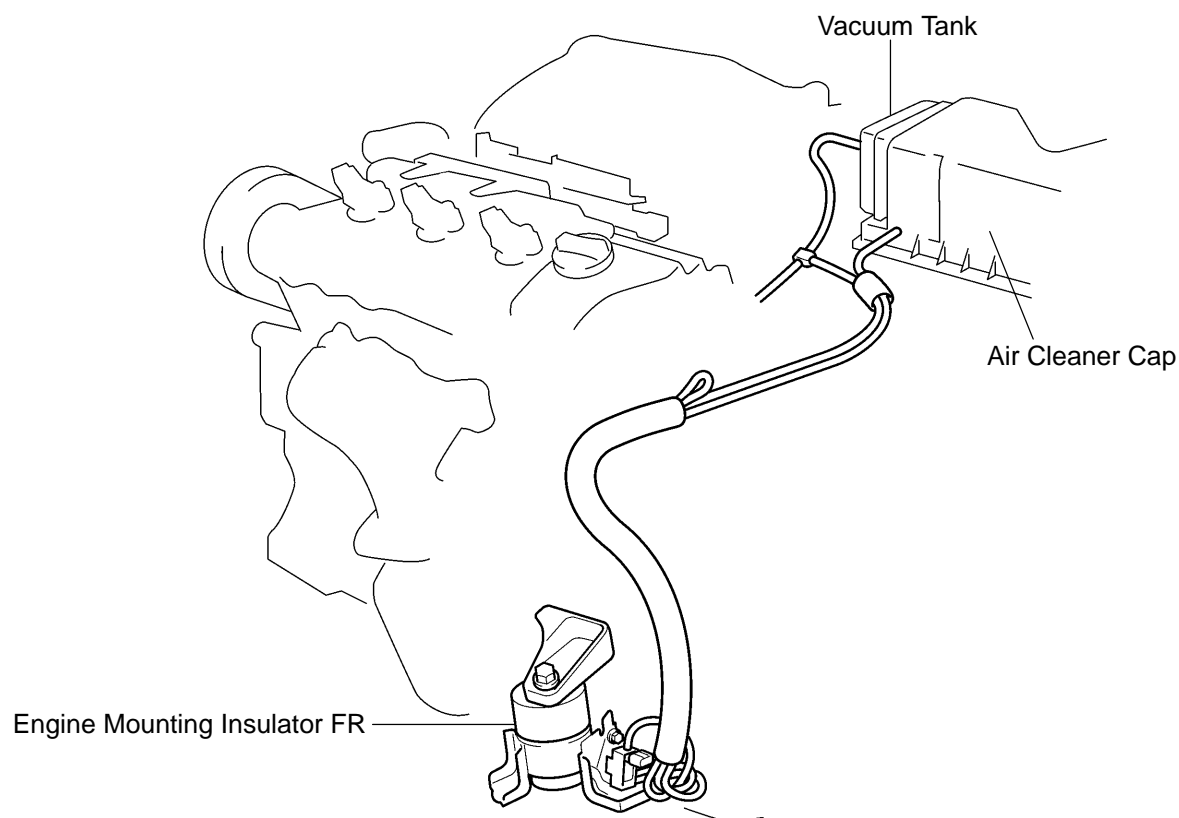
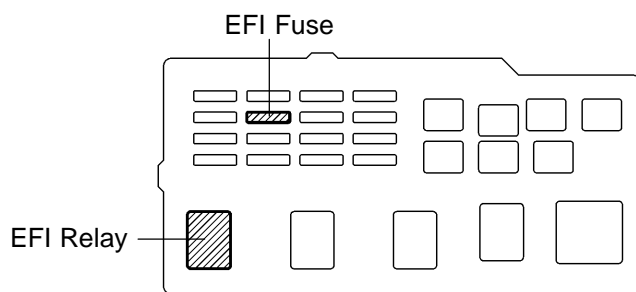


