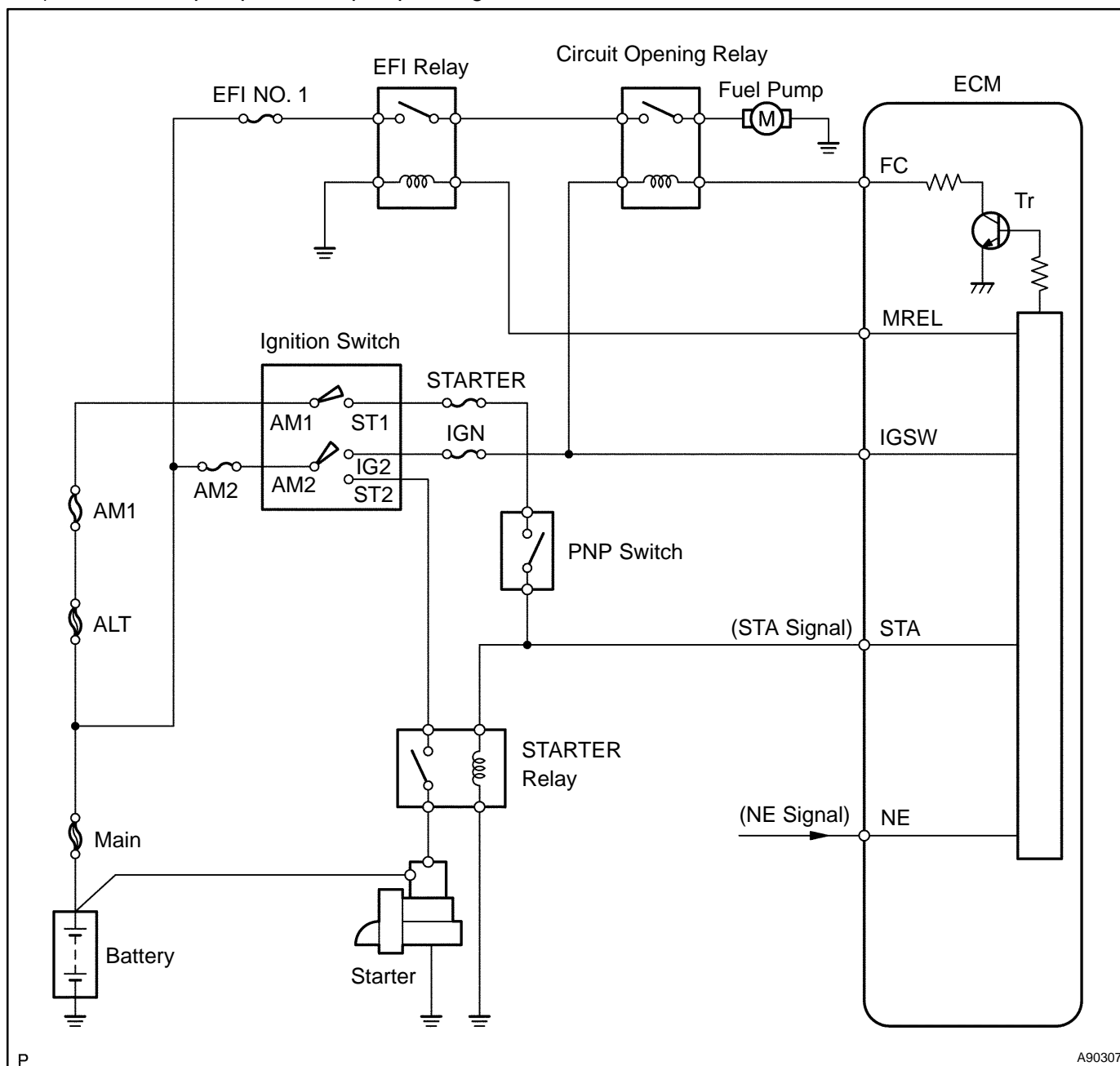
