

DTC	P0753/62,P0758/63	Shift Solenoid A/B Electrical Malfunction (No.1/No.2 Solenoid valve)
------------	--------------------------	---

CIRCUIT DESCRIPTION

Shifting from 1st to O/D is performed in combination with ON and OFF of the No.1 and No.2 solenoid valves controlled by Engine and ECT ECU (2UZ-FE, 1FZ-FE) or ECT ECU (1HZ, 1HD-T, 1HD-FTE). If an open or short circuit occurs in either of the solenoid valves, the Engine and ECT ECU (2UZ-FE, 1FZ-FE) or ECT ECU (1HZ, 1HD-T, 1HD-FTE) controls the remaining normal solenoid valve to allow the vehicle to be operated smoothly (Fail safe function).

HINT:

Check the No.1 solenoid valve when DTC P0753/62 is output, check the No.2 solenoid valve when DTC P0758/63 is output.

DTC No.	DTC Detecting Condition	Trouble Area
P0753/62 P0758/63	<p>The Engine and ECT ECU or ECT ECU checks for an open or short circuit in the No.1 or No.2 solenoid valve circuit when it changes.</p> <p>The Engine and ECT ECU or ECT ECU records DTC P0753/62 or P0758/63 if condition (a) or (b) is detected once, but it does not light up O/D OFF indicator light.</p> <p>After Engine and ECT ECU or ECT ECU detects condition (a) or (b) continuously 8 times or more in 1 trip, it causes the O/D OFF indicator light lights up until condition (a) or (b) disappears.</p> <p>After that, if the Engine and ECT ECU or ECT ECU detects condition (a) or (b) once, it starts lighting up O/D OFF indicator light again.</p> <p>(a) Solenoid resistance is 8 Ω or less (short circuit) when the solenoid is energized.</p> <p>(b) Solenoid resistance is 100 kΩ or more (open circuit) when the solenoid is not energized.</p>	<ul style="list-style-type: none"> • Open or short in No.1/No.2 solenoid valve circuit • No.1/No.2 solenoid valve • Engine and ECT ECU (2UZ-FE, 1FZ-FE) • ECT ECU (1HZ, 1HD-T, 1HD-FTE)

Fail Safe Function:

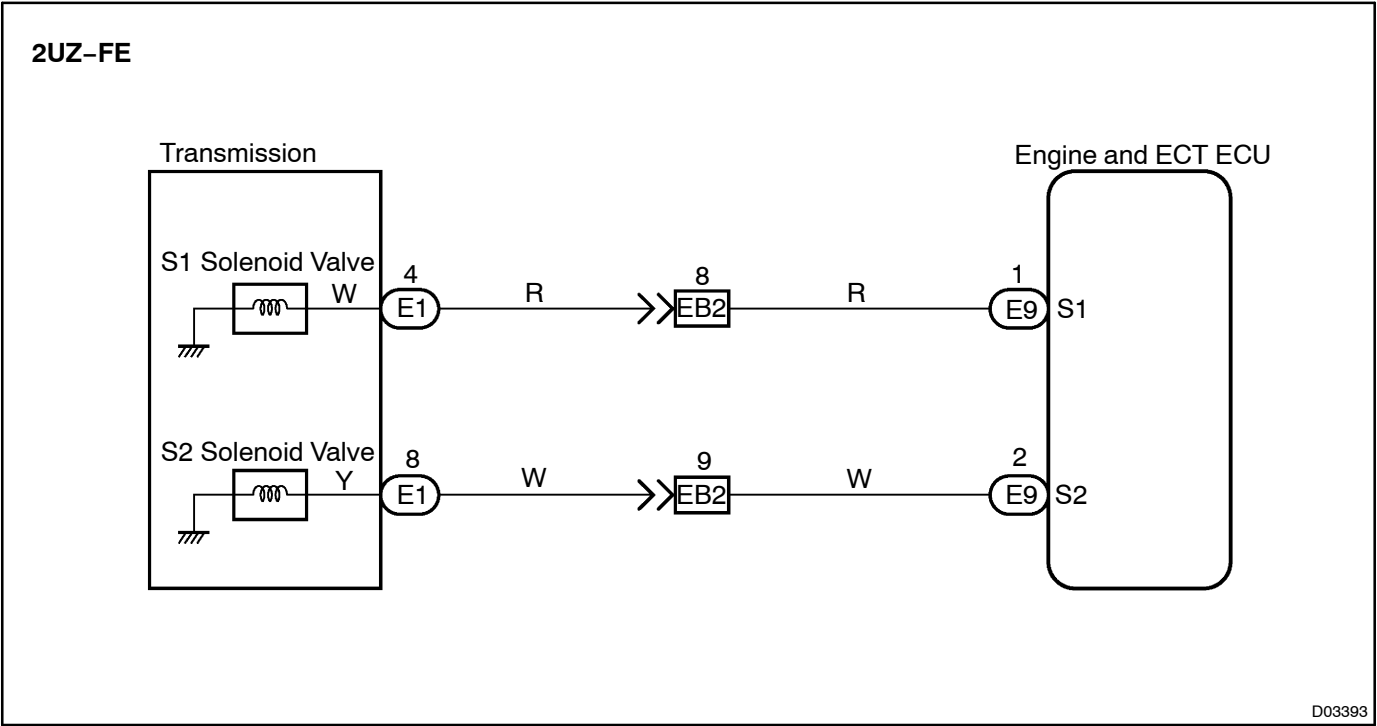
If either of the shift solenoid valve circuits develops an open or short, the Engine and ECT ECU or ECT ECU turns the other solenoid valve ON and OFF to shift to the gear positions shown in the table below. The Engine and ECT ECU or ECT ECU also turns the SL solenoid valve OFF at the same time. If both solenoids are malfunctioning, hydraulic control cannot be performed electronically and must be done manually.

