

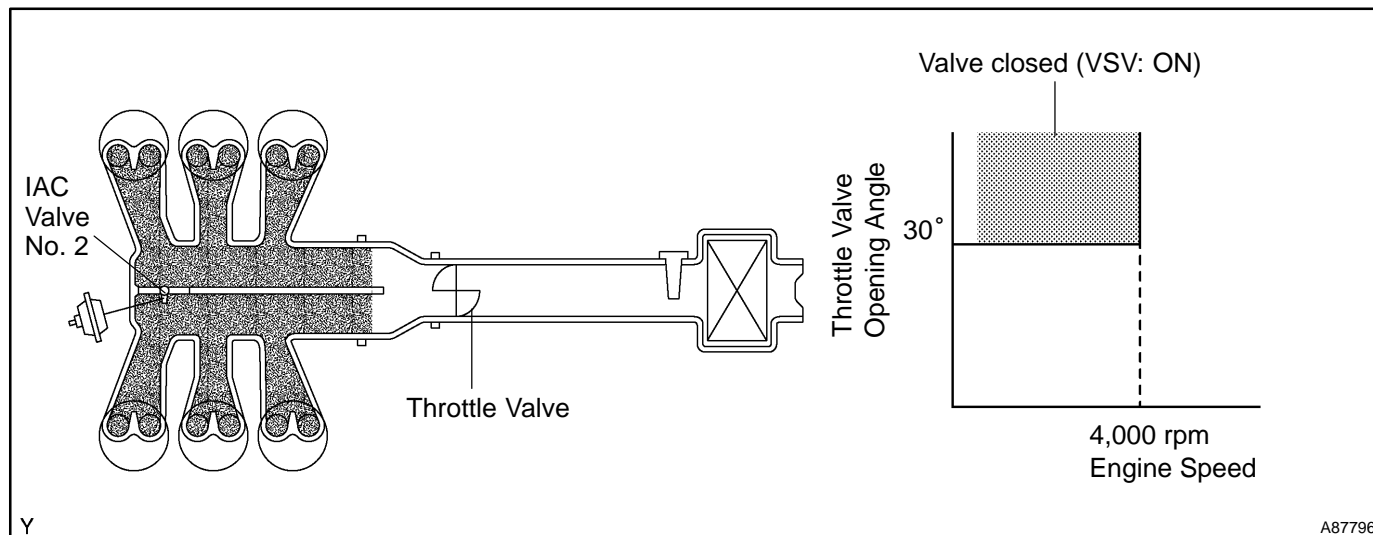
ACIS CONTROL CIRCUIT

CIRCUIT DESCRIPTION

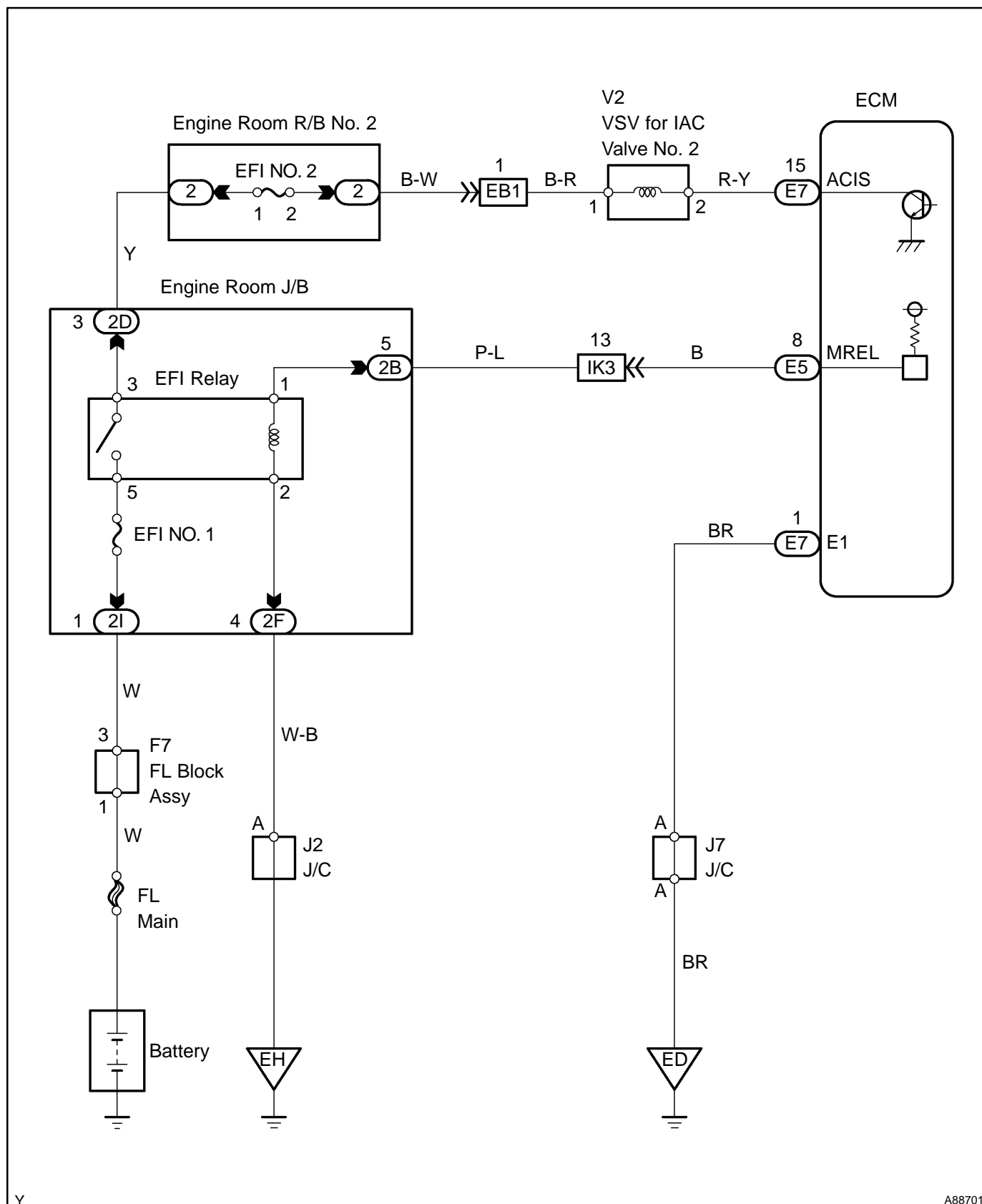
The ECM opens and closes the Intake Air Control (IAC) valve No. 2 in response to engine speed (RPM/NE). This system improves intake manifold tuning for better efficiency at low and high engine rpm. When the engine speed is 4,000 rpm or less and the throttle valve opening angle is 30° or more, the ECM turns the VSV ON to operate the IAC valve.

HINT:

ACIS stands for "Acoustic Control Induction System".



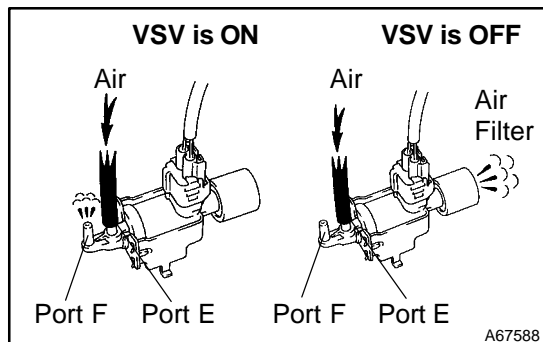
WIRING DIAGRAM



INSPECTION PROCEDURE

Hand-held tester:

1 PERFORM ACTIVE TEST USING HAND-HELD TESTER (OPERATE VSV FOR IAC VALVE NO. 2)



- Disconnect the vacuum hose.
- Connect the hand-held tester to the DLC3.
- Turn the ignition switch ON and push the hand-held tester main switch ON.
- Enter the following menus: DIAGNOSIS / ENHANCED OBD II / ACTIVE TEST / INTAKE CTL VSV1. Operate the VSV.
- Check the VSV operation when it is operated by the hand-held tester.

