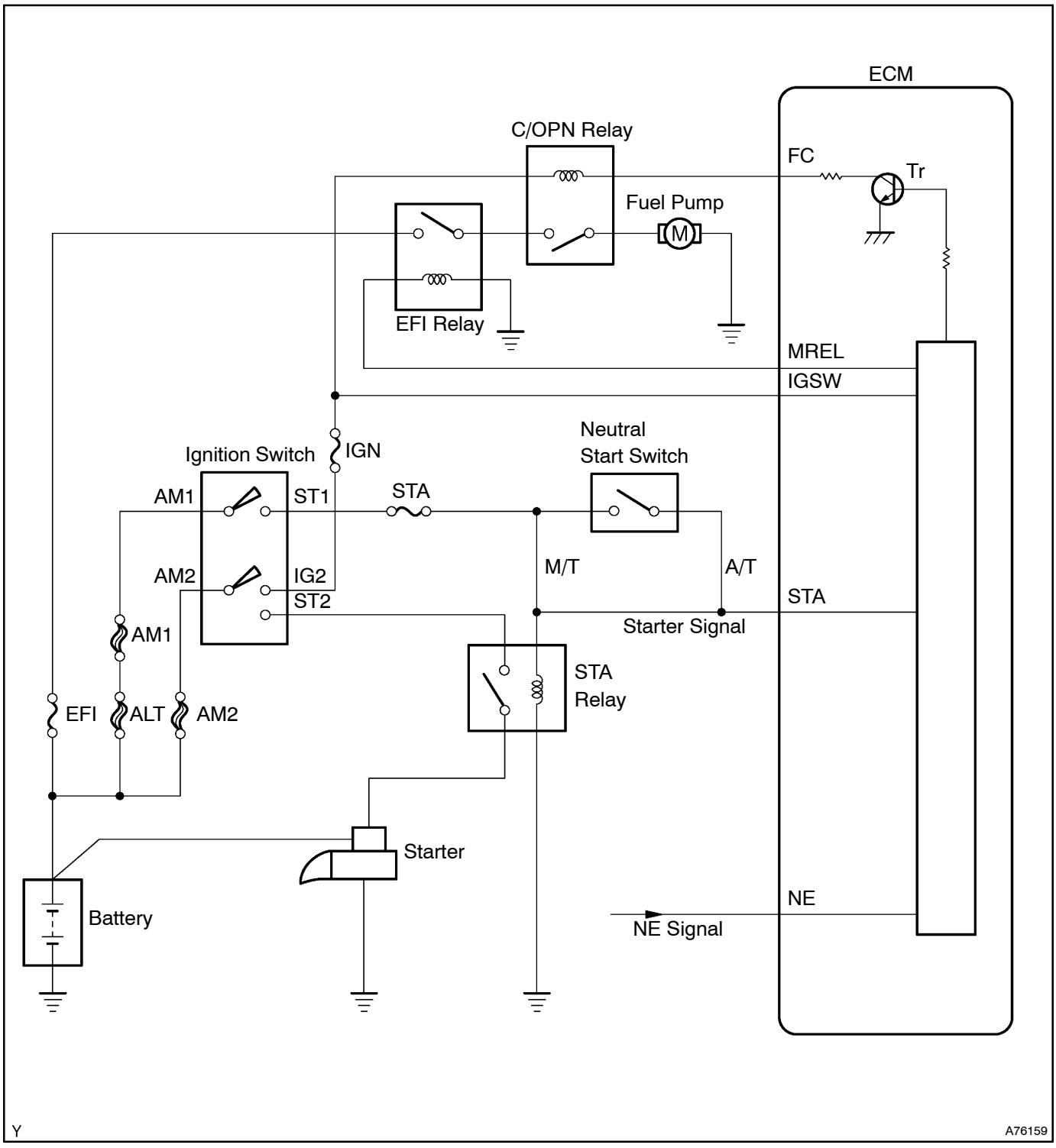
