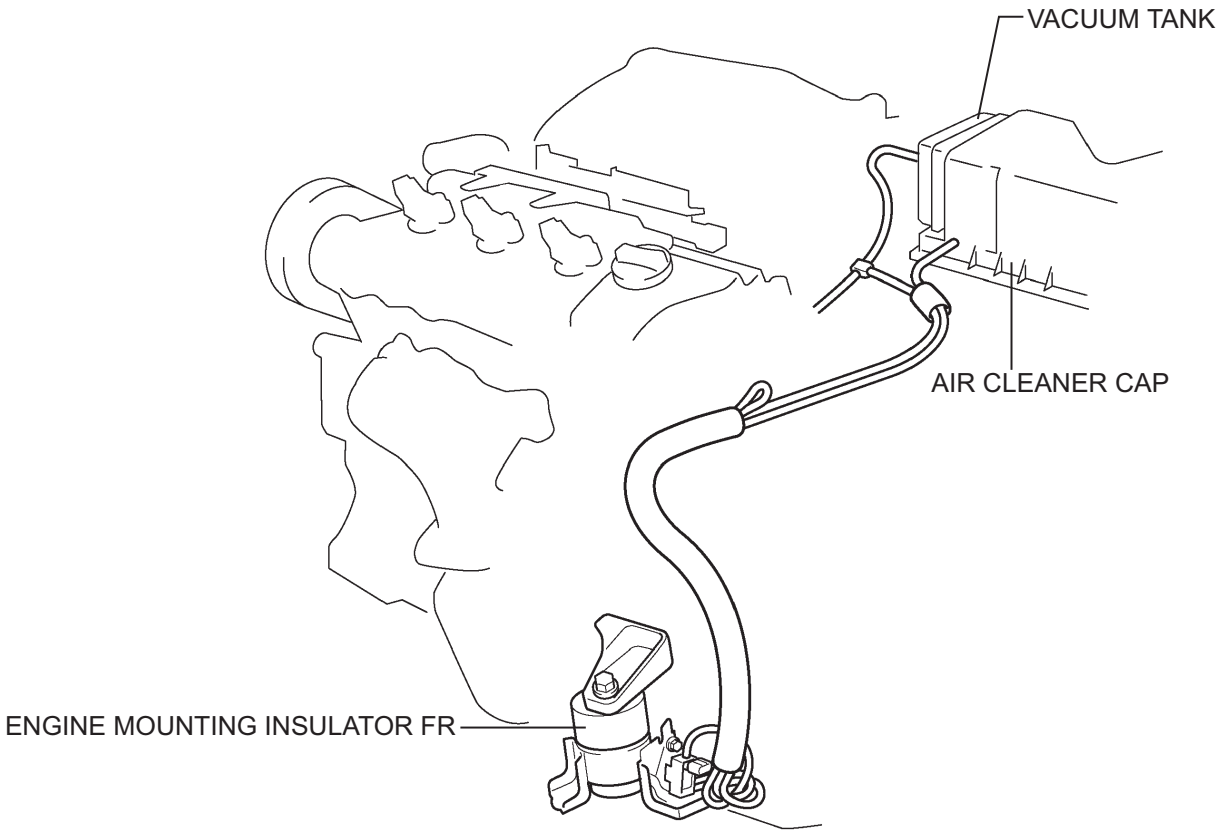
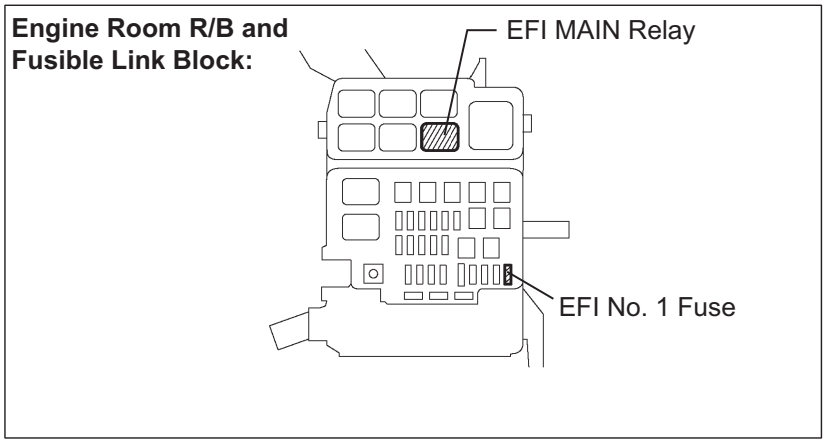
Active Control Engine Mount System

DESCRIPTION

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.