ACTIVE CONTROL ENGINE MOUNT

LOCATION



Engine Room J/B



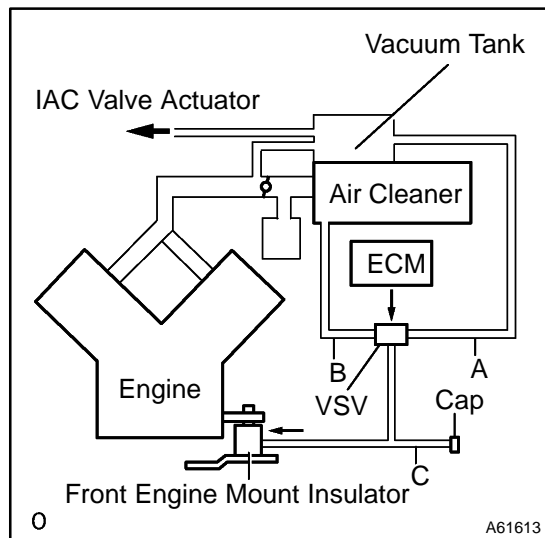
The Active Control Engine Mount (ACM) system decreases engine vibration at low engine speed using the VSV for ACM. The VSV is controlled by a pulse signal transmitted to the VSV from the ECM. The frequency of this pulse signal is matched to the engine speed to decrease engine vibration.

The diagram illustrates the electrical system for the Engine Room J/B and ECM. The Engine Room J/B contains an EFI Relay, an EFI solenoid, and relays 1A, 1B, and 1C. The ECM contains the ACM and MREL components. The wiring is as follows:

- Battery:** Connected to the Engine Room R/B (1) via a B-G wire. The Engine Room R/B (1) is connected to the Engine Room J/B (1A) via a B-G wire.
- FL MAIN:** Connected to the Engine Room R/B (1) via a B-G wire.
- Engine Room J/B:**
 - Relay 1A (2) is connected to the EFI solenoid (5) via a B-G wire.
 - Relay 1C (5) is connected to the EFI Relay (2) via a B-G wire.
 - Relay 1B (3) is connected to the ECM (E6) via a B-W wire.
- ECM:**
 - Relay 1B (3) is connected to the ECM (E6) via a B-W wire.
 - Relay 1C (5) is connected to the ECM (E6) via a W-B wire.
 - Relay 1A (2) is connected to the ECM (E6) via a B-G wire.
 - Relay 1B (3) is connected to the ECM (E6) via a B-W wire.
 - Relay 1C (5) is connected to the ECM (E6) via a W-B wire.
- Other Components:**
 - V15 VSV for ACM:** Connected to the ECM (E6) via a B-W wire.
 - 5V Source:** Connected to the ECM (E6) via a 5V wire.

INSPECTION PROCEDURE

1 CHECK VACUUM HOSES



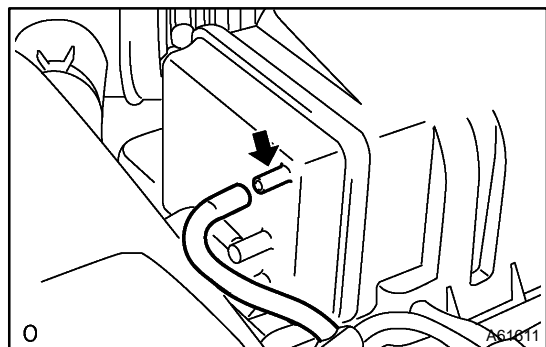
- (a) Check if the vacuum hose cap is missing.
- (b) If the hose is damaged, replace the vacuum hose assembly.
- (c) Check the air and vacuum hoses for looseness, disconnection and blockage.

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REPAIR OR REPLACE VACUUM HOSES

OK

2 CHECK VACUUM



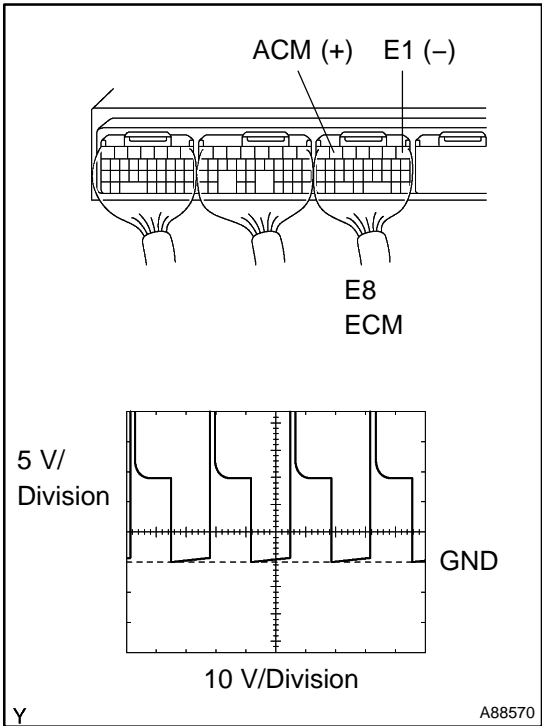
- (a) Start the engine.
- (b) Disconnect the vacuum hose from the vacuum tank.
- (c) Check that the unconnected port located on the vacuum tank applies suction to your finger.
- (d) Reconnect the vacuum hose.

