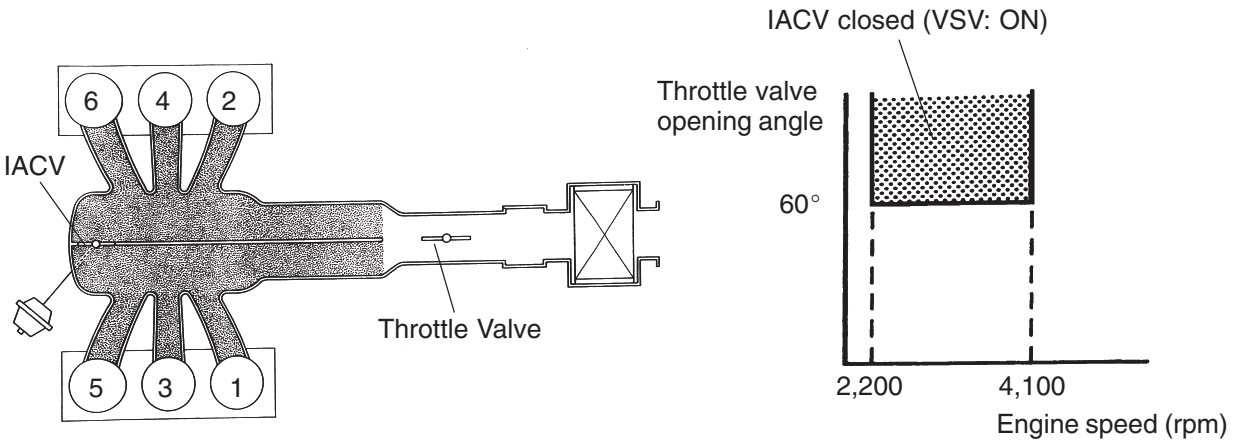
ACIS CONTROL CIRCUIT

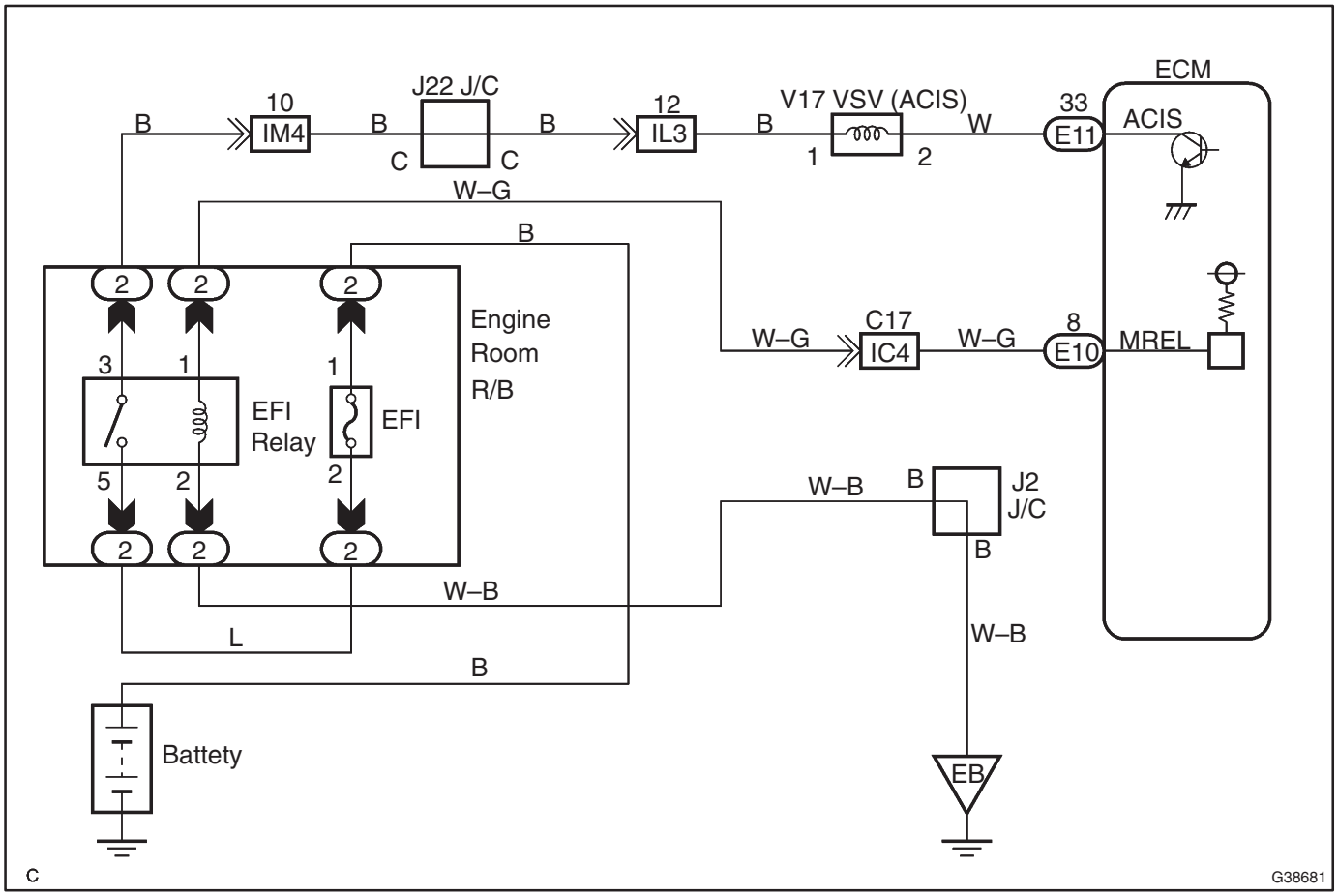
CIRCUIT DESCRIPTION

The acoustic control induction system (ACIS) has been adopted for obtaining high power torque in all engine speed range from low to high. This circuit is used to open and close the intake air control valve (IACV) in response to an engine load and helps that increasing the intake air efficiency inside the intake manifold. When the engine speed is between 2,200 and 4,100 rpm and an opening angle of the throttle valve is 60° or more, the ECM supplies current to the VSV to close the IACV (The VSV is ON). Other than this, the IACV is usually open and the VSV is off.



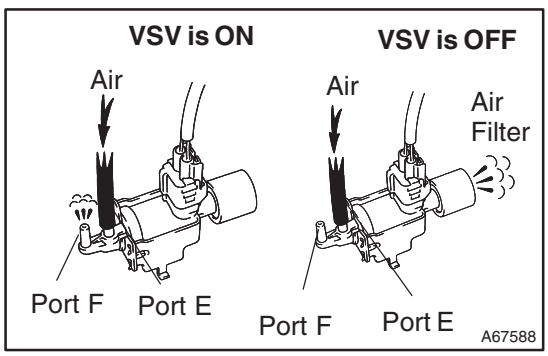
WIRING DIAGRAM

Refer to DTC P0660 on page 05–347.