LOCATION





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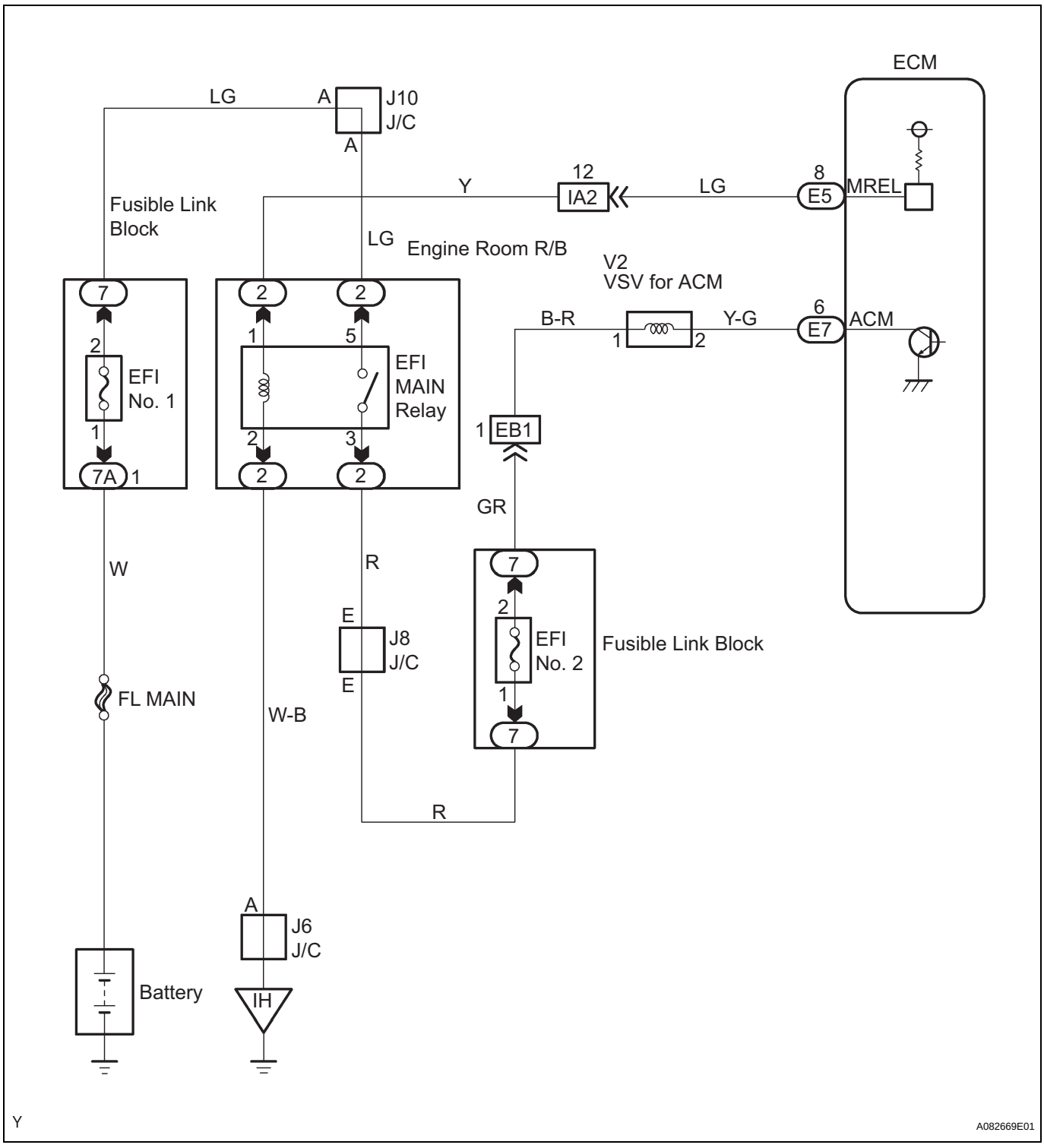
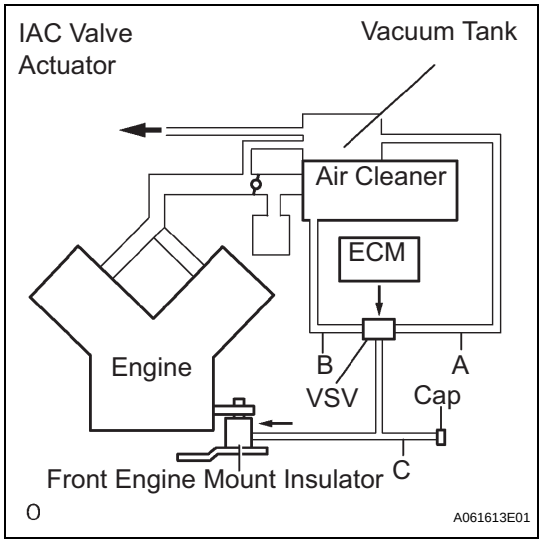
WIRING DIAGRAM



