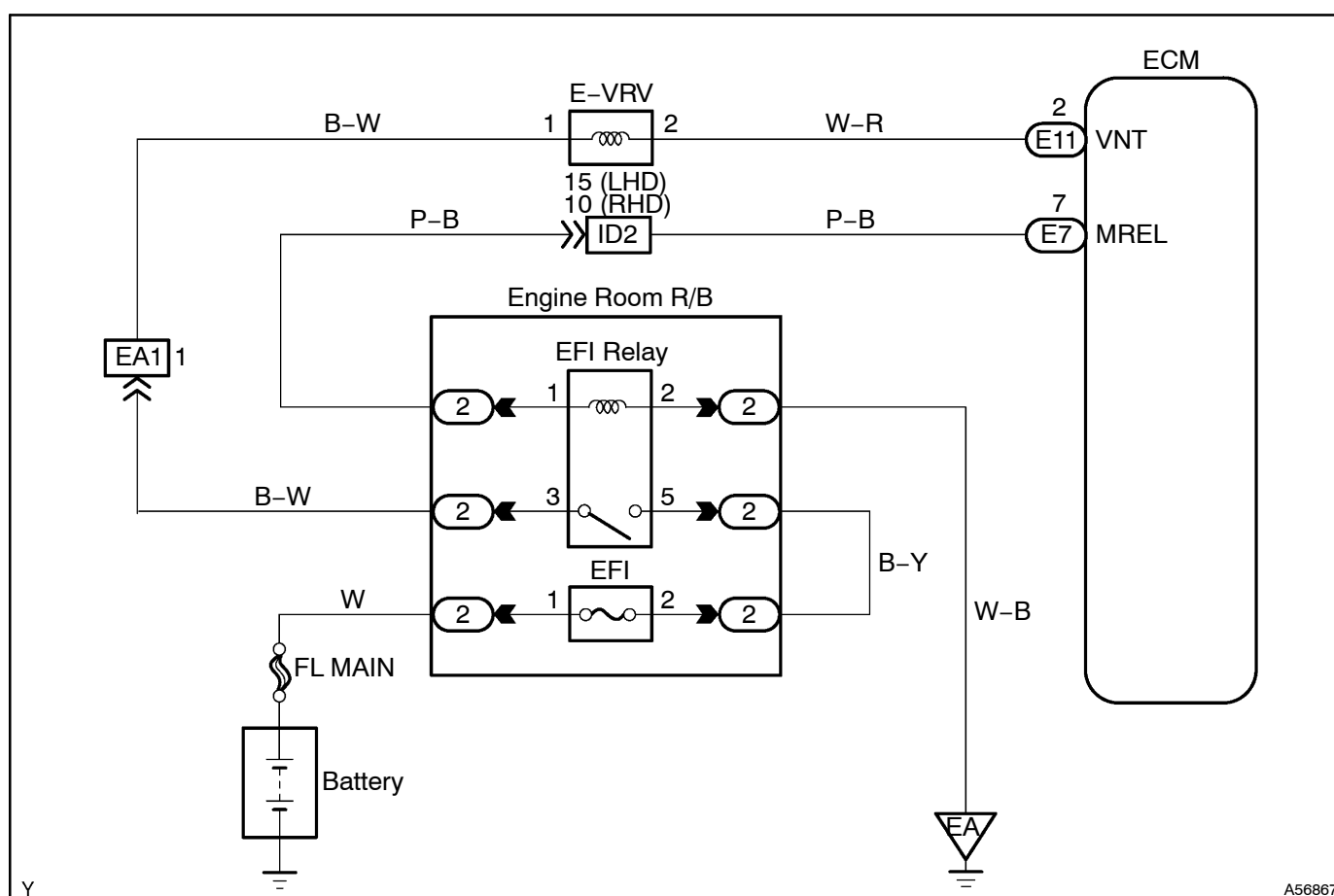


<b>DTC</b>	<b>34(2)</b>	<b>TURBOCHARGER SYSTEM MALFUNCTION</b>
<b>DTC</b>	<b>34(3)</b>	<b>TURBOCHARGER STICK DETECTED(CLOSE)</b>
<b>DTC</b>	<b>34(4)</b>	<b>TURBOCHARGER STICK DETECTED(OPEN)</b>

## 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.	<ul style="list-style-type: none"> <li>• Turbocharger</li> <li>• EGR valve</li> <li>• Air flow meter</li> <li>• ECM</li> </ul>
34 (3) (4)	When the condition that for 60 sec. or more the turbocharger pressure is 20 kPa (0.2 kgf/cm <sup>2</sup> , 1.4 psi) or more above the value that is set based on the engine revolution and the amount of fuel injection is detected.	

