DTC	P0748/62	Pressure Control Solenoid ”A” Electrical (Shift Solenoid Valve SL1)

CIRCUIT DESCRIPTION

Shifting from 1st to 5th is performed in combination with ON and OFF of the shift solenoid valves S1, S2, SR, SL1 and SL2, controlled by Engine and ECT ECU. If an open or short circuit occurs in either of the shift solenoid valves, the Engine and ECT ECU controls the remaining normal shift solenoid valve to allow the vehicle to be operated smoothly (Fail safe function).

Fail Safe Function:

If either of the shift solenoid valve circuits develops an open or short, the Engine and ECT ECU turns the other shift solenoid ON and OFF to shift to the gear ranges shown in the table below.

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

○: ON X: OFF

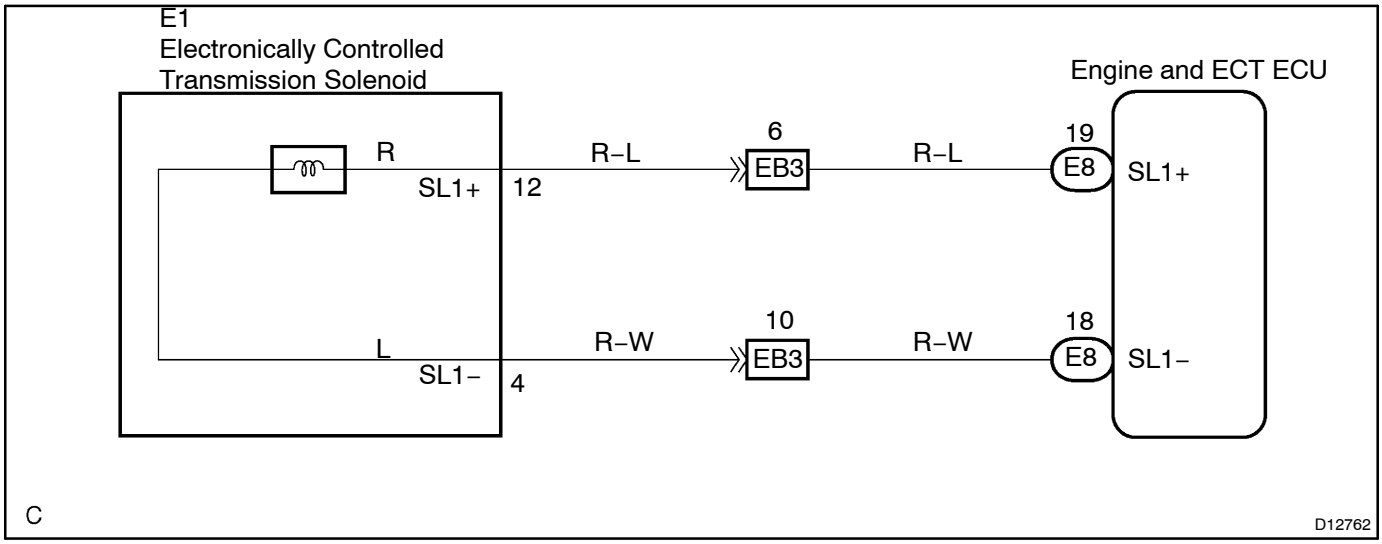
range	NORMAL						S1 OFF						S2 OFF						SR OFF					
	Gear	S1	S2	SR	SL1	SL2	Gear	S1	S2	SR	SL1	SL2	Gear	S1	S2	SR	SL1	SL2	Gear	S1	S2	SR	SL1	SL2
"R"	R	○	X	X	X	○	R	X	X	X	X	○	R	○	X	X	X	○	R	○	X	X	X	○
"D"	1 st	○	X	X	X	○	4 th ↓ 3 rd	X	X→○	X	X	○	1 st	○	X	X	X	○	1 st	○	X	X	X	○
	2 nd	○	○	X	X	○	3 rd	X	○	X	X	○	1 st ↓ 4 th	○→X	X	X	X	○	2 nd	○	○	X	X	○
	3 rd	X	○	X	X	○	3 rd	X	○	X	X	○	4 th	X	X	X	X	○	3 rd	X	○	X	X	○
	4 th	X	X	X	X	○	4 th	X	X	X	X	○	4 th	X	X	X	X	○	4 th	X	X	X	X	○