OK:

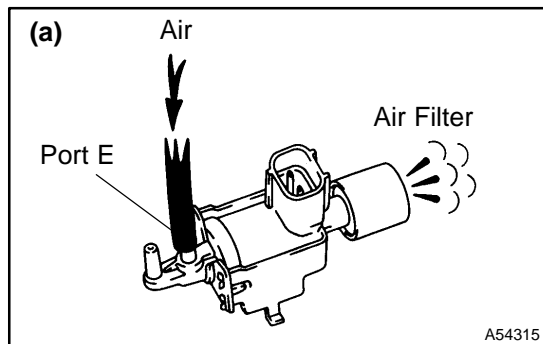
Tester Operation	Specified Condition
VSV is ON	Air from port E flows out through port F
VSV is OFF	Air from port E flows out through the air filter

OK

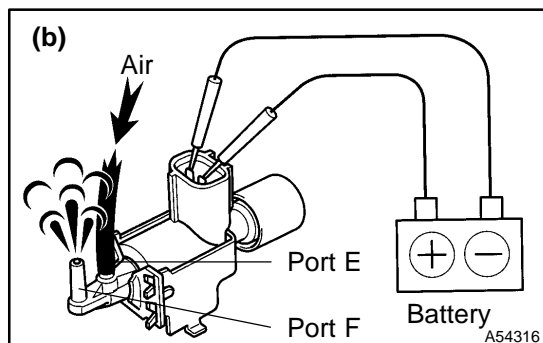
Go to step 4

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2 CHECK VSV FOR IAC VALVE NO.2 (OPERATION)



- Check that air flows from port E to the air filter.



- Apply battery positive voltage across the terminals.
- Check that air flows from port E to port F.

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REPLACE VSV

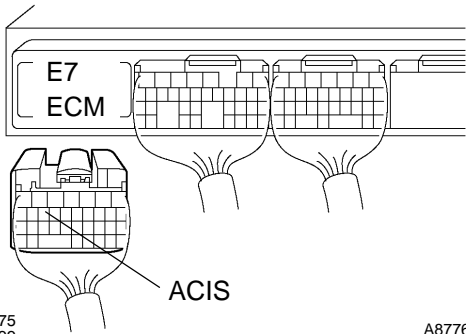
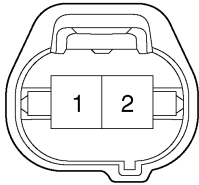
OK

3

CHECK WIRE HARNESS (VSV FOR IAC VALVE NO. 2 - ECM, VSF FOR IAC VALVE NO. 2 - EFI RELAY)

Wire Harness Side

V2
VSV for IAC Valve No. 2



Y
A85675
A81699

A87763

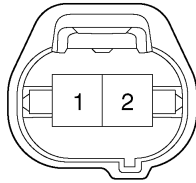
- (a) Check the wire harness between the VSV and ECM.
- (1) Disconnect the V2 VSV connector.
 - (2) Disconnect the E7 ECM connector.
 - (3) Check the resistance of the wire harness side connectors.

Standard:

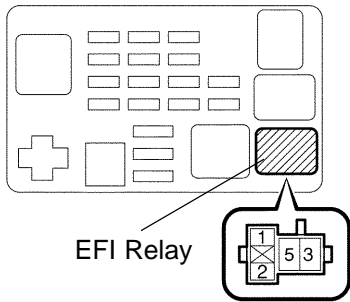
Tester Connection	Specified Condition
V2-2 - E7-15 (ACIS)	Below 1 Ω
V2-2 or E7-15 (ACIS) - Body ground	10 k Ω or higher

Wire Harness Side

V2
VSV for IAC Valve No. 2



Engine Room J/B



A85448
A90291

A92391

- (b) Check the wire harness between the VSV and EFI relay.
- (1) Disconnect the V2 VSV connector.
 - (2) Remove the EFI relay from the engine room J/B.
 - (3) Check the resistance of the wire harness side connectors.

