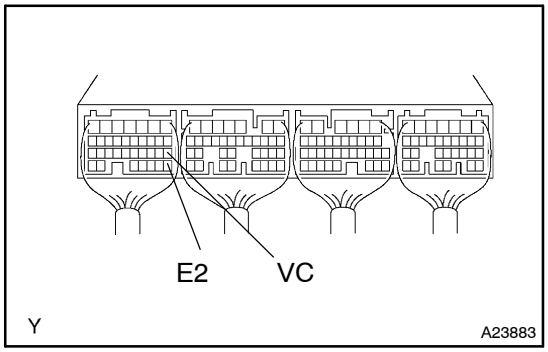
When not using intelligent tester II

1	Check turbo pressure sensor (See Pub No. RM617E, page TC–17).

NG → Replace turbo pressure sensor.

OK

2	Check voltage between terminals VC and E2 of engine ECU.



PREPARATION:
(a) Remove the glove compartment door.
(b) Turn the ignition switch ON.

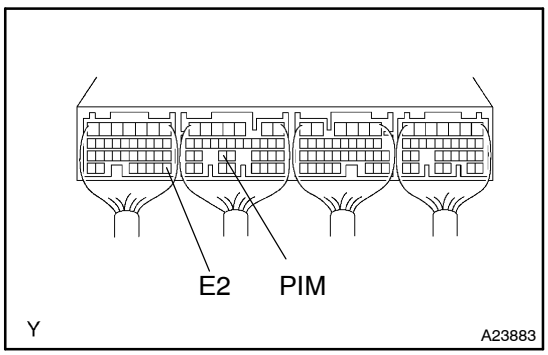
CHECK:
Measure the voltage between terminals VC and E2 of the engine ECU.

OK:
Voltage: 4.5 to 5.5 V

NG → **Check and replace engine ECU (See page IN–19).**

OK

3	Check voltage between terminals PIM and E2 of engine ECU.



PREPARATION:
(a) Remove the glove compartment door.
(b) Turn the ignition switch ON.

CHECK:
Measure the voltage between terminals PIM and E2 of the engine ECU.

OK:
Voltage: 1.7 to 2.9 V

OK → **Check and replace engine ECU (See page IN–19).**

NG

4	Check for open and short in harness and connector between engine ECU and turbo pressure sensor (See page IN–19).

NG → Repair or replace harness or connector.

OK

5	Check connection of vacuum hose between turbo pressure sensor and VSV for turbo pressure sensor, VSV for turbo pressure sensor and intake manifold.

NG → Repair or replace harness or connector.

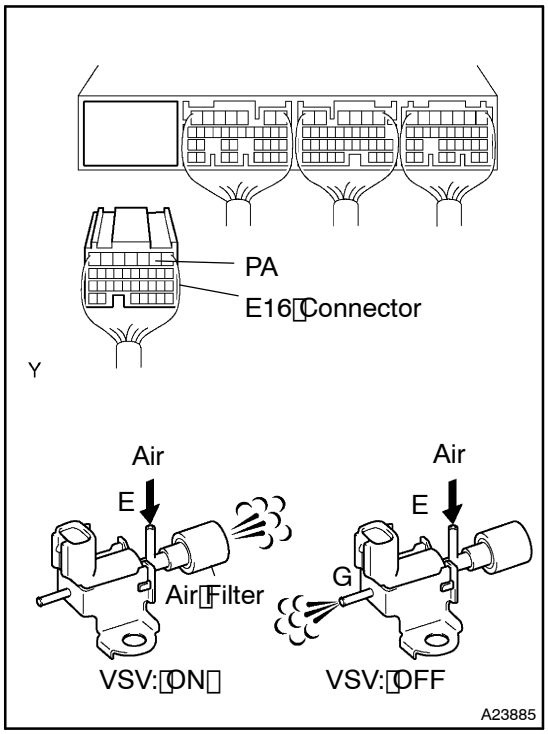
OK

6	Check resistance of VSV for turbo pressure sensor (See Pub No. RM 617E, page TC–19).

NG → Replace VSV for turbo pressure sensor.

OK

7	Check VSV for turbo pressure sensor.



PREPARATION:

(a) Remove the glove compartment door.
(b) Disconnect the E16 connector of the engine ECU.
(c) Turn the ignition switch ON.

CHECK:

Check VSV function.

(a) Connect between terminal PA of the engine ECU and body ground (VSV is ON).
(b) Disconnect between terminal PA of the engine ECU and body ground (VSV is OFF).

OK:

VSV is ON:
Air from pipe E flows out through air filter.
VSV is OFF:
Air from pipe E flows out through pipe G.

OK	Check and replace engine ECU (See page IN–19).

NG

8	Check for open and short in harness and connector between engine ECU and VSV for turbo pressure sensor and EFI OR ECD relay (See page IN–19).

NG	Repair or replace harness or connector.

OK

Replace VSV for turbo pressure sensor.