

DTC	P0753	SHIFT SOLENOID A ELECTRICAL MALFUNCTION
DTC	P0758	SHIFT SOLENOID B ELECTRICAL MALFUNCTION
DTC	P0763	SHIFT SOLENOID C ELECTRICAL MALFUNCTION
DTC	P0768	SHIFT SOLENOID D ELECTRICAL MALFUNCTION
DTC	P1818	SR SOLENOID VALVE ELECTRICAL MALFUNCTION

CIRCUIT DESCRIPTION

Shifting from 1st to 5th is performed in combination with ON and OFF operation of the shift solenoid valves SL1, SL2, SL3, S4 and SR which is controlled by the ECM. If an open or short circuit occurs in either of the shift solenoid valves, the ECM controls the remaining normal shift solenoid valve to allow the vehicle to be operated smoothly (Fail safe function).

DTC No.	DTC Detection Condition	Trouble Area
P0753 P0758 P0763	ECM checks for an open or short circuit in shift solenoid valves SL1, SL2 and SL3: (a) When solenoid is energized, duty ratio exceed 75 % (b) When solenoid is not energized, duty ratio is less than 3 %	
P0768 P1818	ECM checks for an open or short circuit in shift solenoid valves S4 and SR circuit when it changes ECM records DTC P0768 and P1818 if condition (a) or (b) is detected: (a) When solenoid is energized, solenoid resistance is 8 Ω or less and it is counted (b) When solenoid is not energized, solenoid resistance is 100 kΩ or more and it is counted	• Open or short in shift solenoid valve SL1, SL2, SL3, S4 or SR circuit • Shift solenoid valve SL1, SL2, SL3, S4 or SR • ECM

HINT:

Check the shift solenoid valve SL1 when DTC P0753 is output, check the shift solenoid valve SL2 when DTC P0758 is output, check the shift solenoid valve SL3 when DTC P0763 is output, check the shift solenoid valve S4 when DTC P0768 is output and check the shift solenoid valve SR when DTC P1818 is output.

Fail safe function:

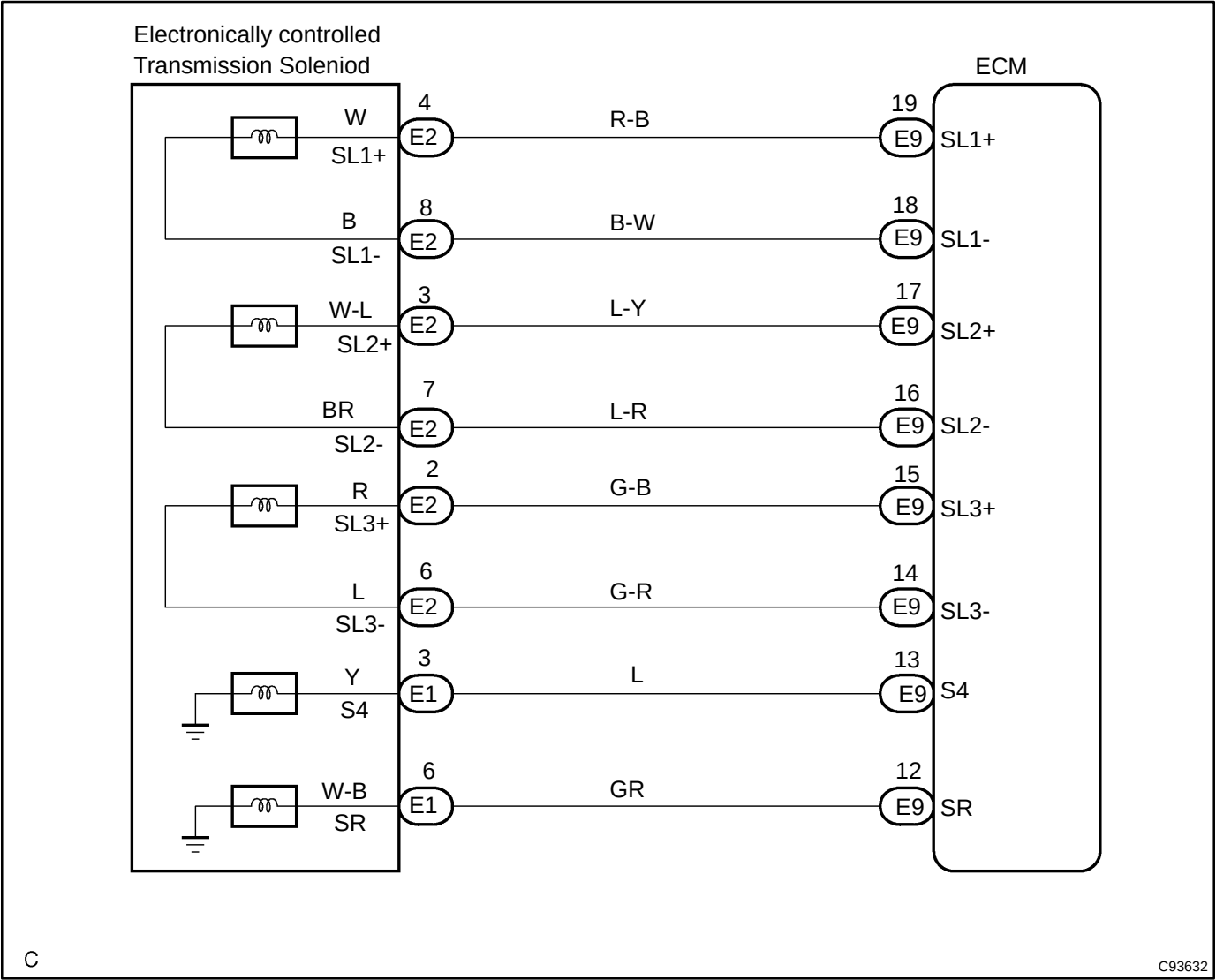
If either of the shift solenoid valve circuits develops an open or short, the ECM turns the other shift solenoid ON and OFF in order to shift into the gear positions shown in the table below.