1	CHECK VACUUM HOSES

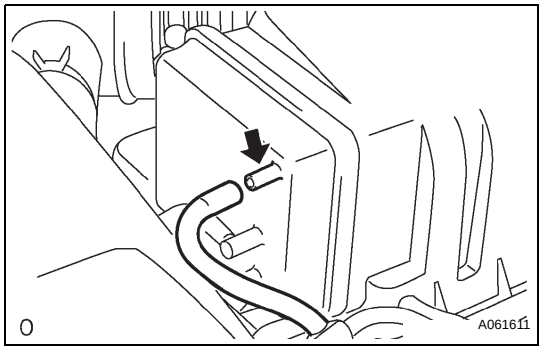


(a) Check if the vacuum hose cap is missing.
(b) If the hose is damaged, replace the vacuum hose assembly.
(c) Check the air and vacuum hoses for looseness, disconnection and blockage.

NG → **REPAIR OR REPLACE VACUUM HOSES**

OK

2	CHECK VACUUM

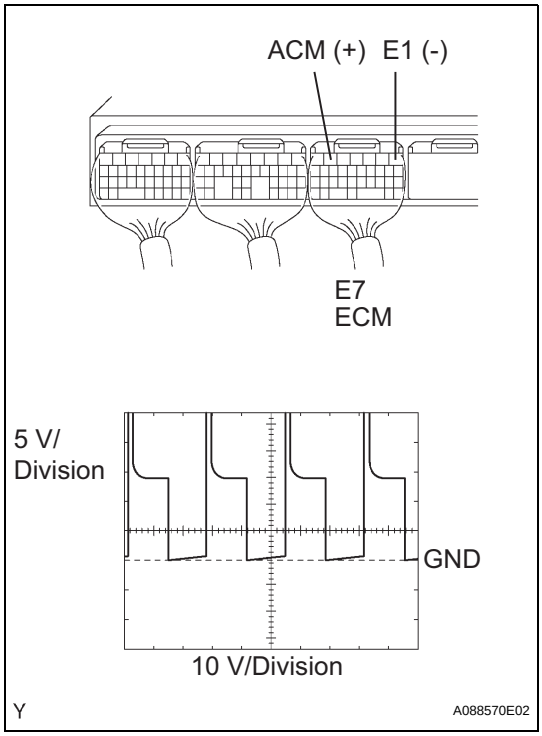


(a) Start the engine.
(b) Disconnect the vacuum hose from the vacuum tank.
(c) Check that the unconnected port located on the vacuum tank applies suction to your finger.
(d) Reconnect the vacuum hose.

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 E7 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 E7 ECM connector.

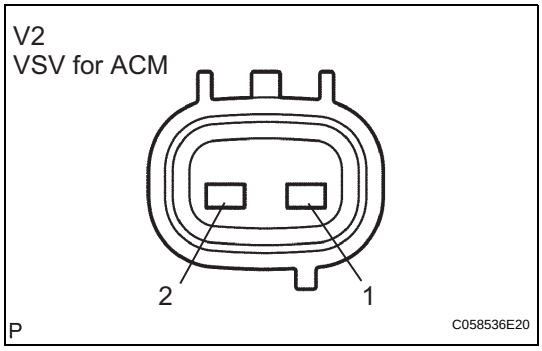
Standard voltage

Condition	Specified Condition
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**

NG

4 INSPECT VSV FOR ACM (RESISTANCE)



(a) Disconnect the V2 VSV for ACM connector.
(b) Measure the resistance between the terminals 1 and 2.

