DI9F4–03

DTC	34 (2)	Turbocharger system malfunction

DTC	34 (3)	Turbocharger stick detected (Close)

DTC	34 (4)	Turbocharger stick detected (Open)

CIRCUIT DESCRIPTION

DTC No.	DTC Detecting Condition	Trouble Area
34 (2)	When the condition that the turbocharger pressure exceeds the standard value for 0.5 sec. or more is detected.	• VNT valve • Turbocharger • EGR valve • Air flow meter • Engine ECU
34 (3) (4)	When the condition that for 60 sec. or more the turbocharger pressure is 20 kPa (0.2 kgf/cm^2, 1.4 psi) or more above the value that is set based on the engine revolution and the amount of fuel injection is detected.	

INSPECTION PROCEDURE

HINT:
If DTC 35 is output simultaneously, first troubleshoot DTC 35.

When using hand–held tester:

1	Check connection of vacuum hose.

NG → Repair or replace.

OK

2	Check vacuum between trubocharger and E–VRV for intake pressure change at 900 rpm.

PREPARATION:

(a) Using a 3–way connector, connect a vacuum gauge to the hose between the E–VRV and trubocharger.

(b) Warm up the engine to above 80˚C (176˚F).

CHECK:

Check the vacuum at 900 rpm.

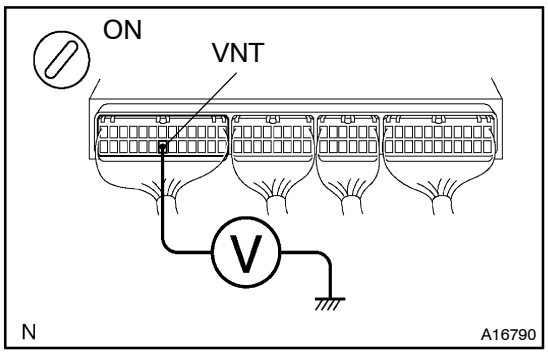
RESULT:

Type	Vacuum
I	0 kPa (0 mmHg, in. Hg) – 50 kPa (375 mmHg, 14.8 in. Hg)
II	Above 50 kPa (375 mmHg, 14.8 in. Hg)

Type II → **Go to step 7.**

Type I

3	Check voltage between terminal VNT of engine ECU connector and body ground.



PREPARATION:

(a) Remove the glove compartment door.

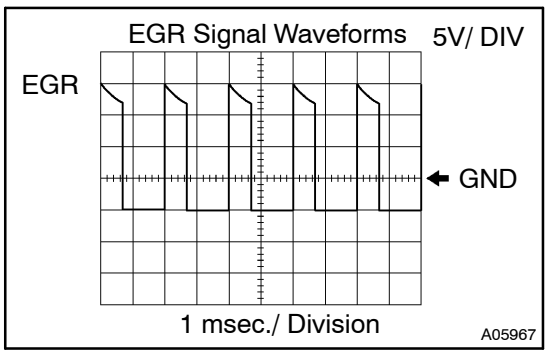
(b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminal VNT of the engine ECU connector and body ground.

OK:

Voltage: 9 – 14 V



Reference: INSPECTION USING OSCILLOSCOPE

During EGR system is ON (engine speed 900 rpm), check the waveform between terminals VNT and E1 of engine ECU connector.

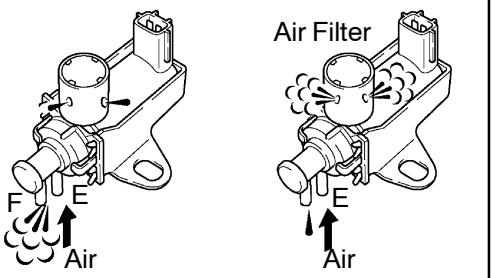
HINT:

The correct waveform is as shown.

NG → **Go to step 5.**

OK

4	Check operation of E–VRV for intake pressure change.



PREPARATION:

(a) Disconnect the vacuum hoses from the E–VRV.
(b) Connect the hand–held tester to the DLC3.
(c) Turn the ignition switch ON and the push hand–held tester main switch ON.
(d) Select the ACTIVE TEST mode on the hand–held tester.

CHECK:

Check the operation of the E–VRV when it is operated by the hand–held tester.

OK:

E–VRV ON:
Air from port E flows out through port F.
E–VRV OFF:
Air from port E flows out through air filter.

OK	Go to step 7.

NG

5	Check E–VRV for intake pressure change (See page TC–15).

NG	Replace E–VRV.

OK

6	Check for open and short in harness and connector between E–VRV and engine ECU, and E–VRV and EFI main relay (Marking : EFI) (See page IN–19).

NG	Repair or replace harness or connector.

OK

7	Check turbocharger assembly (See page TC–1).

NG → Replace turbocharger.

OK

8	Check EGR valve (See page EC–2).

NG → Replace EGR valve.

OK

9	Check air flow meter (See page DI–26).

NG → Replace air flow meter.

OK

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

When not using hand–held tester:

1	Check the connection of vacuum hose.

NG → Repair or replace.

OK

2	Check vacuum between trubocharger and E–VRV for intake pressure change at 900 rpm.

PREPARATION:

(a) Using a 3–way connector, connect a vacuum gauge to the hose between the E–VRV and trubocharger.
(b) Warm up the engine to above 80°C (176°F).

CHECK:

Check the vacuum at 900 rpm.

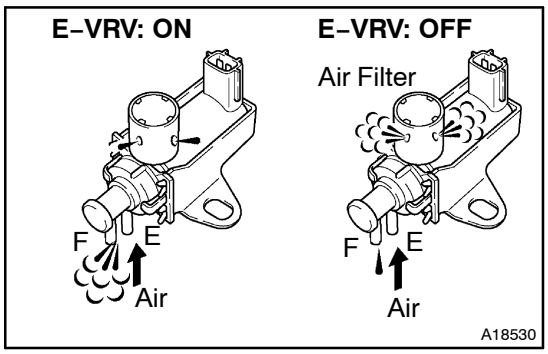
RESULT:

Type	Vacuum
I	0 kPa (0 mmHg, in. Hg) – 50 kPa (375 mmHg, 14.8 in. Hg)
II	Above 50 kPa (375 mmHg, 14.8 in. Hg)

Type II → **Go to step 6.**

Type I

3	Check operation of E–VRV.



PREPARATION:

(a) Remove the glove compartment door.
(b) Disconnect the E3 connector from the engine ECU.
(c) Turn the ignition switch ON.

CHECK:

Check the E–VRV operation.

(1) Connect between terminal VNT of the engine ECU connector and body ground (ON).
(2) Disconnect between terminal VNT of the engine ECU connector and body ground (OFF).

OK:

E–VRV ON:
Air from port E flows out through port F.
E–VRV OFF:
Air from port E flows out through air filter.

OK → **Go to step 6.**

NG

4	Check E–VRV for intake pressure change (See page ED–10).

NG → Replace E–VRV.

OK

5	Check for open and short in harness and connector between E–VRV and engine ECU, and E–VRV and EFI main relay (Marking : EFI) (See page IN–19).

NG → Repair or replace harness or connector.

OK

6	Check turbocharger assembly (See page TC–1).

NG → Replace turbocharger.

OK

7	Check EGR valve (See page EC–2).

NG → Replace EGR valve.

OK

8	Check air flow meter (See page DI–26).

NG → Replace air flow meter.

OK →

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