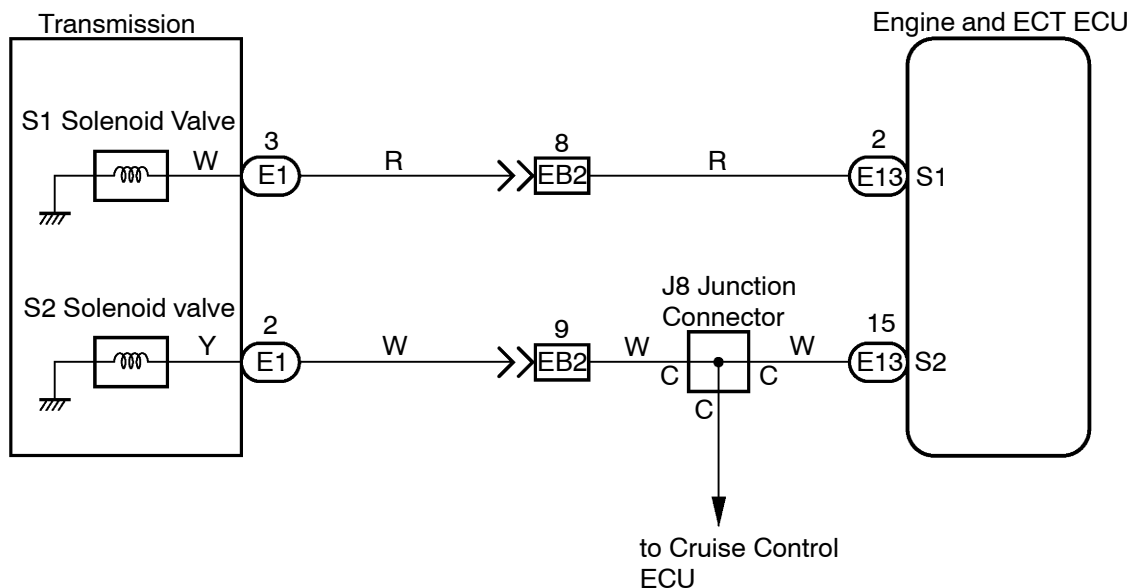
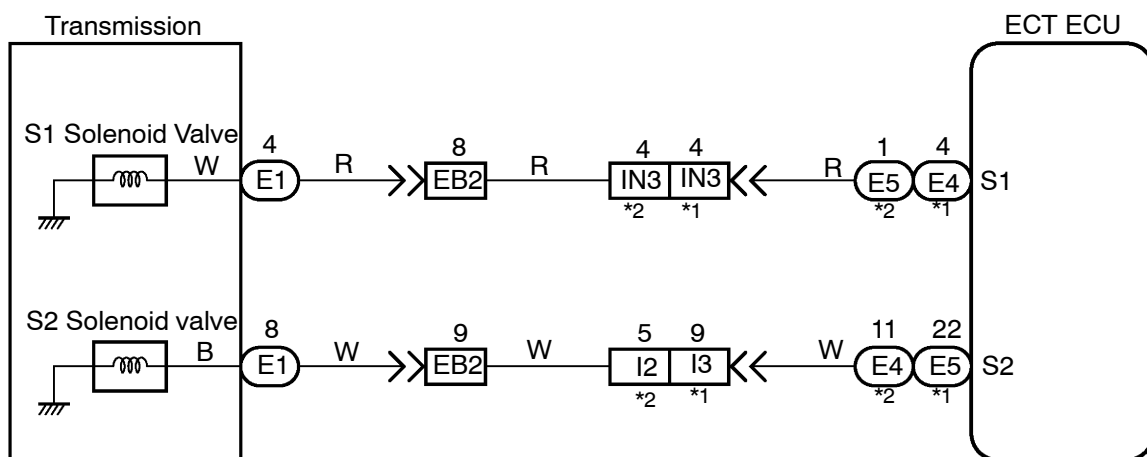
Manual shifting as shown in the following table must be done (In the case of a short circuit, the Engine and ECT ECU or ECT ECU stops sending current to the short circuited solenoid).

Range	NORMAL			NO.1 SOLENOID MALFUNCTIONING			NO.2 SOLENOID MALFUNCTIONING			BOTH SOLENOIDS MAL- FUNCTIONING
	Solenoid valve		Gear	Solenoid valve		Gear	Solenoid valve		Gear	Gear when shift selector is manually operated
	No.1	No.2		No.1	No.2		No.1	No.2		
D	ON	OFF	1st	X	OFF	3rd	ON	X	1st	O/D
	ON	ON	2nd	X	ON	3rd	OFF	X	O/D	O/D
	OFF	ON	3rd	X	ON	3rd	OFF	X	O/D	O/D
	OFF	OFF	O/D	X	OFF	O/D	OFF	X	O/D	O/D
2	ON	OFF	1st	X	OFF	3rd	ON	X	1st	3rd
	ON	ON	2nd	X	ON	3rd	OFF	X	3rd	3rd
	OFF	ON	3rd	X	ON	3rd	OFF	X	3rd	3rd
L	ON	OFF	1st	X	OFF	1st	ON	X	1st	1st
	ON	ON	2nd	X	ON	2nd	ON	X	1st	1st