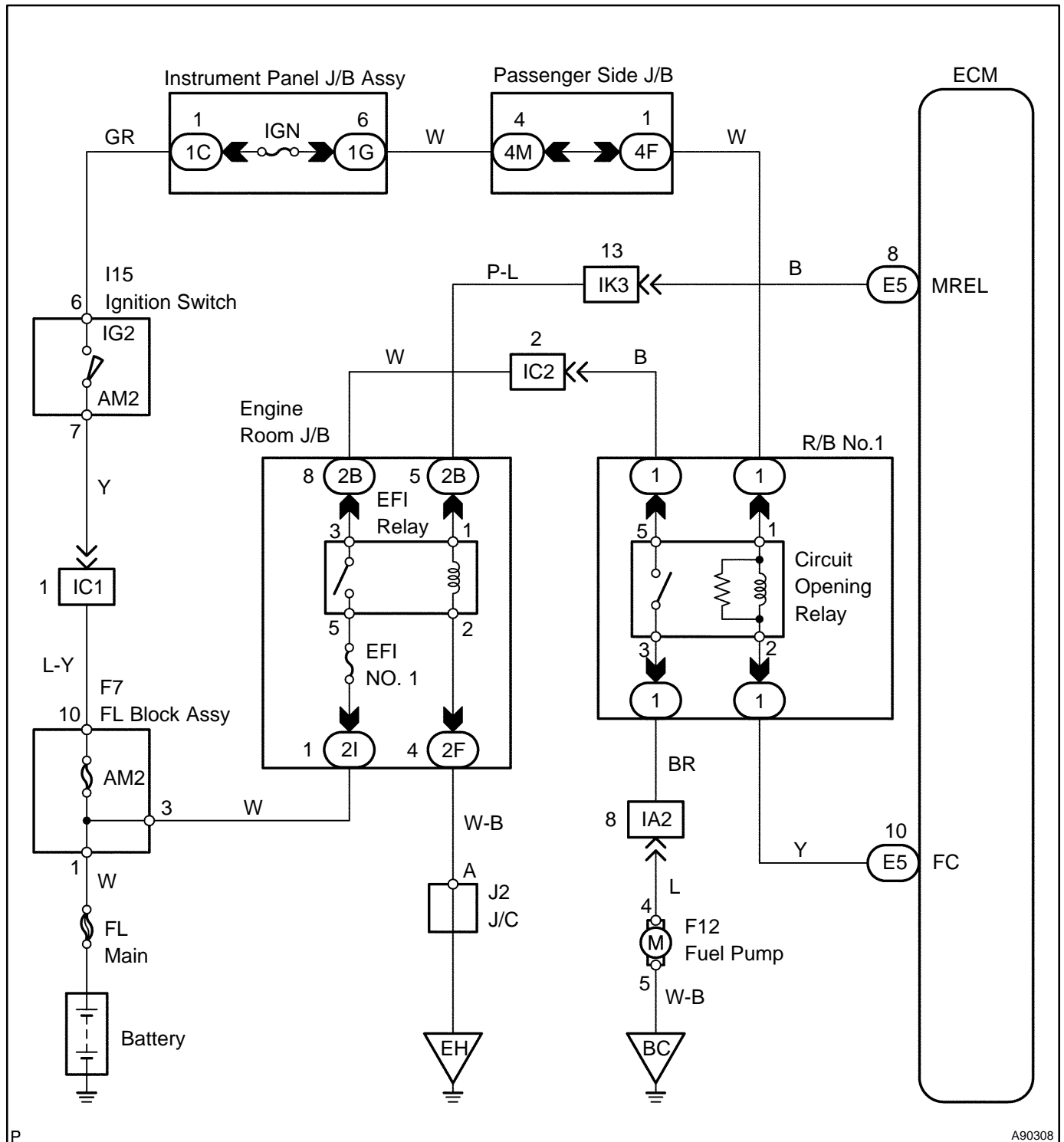