Standard:

Tester Connection	Specified Condition
V2-1 - J/B EFI relay terminal 3	Below 1 Ω

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REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

4 CHECK VACUUM HOSES (INTAKE MANIFOLD - INTAKE AIR CONTROL VALVE, INTAKE AIR CONTROL)

- (a) Check that the vacuum hoses are:
- Connected correctly.
 - Are not loose or disconnected.
 - Do not have cracks, holes or damage.

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REPAIR OR REPLACE VACUUM HOSES

OK

5 INSPECT INTAKE AIR CONTROL VALVE (See page 13-2)

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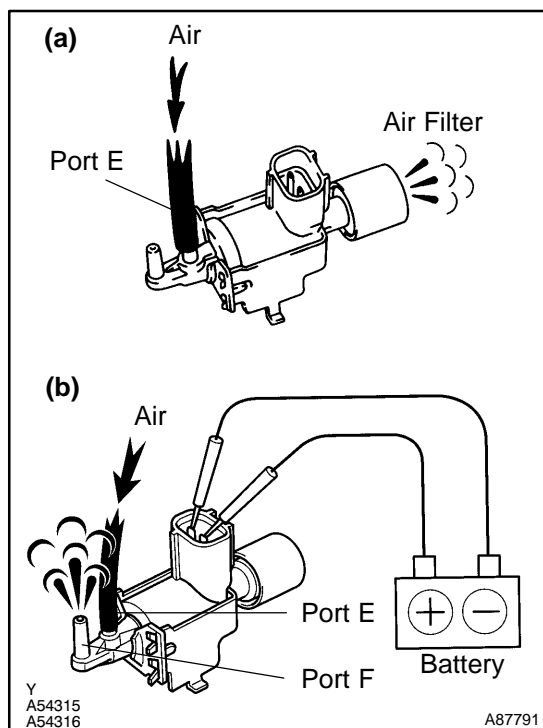
REPLACE INTAKE AIR CONTROL VALVE

OK

REPLACE ECM (See page 10-24)

OBD II scan tool (excluding hand-held tester):

1 INSPECT VSV FOR IAC VALVE NO.2 (OPERATION)



- (a) Disconnect the VSV connector.
 (b) Check operation of the VSV when battery positive voltage is applied to the terminals of the VSV.

OK:**Battery positive voltage is not applied:****Air from port E flows out through the air filter.****Battery positive voltage is applied:****Air from port E flows out through port F.**

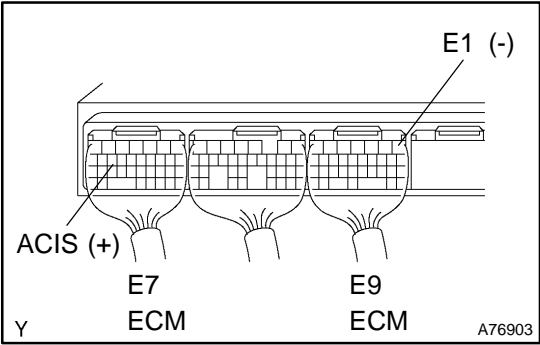
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REPLACE VSV

OK

2

CHECK ECM (ACIS VOLTAGE)



- (a) Start the engine.
- (b) Check the voltage of the ECM connectors.
- Standard

Tester Connection	Condition	Specified Condition
E7-15 (ACIS) - E9-1 (E1)	<ul style="list-style-type: none">• Engine speed is 4,000 rpm or less• Throttle valve opening angle is 30° or more	9 to 14 V