X: Malfunctions

WIRING DIAGRAM



1FZ-FE**1HZ, 1HD-T, 1HD-FTE**

*1: 1HD-FTE
 *2: 1HZ, 1HD-T

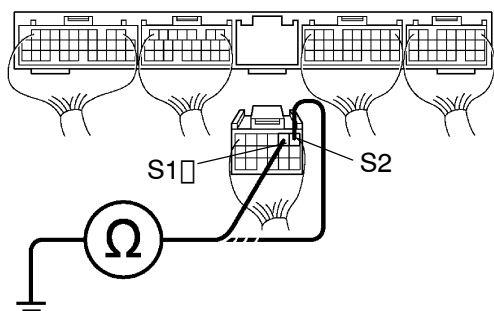
D03965
 D03966

D03978

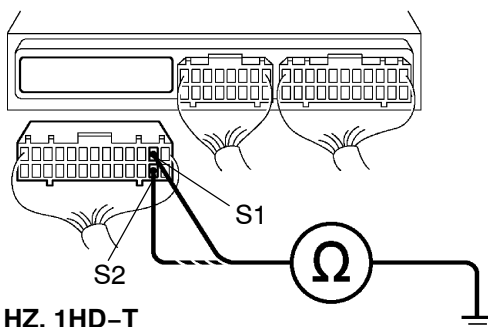
INSPECTION PROCEDURE

- 1 Measure resistance between terminal S1 or S2 of Engine and ECT ECU or ECT ECU and body ground.

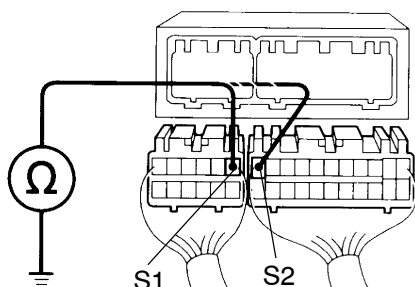
2UZ-FE



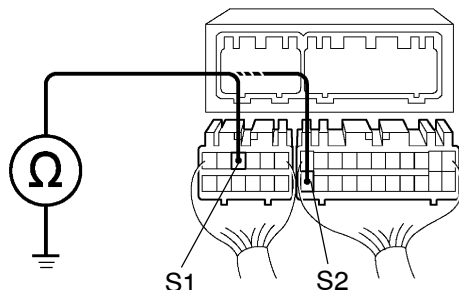
1FZ-FE



1HZ, 1HD-T



1HD-FTE



D01657
D03300
Q11268
D03254

D03311

PREPARATION:

- (a) Remove the glove compartment door
(See page BO-127).
(b) Disconnect the connector from Engine and ECT ECU or ECT ECU.

CHECK:

Measure resistance between terminal S1 or S2 of Engine and ECT ECU or ECT ECU and body ground.

OK:

Resistance: 11 – 15 Ω at 20°C (68°F)

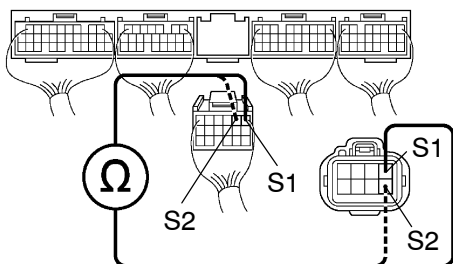
OK

Check and replace the Engine and ECT ECU or ECT ECU (See page IN-35).