INSPECTION PROCEDURE

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER II(OPERATE VSV FOR ACIS)



(a) Disconnect the vacuum hose.
(b) Connect the Intelligent Tester II to the DLC3.
(c) Start the engine and turn the Intelligent Tester II ON.
(d) Select the following menu items: Powertrain / Engine and ECT / Active Test / Active the VSV for Intake Control. Press the right or left button.
(e) Check if the disconnected port applies suction to your finger when operating the ACIS VSV using the Intelligent Tester II.

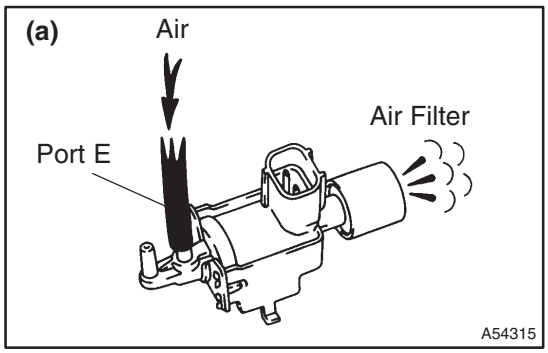
Standard:

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

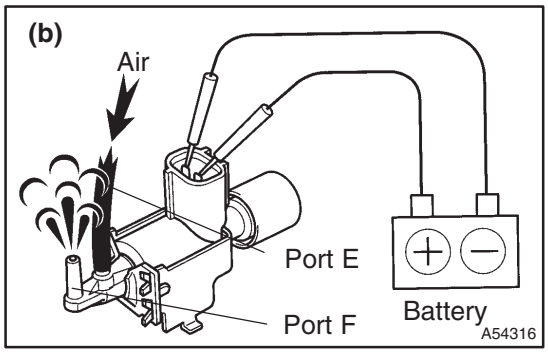
OK	Go to step 4

NG

2	CHECK VSV FOR ACIS(OPERATION)



(a) Check that air flows from port E to the air filter.

