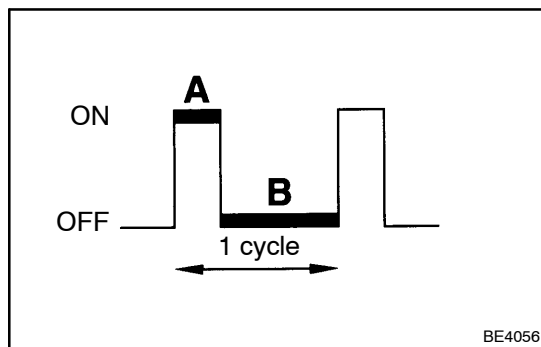
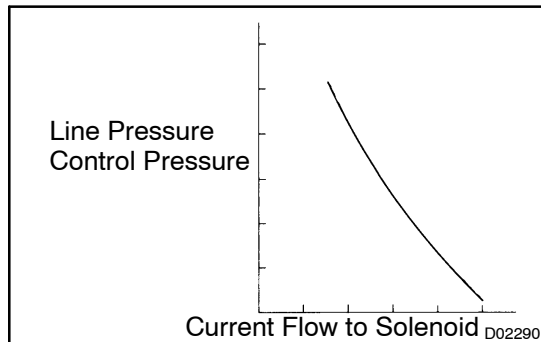


|            |              |                                                                                |
|------------|--------------|--------------------------------------------------------------------------------|
| <b>DTC</b> | <b>P2716</b> | <b>Pressure Control Solenoid "D" Electrical<br/>(Shift Solenoid Valve SLT)</b> |
|------------|--------------|--------------------------------------------------------------------------------|



## CIRCUIT DESCRIPTION

The throttle pressure that is applied to the primary regulator valve (which modulates line pressure) causes the solenoid valve SLT, under electronic control, to precisely and minutely modulate and generate line pressure according to the accelerator pedal effort, or the detected engine power output.

This controls the line pressure and provides smooth shifting characteristics.

Upon receiving the throttle valve opening angle signal, ECM controls the line pressure by sending a predetermined (\*) duty ratio to the solenoid valve, modulating the line pressure, and generating throttle pressure.

(\*) Duty Ratio

The duty ratio is the ratio of the period of continuity in one cycle. For example, if A is the period of continuity in one cycle, and B is the period of non-continuity, then

$$\text{Duty Ratio} = \frac{A}{A + B} \times 100 (\%)$$

| DTC No. | DTC Detection Condition                                                                                | Trouble Area                                                                                                                                             |
|---------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| P2716   | ECM detects solenoid SLT circuit open or short malfunction for 1 sec. or more (1-trip detection logic) | <ul style="list-style-type: none"> <li>• Open or short in shift solenoid valve SLT circuit</li> <li>• Shift solenoid valve SLT</li> <li>• ECM</li> </ul> |

## MONITOR DESCRIPTION

When an open or short in the linear solenoid valve (SLT) circuit is detected, the ECM interprets this as a fault. The ECM will turn ON the MIL and store the DTC.

## MONITOR STRATEGY

|                             |                          |                                      |
|-----------------------------|--------------------------|--------------------------------------|
| Related DTCs                | P2716                    | Shift solenoid valve SLT/Range check |
| Required sensors/Components | Shift solenoid valve SLT |                                      |
| Frequency of operation      | Continuous               |                                      |
| Duration                    | 1 sec.                   |                                      |
| MIL operation               | Immediate                |                                      |
| Sequence of operation       | None                     |                                      |

# TYPICAL ENABLING CONDITIONS

| Item                                                              | Specification                   |         |
|-------------------------------------------------------------------|---------------------------------|---------|
|                                                                   | Minimum                         | Maximum |
| The monitor will run whenever the following DTCs are not present. | See page <a href="#">DI-369</a> |         |
| Solenoid current cut status                                       | Not cut                         |         |
| CPU command duty ratio to SLT                                     | 19% or more                     | –       |
| Battery voltage                                                   | 11 V or more                    | –       |
| Ignition switch                                                   | ON                              |         |
| Starter                                                           | OFF                             |         |