	5 th	X	X	○	○	X	5 th	X	X	○	○	X	5 th	X	X	○	○	X	4 th	X	X	X	○	X
"3"	1 st	○	X	X	X	○	3 rd ↓ 3 rd E/B	X	X→○	X	X	○→X	1 st	○	X	X	X	○	1 st	○	X	X	X	○
	2 nd	○	○	X	X	○	3 rd ↓ 3 rd E/B	X	○	X	X	○→X	1 st ↓ 3 rd E/B	○→X	X	X	X	○→X	2 nd	○	○	X	X	○
	3 rd E/B	X	○	X	X	X	3 rd E/B	X	○	X	X	X	3 rd E/B	X	X	X	X	X	3 rd E/B ↓ 3 rd	X	○	X	X	X→○
	4 th	X	X	○	X	○	4 th	X	X	○	X	○	4 th	X	X	○	X	○	3 rd	X	X→○	X	X	○→○
	5 th	X	X	○	○	X	5 th	X	X	○	○	X	5 th	X	X	○	○	X	3 rd E/B ↓ 3 rd	X	X→○	X	○→X	X→○
"2"	1 st	○	X	X	X	○	1 st	X	X	X	X	○	1 st	○	X	X	X	○	1 st	○	X	X	X	○
	2 nd E/B	○	○	○	X	X	3 rd E/B	X	○	○	X	X	2 st E/B ↓ 4 th	○→X	X	○	X	X→○	2 nd	○	○	X	X	X
	3 rd E/B	X	○	○	X	X	3 rd E/B	X	○	○	X	X	Fail 4th	X	X	○	X	X→○	2 nd	X→○	○	X	X	X
	4 th	X	X	○	X	○	4 th	X	X	○	X	○	4 th	X	X	○	X	○	1 st ↓ 2 nd	X→○	X→○	X	X	○→X
	5 th	X	X	○	○	X	5 th	X	X	○	○	X	5 th	X	X	○	○	X	1 st E/B ↓ 2 nd	X→○	○	X	○→X	X
"L"	1 st E/B	○	X	X	X	X	1 st E/B	X	X	X	X	X	1 st E/B	○	X	X	X	X	1 st E/B	○	X	X	X	X
	2 nd E/B	○	○	○	X	X	3 rd E/B	X	○	○	X	X	2 st E/B ↓ 4 th	○→X	X	○	X	X→○	2 nd	○	○	X	X	X
	3 rd E/B	X	○	○	X	X	3 rd E/B	X	○	○	X	X	Fail 4 th	X	X	○	X	X→○	2 nd	X→○	○	X	X	X
	4 th	X	X	○	X	○	4 th	X	X	○	X	○	4 th	X	X	○	X	○	1 st ↓ 2 nd	X→○	X→○	X	X	○→X
	5 th	X	X	○	○	X	5 th	X	X	○	○	X	5 th	X	X	○	○	X	1 st E/B ↓ 2 nd	X→○	X→○	X	○→X	X