CIRCUIT DESCRIPTION

While the NE signal is generated and the engine is running, the ECM keeps Tr ON (Circuit Opening relay ON) and the fuel pump also keeps operating.



WIRING DIAGRAM



P

A90308

INSPECTION PROCEDURE

Hand-held tester:

1 PERFORM ACTIVE TEST USING HAND-HELD TESTER (OPERATE CIRCUIT OPENING RELAY)

- Connect the hand-held tester to the DLC3.
- Turn ON the ignition switch. Push the hand-held tester main switch.
- Enter the following menus: DIAGNOSIS / ENHANCED OBD II / ACTIVE TEST / FUEL PUMP / SPD.
- Check the relay operation while operating it with the hand-held tester.

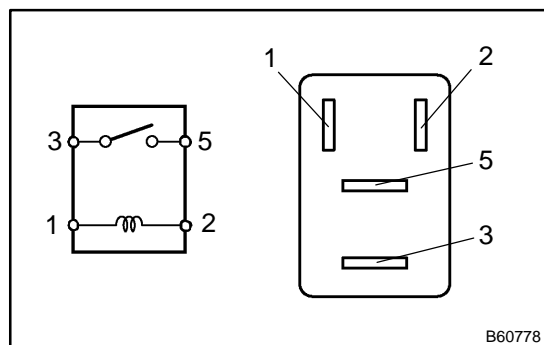
OK: Operating noise can be heard from the relay.

OK

Go to step 5

NG

2 INSPECT CIRCUIT OPENING RELAY



- Remove the circuit opening relay from the R/B sub-assy.
- Measure the resistance of the circuit opening relay.

Standard:

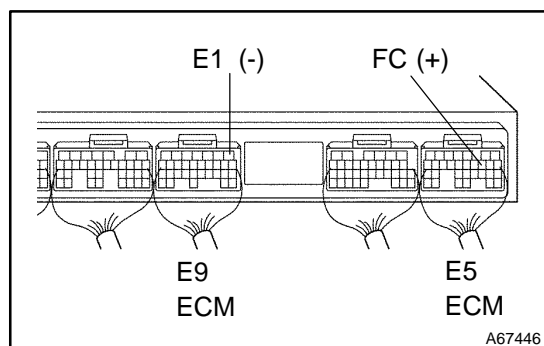
Tester Connection	Specified Condition
3 - 5	10 kΩ or higher
3 - 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)

NG

REPLACE CIRCUIT OPENING RELAY

OK

3 INSPECT ECM (FC VOLTAGE)



- Turn the ignition switch ON.
- Measure the voltage of the ECM connectors.

Standard:

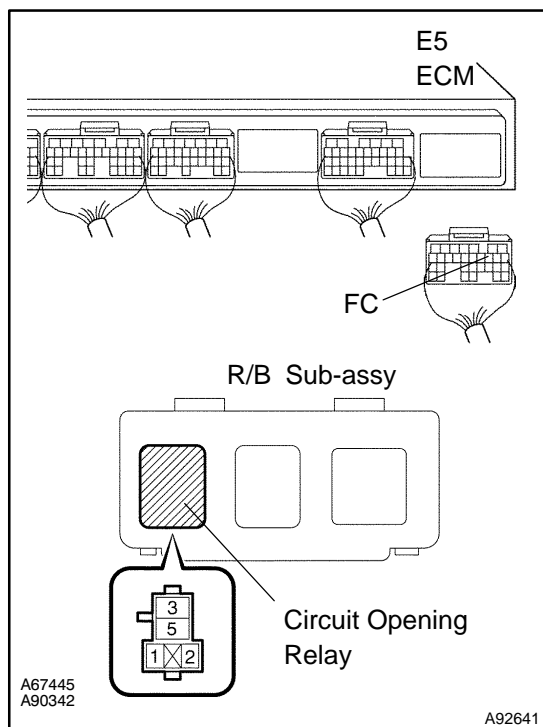
Tester Connection	Specified Condition
E5-10 (FC) - E9-1 (E1)	9 to 14 V

