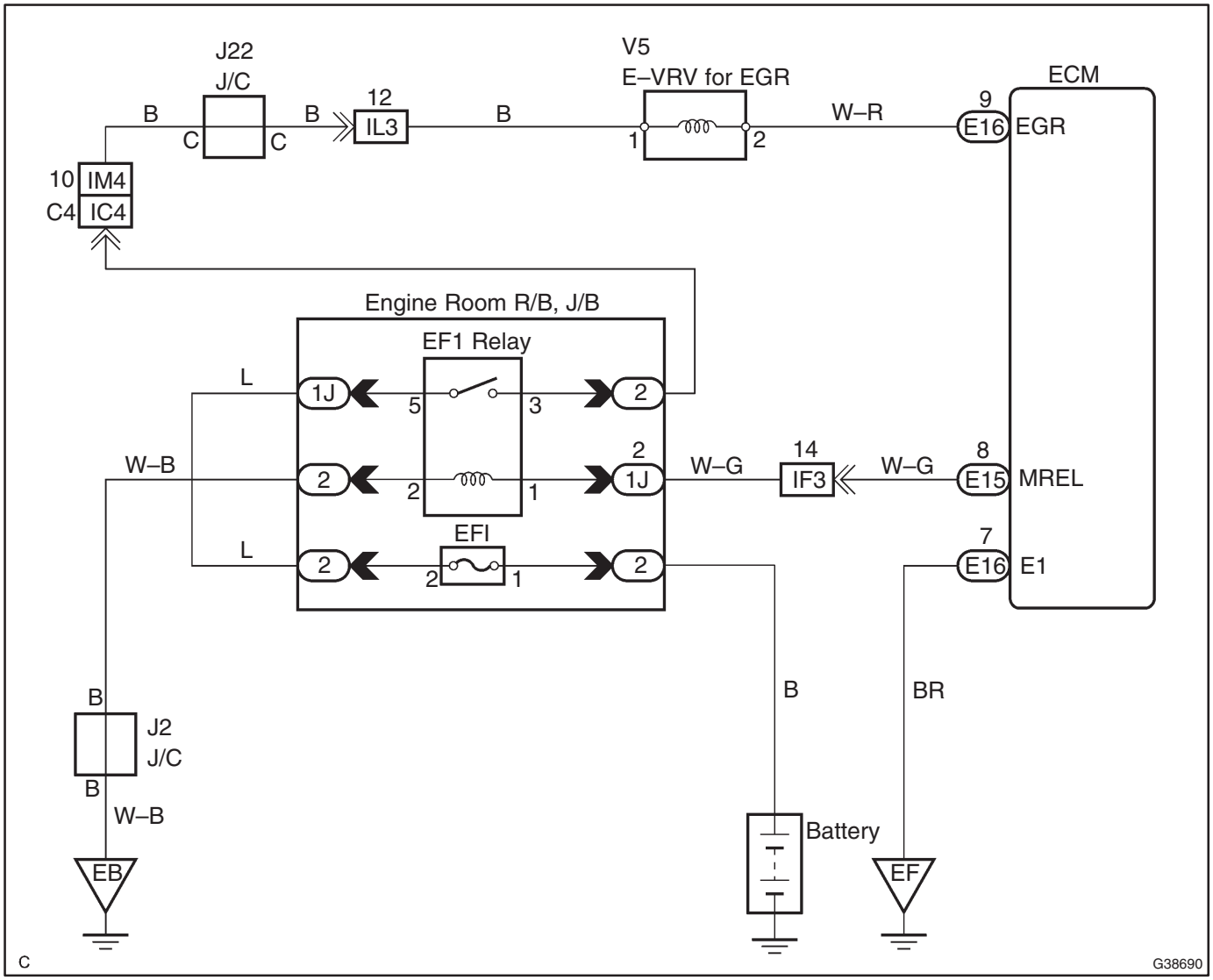
DTC P0400/71 EXHAUST GAS RECIRCULATION FLOW

CIRCUIT DESCRIPTION

The EGR system recirculates exhaust gases, and is controlled to the proper volume to be suitable for all driving conditions. The recirculated gas mingles with the intake air, allowing the EGR system to slow down engine combustion and lower the combustion temperature. This helps reduce NOx emissions.
In order to increase circulatory efficiency, the ECM adjusts the lift amount of the EGR valve and throttle valve.

