

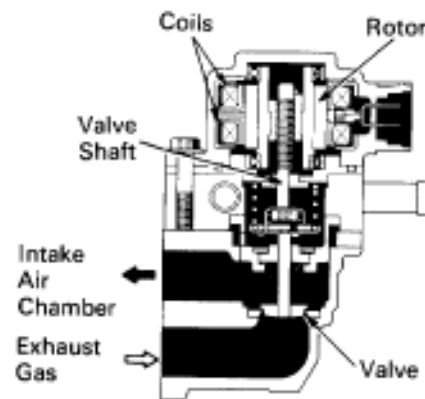
Diag. Code 71**EGR System Malfunction (Only for USA spec.)****— CIRCUIT DESCRIPTION —**

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 the EGR valve is controlled by a step motor operated by the ECU. The ECU operates the motor only a preprogrammed amount in response to the engine operating conditions (engine rpm, intake air volume to adjust the EGR volume to the target valve.)

Under the following conditions, EGR is cut to maintain driveability.

- Coolant temp. below 53°C (127.45°F)
- During deceleration (throttle valve closed)
- Light engine load (amount of intake air very small)
- Engine speed over 4,000 rpm
- Engine idling
- Neutral start switch on



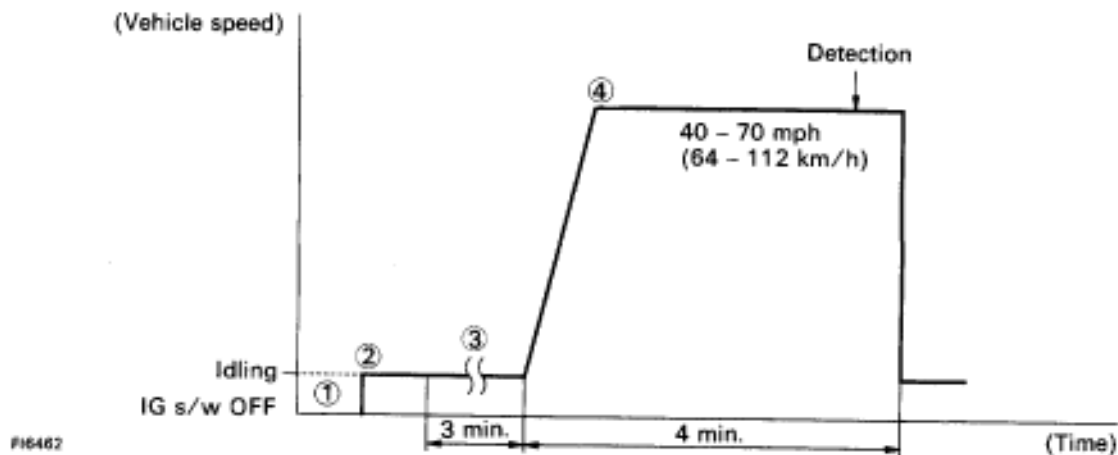
Code No.	Diagnostic Code Detecting Condition	Trouble Area
71	(1) Open or short in EGR step motor circuit for 1 sec. or more.	<ul style="list-style-type: none"> •Open or short in EGR step motor circuit •ECU
	(2) EGR gas temp. is 65°C (149°F) or below for 1 ~ 4 min. under conditions (a) and(b). (2 trip detection logic)* (a) Coolant temp.: 65°C (149°F) or more. (b) EGR operation possible (EX. ECT in 3rd speed, A/C ON, 60 mph (96 km/h), Flat road).	<ul style="list-style-type: none"> •Open in EGR gas temp. sensor circuit •ECU

*: See page [TR-21](#).

— **CIRCUIT DESCRIPTION (Cont'd)** —**DIAGNOSIS CODE DETECTION DRIVING PATTERN**

Purpose of the driving pattern.

- (a) To simulate diag. code detecting condition after diag. code is recorded.
- (b) To check that the malfunction is corrected when the repair is completed confirming that diag. code is no longer detected.

