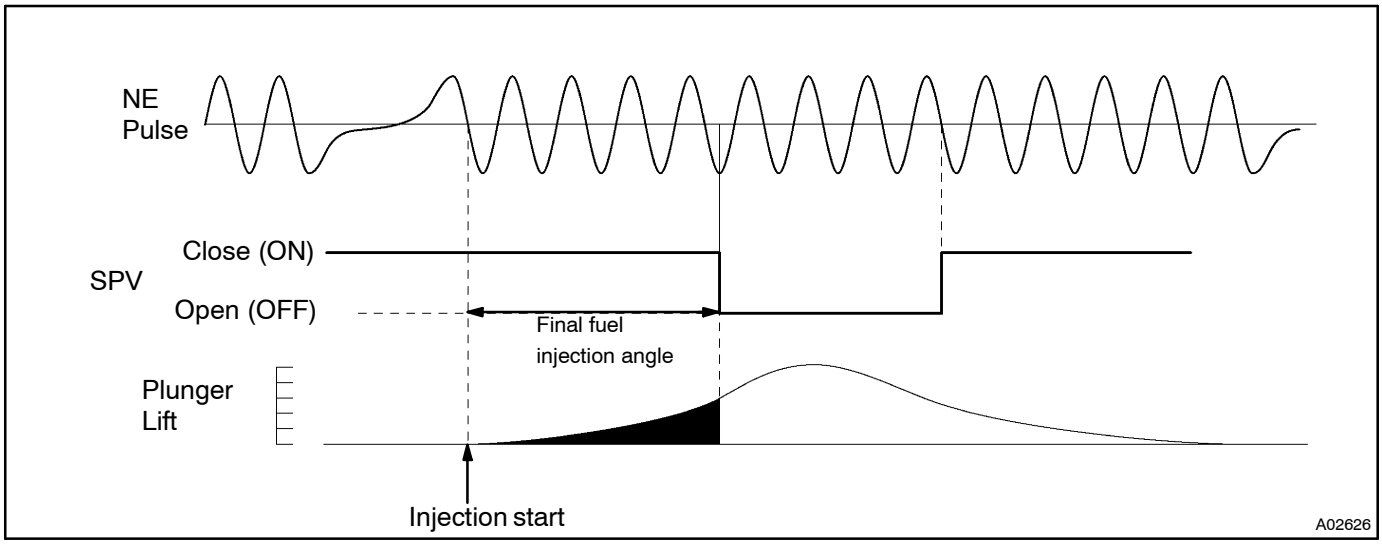
DI6K5–02

DTC	18	Spill Control Valve Circuit

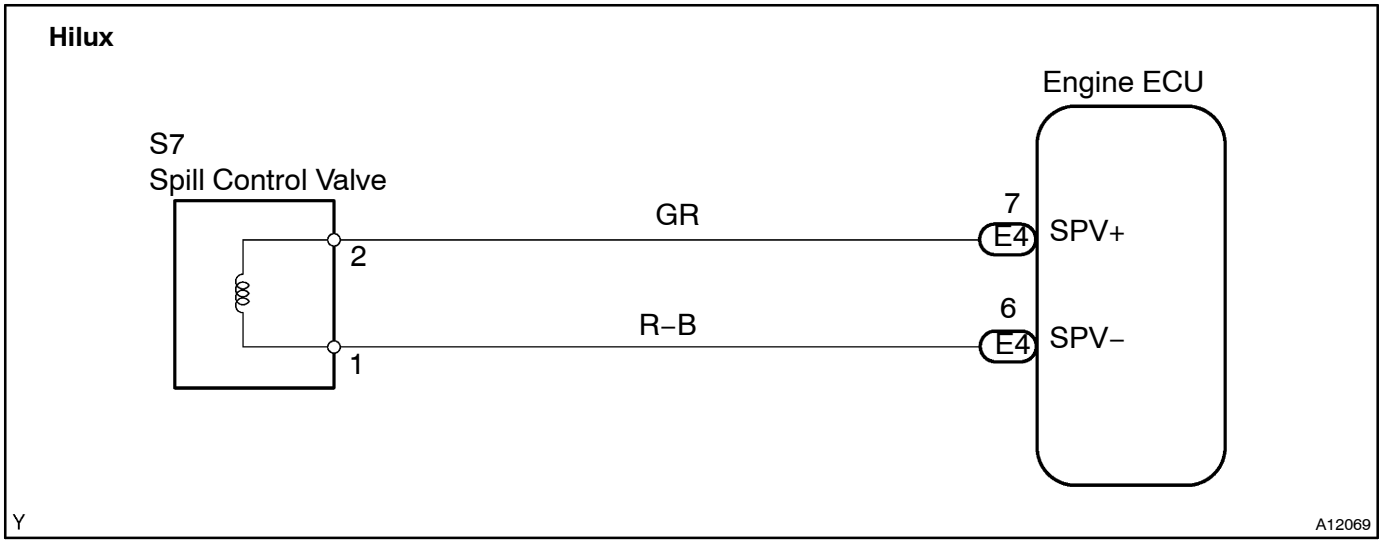
CIRCUIT DESCRIPTION

The engine ECU controls the fuel injection volume by operating the spill control valve. The spill control valve is mounted on the injection pump, and open or close the injection pressure releasing port by the solenoid valve in the spill control valve (During injection; valve is close (ON)). The engine ECU decides the basic fuel injection volume by the engine rpm and throttle valve opening angle, and calculates the