Manual shifting as shown in the following table must be done (In case of a short circuit, the ECM stops sending the current to the short circuit solenoid).

○ : ON △ : Lock-up ON × : OFF

Normal	Solenoid Valve	SL1	○	×	○	×	×
		SL2	○	○	△	△	△
		SL3	×	×	×	○	○
		S4	×	×	×	×	○
	Gear Position		1st	2nd	3rd	4th	5th
SL1 Malfunction (During driving at 1st or 2nd)	Solenoid Valve	SL1	×				
		SL2	○	○	△→○	△→○	△→○
		SL3	×	×	×	○→×	○→×
		S4	×	×	×	×	○→×
	Gear Position		1st → 2nd	2nd	3rd → 2nd	4th → 2nd	5th → 2nd
SL1 Malfunction (During driving at 3rd)	Solenoid Valve	SL1	×				
		SL2	○→△	○→△	△	△	△
		SL3	×	×	×	○→×	○→×
		S4	×	×	×	×	○
	Gear Position		1st → 4th	2nd → 4th	3rd → 4th	4th	5th → 4th
SL1 Malfunction (During driving at 4th or 5th)	Solenoid Valve	SL1	×				
		SL2	○→△	○→△	△	△	△
		SL3	×	×	×	○	○
		S4	×	×	×	×	○
	Gear Position		1st → 4th	2nd → 4th	3rd → 4th	4th	5th → 4th
SL2 Malfunction	Solenoid Valve	SL1	○	×	○	×	×
		SL2	×				
		SL3	×	×	×	○→×	○→×
		S4	×	×	×	×	○
	Gear Position		1st → 4th	2nd → 4th	3rd → 4th	4th	5th → 4th
SL3 Malfunction	Solenoid Valve	SL1	○	×	○	×	×
		SL2	○	○	△	△	△
		SL3	×				
		S4	×	×	×	×	○
	Gear Position		1st	2nd	3rd	4th	5th → 4th
SL4 Malfunction	Solenoid Valve	SL1	○	×	○	×	×
		SL2	○	○	△	△	△
		SL3	×	×	×	○	○
		S4	×				
	Gear Position		1st	2nd	3rd	4th	5th → 4th
SL1, SL2, SL3, and S4 Malfunction	Solenoid Valve	SL1	×				
		SL2	×				
		SL3	×				
		S4	×				
	Gear Position		1st → 4th	2nd → 4th	3rd → 4th	4th	5th → 4th

WIRING DIAGRAM



INSPECTION PROCEDURE

1 PERFORM ACTIVE TEST BY OBD II SCAN TOOL OR HAND-HELD TESTER

- Warm up the engine.
- Turn the ignition switch OFF.
- Connect the OBD II scan tool or Hand-held tester to the DLC3.
- Turn the ignition switch ON and push the OBD II scan tool or Hand-held tester main SW ON.
- Select the item "SHIFT" in the ACTIVE TEST and operate the shift solenoid valves on the OBD II scan tool or Hand-held tester.