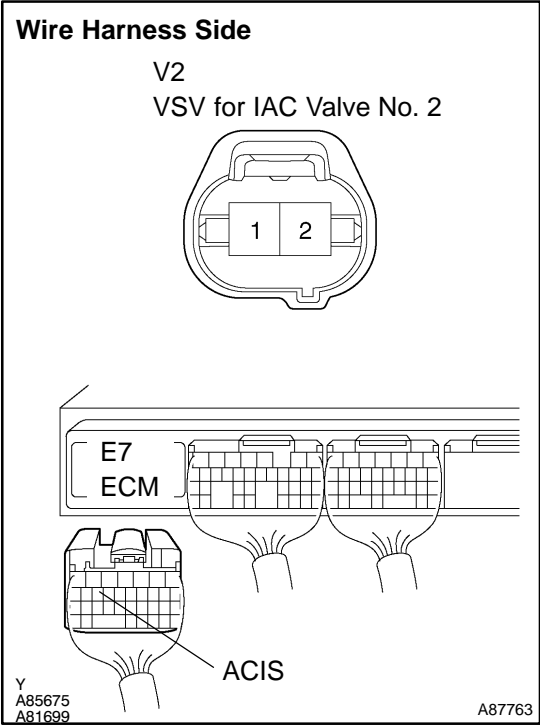
OK

Go to step 4

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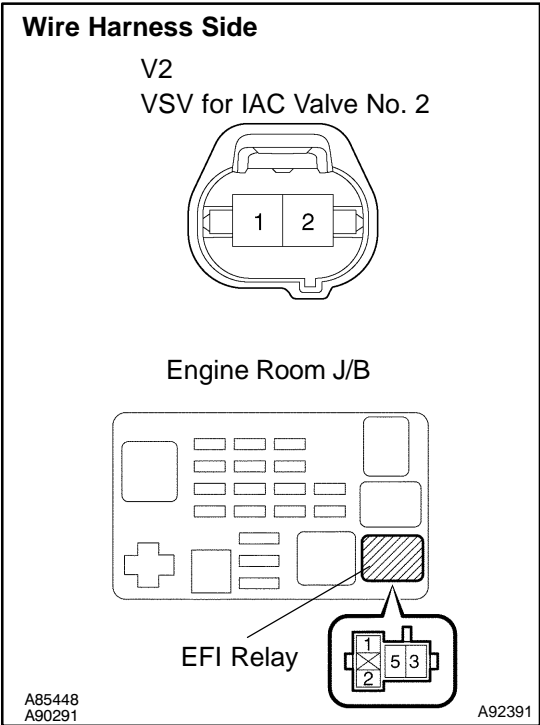
CHECK WIRE HARNESS (VSV FOR IAC VALVE NO. 2 - ECM, VSV FOR IAC VALVE NO.2 - EFI RELAY)



- (a) Check the wire harness between the VSV and ECM.
- (1) Disconnect the V2 VSV connector.
 - (2) Disconnect the E7 ECM connector.
 - (3) Check the resistance of the wire harness side connectors.

Standard:

Tester Connection	Specified Condition
V2-2 - E7-15 (ACIS)	Below 1 Ω
V2-2 or E7-15 (ACIS) - Body ground	10 k Ω or higher



- (b) Check the wire harness between the VSV and EFI relay.
- (1) Disconnect the V2 VSV connector.
 - (2) Remove the EFI relay from the engine room J/B.
 - (3) Check the resistance OF the wire harness side connectors.

Standard:

Tester Connection	Specified Condition
V2-1 (VSV for ACIS) - J/B EFI relay terminal 3	Below 1 Ω

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REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

4	CHECK VACUUM HOSES (INTAKE MANIFOLD - INTAKE AIR CONTROL VALVE, INTAKE AIR CONTROL)
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(a) Check that the vacuum hoses are:

- Connected correctly.
- Are not loose or disconnected.
- Do not have cracks, holes or damage.

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REPAIR OR REPLACE VACUUM HOSE

OK

5	INSPECT INTAKE AIR CONTROL VALVE (See page 13-2)
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REPLACE INTAKE AIR CONTROL VALVE

OK

REPLACE ECM (See page 10-24)