

<b>DTC</b>	<b>P0778</b>	<b>Pressure Control Solenoid "B" Electrical (Shift Solenoid Valve SL2)</b>
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## DESCRIPTION

Shifting from 1st to 5th is performed in combination with the ON and OFF operation of the shift solenoid valves S1, S2, SR, SL1 and SL2 which are controlled by the ECM. If an open or short circuit occurs in any of the shift solenoid valves, the ECM controls the remaining normal shift solenoid valves to allow the vehicle to be driven smoothly (See page [AT-32](#)).

DTC No.	DTC Detection Conditions	Trouble Areas
P0778	The ECM checks for an open or short in the shift solenoid valve SL2 circuit (1-trip detection logic): <ul style="list-style-type: none"> <li>• Output signal duty equals 100 %.</li> <li>(NOTE: SL2 output signal duty is less than 100 % under normal conditions)</li> </ul>	<ul style="list-style-type: none"> <li>• Open or short in shift solenoid valve SL2 circuit</li> <li>• Shift solenoid valve SL2</li> <li>• ECM</li> </ul>

## MONITOR DESCRIPTION

This DTC indicates an open or short in the shift solenoid valve SL2 circuit. The ECM controls the gearshift by turning the shift solenoid valves "ON/OFF". When there is an open or short circuit in any shift solenoid valve circuit, the ECM detects the problem, illuminates the MIL and stores the DTC. And the ECM performs the fail-safe function and turns the other functioning shift solenoid valves "ON/OFF". (If an open or short circuit is detected, the ECM cuts the current to the circuit.)

If the ECM detects an open or short in the shift solenoid valve SL2 circuit, the ECM determines that there is a malfunction (See page [AT-32](#)).

## MONITOR STRATEGY

Related DTCs	P0778: Shift solenoid valve SL2/Range check
Required sensors/Components	Shift solenoid valve SL2
Frequency of operation	Continuous
Duration	1 second
MIL operation	Immediate
Sequence of operation	None

## TYPICAL ENABLING CONDITIONS

The monitor will run whenever the following DTCs are not present.	None
Battery voltage	10 V or more
CPU requested duty ratio to SL2	Less than 75 %
Ignition switch	ON
Starter	OFF

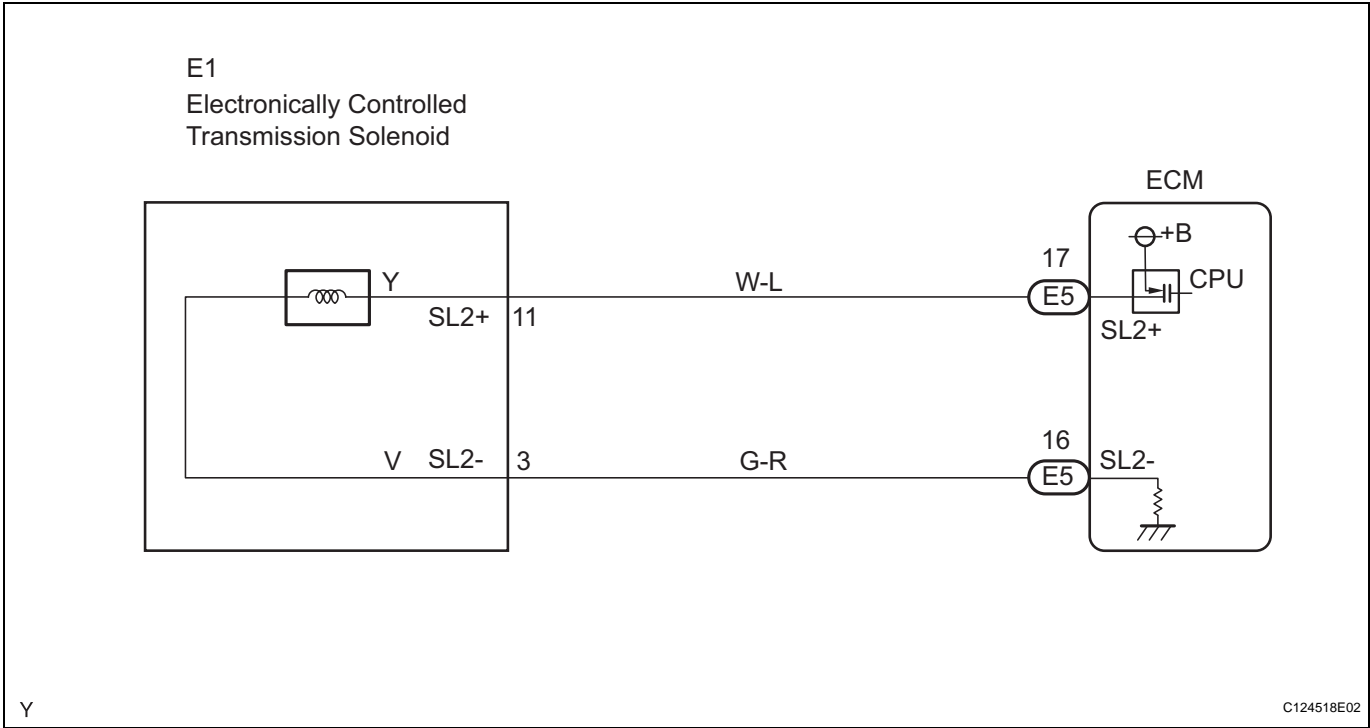
## TYPICAL MALFUNCTION THRESHOLDS

Output signal duty	100 %
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## COMPONENT OPERATING RANGE