NOTICE:

The values given below for "Normal Condition" are representative values, so a vehicle may still be normal even if its value differs from those listed here. Do not depend solely on the "Normal Condition" here when deciding whether or not the part is faulty.

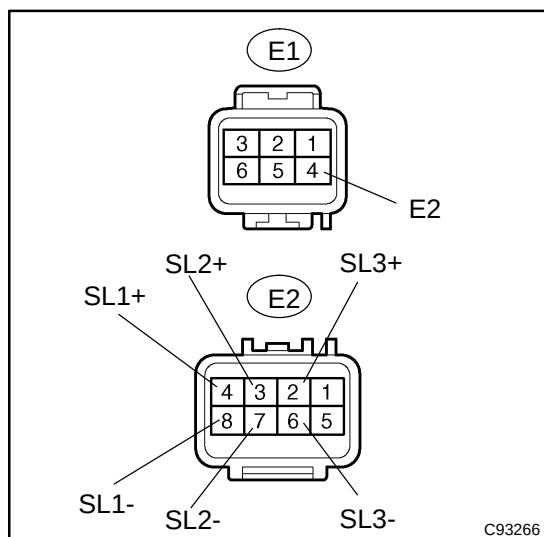
Item	Test Details	Diagnostic Note
SHIFT	[Test Details] Operate the shift solenoid valve and set the each shift position by yourself. [Vehicle Condition] Less than 50 km/h (31 mph) [Others] - Press → button: Shift up - Press ← button: Shift down	Possible to check the operation of the shift solenoid values.

OK

CHECK AND REPLACE ECM(See age 01-31)

NG

2 INSPECT TRANSMISSION WIRE(SL1/SL2/SL3)



- Disconnect the 2 transmission wire connectors from the transaxle.
- Measure the resistance between terminals SL1+ and SL1-.

OK:

Resistance: 5.0 - 5.6 Ω at 20 °C (68 °F)

NG(A)

Go to step 5

- Measure the resistance between terminals SL2+ and SL2-.

OK:

Resistance: 5.0 - 5.6 Ω at 20 °C (68 °F)

NG(B)

Go to step 6

- Measure the resistance between terminals SL3+ and SL3-.

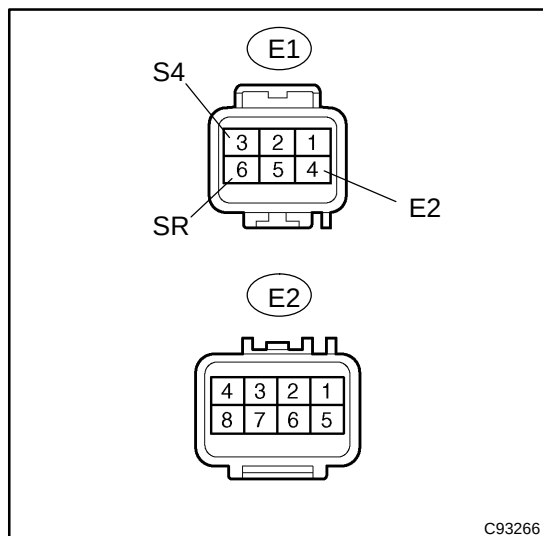
OK:

Resistance: 5.0 - 5.6 Ω at 20 °C (68 °F)

NG(C)

Go to step 7

OK

3 INSPECT TRANSMISSION WIRE(S4/SR)

- (a) Measure resistance between terminal S4 and body ground.

OK:

Resistance: 11 - 15 Ω at 20 °C (68 °F)

NG(A) Go to step 8

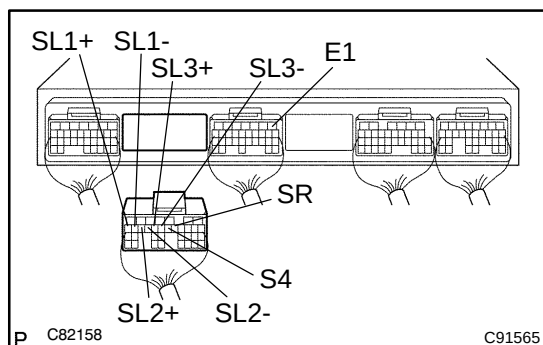
- (b) Measure resistance between terminal SR and body ground.

OK:

Resistance: 11 - 15 Ω at 20 °C (68 °F)

NG(B) Go to step 9

OK

4 CHECK HARNESS AND CONNECTOR(TRANSMISSION WIRE-ECM)

- (a) Connect the 2 transmission connectors to the transaxle.
(b) Disconnect the connector from the ECM.
(c) Measure the resistance between terminals.