NG

CHECK AND REPLACE VACUUM SOURCE AND HOSES

OK

3 INSPECT ECM (ACM VOLTAGE)



- (a) Connect the oscilloscope between terminals ACM and E1 of the E8 ECM connector.
- (b) Warm up engine to normal operating temperature.
- (c) Turn the A/C switch on.
- (d) Measure the voltage between terminals ACM and E1 of the E8 ECM connector.

Result:

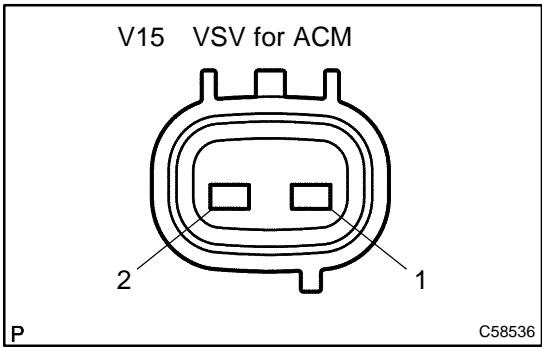
Condition	Voltage
Shift position is D range, and engine speed is 850 rpm or less	Pulse generation
Shift position is D range, and engine speed is 950 rpm or more	9 to 14 V
Shift position is P range	9 to 14 V

OK

Go to step 6

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4 INSPECT VSV FOR ACM (RESISTANCE)



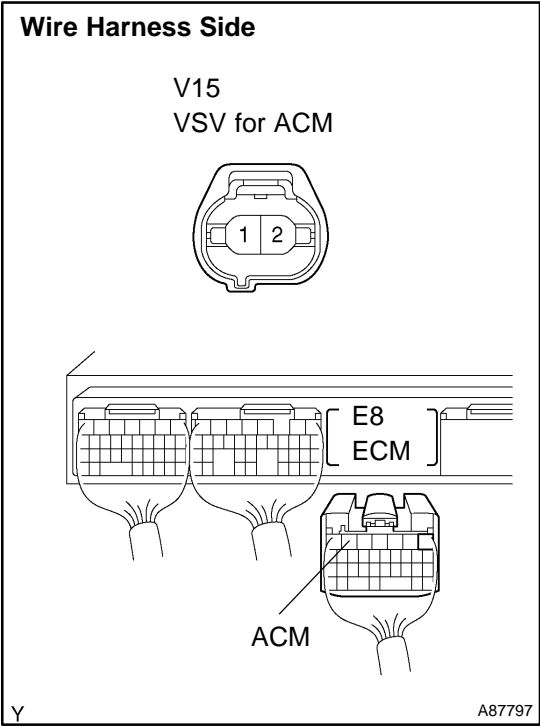
- (a) Disconnect the V15 VSV connector.
 - (b) Measure the resistance between the terminals 1 and 2.
- Standard: 19 to 21 Ω at 20°C (68°F)**