○: ON X: OFF

range	S1 S2 OFF						S2 SR OFF						S1 SR OFF						S1 S2 SR OFF					
	Gear	S1	S2	SR	SL1	SL2	Gear	S1	S2	SR	SL1	SL2	Gear	S1	S2	SR	SL1	SL2	Gear	S1	S2	SR	SL1	SL2
"R"	R	X	X	X	X	○	R	○	X	X	X	○	R	X	X	X	X	○	R	X	X	X	X	○
"D"	4 th	X	X	X	X	○	1 st	○	X	X	X	○	4 th → 3 rd	X	X → ○	X	X	○	4 th	X	X	X	X	○
	4 th	X	X	X	X	○	1 st → 4 th	○ → X	X	X	X	○	3 rd	X	○	X	X	○	4 th	X	X	X	X	○
	4 th	X	X	X	X	○	4 th	X	X	X	X	○	3 rd	X	○	X	X	○	4 th	X	X	X	X	○
	4 th	X	X	X	X	○	4 th	X	X	X	X	○	4 th	X	X	X	X	○	4 th	X	X	X	X	○
	5 th	X	X	○	○	X	4 th	X	X	X	○ → X	X → ○	4 th	X	X	X	○ → X	X → ○	4 th	X	X	X	○ → X	X → ○
"3"	3 rd → 3 rd E/B	X	X	X	X	○ → X	1 st	○	X	X	X	○	3 rd	X	X → ○	X	X	○ → ○	3 rd	X	X	X	X	○ → ○
	3 rd → 3 rd E/B	X	X	X	X	○ → X	1 st → 3 rd	○ → X	X	X	X	○ → ○	3 rd	X	○	X	X	○ → ○	3 rd	X	X	X	X	○ → ○
	3 rd E/B	X	X	X	X	X	3 rd E/B → 3 rd	X	X	X	X	X → ○	3 rd E/B → 3 rd	X	○	X	X	X → ○	3 rd E/B → 3 rd	X	X	X	X	X → ○
	4 th	X	X	○	X	○	3 rd	X	X	X	X	○ → ○	3 rd	X	X → ○	X	X	○ → ○	3 rd	X	X	X	X	○ → ○
	5 th	X	X	○	○	X	1 st E/B → 3 rd	X	X	X	○ → X	X → ○	3 rd E/B → 3 rd	X	X → ○	X	○ → X	X → ○	3 rd E/B → 3 rd	X	X	X	○ → X	X → ○
"2"	1 st	X	X	X	X	○	1 st	○	X	X	X	○	1 st	X	X	X	X	○	1 st	X	X	X	X	○
	Fail 4 th	X	X	○	X	X → ○	1 st E/B → 1 st	○	X	X	X	X → ○	2 nd	X	○	X	X	X	1 st E/B → 1 st	X	X	X	X	X → ○
	Fail 4 th	X	X	○	X	X → ○	1 st E/B → 1 st	X → ○	X	X	X	X → ○	2 nd	X	○	X	X	X	1 st E/B → 1 st	X	X	X	X	X → ○
	4 th	X	X	○	X	○	1 st	X → ○	X	X	X	○	1 st → 2nd	X	X → ○	X	X	○ → X	1 st	X	X	X	X	○
	5 th	X	X	○	○	X	1 st E/B → 1 st	X → ○	X	X	○ → X	X → ○	1 st E/B → 2nd	X	X → ○	X	○ → X	X	1 st E/B → 1 st	X	X	X	○ → X	X → ○
"L"	1 st E/B	X	X	X	X	X	1 st E/B	○	X	X	X	X	1 st E/B	X	X	X	X	X	1 st E/B	X	X	X	X	X
	Fail 4 th	X	X	○	X	X → ○	1 st E/B → 1 st	○	X	X	X	X → ○	2 nd	X	○	X	X	X	1 st E/B → 1 st	X	X	X	X	X → ○
	Fail 4 th	X	X	○	X	X → ○	1 st E/B → 1 st	X → ○	X	X	X	X → ○	2 nd	X	○	X	X	X	1 st E/B → 1 st	X	X	X	X	X → ○
	4 th	X	X	○	X	○	1 st	X → ○	X	X	X	○	1 st → 2nd	X	X → ○	X	X	○ → X	1 st	X	X	X	X	○
	5 th	X	X	○	○	X	1 st E/B → 1 st	X → ○	X	X	○ → X	X → ○	1 st E/B → 2nd	X	X → ○	X	○ → X	X	1 st E/B → 1 st	X	X	X	○ → X	X → ○

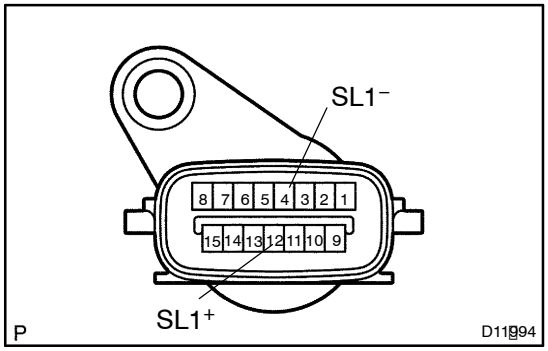
DTC No.	DTC Detection Condition	Trouble Area
P0748/62	Engine and ECT ECU checks for an open or short circuit in shift solenoid valves SL1 (1–trip detection logic) (a) When solenoid is energized, duty ratio exceed 75% (b) When solenoid is not energized, duty ratio is less than 3%	• Open or short in shift solenoid valve SL1 circuit • Shift solenoid valve SL1 • Engine and ECT ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