final fuel injection angle to add the various corrections on the basic fuel injection volume. The engine ECU counts the NE pulse to detects the angle from the time when the injection starts and operates the spill control valve from ON to OFF (The injection pressure releasing port is open.) at the position where the final fuel injection angle.

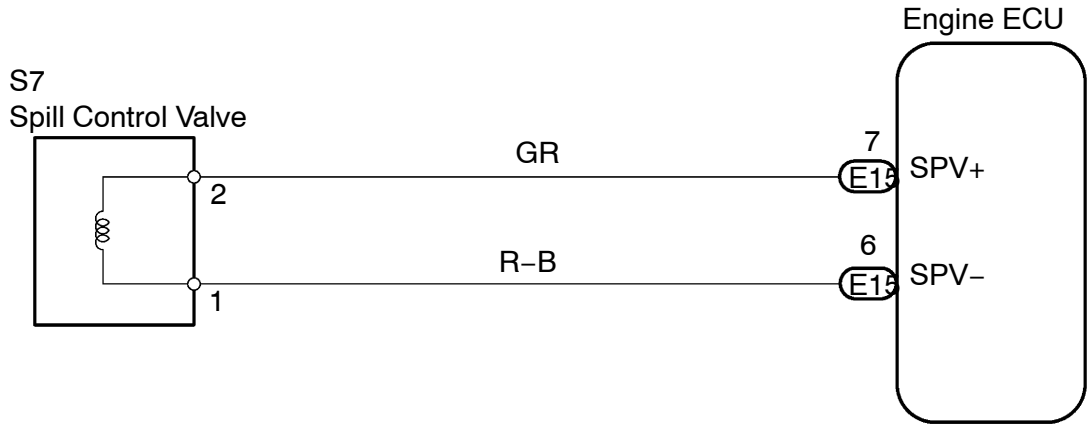


DTC No.	DTC Detection Condition	Trouble Area
18	Open or short in spill control valve circuit	• Open or short in spill control valve circuit • Spill control valve • Engine ECU