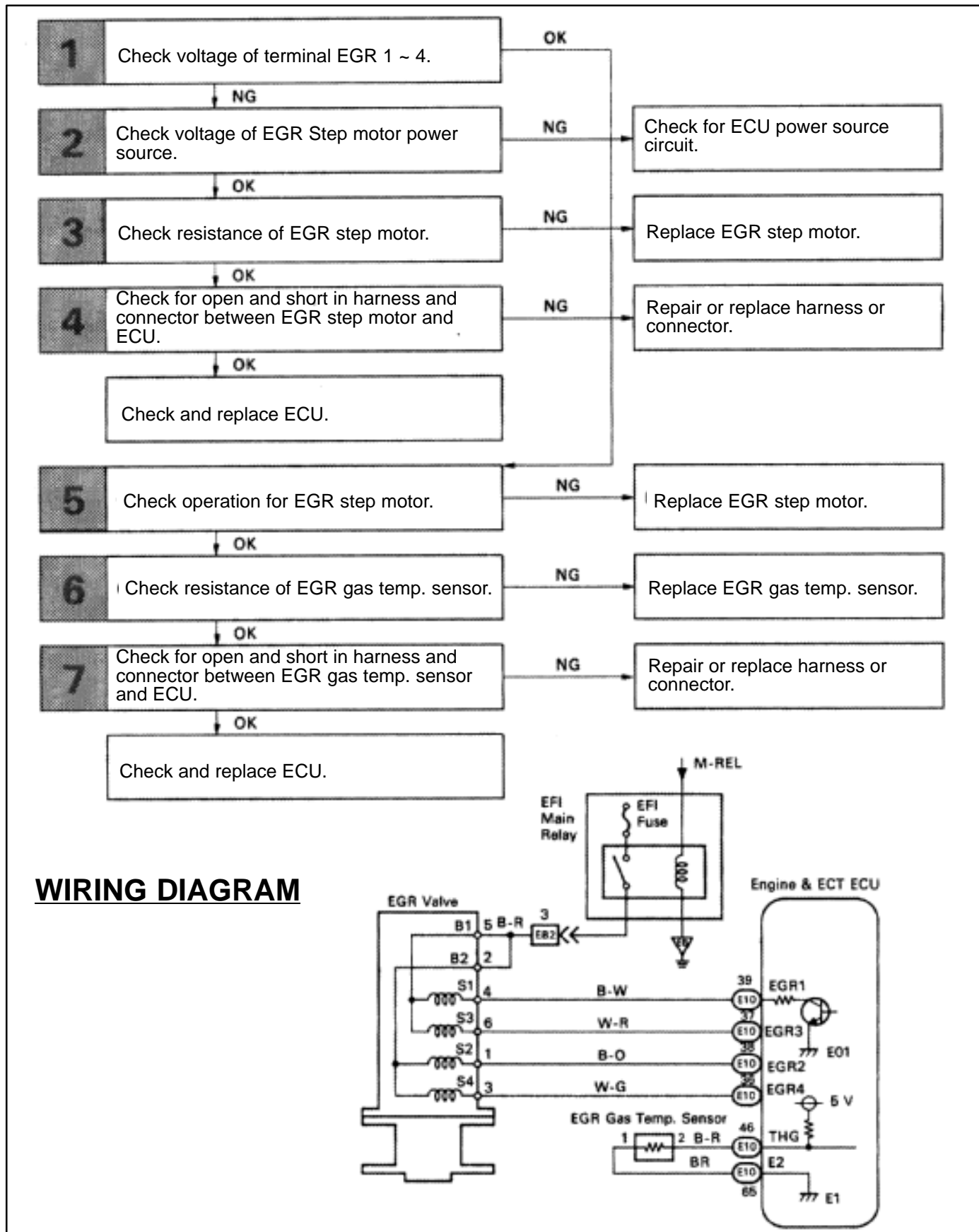
Malfunction: Open in EGR gas temp. sensor circuit

- ① Initiate test mode (See page [TR-12](#)).
- ② Start engine and warm up.
- ③ After engine is warmed up, let it idle for 3 min.
- ④ With the A/C ON and transmission in D range (O/D OFF), drive at 40–70 mph for 4 min.