OK:

Resistance:

SL1+ - SL1-: 5.0 - 5.6 Ω at 20 °C (68 °F)

SL2+ - SL2-: 5.0 - 5.6 Ω at 20 °C (68 °F)

SL3+ - SL3-: 5.0 - 5.6 Ω at 20 °C (68 °F)

S4 - E1: 11 - 15 Ω at 20 °C (68 °F)

SR - E1: 11 - 15 Ω at 20 °C (68 °F)

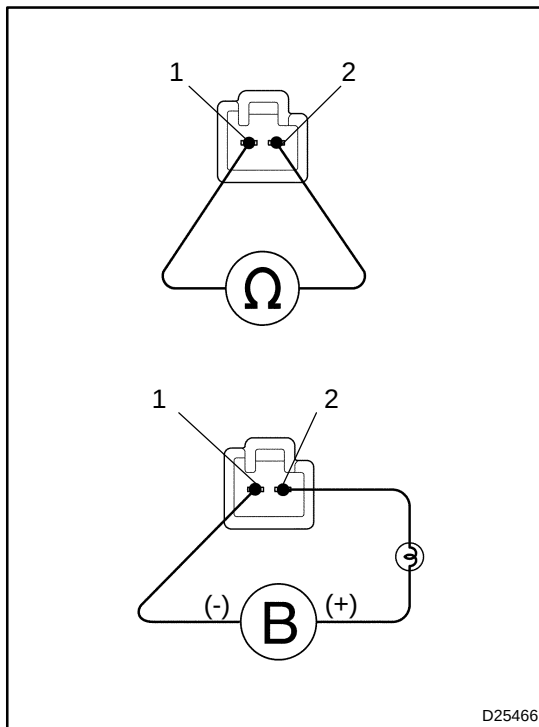
NG

REPAIR OR REPLACE HARNESS OR CONNECTOR(See page 01-31)

OK

CHECK AND REPLACE ECM(See page 01-31)

5 INSPECT SHIFT SOLENOID VALVE SL1



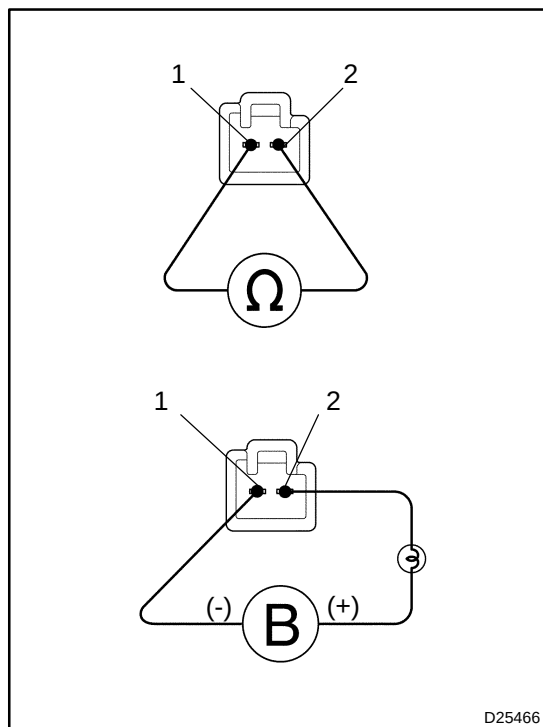
- (a) Remove the shift solenoid valve SL1.
- (b) Measure the resistance between terminals.
OK:
Resistance: 5.0 - 5.6 Ω at 20°C (68°F)
- (c) Connect the positive (+) lead with a 21 W bulb to terminal 2 and the negative (-) lead to terminal 1 of the solenoid valve connector, then check the movement of the valve.
OK:
The solenoid makes an operating noise.