OK

REPLACE ECM (See page 10-9)

NG

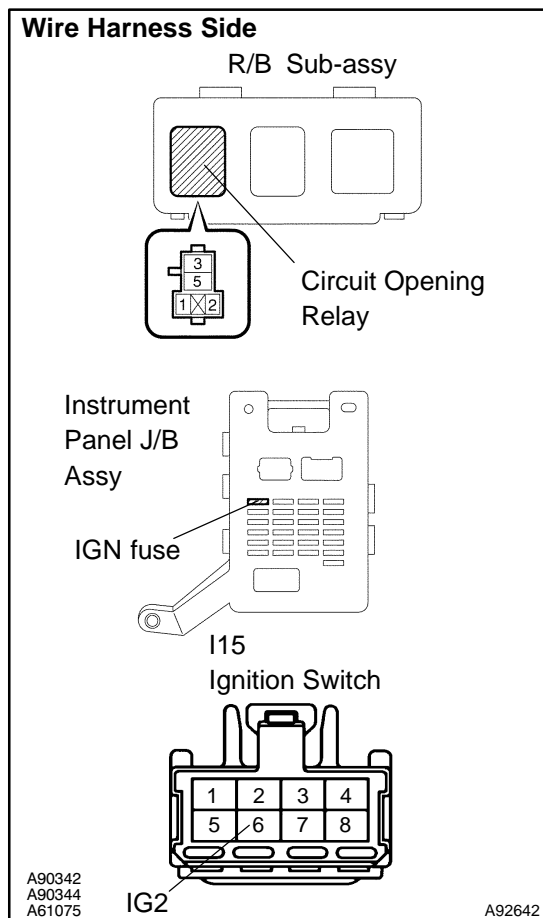
4 CHECK WIRE HARNESS (ECM - CIRCUIT OPENING RELAY, CIRCUIT OPENING RELAY - IGNITION SWITCH)



- (a) Check the wire harness between the ECM and circuit opening relay.
- (1) Disconnect the E5 ECM connector.
 - (2) Remove the circuit opening relay from the R/B sub-assy.
 - (3) Measure the resistance of the wire harness side connectors.

Standard:

Tester Connection	Specified Condition
E5-10 (FC) - R/B sub-assy circuit opening relay terminal 2	Below 1 Ω
E5-10 (FC) or R/B sub-assy circuit opening relay terminal 2 - Body ground	10 k Ω or higher



- (b) Check the wire harness between the circuit opening relay and ignition switch.
- (1) Check the IGN fuse.
 - Remove the IGN fuse from the instrument panel J/B.
 - Measure the resistance of the IGN fuse.

Standard: Below 1 Ω

- Reinstall the IGN fuse.
- (2) Remove the circuit opening relay from the R/B sub-assy.
- (3) Disconnect the I15 ignition switch connector.
- (4) Measure the resistance of the wire harness side connectors.

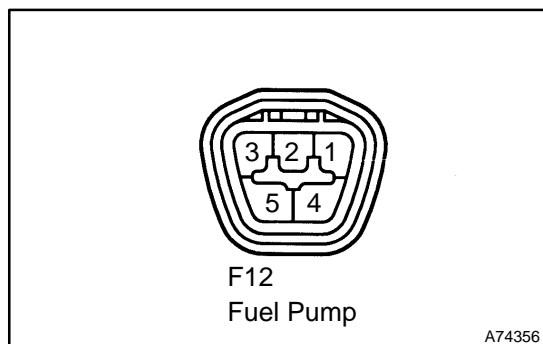
Standard:

Tester Connection	Specified Condition
R/B sub-assy circuit opening relay terminal 1 - I15-6 (IG2)	Below 1 Ω
I15-6 (IG2) or R/B sub-assy circuit opening relay terminal 1 - Body ground	10 k Ω or higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE ECM (See page 10-9)**5 INSPECT FUEL PUMP ASSY**

- (a) Measure the resistance of the fuel pump terminals.

