DI302–02

EGR Control Circuit

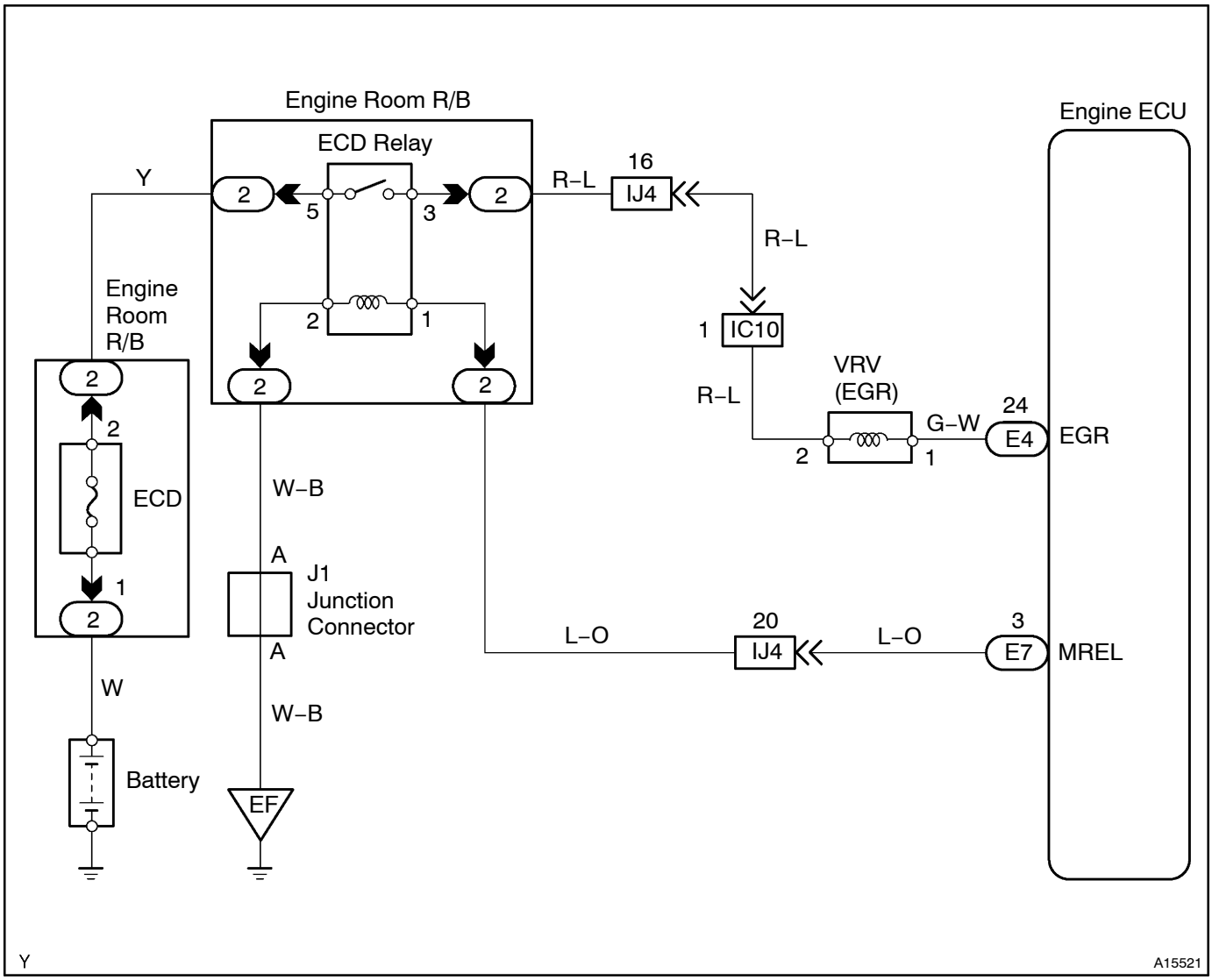
CIRCUIT DESCRIPTION

The EGR system recirculates exhaust gas, which is controlled to the proper quantity to suit the driving conditions into the intake air mixture to slow down combustion, reduce the combustion temperature and reduce NOx emissions.

The lift amount of EGR valve is controlled by the vacuum which is regulated by the VRV operated by the engine ECU.
Under the following conditions, EGR is cut to maintain driveability.