1	**Check transmission wire.**

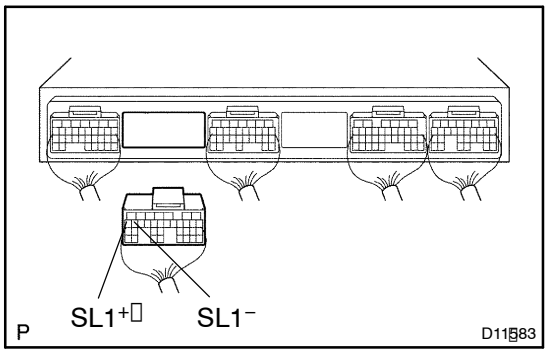


PREPARATION:
Disconnect the transmission wire connector.
CHECK:
Measure resistance between SL1+ and SL1– of transmission wire.
OK:
Resistance: 5.0 – 5.6 Ω at 20°C (68°F)
CHECK:
Measure resistance between terminals SL1+ and SL1– of the transmission wire connector and body ground.
OK:
Resistance: 1 MΩ or higher

NG	**Go to step 3.**

OK

2	**Measure resistance between terminal SL1+ and SL1– of Engine and ECT ECU connector.**



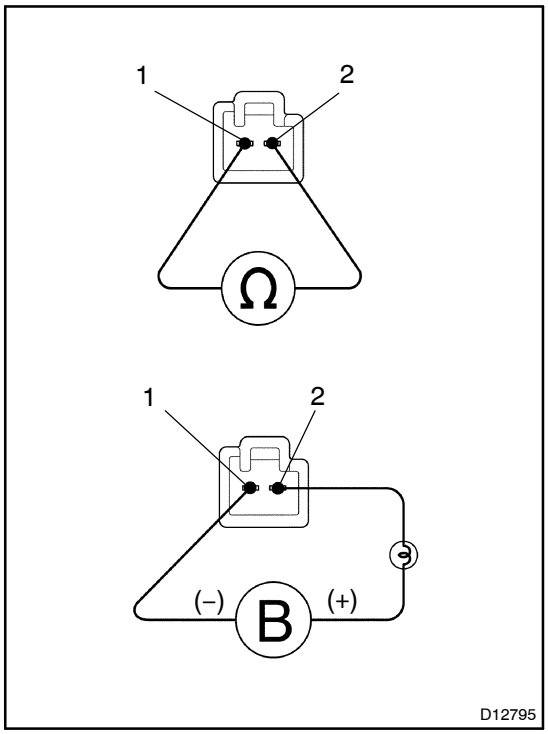
PREPARATION:
(a) Connect the transmission wire connector.
(b) Disconnect the connector of the Engine and ECT ECU.
CHECK:
Measure resistance between terminals SL1+ and SL1– of Engine and ECT ECU connector.
OK:
Resistance: 5.0 – 5.6 Ω at 20°C (68°F)
CHECK:
Measure resistance between terminals SL1+ and SL1– of the Engine and ECT ECU connector and body ground.
OK:
Resistance: 1 MΩ or higher

NG	**Repair or replace the harness or connector (See page IN–38).**

OK

Check and replace the Engine and ECT ECU (See page IN–38).

3	Check shift solenoid valve SL1.



PREPARATION:

(a) Jack up the vehicle.
(b) Remove the oil pan.
(c) Remove the shift solenoid valve SL1.

CHECK:

(a) Measure the resistance between terminals 1 and 2 of solenoid connector.
Standard: 5.0 – 5.6 Ω at 20°C (68°F)
(b) Connect the positive (+) lead with an 21 W bulb to terminal 2 of solenoid connector and negative (–) lead to terminal 1 of the solenoid valve connector, then check the movement of the valve.
Standard: Solenoid sounds operation noise.

OK:

Standard

NG → **Replace the shift solenoid valve SL1 (See page AT–8).**

OK

Repair or replace the transmission wire (See page AT–6).