HINT: If a malfunction exists, the "CHECK" engine warning light will light up at 1–4 min. of driving at 40–70 mph (64–112 km/h).

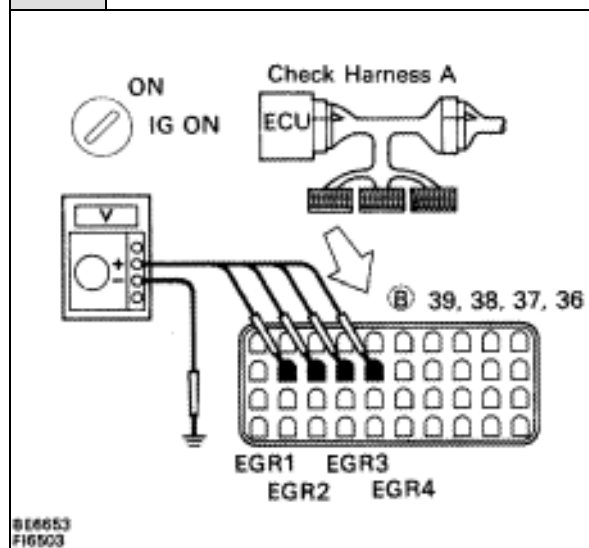
NOTICE: If the conditions in this test are not strictly followed, detection of the malfunction will not be possible.

DIAGNOSTIC CHART



INSPECTION PROCEDURE

1 Check voltage between terminals EGR 1 ~ 4 of engine & ECT ECU connector and body ground.



P (2) Connect the Check Harness A.
(See page [TR-30](#)).

(2) Turn ignition switch on.

C Measure voltage between terminals EGR 1 ~ 4 of engine & ECT ECU connector and body ground.

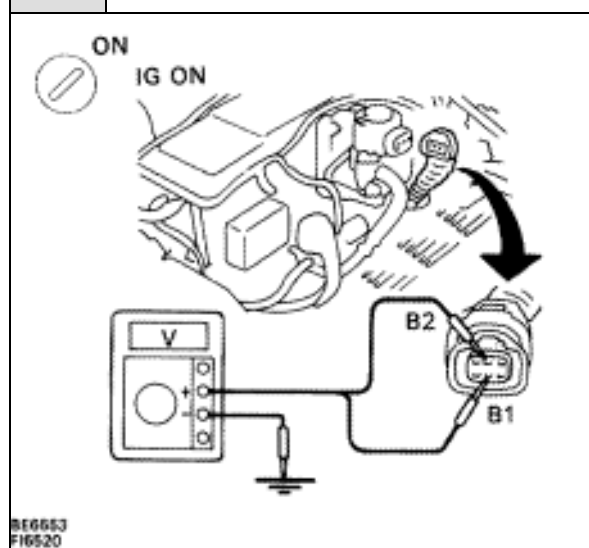
OK Voltage: 10 – 14 V

NG

OK

Go to step 5.

2 Check voltage between terminals B1 and B2 of EGR step motor connector and body ground.



P (2) Disconnect EGR step motor connector.
(2) Turn ignition switch on.

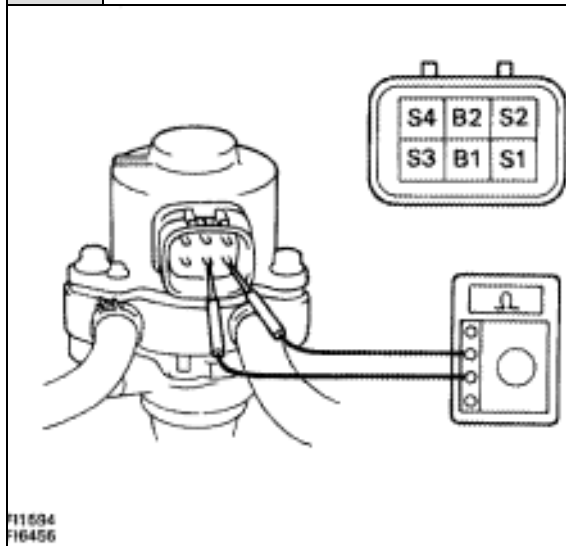
C Measure voltage between terminals B1 and B2 of EGR step motor connector and body ground.