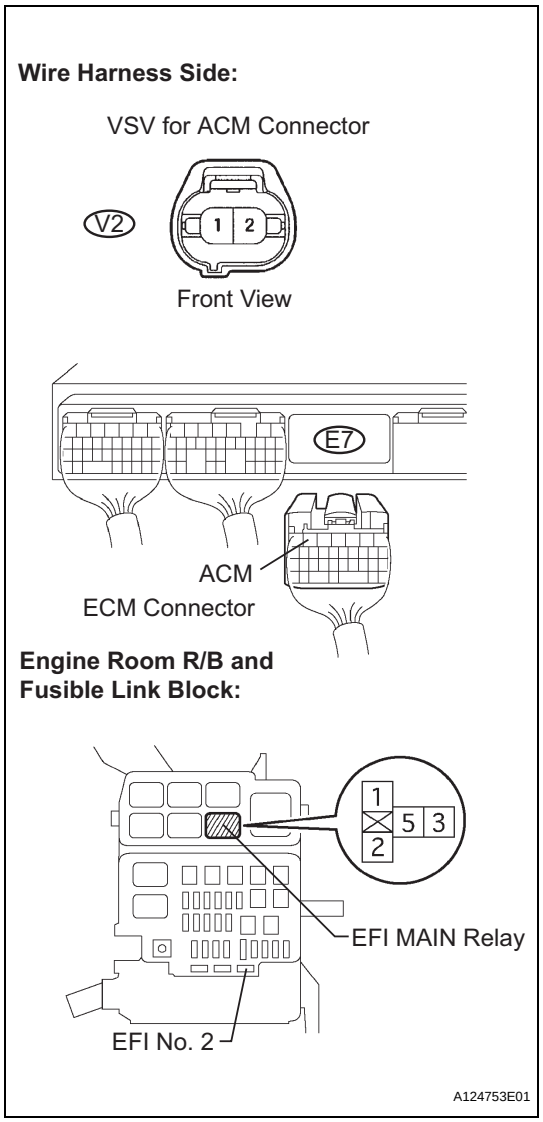
Standard resistance

Tester Connection	Condition	Specified Condition
1 - 2	20°C (68°F)	19 to 20 Ω

NG → **REPLACE VSV**

OK

5	CHECK HARNESS AND CONNECTOR (VSV FOR ACM - ECM, VSV FOR ACM - EFI MAIN RELAY)



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

Standard resistance

Tester Connection	Specified Condition
V2-2 - E7-6 (ACM)	Below 1 Ω
V2-2 or E7-6 (ACM) - Body ground	10 kΩ or higher

(b) Check the wire harness between the VSV and EFI MAIN relay.
  (1) Check the EFI No. 2 fuse from the fusible link block.
    • Remove the EFI No. 2 fuse from the fusible link block.
    • Measure the resistance of the EFI No. 2 fuse.

Standard resistance:
Below 1 Ω

    • Reinstall the EFI No. 2 fuse.
  (2) Disconnect the V3 VSV for ACM connector.
  (3) Remove the EFI MAIN relay from the engine room J/B.
  (4) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
V2-1 (VSV for ACM) - EFI MAIN relay terminal 3	Below 1 Ω

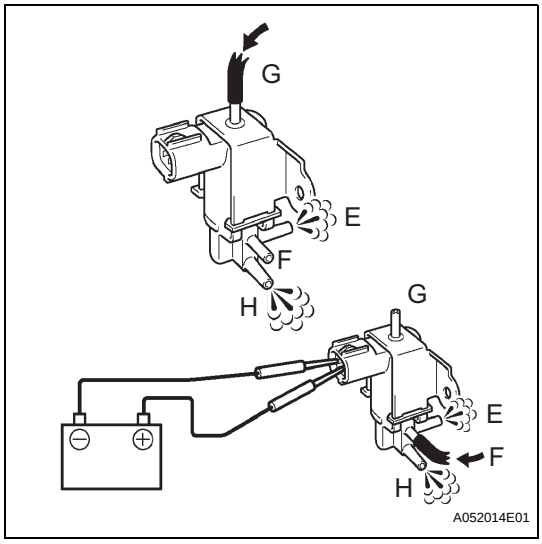
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE ECM

ES

6	INSPECT VSV FOR ACM (OPERATION)

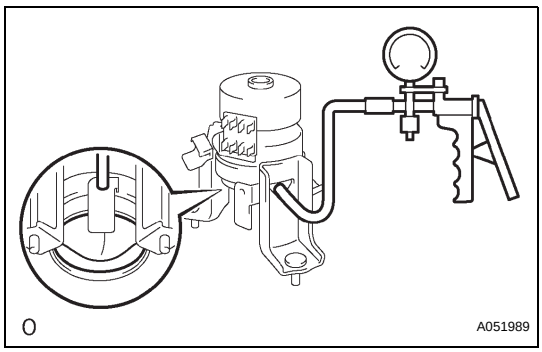


(a) Remove the VSV.
(b) Check operation of the VSV when battery positive voltage is applied to the terminals of the VSV connector.
Battery positive voltage is not applied:
The air from pipe G is flowing out through pipes E and H.
Battery positive voltage is applied:
The air from pipe F is flowing out through pipes E and H.

NG → **REPLACE VSV FOR ACM**

OK

7	INSPECT FRONT ENGINE MOUNT INSULATOR



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

NG → **REPLACE FRONT ENGINE MOUNT INSULATOR**

OK

SYSTEM OK