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REPLACE VSV

OK

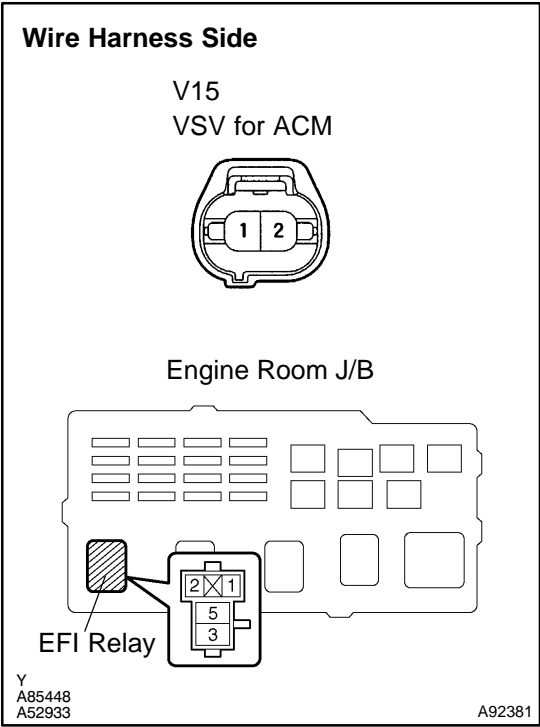
5 CHECK WIRE HARNESS (VSV FOR ACM – ECM, VSV FOR ACM – EFI RELAY)



- (a) Check the wire harness between the VSV and ECM.
- (1) Disconnect the V15 VSV connector.
 - (2) Disconnect the E8 ECM connector.
 - (3) Check the resistance of the wire harness side connectors.

Standard:

Tester Connection	Specified Condition
V15-2 – E8-6 (ACM)	Below 1 Ω
V15-2 or E8-6 (ACM) – Body ground	10 k Ω or higher



- (b) Check the wire harness between the VSV and EFI relay.
- (1) Disconnect the V15 VSV connector.
 - (2) Remove the EFI relay from the engine room J/B.
 - (3) Check the resistance of the wire harness side connectors.

Standard:

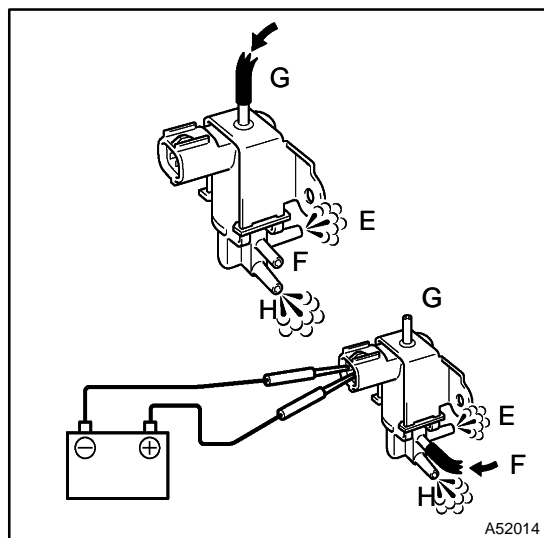
Tester Connection	Specified Condition
V15-1 (VSV for ACM) – J/B EFI relay terminal 3	Below 1 Ω

NG REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE ECM (See page 10-25)

6 INSPECT VSV FOR ACM (OPERATION)



- Remove the VSV.
- Check operation of the VSV when battery positive voltage is applied to the terminals of the VSV connector.

Battery positive voltage is not applied:

The air from pipe G is flowing out through pipes E and H.

Battery positive voltage is applied:

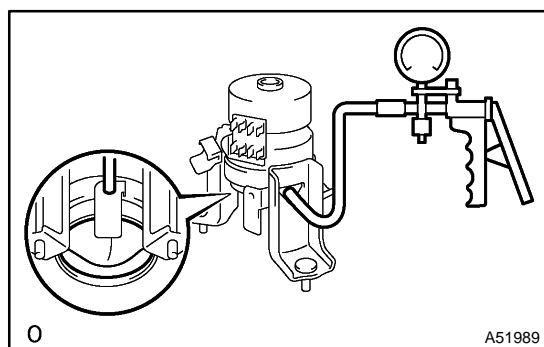
The air from pipe F is flowing out through pipes E and H.

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REPLACE VSV FOR ACM

OK

7 INSPECT TRANSVERSE ENGINE ENGINE MOUNTING INSULATOR



- Disconnect the vacuum hose from the front engine mount insulator.
- Using MITYVAC (Hand-held Vacuum Pump), apply a vacuum of 80 kPa (600 mmHg, 25 in.Hg) and wait for 1 minute.
- Make sure there is no needle movement on the MITYVAC.
- Check that there is no fluid leakage caused by a broken lower diaphragm.

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REPLACE TRANSVERSE ENGINE ENGINE MOUNTING INSULATOR

OK

SYSTEM OK