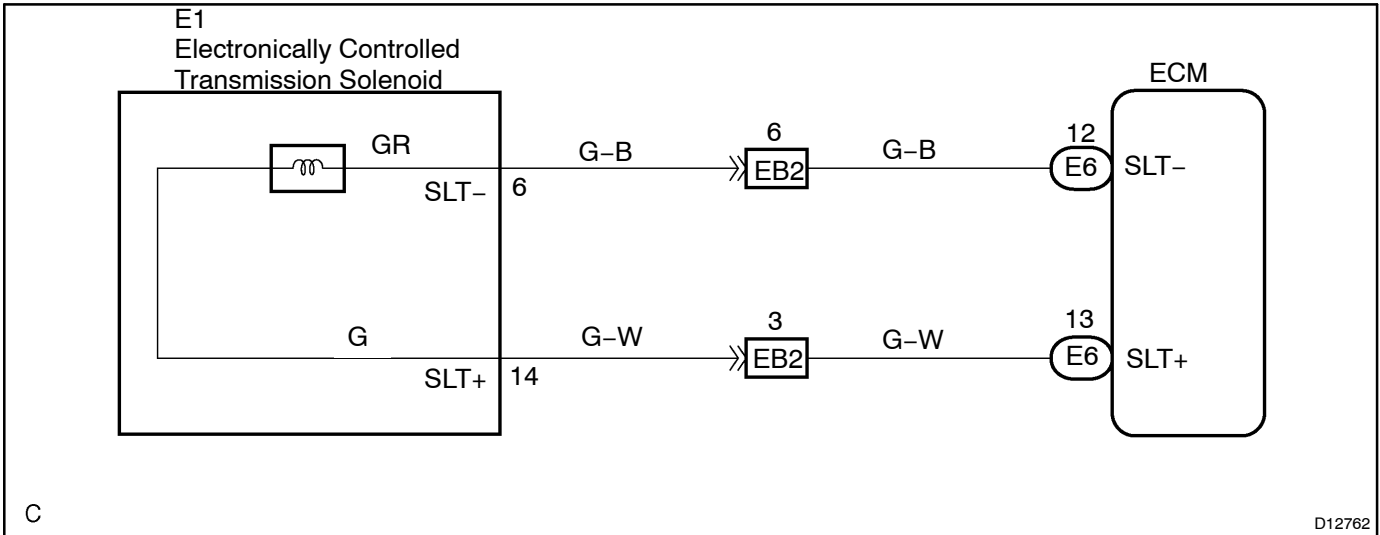
# TYPICAL MALFUNCTION THRESHOLDS

| Detection criteria       | Threshold |
|--------------------------|-----------|
| Solenoid status from MIC | Fail      |

# COMPONENT OPERATING RANGE

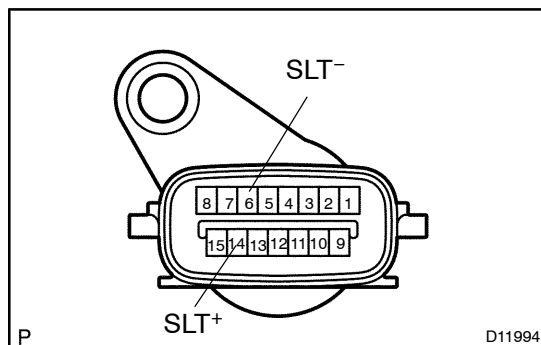
| Parameter          | Standard value |
|--------------------|----------------|
| Output signal duty | Less than 100% |

# WIRING DIAGRAM



## INSPECTION PROCEDURE

### 1 Check transmission wire.



#### PREPARATION:

Disconnect the transmission wire connector.

#### CHECK:

Measure resistance between SLT<sup>+</sup> and SLT<sup>-</sup> of transmission wire.

#### OK:

**Resistance: 5.0 to 5.6  $\Omega$  at 20°C (68°F)**

#### CHECK:

Measure resistance between terminals SLT<sup>+</sup> and SLT<sup>-</sup> of the transmission wire connector and body ground.

#### OK:

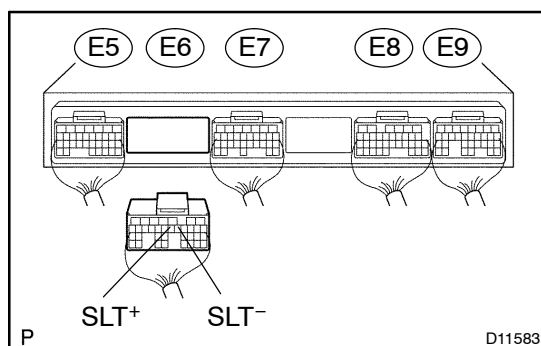
**Resistance: 1 M $\Omega$  or higher**

NG

Go to step 3.

OK

### 2 Measure resistance between terminal SLT<sup>+</sup> and SLT<sup>-</sup> of ECM connector.



#### PREPARATION:

- (a) Connect the transmission wire connector.
- (b) Disconnect the connector of the ECM.

#### CHECK:

Measure resistance between terminals SLT<sup>+</sup> and SLT<sup>-</sup> of ECM connector.

#### OK:

**Resistance: 5.0 to 5.6  $\Omega$  at 20°C (68°F)**

#### CHECK:

Measure resistance between terminals SLT<sup>+</sup> and SLT<sup>-</sup> of the ECM connector and body ground.

#### OK:

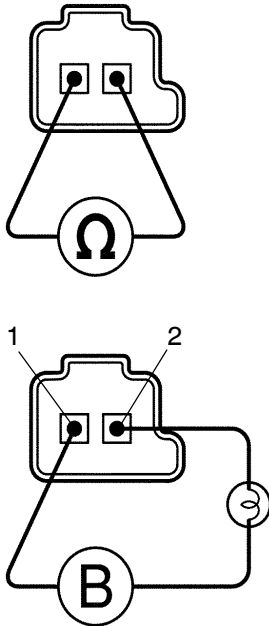
**Resistance: 1 M $\Omega$  or higher**

NG

Repair or replace the harness or connector (See page [IN-36](#)).

OK

Check and replace the ECM (See page [IN-36](#)).

**3****Check shift solenoid valve SLT.**

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**PREPARATION:**

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

**CHECK:**

- (a) Measure the resistance between terminals 1 and 2 of solenoid connector.

**Standard: 5.0 to 5.6  $\Omega$  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 SLT  
(See page [AT-8](#)).****OK****Repair or replace the transmission wire  
(See page [AT-6](#)).**