NG

REPLACE SHIFT SOLENOID VALVE SL1

OK

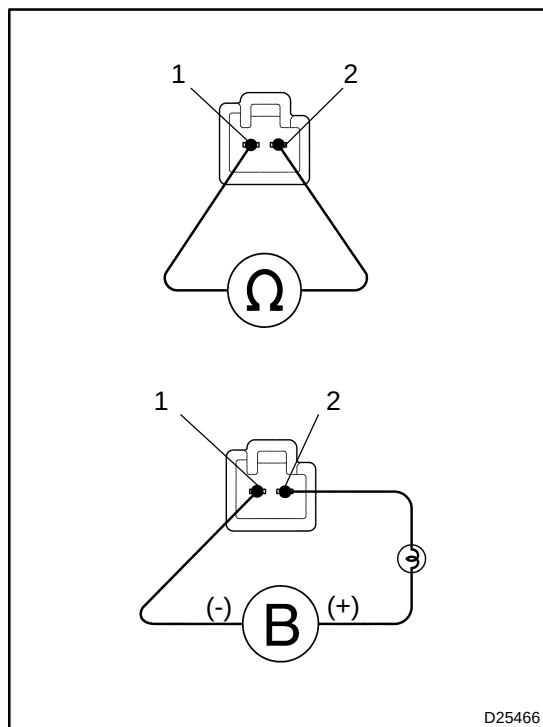
REPAIR OR REPLACE TRANSMISSION WIRE(See page [01-31](#))

6 INSPECT SHIFT SOLENOID VALVE SL2

- (a) Remove the shift solenoid valve SL2.
 (b) Measure the resistance between terminals.
OK:
Resistance: 5.0 - 5.6 Ω at 20°C (68°F)
 (c) Connect the positive (+) lead with a 21 W bulb to terminal 2 and the negative (-) lead to terminal 1 of the solenoid valve connector, then check the movement of the valve.
OK:
The solenoid makes an operating noise.

NG**REPLACE SHIFT SOLENOID VALVE SL2****OK****REPAIR OR REPLACE TRANSMISSION WIRE(See page 01-31)**

7 INSPECT SHIFT SOLENOID VALVE SL3



- Remove the shift solenoid valve SL3.
- Measure the resistance between terminals.
OK:
Resistance: 5.0 - 5.6 Ω at 20°C (68°F)
- Connect the positive (+) lead with a 21 W bulb to terminal 2 and the negative (-) lead to terminal 1 of the solenoid valve connector, then check the movement of the valve.
OK:
The solenoid makes an operating noise.

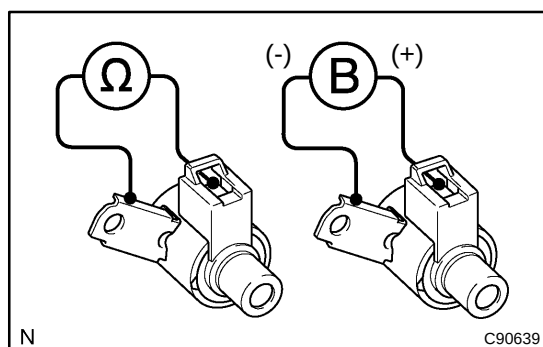
NG

REPLACE SHIFT SOLENOID VALVE SL3

OK

REPAIR OR REPLACE TRANSMISSION WIRE(See page 01-31)

8 INSPECT SHIFT SOLENOID VALVE S4



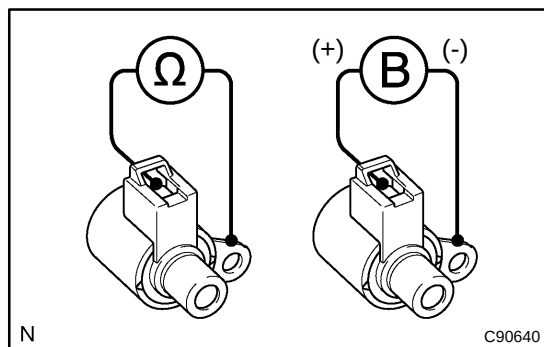
- Remove the shift solenoid valve S4.
- Measure the resistance between the solenoid connector and the solenoid body.
OK:
Resistance: 11 - 15 Ω at 20°C (68°F)
- Connector positive (+) lead to the terminal of solenoid connector, negative (-) lead to the solenoid body.
OK:
The solenoid makes an operating noise.

NG

REPLACE SHIFT SOLENOID VALVE S4

OK

REPAIR OR REPLACE TRANSMISSION WIRE(See page 01-31)

9 INSPECT SHIFT SOLENOID VALVE SR

- (a) Remove the shift solenoid valve SR.
- (b) Measure the resistance between the solenoid connector and the solenoid body.

OK:**Resistance: 11 - 15 Ω at 20°C (68°F)**

- (c) Connector positive (+) lead to the terminal of solenoid connector, negative (-) lead to the solenoid body.

OK:**The solenoid makes an operating noise.****NG****REPLACE SHIFT SOLENOID VALVE SR****OK****REPAIR OR REPLACE TRANSMISSION WIRE(See page [01-31](#))**