Standard:

Tester Condition	Condition	Specified Condition
4 - 5	20°C (68°F)	0.2 to 0.3 Ω

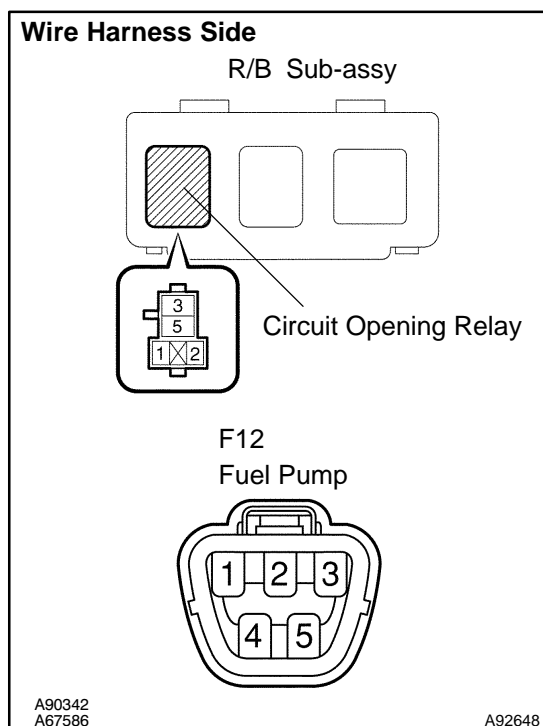
- (b) Check operation of the fuel pump.
- (1) Apply battery voltage to both the terminals. Check that the pump operates.

NOTICE:

- These tests must be done quickly (within 10 seconds) to prevent the coil from burning out.
- Keep the fuel pump as far away from the battery as possible.
- Always turn ON and OFF the voltage on the battery side, not the fuel pump side.

NG

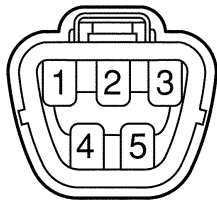
REPLACE FUEL PUMP ASSY
(See page 11-16)

OK**6 CHECK WIRE HARNESS (CIRCUIT OPENING RELAY - FUEL PUMP, FUEL PUMP - BODY GROUND)**

- (a) Check the wire harness between the circuit opening relay and fuel pump.
- (1) Remove the circuit opening relay from the R/B sub-assy.
- (2) Disconnect the F12 fuel pump connector.
- (3) Measure the resistance of the wire harness side connectors.

Standard:

Tester Connection	Specified Condition
R/B sub-assy circuit opening relay terminal 3 - F12-4	Below 1 Ω
F12-4 or R/B sub-assy circuit opening relay terminal 3 - Body ground	10 k Ω or higher

Wire Harness SideF12
Fuel Pump

P

A67586

- (b) Check the wire harness between the fuel pump and body ground.

- (1) Disconnect the F12 fuel pump connector.
- (2) Measure the resistance between the wire harness side connector and body ground.

Standard:

Tester Connection	Specified Condition
F12-5 - Body ground	Below 1 Ω

OK

REPAIR OR REPLACE HARNESS AND CONNECTOR

NG

REPLACE ECM (See page 10-9)**OBD II scan tool (excluding hand-held tester):****1 CHECK FUEL PUMP OPERATION (See Page 11-4)**

- (a) Check if there is pressure in the fuel inlet hose.