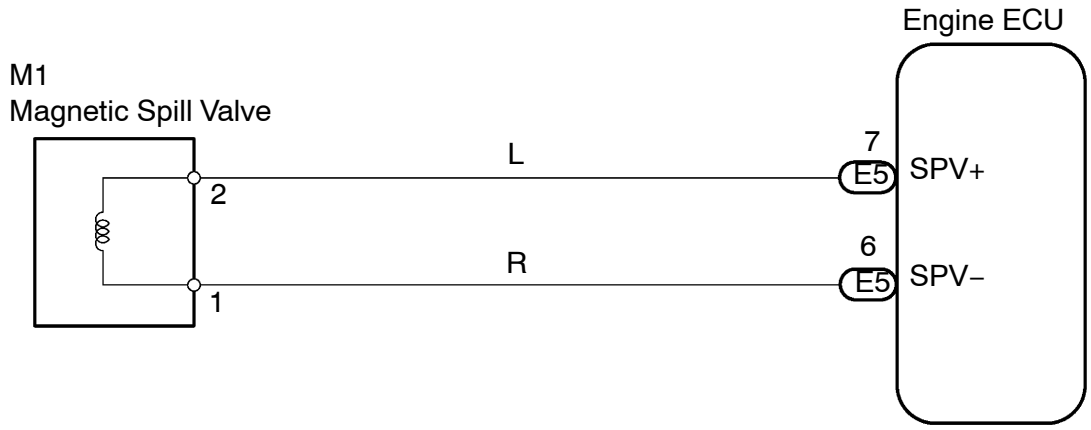
WIRING DIAGRAM



4Runner



Land Cruiser/Land Cruiser Prado



INSPECTION PROCEDURE

HINT:

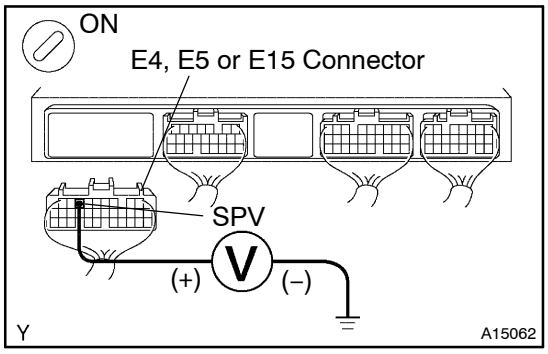
Read freeze frame data using hand–held tester, as freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air–fuel ratio was lean or rich, etc. at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

1	**Check spill control valve (See page ED–9).**

NG → **Replace injection pump (See page FU–12).**

OK

2	Check voltage between terminal SPV of engine ECU connector and body ground.



PREPARATION:

(a) Remove the glove compartment.

(b) Disconnect the E4 (Hilux), E5 (Land Cruiser/Land Cruiser Prado) or E15 (4Runner) connector from the engine ECU.

(c) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminal SPV of the engine ECU connector and the body ground.

OK:

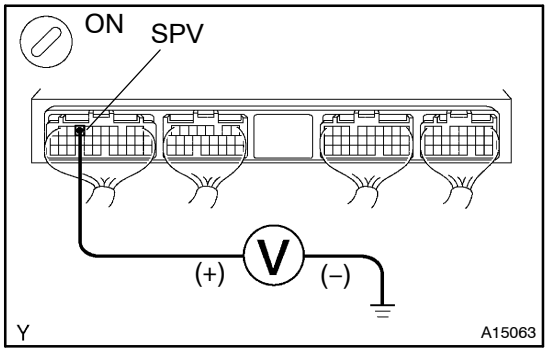
Voltage: 9 – 14 V

OK	Go to step 3.

NG

Check for open or short in harness and connector between spill control valve and engine ECU (See page IN–20).

3	Check voltage between terminal SPV of engine ECU connector and body ground.



PREPARATION:

(a) Remove the glove compartment.

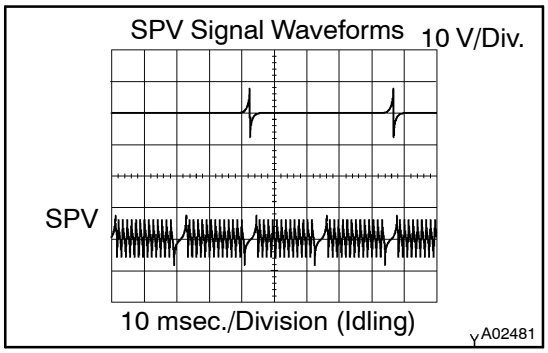
(b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals SPV of the engine ECU connector and the body ground.

OK:

Voltage: 9 – 14 V



Reference: INSPECTION USING OSCILLOSCOPE

During idling, check the waveforms between terminals SPV and E1 of the engine ECU connector.

HINT:

The correct waveforms are as shown.

NG

Check and replace engine ECU (See page IN–20).