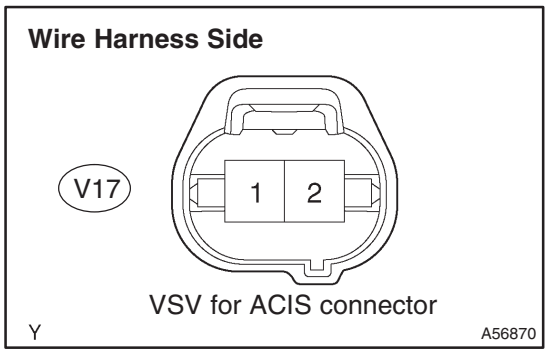


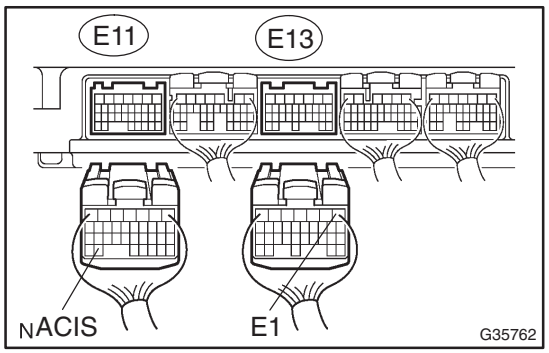
(b) Apply battery voltage across the terminals.
(c) Check that air flows from port E to port F.

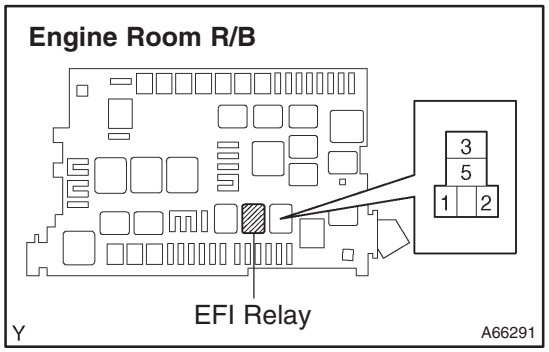
NG → **REPLACE VSV FOR ACIS**

OK

3 CHECK HARNESS AND CONNECTOR(VSV FOR ACIS – ECM, VSV FOR ACIS – EFI RELAY)







(a) Check the wire harness between the VSV for ACIS and connector the ECM connector.
  (1) Disconnect the VSV for ACIS connector.
  (2) Disconnect the E11 and E13 ECM connector.
  (3) Check for resistance between the wire harness side connectors.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
VSV for ACIS (V17–2) – ACIS (E11–33)	Below 1 Ω

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
VSV for ACIS (V17–2) or ACIS (E11–33) – E1 (E13–1)	10 kΩ or higher

(b) Check the wire harness between the VSV for ACIS connector and the EFI relay.
  (1) Disconnect the VSV for ACIS connector.
  (2) Remove the EFI relay from the engine room R/B.
  (3) Check for resistance between the wire harness side connectors.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
VSV for ACIS (V17–1) – EFI relay terminal 3 of R/B	Below 1 Ω

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

OK

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

(a) Check that the vacuum hose is connected correctly.
(b) Check the vacuum hose for looseness and disconnection.
(c) Check the vacuum hose for cracks, hole and damage.

NG → **REPAIR OR REPLACE VACUUM HOSES**

OK

5	**INSPECT INTAKE AIR CONTROL VALVE(INTAKE AIR SURGE TANK) (See Pub. No. RM1017E, page 13–1)**

NG → **REPLACE INTAKE AIR CONTROL VALVE (INTAKE AIR SURGE TANK)**

OK

REPLACE ECM (See Pub. No. RM1017E, page 10–11)