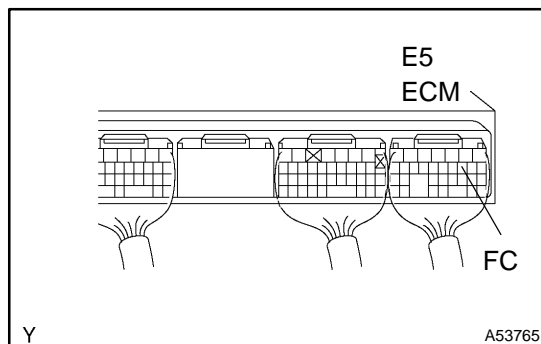
HINT:

The pipe has fuel pressure if the sound of flowing fuel can be heard.

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE (See page 05-31)

NG

2 CHECK RELAY OPERATION (CIRCUIT OPENING RELAY)

Y

A53765

- (a) When connecting between terminal FC of the ECM connector and body ground, check relay operation.

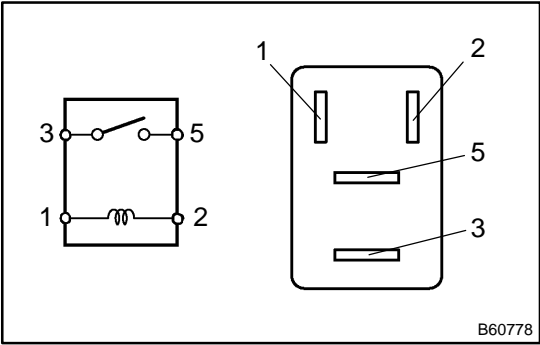
OK: Noise can be heard from the circuit opening relay.

OK

Go to step 6

NG

3 INSPECT CIRCUIT OPENING RELAY



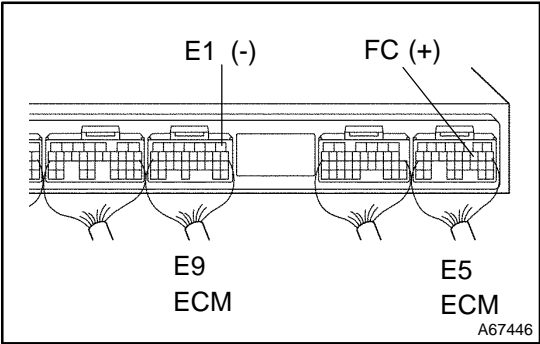
- (a) Remove the circuit opening relay from the R/B sub-assy.
 - (b) Measure the resistance of the circuit opening relay.
- Standard:**

Tester Connection	Specified Condition
3 - 5	10 kΩ or higher
3 - 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)

NG → **REPLACE CIRCUIT OPENING RELAY**

OK

4 INSPECT ECM (FC VOLTAGE)



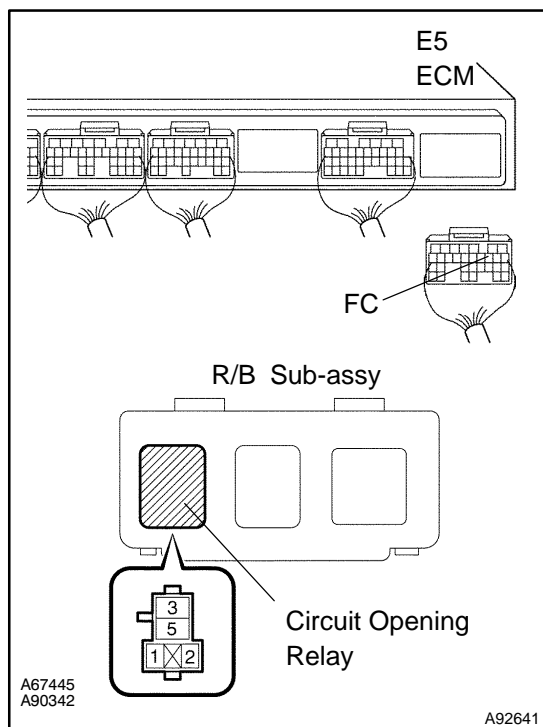
- (a) Turn the ignition switch ON.
 - (b) Measure the voltage of the ECM connectors.
- Standard:**