OK Voltage: 10 – 14 V

OK

NG

Check for ECU power source circuit
(See page [TR-124](#)).

3 Check resistance of EGR step motor.**P** Disconnect EGR step motor connector.**C** Measure resistance between terminals shown below.**OK**

Terminal	Resistance
B1 – S1	10 Ω – 30 Ω
B1 – S3	10 Ω – 30 Ω
B2 – S2	10 Ω – 30 Ω
B2 – S4	10 Ω – 30 Ω

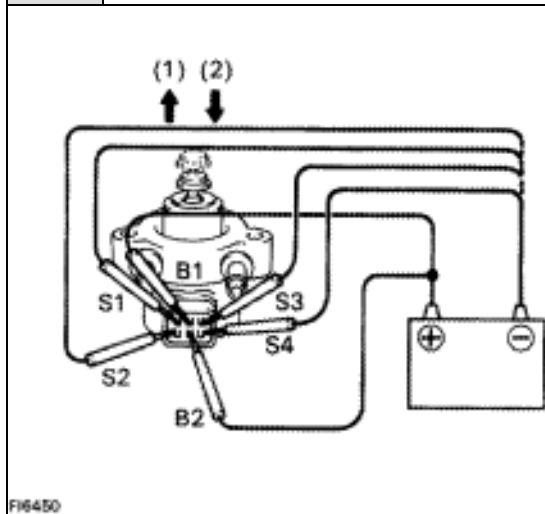
OK**NG**

Replace EGR step motor.

4 Check for open and short in harness and connector between EGR step motor and engine & ECT ECU (See page IN-27).**OK****NG**

Repair or replace harness or connector.

Check and replace engine & ECT ECU.

5 Check operation for EGR step motor.**P** Remove EGR step motor.**C** (2) Connect the battery positive lead to terminals B1 and B2, and the negative lead to terminals S1 – S2 – S3 – S4 in that order.

(2) Connect the battery positive lead to terminals B1 and B2, and the negative lead to terminals S4 – S3 – S2 – S1 in that order.

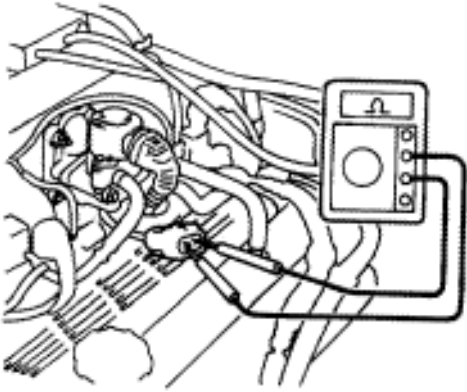
OK

(2) The valve moves in the closing direction.

(2) The valve moves in the opening direction.

OK**NG**

Replace EGR step motor.

6 Check resistance of EGR gas temp. sensor.

F16486

- P** Disconnect EGR gas temp. sensor connector (See page [FI-103](#)).
- C** Measure resistance between terminals of EGR gas temp. sensor connector.
- OK** Resistance: 69 – 89 k Ω at 50°C (122°F)
12 – 15 k Ω at 100°C (212°F)
2 – 4 k Ω at 150°C (302°F)

OK**NG**

Replace EGR gas temp. sensor.

7 Check for open and short in harness and connector between EGR gas temp. sensor and engine & ECT ECU (See [IN-27](#)).**OK****NG**

Repair or replace harness or connector.

Check and replace engine & ECT ECU.