- Before the engine is warmed up
- During deceleration (Diesel throttle valve closed)
- Light engine load (amount of intake air very small)
- Full speed over 3,200 rpm

WIRING DIAGRAM



INSPECTION PROCEDURE

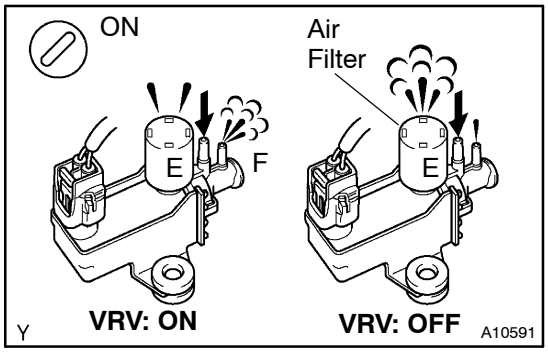
When using hand–held tester

1	**Check the connection of vacuum hose between vacuum pump and VRV for EGR, VRV for EGR and EGR valve.**

NG → **Repair or replace.**

OK

2	**Check operation of VRV for EGR.**



PREPARATION:

(a) Disconnect the vacuum hoses from the VRV for EGR.
(b) Connect the hand–held tester to the DLC3.
(c) Turn ignition switch ON and push hand–held tester main switch ON.
(d) Select the active test mode on the hand–held tester.

CHECK:

Check operation of VRV for EGR, when it is operated by the hand–held tester.

OK:

(a) VRV ON:
Air from pipe E is flowing out through pipe F.
(b) VRV OFF:
Air from pipe E is flowing out through air filter.

OK → **Go to step 5.**

NG

3	**Check VRV for EGR (See page EC–7).**

NG → **Replace the VRV for EGR.**

OK

4	Check for open and short in harness and connector between VRV for EGR and engine ECU, VRV for EGR and ECD relay (Marking : ECD) (See page IN–19).

NG → Repair or replace harness or connector.

OK

5	Check EGR valve (See page EC–4).

NG → Replace the EGR valve.

OK

6	Check EGR system (See page EC–4).

NG → Repair or replace.

OK

Proceed to next circuit inspection shown on problem symptoms table (See page DI–25).

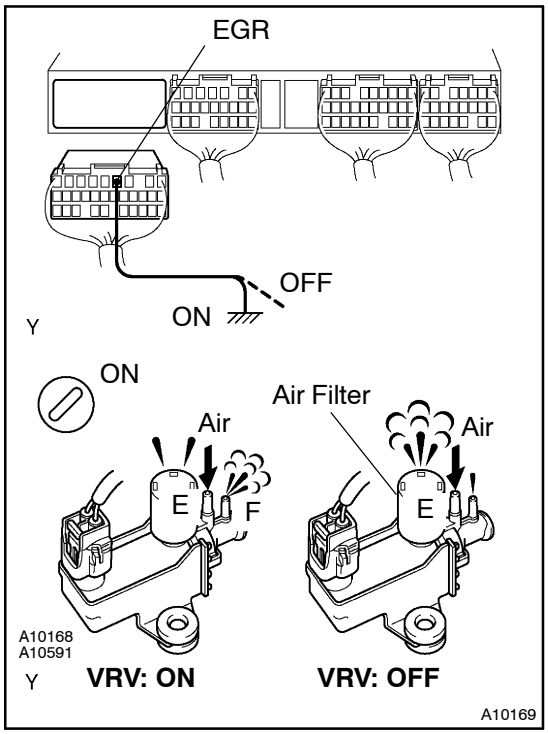
When not using hand–held tester

1	Check the connection of vacuum hose between vacuum pump and VRV for EGR, VRV for EGR and EGR valve.

NG → Repair or replace.

OK

2	Check operation of VRV for EGR.



PREPARATION:

(a) Remove glove compartment door (See page ED–25).
(b) Disconnect the connector of engine ECU.
(c) Turn the ignition switch ON.

CHECK:

Check E VRV operation.

(1) Connect between terminal EGR of engine ECU connector and body ground (ON).
(2) Disconnect between terminal EGR of engine ECU connector and body ground (OFF).

OK:

(3) VRV ON :
Air from pipe E is flowing out through pipe F.
(4) VRV OFF :
Air from pipe E is flowing out through air filter.

OK	Go to step 5.

NG

3	Check VRV for EGR (See page EC–7).

NG	Replace the VRV for EGR.

OK

4	Check for open and short in harness and connector between VRV for EGR and engine ECU, VRV for EGR and ECD relay (Marking : ECD) (See page IN–19).

NG → Repair or replace harness or connector.

OK →

Check and replace engine ECU (See page IN–19).

5	Check EGR valve (See page EC–4).

NG → Replace the EGR valve.

OK →

6	Check EGR system (See page EC–4).

NG → Repair or replace.

OK →

Proceed to next circuit inspection shown on problem symptoms table (See page DI–25).