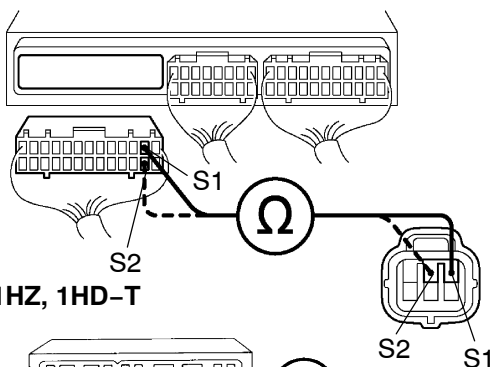
NG

2 Check harness and connector between Engine and ECT ECU or ECT ECU and automatic transmission solenoid connector.

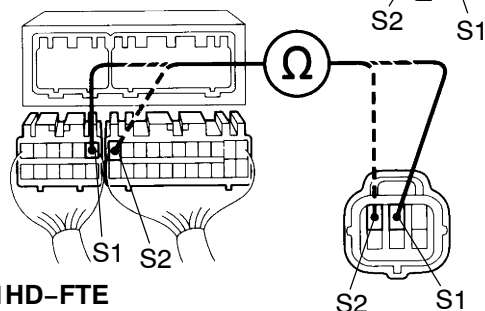
2UZ-FE



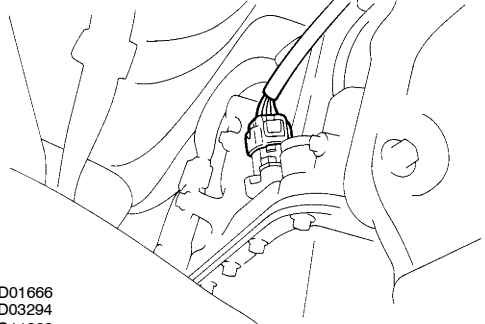
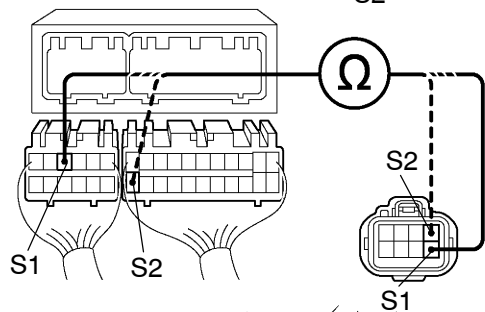
1FZ-FE



1HZ, 1HD-T



1HD-FTE



D01666
D03294
Q11269
D03255
D02928

D03312

PREPARATION:

Disconnect the solenoid connector from the automatic transmission.

CHECK:

Check the harness and connector between terminal S1 or, S2 of Engine and ECT ECU or ECT ECU and terminal S1 or S2 of solenoid connector.

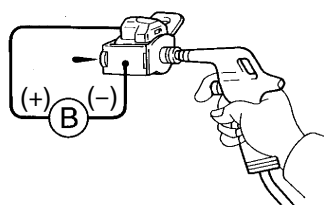
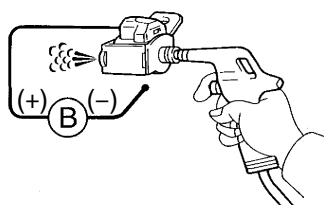
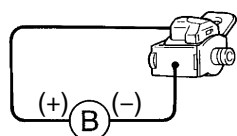
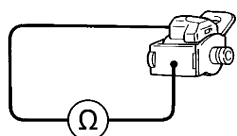
OK:

There is no open and no short circuit.

NG

Repair or replace the harness or connector.

OK

3 Check No.1 or No.2 solenoid valve.

D03256

Electrical Check:**PREPARATION:**

- (a) Jack up the vehicle.
- (b) Remove the oil pan.
- (c) Disconnect the solenoid connector.
- (d) Remove the No.1 or No.2 solenoid valve.

CHECK:

- (a) Measure resistance between solenoid connector and body ground.
- (b) Connect positive \oplus lead to terminal of solenoid connector, negative \ominus lead to solenoid body.

OK:

- (a) **Resistance: 11 – 15 Ω at 20 °C (68 °F)**
- (b) **The solenoid makes an operating noise.**

Mechanical Check:**PREPARATION:**

- (a) Jack up the vehicle.
- (b) Remove the oil pan.
- (c) Disconnect the solenoid connector.
- (d) Remove the No.1 or No.2 solenoid valve.

CHECK:

- (a) Applying 490 kPa (5 kgf/cm², 71 psi) of compressed air, check that the solenoid valves do not leak air.
- (b) When battery positive voltage is supplied to the solenoid valves, check that the solenoid valves open.

OK:

- (a) **Solenoid valve does not leak air.**
- (b) **Solenoid valve opens.**

NG

Replace the solenoid valve.

OK

Repair or replace the solenoid wire.