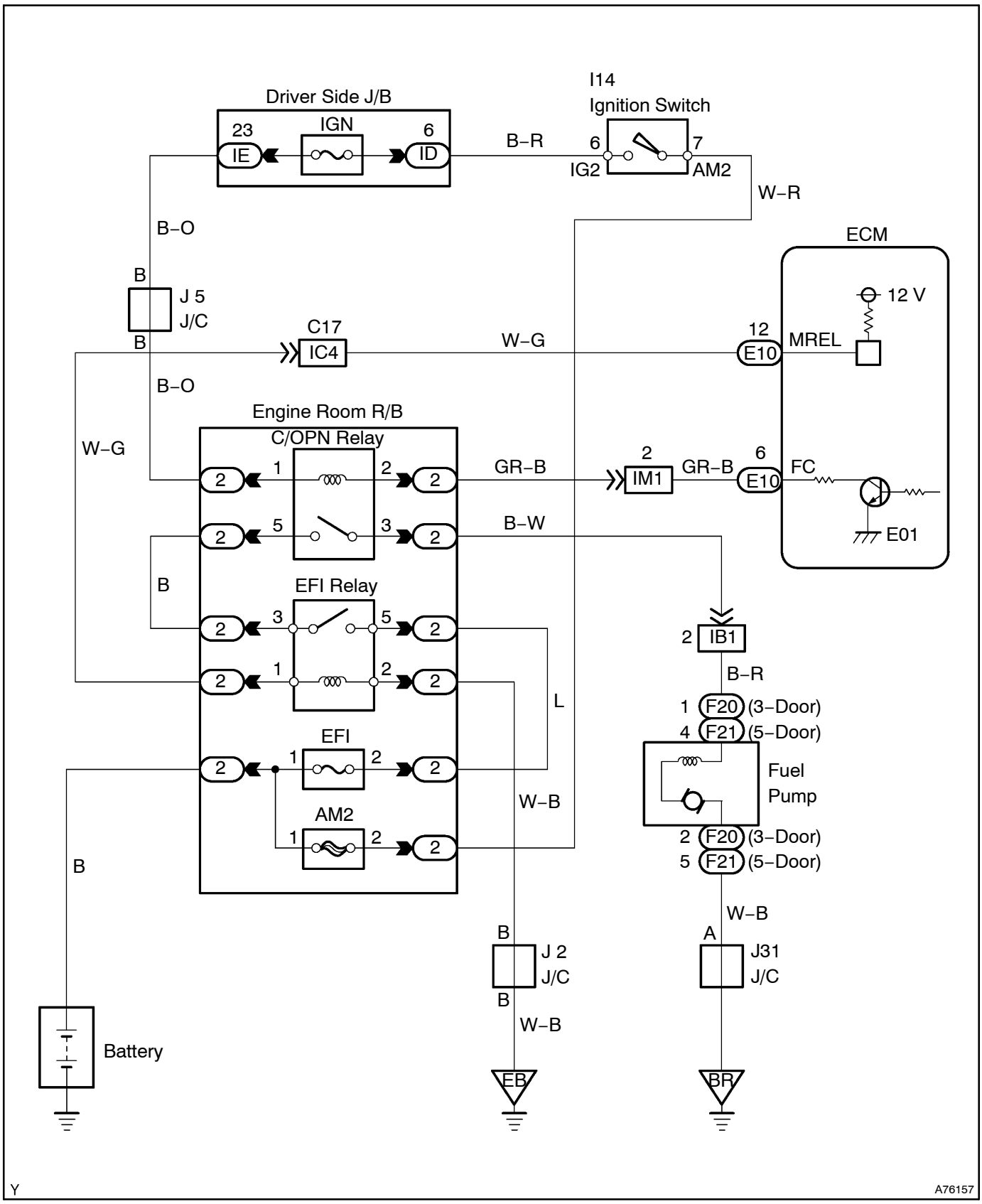
FUEL PUMP CONTROL CIRCUIT