Output signal duty	Less than 100 %
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**WIRING DIAGRAM**

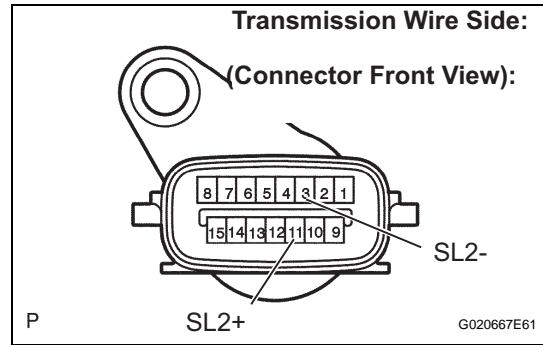


**HINT:**

The shift solenoid valve SL2 is turned on/off normally when the shift lever is in the D position:

Gearshift controlled by ECM	1st	2nd	3rd	4th	5th
Shift solenoid valve SL2	ON	ON	ON	ON	OFF

**1 INSPECT TRANSMISSION WIRE (SL2)**



- (a) Disconnect the transmission wire connector from the transmission.
- (b) Measure the resistance.  
**Standard resistance**

Tester Connection	Specified Condition
11 (SL2+) - 3 (SL2-)	5.0 to 5.6 $\Omega$ at 20°C (68°F)

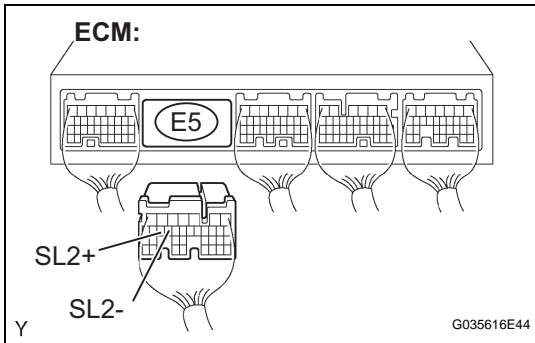
- (c) Measure the resistance.  
**Standard resistance (Check for short):**

Tester Connection	Specified Condition
11 (SL2+) - Body ground	10 k $\Omega$ or higher
3 (SL2-) - Body ground	10 k $\Omega$ or higher

**NG** Go to step 3

**OK**

**2 CHECK HARNESS AND CONNECTOR (TRANSMISSION WIRE - ECM)**



- (a) Connect the transmission wire connector to the transmission.
- (b) Disconnect the ECM connector.
- (c) Measure the resistance.

**Standard resistance**

Tester Connection	Specified Condition
E5-17 (SL2+) - E5-16 (SL2-)	5.0 to 5.6 Ω at 20°C (68°F)

- (d) Measure the resistance.

**Standard resistance (Check for short)**

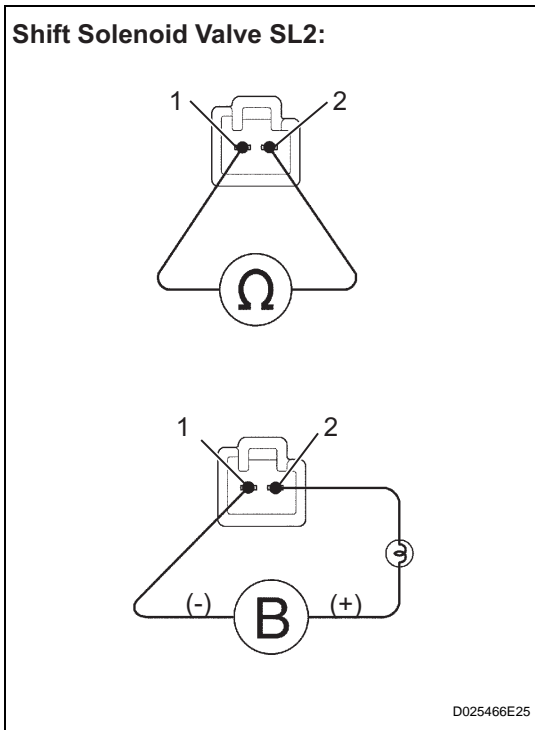
Tester Connection	Specified Condition
E5-17 (SL2+) - Body ground	10 kΩ or higher
E5-16 (SL2-) - Body ground	10 kΩ or higher

**NG** → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK**

**REPLACE ECM**

**3 INSPECT SHIFT SOLENOID VALVE SL2**



- (a) Remove the shift solenoid valve SL2.
- (b) Measure the resistance.

**Standard resistance**

Tester Connection	Specified Condition
1 - 2	5.0 to 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**