**DESCRIPTION**

Shifting from 1st to 5th is performed in combination with the ON and OFF operations 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-34).

<table>
<thead>
<tr>
<th>DTC No.</th>
<th>DTC Detection Conditions</th>
<th>Trouble Areas</th>
</tr>
</thead>
</table>
| P0985   | ECM detects short in solenoid valve SR circuit 2 times when solenoid valve SR is operated. (1-trip detection logic) | • Short in shift solenoid valve SR circuit  
 • Shift solenoid valve SR  
 • ECM |
| P0986   | ECM detects open in solenoid valve SR circuit 2 times when solenoid valve SR is not operated. (1-trip detection logic) | • Open in shift solenoid valve SR circuit  
 • Shift solenoid valve SR  
 • ECM |

**MONITOR DESCRIPTION**

These DTCs indicate an open or short in the shift solenoid valve SR circuit. When there is an open or short circuit in any shift solenoid valve circuits, the ECM detects the problem, illuminates the MIL and stores the DTC. When the shift solenoid valve SR is ON, if the resistance is 8 Ω or less, the ECM determines that there is a short malfunction in the shift solenoid valve SR circuit. When the shift solenoid valve SR is OFF, if the resistance is 100 kΩ or more, the ECM determines that the shift solenoid valve SR circuit is open (See page AT-34).

**MONITOR STRATEGY**

| Related DTCs | P0985: Shift solenoid valve SR/Range check (Low resistance)  
 P0986: Shift solenoid valve SR/Range check (High resistance) |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Required sensors/Components</td>
<td>Shift solenoid valve SR</td>
</tr>
<tr>
<td>Frequency of operation</td>
<td>Continuous</td>
</tr>
<tr>
<td>Duration</td>
<td>0.128 seconds</td>
</tr>
<tr>
<td>MIL operation</td>
<td>Immediate</td>
</tr>
<tr>
<td>Sequence of operation</td>
<td>None</td>
</tr>
</tbody>
</table>

**TYPICAL ENABLING CONDITIONS**

**P0985: Range check (Low resistance)**

- The monitor will run whenever the following DTCs are not present: None
- Shift solenoid valve SR: ON
- Battery voltage: 8 V or more
- Ignition switch: ON
- Starter: OFF

**P0986: Range check (High resistance)**

- The monitor will run whenever the following DTCs are not present: None
- Shift solenoid valve SR: OFF
- Battery voltage: 8 V or more
- Ignition switch: ON
- Starter: OFF
TYPICAL MALFUNCTION_THRESHOLDS
P0985: Range check (Low resistance)
Shift solenoid valve SR resistance 8 \(\Omega\) or less

P0986: Range check (High resistance)
Shift solenoid valve SR resistance 100 k\(\Omega\) or more

COMPONENT OPERATING RANGE
Shift solenoid valve SR resistance 11 to 15 \(\Omega\) at 20\(^\circ\)C (68\(^\circ\)F)

WIRING DIAGRAM

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

<table>
<thead>
<tr>
<th>Gearshift controlled by ECM</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift solenoid valve SR</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
</tr>
</tbody>
</table>
1  **INSPECT TRANSMISSION WIRE (SR)**

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

**Standard resistance**

<table>
<thead>
<tr>
<th>Tester Connection</th>
<th>Specified Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 (SR) - Body ground</td>
<td>11 to 15 Ω at 20°C (68°F)</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Tester Connection</th>
<th>Specified Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2-9 (SR) - Body ground</td>
<td>11 to 15 Ω at 20°C (68°F)</td>
</tr>
</tbody>
</table>

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE ECM
3 INSPECT SHIFT SOLENOID VALVE SR

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

**Standard resistance**

<table>
<thead>
<tr>
<th>Tester Connection</th>
<th>Specified Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solenoid Connector (SR) - Solenoid Body (SR)</td>
<td>11 to 15 Ω at 20°C (68°F)</td>
</tr>
</tbody>
</table>

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

**OK:**
- The solenoid makes operating sounds.

**NG**
- **REPLACE SHIFT SOLENOID VALVE SR**

---

**OK**

**REPAIR OR REPLACE TRANSMISSION WIRE**