## WIRING DIAGRAM



## INSPECTION PROCEDURE

HINT:

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

## When using hand-held tester:

### 1 CHECK THE CONNECTION OF VACUUM HOSE

NG

REPAIR OR REPLACE VACUUM HOSE

OK

### 2 CHECK VACUUM HOSE(CHECK VACUUM BETWEEN TRUBOCHARGER-E-VRV FOR INTAKE PRESSURE CHANGE AT 900 RPM)

- Using a 3-way connector, connect a vacuum gauge to the hose between the E-VRV and turbocharger.
- Warm up the engine to above 80°C (176°F).
- Check the vacuum at 900 rpm.

#### Result:

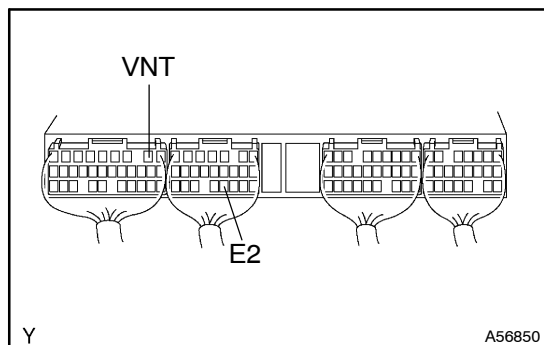
	Vacuum
A	0 kPa (0 mmHg, in. Hg) – 50 kPa (375 mmHg, 14.8 in. Hg)
B	Above 50 kPa (375 mmHg, 14.8 in. Hg)

B

Go to step 8

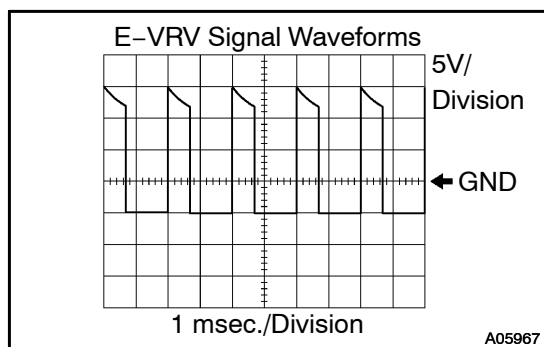
A

### 3 INSPECT ECM



- Turn the ignition switch ON.
- Measure the voltage between terminal VNT and E2 of the ECM connector.

**Voltage: 9 – 14 V**



- Check the output waveform.

Item	Contents
Terminal	VNT ↔ E2
Equipment set	5V/DIV, 1ms/DIV
Condition	During EGR system ON (engine speed 900rpm)

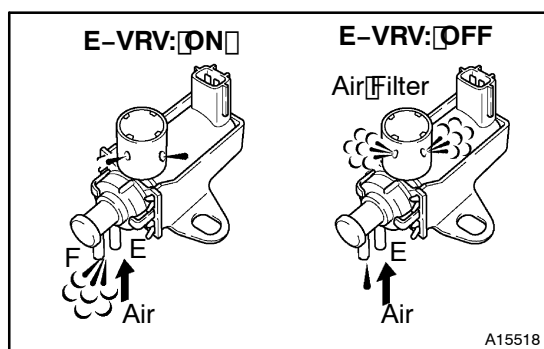
#### HINT:

The correct waveforms are as shown.

NG

Go to step 6

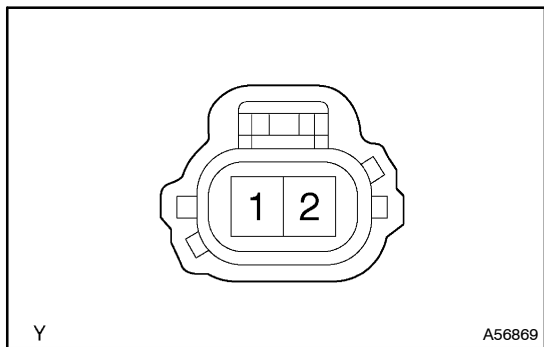
OK

**4 CHECK OPERATION OF E-VRV (PURGE FLOW)**

- (a) Disconnect the vacuum hoses from the E-VRV.
- (b) Turn the ignition switch ON.
- (c) Check the operation of the E-VRV when it is operated by the hand-held tester.