CIRCUIT DESCRIPTION

In the diagram below, when the engine is cranked, current flows from terminal ST2 of the ignition switch to the starter relay coil and also current flows to terminal STA of ECM (STA signal).
When the STA signal and NE signal are input to the ECM, Tr is turned ON, current flows to the coil of the circuit opening relay, the relay switches on, power is supplied to the fuel pump and the fuel pump operates.
While the NE signal is generated (engine running), the ECM keeps Tr ON (circuit opening relay ON) and the fuel pump also keeps operating.

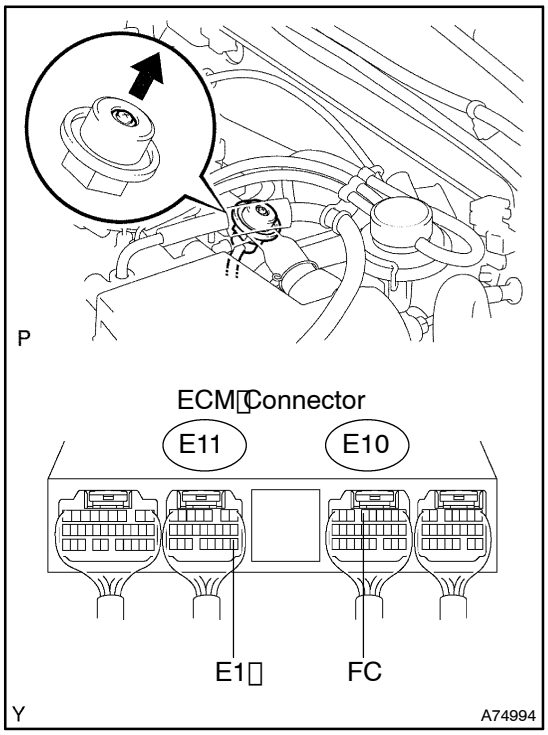


WIRING DIAGRAM



INSPECTION PROCEDURE

1 CHECK OPERATION OF FUEL PUMP



(a) Connect the hand–held tester to the DLC3.
(b) Turn the ignition switch ON and push the hand–held tester main switch ON.
(c) Select the item "DIAGNOSIS/ENHANCED OBD II/ACTIVE TEST/FUEL PMP SP CTL".
(d) Perform the active test at the engine stop.
(e) If you have no hand–held tester, connecting between terminals FC (E10–6) and E1 (E11–17) of the ECM connectors.
(f) Check that the fuel pulsation damper screw rises up.
Result: The fuel pulsation damper screw rises up

OK → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE (See page 05–99)**

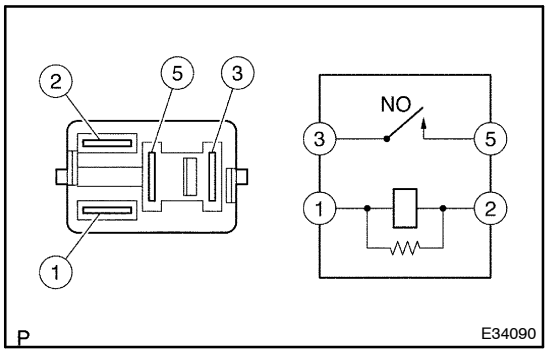
NG

2 CHECK FOR ECM POWER SOURCE CIRCUIT (See page 05–168)

NG → **REPAIR OR REPLACE**

OK

3 INSPECT CIRCUIT OPENING RELAY



(a) Measure the resistance between the terminals.
Standard:

Terminal No.	Specified condition
1 ⇔ 2	Continuity
3 ⇔ 5	No continuity

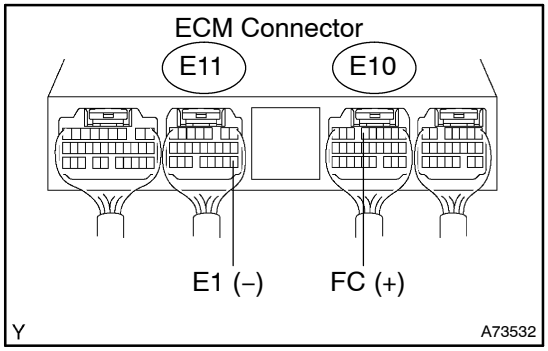
(b) Apply the battery positive voltage between the terminals 1 and 2.
(c) Check the continuity between the terminals 3 and 5.
Standard:

Terminal No.	Specified condition
3 ⇔ 5	Continuity

NG → REPLACE CIRCUIT OPENING RELAY

OK

4 CHECK ECM (FC VOLTAGE)



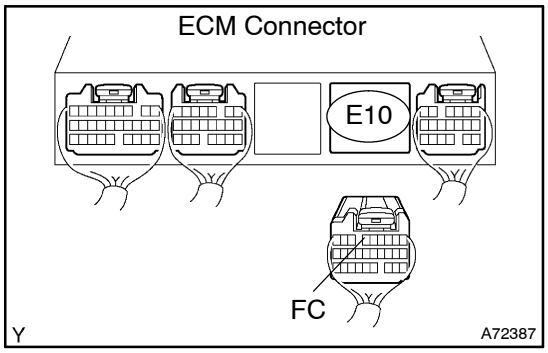
(a) Turn the ignition switch ON.
(b) Measure the voltage between the terminals of the E10 and E11 ECM connectors.
Voltage:

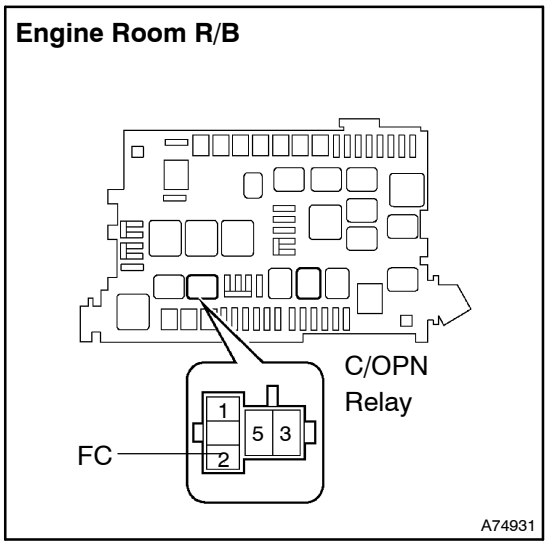
Symbols (Terminal No.)	Specified condition
FC (E10–6) ⇔ E1 (E11–17)	9 – 14 V

OK → Go to step 6

NG

5 CHECK HARNESS AND CONNECTOR (ECM ⇔ C/OPN RELAY)





(a) DIsconnect the E10 ECM connector.
(b) Remove the C/OPN relay.
(c) Check the continuity between the wire harness side connectors.
Standard (Check for open):

Symbols (Terminal No.)	Specified condition
FC (E10–6) ⇔ FC (C/OPN relay terminal 2 of R/B)	Continuity

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
FC (E10–6) or FC (C/OPN relay terminal 2 of R/B) ⇔ Other terminals and body ground	No continuity

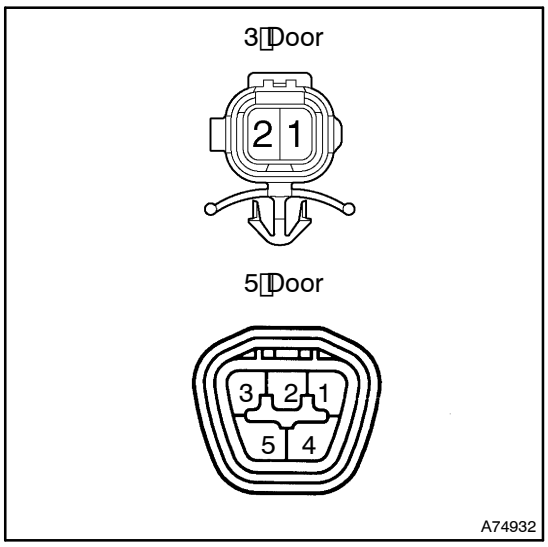
NOTICE:
Do not insert the tester hard in the procedure (c), or the holder may be damaged.

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

CHECK OR REPAIR HARNESS OR CONNECTOR (C/OPN RELAY ⇔ IGN FUSE)

6 INSPECT FUEL SUCTION W/PUMP & GAGE TUBE ASSY



(a) Measure the resistance between the terminals.

Resistance:

3 Door

Terminal No.	Specified condition
1 ⇔ 2	0.2 – 3.0 Ω at 20°C (68°F)

5 Door

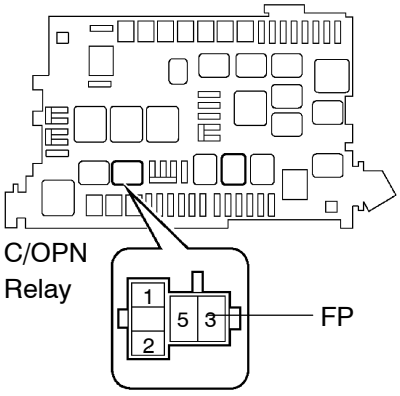
Terminal No.	Specified condition
4 ⇔ 5	0.2 – 3.0 Ω at 20°C (68°F)

NG → **REPLACE FUEL SUCTION W/PUMP & GAGE TUBE ASSY (See page 11–34, 11–36)**

OK →

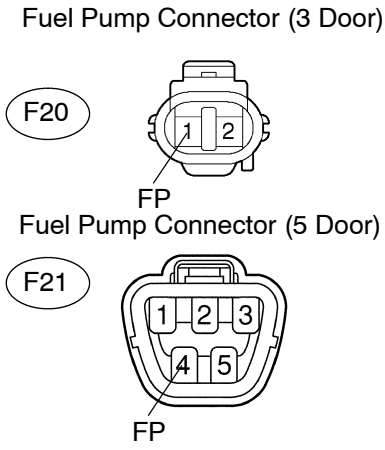
7 CHECK HARNESS AND CONNECTOR (C/OPN RELAY ⇔ FUEL PUMP)

Engine Room R/B



A74931

Wire Harness Side



A74933

(a) Remove the C/OPN relay.
(b) Disconnect the F20 (3 Door) or F21 (5 Door) fuel pump connector.
(c) Check the continuity between the wire harness side connectors.

