

**DTC****P0778****Pressure Control Solenoid "B" Electrical (Shift Solenoid Valve SL2)****DESCRIPTION****AT**

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> </ul> (NOTE: SL2 output signal duty is less than 100 % under normal conditions) | <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            |

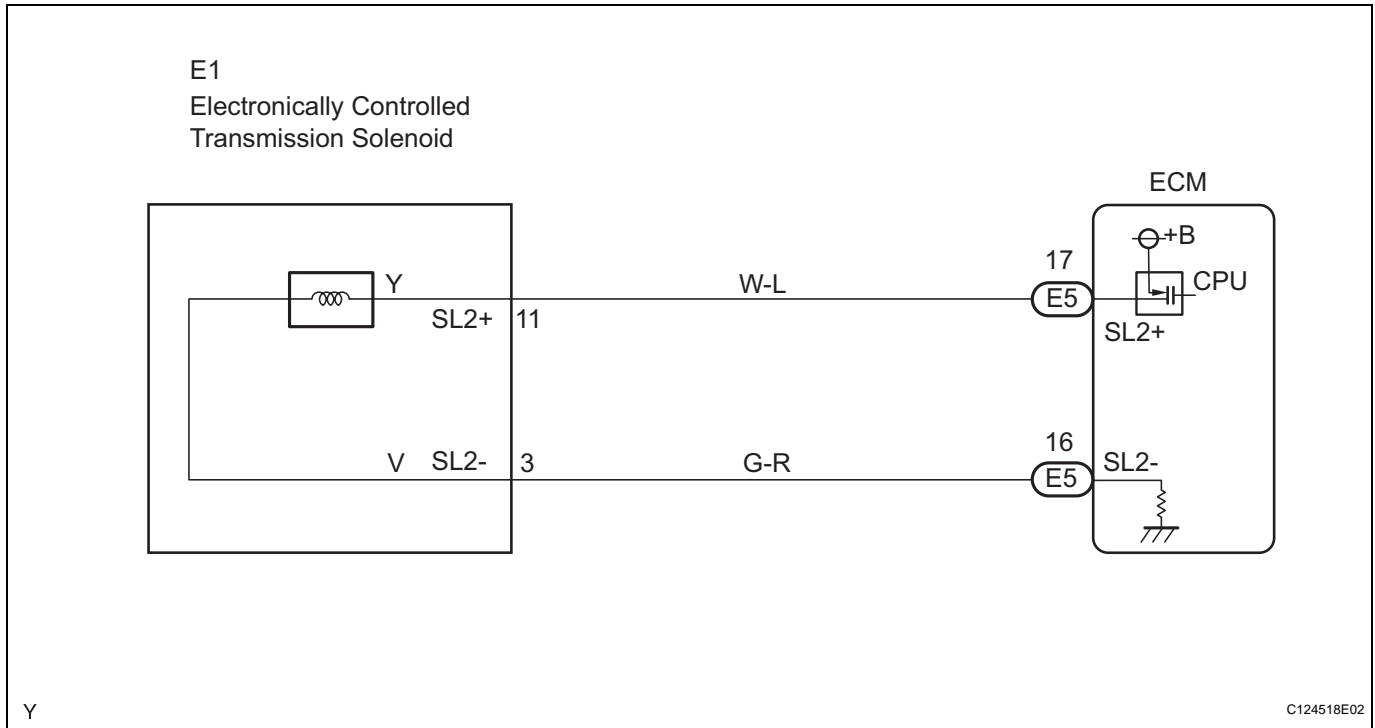
**TYPICAL MALFUNCTION THRESHOLDS**

|                    |       |
|--------------------|-------|
| Output signal duty | 100 % |
|--------------------|-------|

**COMPONENT OPERATING RANGE**

|                    |                 |
|--------------------|-----------------|
| Output signal duty | Less than 100 % |
|--------------------|-----------------|

## WIRING DIAGRAM

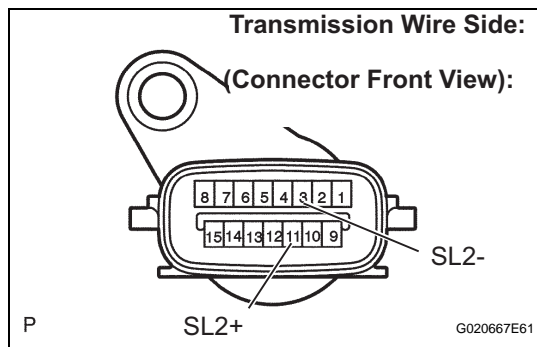


## HINT:

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 |

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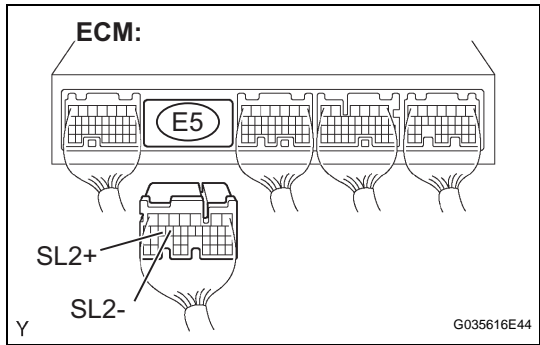
Go to step 3

OK

AT

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 $\Omega$ at 20°C (68°F) |

- (d) Measure the resistance.
- Standard resistance (Check for short)

| Tester Connection          | Specified Condition     |
|----------------------------|-------------------------|
| E5-17 (SL2+) - Body ground | 10 k $\Omega$ or higher |
| E5-16 (SL2-) - Body ground | 10 k $\Omega$ or higher |

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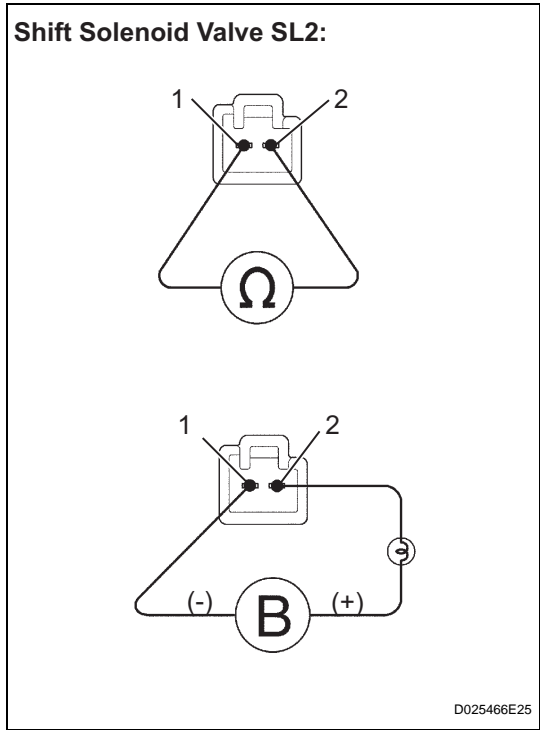
REPAIR OR REPLACE HARNESS OR CONNECTOR

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 $\Omega$ 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.

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REPLACE SHIFT SOLENOID VALVE SL2

OK

REPAIR OR REPLACE TRANSMISSION WIRE

AT