**E-VRV ON:****Air from port E flows out through port F.****E-VRV OFF:****Air from port E flows out through air filter.****NG****Go to step 3****OK****5 INSPECT VACUUM REGULATING VALVE ASSY (See page 12-7)****NG****REPLACE VACUUM REGULATING VALVE ASSY****OK****CHECK AND REPLACE ECM****6 INSPECT VACUUM REGULATING VALVE ASSY (See page 12-7)****NG****REPLACE VACUUM REGULATING VALVE ASSY****OK**

# 7 CHECK HARNESS AND CONNECTOR (E-VRV-ECM, AND E-VRV-EFI RELAY)



- (a) Disconnect the E-VRV connector.
- (b) Disconnect the ECM E11 connector.
- (c) Remove the EFI relay.
- (d) Check for open between the terminals 2 of the E-VRV harness side connector and VNT of the ECM E11 connector.

**Resistance: 1 Ω or less**

- (e) Check for open between the terminals 1 of the E-VRV harness side connector and 3 of the EFI relay in the engine room R/B connector.

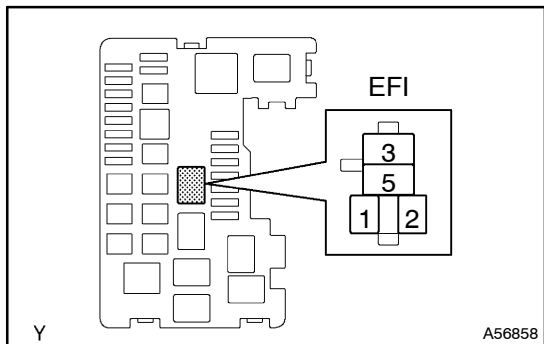
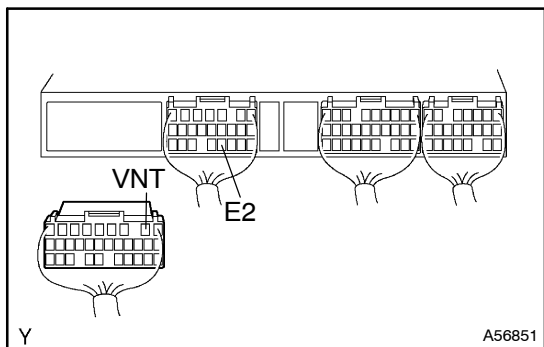
**Resistance: 1 Ω or less**

- (f) Check for short between the terminals VNT and E1 of the ECM E11 connector.

**Resistance: 1 MΩ or more**

- (g) Check for short between the terminals 1 of the E-VRV and E2 of the ECM E10 connector.

**Resistance: 1 MΩ or more**



NG

**REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

# 8 INSPECT TURBOCHARGER SUB-ASSY (See page 13-1)

NG

**REPLACE TURBOCHARGER SUB-ASSY**

OK

# 9 INSPECT EGR VALVE ASSY (See page 12-7)

NG

**REPLACE EGR VALVE ASSY**

OK

**10 INSPECT INTAKE AIR FLOW METER SUB-ASSY (See page 10-9)****NG****REPLACE  
INTAKE AIR FLOW METER SUB-ASSY****OK****CHECK AND REPLACE ECM****When not using hand-held tester:****1 CHECK THE CONNECTION OF VACUUM HOSE****NG****REPAIR OR REPLACE VACUUM HOSE****OK****2 CHECK VACUUM HOSE (CHECK VACUUM BETWEEN TURBOCHARGER-E-VRV FOR INTAKE PRESSURE CHANGE AT 900 RPM)**

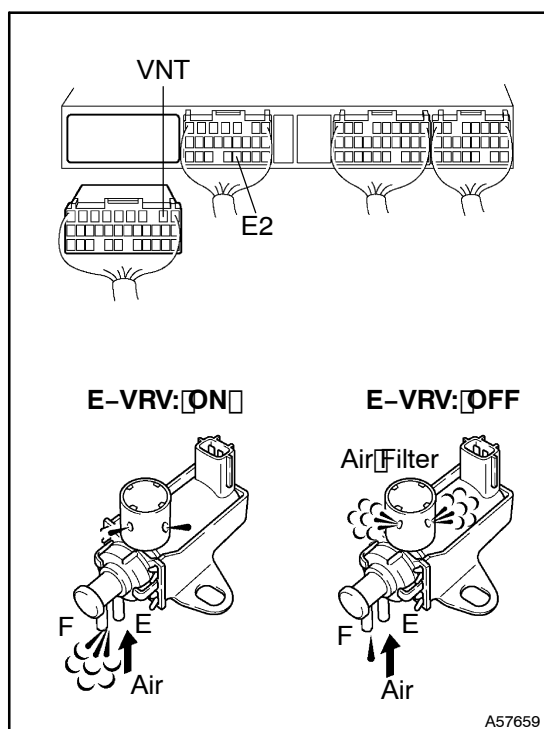
- (a) Using a 3-way connector, connect a vacuum gauge to the hose between the E-VRV and Turbocharger.  
 (b) Warm up the engine to above 80°C (176°F).  
 (c) Check the vacuum at 900 rpm.

