DI69J–07

DTC	78 (7)	Fuel Line Malfunction

CIRCUIT DESCRIPTION

Refer to DTC 49 on page DI–89, DTC 97 on page DI–108.

DTC No.	DTC Detecting condition	Trouble Area
78 (7)	Fuel leaks in high pressure area	• Fuel line (supply pump – common rail – injector) • Supply pump • Common rail • Injector • Pressure discharge valve (pressure limiter) • EDU • Engine ECU

WIRING DIAGRAM

Refer to DTC 49 on page DI–89, DTC 97 on page DI–108.

INSPECTION PROCEDURE

HINT:

Read freeze frame data on the hand–held tester, as freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, etc. at the time of the malfunction.

When using hand–held tester:

1	**Are there any other codes (besides DTC 39, 49, 78 (3), 78 (8) or 97) being output?**

YES → **Go to relevant DTC chart (See page DI–12).**

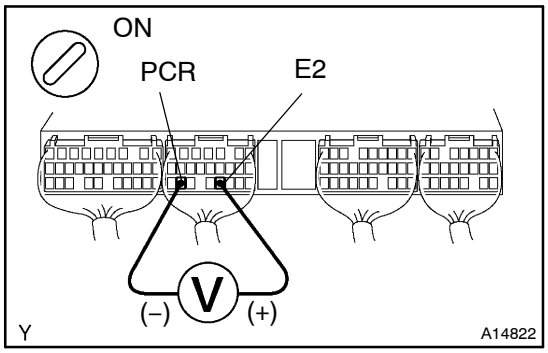
NO

2	**Open engine hood and check if there is any fuel leakage (See page FU–8).**

NG → **Check and replace.**

OK

3	**Check voltage between terminals PCR and E2 of engine ECU connector.**



PREPARATION:

(a) Remove the glove compartment box.

(b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals PCR and E2 of the engine ECU connector.

OK:

Voltage: Approximately 1 V at 20°C (68°F)

OK → **Go to step 5.**

NG

4	**Check for open and short in harness and connector between common rail pressure sensor and engine ECU (See page IN–20).**

NG → **Repair or replace harness or connector.**

OK

Replace common rail assembly (See page FU–21).

5	**Read value of compensation of injection quantity between cylinders on hand–held tester.**

OK:

STD: –3 – 3 mm^3/st

Maximum: –4 – 4 mm^3/st

NG → **Replace corresponding cylinder injector.**

OK

6	Check if any fuel is mixed with engine oil.

NG → Replace injector (See page FU–6).

OK ↓

7	Check that if any white smoke is coming out from exhaust pipe when engine running.

NG → Replace injector (See page FU–6).

OK ↓

Replace injector (See page FU–6) and common rail assembly (See page FU–21).

When not using hand–held tester:

1	Are there any other codes (besides DTC 39, DTC 49, DTC 78 (3), DTC 78 (8) or DTC 97) being output?

YES → Go to relevant DTC chart (See page DI–12).

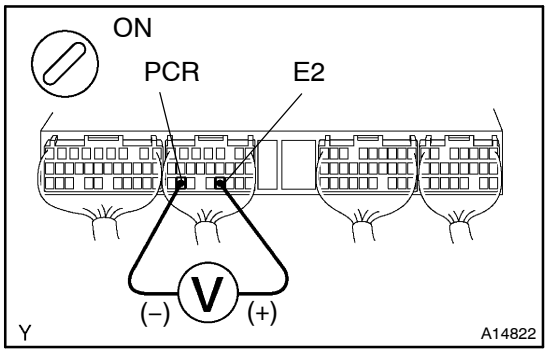
NO ↓

2	Check if any fuel is leaked (See page FU–8).

NG → Check and replace leakage parts.

OK ↓

3	**Check voltage between terminals PCR and E2 of engine ECU connector.**



PREPARATION:

(a) Remove the glove compartment box.

(b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals PCR and E2 of the engine ECU connector.

OK:

Voltage: Approximately 1 V at 20°C (68°F)

NG → **Go to step 5.**

OK

4	**Check for open and short in harness and connector between common rail pressure sensor and engine ECU (See page IN–20).**

NG → **Repair or replace harness or connector.**

OK

Replace common rail assembly (See page FU–21).

5	**Check if any fuel is mixed with engine oil.**

NG → **Replace injector.**

OK

6	**When you start the engine, check that if any white smoke is coming out from exhaust pipe.**

NG → **Replace injector (See page FU–6).**

OK

Go to step 1 in DTC 78 (3) (8).