DTC No.	DTC Detection Condition	Trouble Area
P0400/71	• Open or short is detected in the EGR valve position sensor circuit.	• EGR valve stuck • EGR valve does not move smoothly • Open or short in E–VRV for EGR circuit • Open or short in EGR valve position sensor circuit • EGR valve position sensor • Vacuum pump • Vacuum hose connection loose • ECM

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:
When the MAF is not between 5 or 15 g/sec with all the following conditions (a) to (e) satisfied, a malfunction occurs in the EGR system.

(a) IAT is between 20 to 30°C
(b) ECT is between 80 to 90°C
(c) Vehicle is under normal atmospheric pressure.
(d) Engine is idling (A/T in N position).
(e) A/C and all accessories are OFF, and the steering wheel is centered.

1	CHECK OTHER DTC OUTPUT (IN ADDITION TO DTC P0400/71)

(a) Connect the intelligent tester II to the DLC3.
(b) Turn the ignition switch ON and turn the intelligent tester II ON.
(c) Enter the following menus: Powertrain / Engine / DTC.
(d) Read DTCs.

Result:

Display (DTC output)	Proceed to
P0400/71	A
P0400/71 and P0405/96 and/or P0406/96	B

HINT:
If any other codes besides DTC P0400/71 are output, perform troubleshooting for those DTCs first.

B → **Go to RELEVANT DTC CHART (See page 05–477)**

A

2	INSPECT VACUUM PUMP (See Pub. No. RM990E, page 32–51)

NG → **REPLACE VACUUM PUMP (See Pub. No. RM990E, page 32–52)**

OK

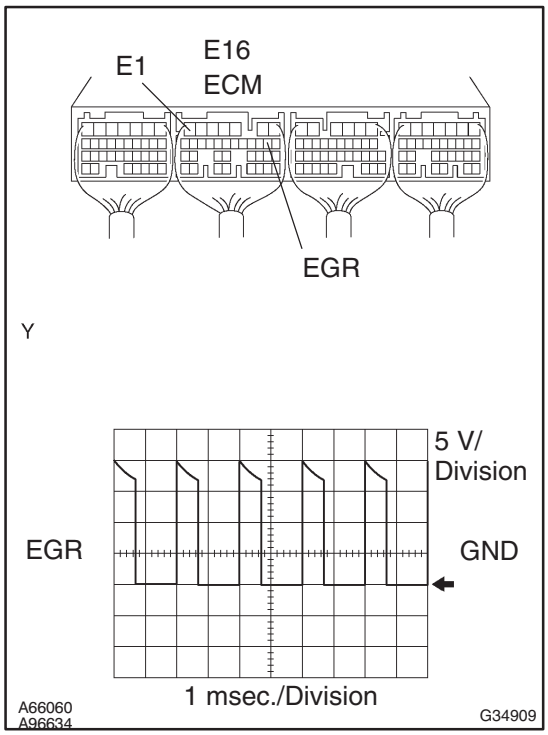
3	CHECK VACUUM HOSES

HINT:
Check the vacuum hose of EGR system.

NG → **REPLACE VACUUM HOSE**

OK

4 INSPECT ECM (EGR VOLTAGE)



(a) While idling the engine, check the waveform of the ECM connector.

Standard:

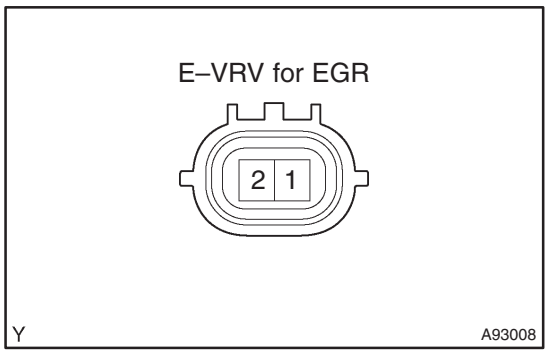
Tester Connection	Specified Condition
E16–9 (EGR) – E16–7 (E1)	Correct waveform is as shown

NG → **REPLACE ECM (See Pub. No. RM990E, page 10–34)**

NOTICE:
After replacing the ECM, allow for ECM learning start the engine and idle it until it is fully warmed up.

OK

5 INSPECT ELECTRIC VACUUM REGULATING VALVE FOR EGR (RESISTANCE)



(a) Disconnect the V5 E–VRV connector.
(b) Measure the resistance of the E–VRV.