Tester Connection	Specified Condition
E5-10 (FC) - E9-1 (E1)	9 to 14 V

OK → **REPLACE ECM (See page 10-9)**

NG

5

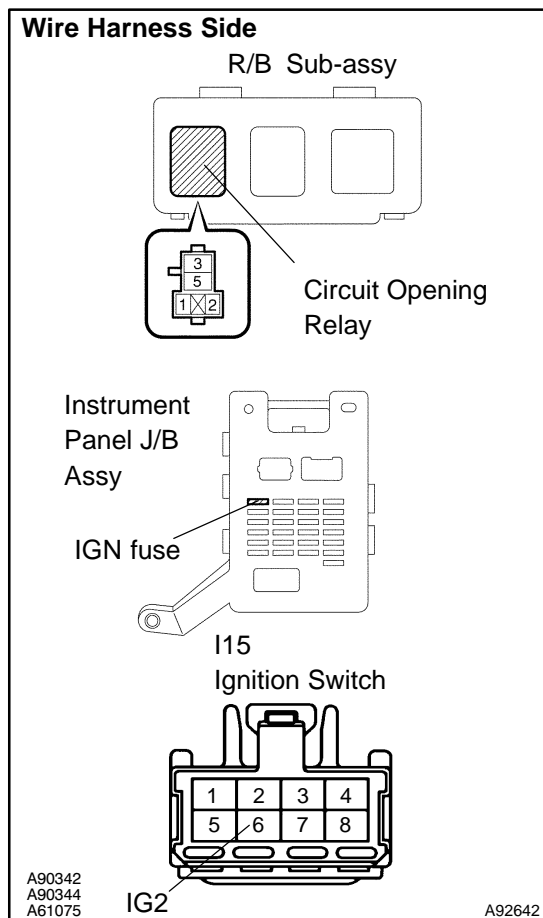
CHECK WIRE HARNESS (ECM - CIRCUIT OPENING RELAY, CIRCUIT OPENING RELAY - IGNITION SWITCH)

(a) Check the wire harness between the ECM and circuit opening relay.

- (1) Disconnect the E5 ECM connector.
- (2) Remove the circuit opening relay from the R/B sub-assy.
- (3) Measure the resistance of the wire harness side connectors.

Standard:

Tester Connection	Specified Condition
E5-10 (FC) - R/B sub-assy circuit opening relay terminal 2	Below 1 Ω
E5-10 (FC) or R/B sub-assy circuit opening relay terminal 2 - Body ground	10 k Ω or higher



(b) Check the wire harness between the circuit opening relay and ignition switch.

- (1) Check the IGN fuse.
 - Remove the IGN fuse from the instrument panel J/B Assy.
 - Check the resistance of the IGN fuse.

Standard: Below 1 Ω

- Reinstall the IGN fuse.
- (2) Remove the circuit opening relay from the R/B sub-assy.
 - (3) Disconnect the I15 ignition switch connector.
 - (4) Measure the resistance of the wire harness side connectors.

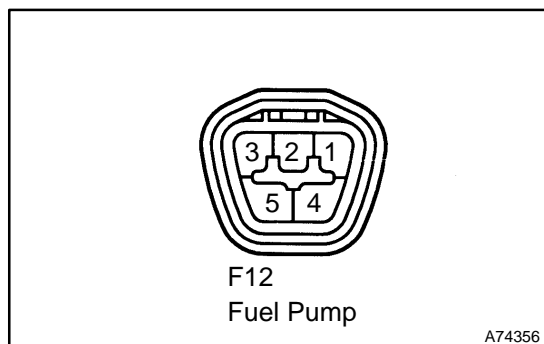
Standard:

Tester Connection	Specified Condition
R/B sub-assy circuit opening relay terminal 1 - I15-6 (IG2)	Below 1 Ω
I15-6 (IG2) or R/B sub-assy circuit opening relay terminal 1 - Body ground	10 k Ω or higher

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

REPLACE ECM (See page 10-9)

6 INSPECT FUEL PUMP ASSY



- (a) Measure the resistance of the fuel pump terminals.

