

P0976、 P0977 Shift Solenoid (SS) 2 Control Circuit

Diagnostic Instructions

- Perform the Diagnostic System Check – Vehicle on page 6-60 prior to using this diagnostic procedure.
- Review Strategy Based Diagnosis on page 6-57 for an overview of the diagnostic approach.
- Diagnostic Procedure Instructions on page 6-58 provides an overview of each diagnostic category.

DTC Descriptors

DTC P0976: Shift Solenoid (SS) 2 Control Circuit Low Voltage

DTC P0977: Shift Solenoid (SS) 2 Control Circuit High Voltage

Circuit/System Description

The shift solenoid (SS) 2 is part of the control solenoid (w/body and TCM) valve assembly and is not serviced separately. The TCM supplies 12 volts to SS 2 on the high side driver 2 circuit. The TCM controls the normally closed SS 2 on the SS 2 control circuit. The SS 2 controls the transmission fluid to the Mode-3 valve. In the ON position the 4-5-6 clutch is fed by drive fluid. In the OFF position, Reverse fluid is allowed to flow and is supplied to the low and reverse clutch and the 4-5-6 clutch assemblies.

Conditions for Running the DTC

- The engine speed is greater than 500 RPM for greater than 5 seconds.
- The ignition voltage is between 8.6 volts and 19.0 volts.

Conditions for Setting the DTC

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The TCM detects a short to ground on the SS 2 control circuit when the SS 2 is commanded OFF for 1.2 seconds in a 1.5 second sample.

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The TCM detects high voltage on the SS 2 control circuit when the SS 2 is commanded ON for 1.2 seconds in a 1.5 second sample.

Action Taken When the DTC Sets**P0976**

DTC P0976 is a Type B DTC.

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- DTC P0977 is a Type A DTC.
- The TCM defaults the transmission to 3rd gear if the current gear is 1st, 2nd, or 3rd, or 5th gear if the current gear is 4th, 5th, or 6th gear.
- The TCM inhibits the torque converter clutch (TCC).
- The TCM commands maximum line pressure.
- The TCM freezes transmission adaptive functions.

Conditions for Clearing the DIC/DTC

- DTC P0976 is a Type B DTC.
- DTC P0977 is a Type A DTC.

Reference Information**Description and Operation**

Transmission General Description on page 17-278

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions on page 6-61

Scan Tool Reference

Control Module References on page 6-1 for scan tool information

Circuit/System Verification

- 1). Ensure the transmission fluid temperature is between 50–80°C (122–176°F).
- 2). Operate the vehicle in 4th, 5th, or 6th gear with TCC applied, long enough to ensure at least a
- 3). 3°C (5°F) rise in TCM substrate temperature.

- 4). Verify the scan tool Shift Sol. 2 CKT Status parameter displays OK.

If not the specified value, replace the control solenoid (w/body and TCM) valve assembly.

- 5). Operate the vehicle within the Conditions for Running the DTC to verify the DTC does not reset. You may also operate the vehicle within the conditions that you observed from the Freeze Frame/Failure Records data.

Repair Instructions

Important:

- Perform the Service Fast Learn Adapts on page 17-102 following all transmission related repairs.
- Before replacing the TCM, perform the Control Solenoid Valve and Transmission Control Module Assembly Inspection on page 17-98. Perform the Diagnostic Repair Verification on page 6-86 after completing the diagnostic procedure. Control Module References on page 6-1 for control solenoid (w/body and TCM) valve assembly replacement, setup, and programming.

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