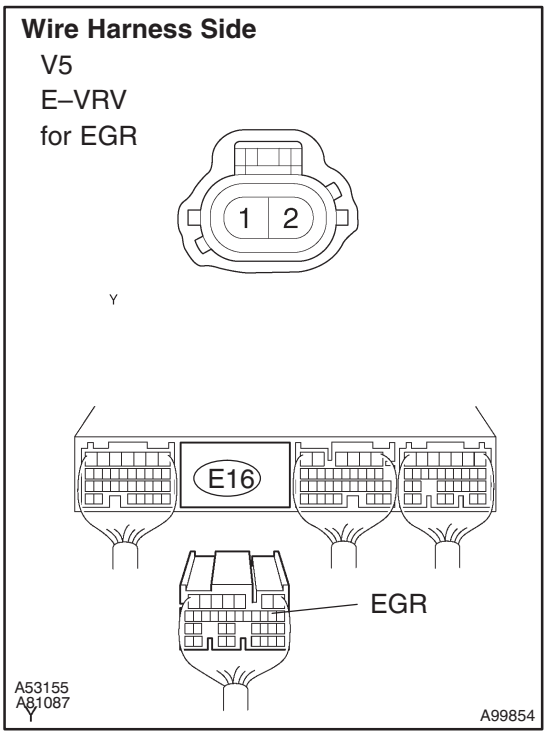
Standard:

Tester Connection	Condition	Specified Condition
1 – 2	20°C (68°F)	11 to 13 Ω

NG → **REPLACE ELECTRIC VACUUM REGULATING VALVE FOR EGR**

OK

6 CHECK WIRE HARNESS (ELECTRIC VACUUM REGULATING VALVE FOR EGR – ECM)



(a) Disconnect the V5 E–VRV connector.
(b) Disconnect the E16 ECM connector.
(c) Measure the resistance of the wire harness side connectors.

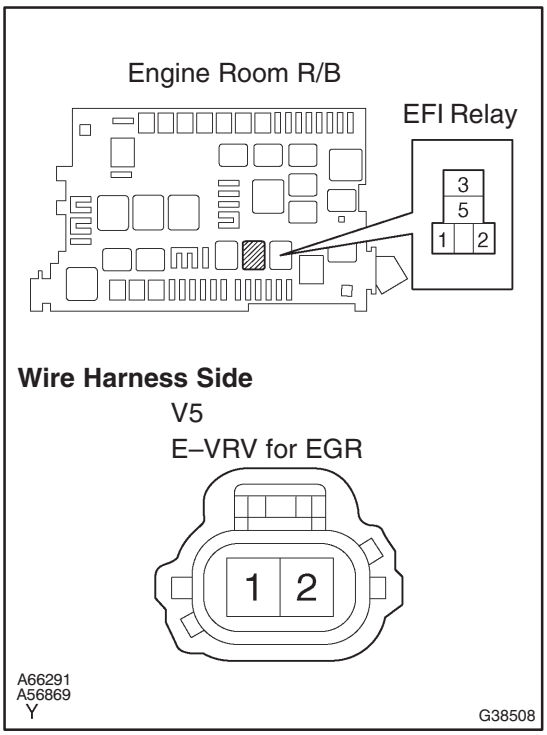
Standard:

Tester Connection	Specified Condition
E16–9 (EGR) – V5–2	Below 1 Ω
E16–9 (EGR) or V5–2 – Body ground	10 kΩ or higher

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

OK

7 CHECK WIRE HARNESS (ELECTRIC VACUUM REGULATING VALVE FOR EGR – EFI RELAY)



(a) Remove the EFI relay from the engine room R/B.
(b) Disconnect the V5 E–VRV connector.
(c) Measure the resistance of the wire harness side connectors.

Standard:

Tester Connection	Specified Condition
EFI relay (3) – V5–1	Below 1 Ω
EFI relay (3) or V5–1 – Body ground	10 kΩ or higher

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

OK

8	INSPECT EGR VALVE ASSY (See page 12–20)

NG → REPLACE EGR VALVE ASSY (See page 10–20)

OK

REPLACE ECM (See Pub. No. RM990E, page 10–34)

NOTICE:
After replacing the ECM, allow for ECM learning start the engine and idle it until it is fully warmed up.