**Result:**

	Vacuum
A	0 kPa (0 mmHg, in. Hg) – 50 kPa (375 mmHg, 14.8 in. Hg)
B	Above 50 kPa (375 mmHg, 14.8 in. Hg)

**B****Go to step 6****A**

### 3 CHECK OPERATION OF E-VRV (PURGE FLOW)



- Disconnect the ECM E11 connector.
- Turn the ignition switch ON.
- Check the E-VRV operation.
  - Connect between terminal VNT and E2 of the ECM connector. (ON)

#### E-VRV ON:

Air from port E flows out through port F.

- Disconnect between terminal VNT and E2 of the ECM connector. (OFF)

#### E-VRV OFF:

Air from port E flows out through air filter.

OK

Go to step 6

NG

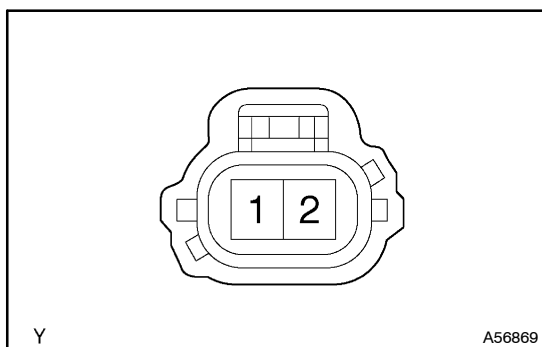
### 4 INSPECT VACUUM REGULATING VALVE ASSY (See page 12-7)

NG

REPLACE VACUUM REGULATING VALVE ASSY

NG

## 5 CHECK HARNESS AND CONNECTOR (E-VRV-ECM, AND E-VRV-EFI RELAY)



- (a) Disconnect the E-VRV connector.
- (b) Disconnect the ECM E11 connector.
- (c) Remove the EFI relay.
- (d) Check for open between the terminals 2 of the E-VRV harness side connector and VNT of the ECM E11 connector.

**Resistance: 1  $\Omega$  or less**

- (e) Check for open between the terminals 1 of the E-VRV harness side connector and 3 of the EFI relay in the engine room R/B connector.

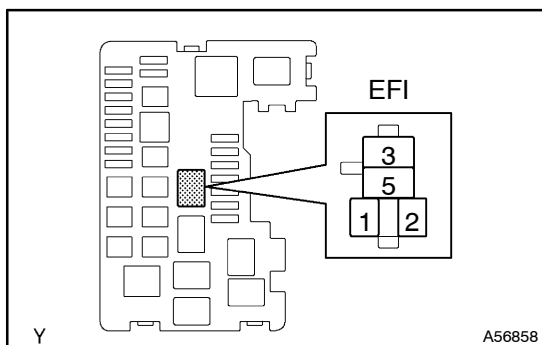
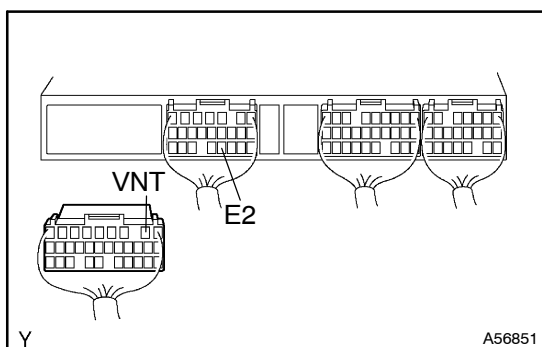
**Resistance: 1  $\Omega$  or less**

- (f) Check for short between the terminals VNT and E1 of the ECM E11 connector.

**Resistance: 1 M $\Omega$  or more**

- (g) Check for short between the terminals 1 of the E-VRV and E2 of the ECM E10 connector.

**Resistance: 1 M $\Omega$  or more**



NG

**REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

## 6 INSPECT TURBOCHARGER SUB-ASSY (See page 13-1)

NG

**REPLACE TURBOCHARGER SUB-ASSY**

OK

## 7 INSPECT EGR VALVE ASSY (See page 12-7)

NG

**REPLACE EGR VALVE ASSY**

OK

8	INSPECT INTAKE AIR FLOW METER SUB-ASSY (See page 10-9)
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NG	REPLACE INTAKE AIR FLOW METER SUB-ASSY
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OK
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CHECK AND REPLACE ECM
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