Standard (Check for open):

3 door

Symbols (Terminal No.)	Specified condition
FP (C/OPN relay terminal 3 of R/B) ⇔ FP (F20–1)	Continuity

5 door

Symbols (Terminal No.)	Specified condition
FP (C/OPN relay terminal 3 of R/B) ⇔ FP (F21–4)	Continuity

Standard (Check for short):

3 door

Symbols (Terminal No.)	Specified condition
FP (C/OPN relay terminal 3 of R/B) or FP (F20–1) ⇔ Other terminals and body ground	No continuity

5 door

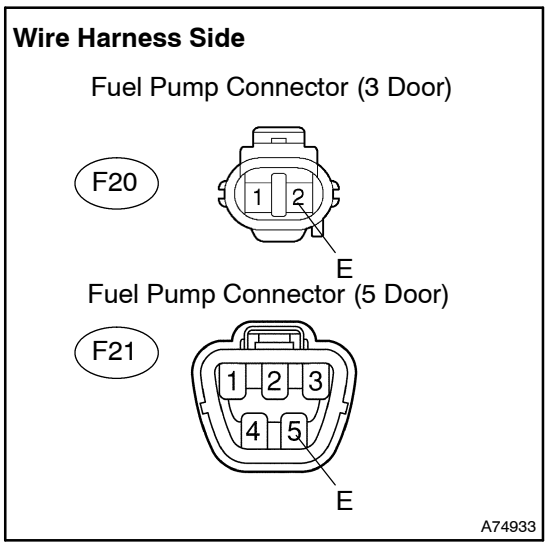
Symbols (Terminal No.)	Specified condition
FP (C/OPN relay terminal 3 of R/B) or FP (F21–4) ⇔ Other terminals and body ground	No continuity

NOTICE:
Do not insert the tester hard in the procedure (c), or the holder may be damaged.

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

OK

8	CHECK HARNESS AND CONNECTOR (FUEL PUMP ⇔ BODY GROUND)



(a) Disconnect the F20 (3 Door) or F21 (5 Door) fuel pump connector.

(b) Check the continuity between the wire harness side connectors.

Standard (Check for open):

3 door

Symbols (Terminal No.)	Specified condition
E (F20–2) ⇔ Body ground	Continuity

5 door

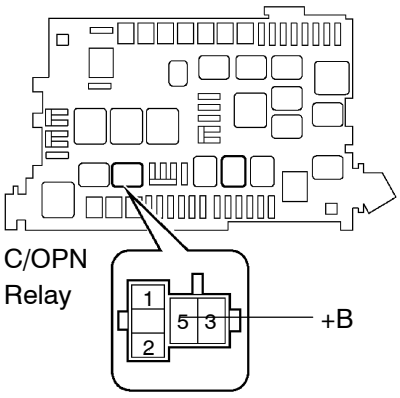
Symbols (Terminal No.)	Specified condition
E (F21–5) ⇔ Body ground	Continuity

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

OK

9	CHECK HARNESS AND CONNECTOR (C/OPN RELAY ⇔ EFI RELAY)

Engine Room R/B



(a) Remove the C/OPN relay.
(b) Remove the EFI relay.
(c) Check the continuity between the wire harness side connector.

Standard (Check for open):

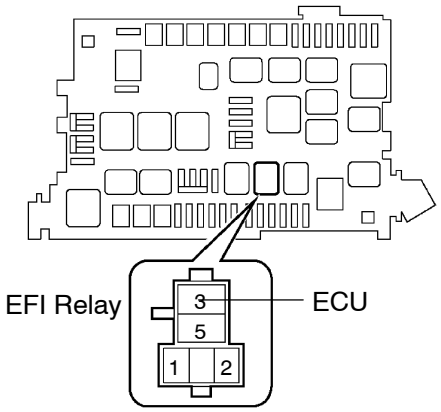
Symbols (Terminal No.)	Specified condition
+B (C/OPN relay terminal 5 of R/B) ⇔ ECU (EFI relay terminal 3 of R/N)	Continuity

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
+B (C/OPN relay terminal 5 of R/B) or ECU (EFI relay terminal 3 of R/B) ⇔ Other terminals and body ground	No continuity

NOTICE:
Do not insert the tester hard in the procedure (c), or the holder may be damaged.

Engine Room R/B



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

OK

CHECK AND REPLACE ECM (See page 01–36)