Standard:

Tester Condition	Condition	Specified Condition
4 - 5	20°C (68°F)	0.2 to 0.3 Ω

- (b) Check operation of the fuel pump.

- (1) Apply battery voltage to both the terminals. Check that the pump operates.

NOTICE:

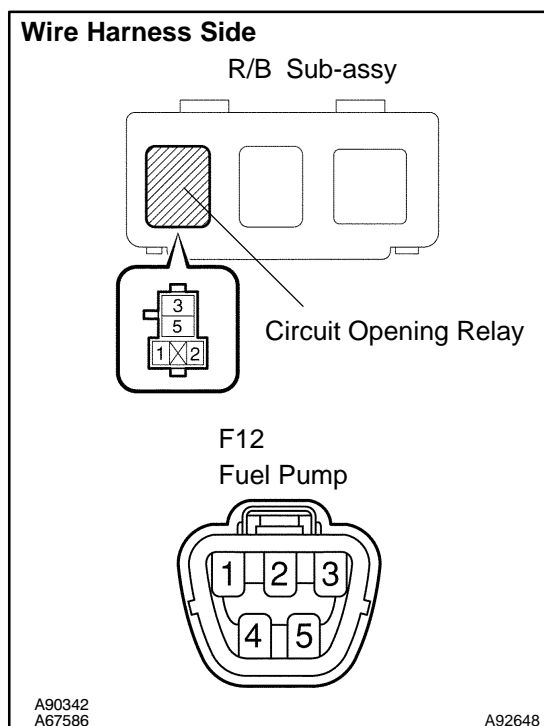
- These tests must be done quickly (within 10 seconds) to prevent the coil from burning out.
- Keep the fuel pump as far away from the battery as possible.
- Always turns ON and OFF the voltage on the battery side, not the fuel pump side.

NG

REPLACE FUEL PUMP ASSY
(See page 11-16)

OK

7 CHECK WIRE HARNESS (CIRCUIT OPENING RELAY - FUEL PUMP, FUEL PUMP - BODY GROUND)

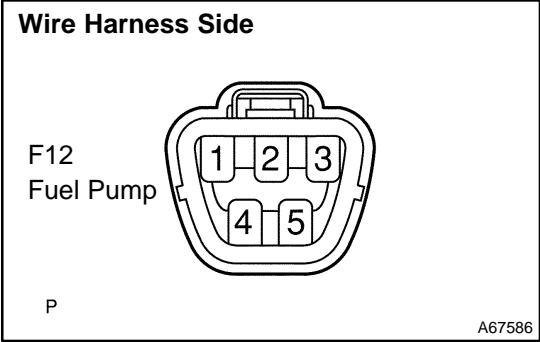


- (a) Check the wire harness between the circuit opening relay and fuel pump.

- (1) Remove the circuit opening relay from the R/B Sub-Assy.
(2) Disconnect the F12 fuel pump connector.
(3) Measure the resistance of the wire harness side connectors.

Standard:

Tester Connection	Specified Condition
R/B sub-assy circuit opening relay terminal 3 - F12-4	Below 1 Ω
F12-4 or R/B sub-assy circuit opening relay terminal 3 - Body ground	10 k Ω or higher



- (b) Check the wire harness between the fuel pump and body ground.
- (1) Disconnect the F12 fuel pump connector.
 - (2) Measure the resistance between the wire harness side connector and body ground.

Standard:

Tester Connection	Specified Condition
F12-5 - Body ground	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE ECM (See page 10-9)