P0776 or P0777 Clutch Pressure Control (PC) Solenoid

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 P0776: Clutch Pressure Control (PC) Solenoid 2 – Stuck Off
DTC P0777: Clutch Pressure Control (PC) Solenoid 2 – Stuck On

Circuit/System Description

The clutch pressure control (PC) solenoid 2 is part of the control solenoid (w/body and TCM) valve assembly and is not serviced separately. The clutch PC solenoid 2 flows fluid to the 3-5-R clutch when commanded OFF and exhausts fluid when commanded ON. The clutch PC solenoid 2 regulates the transmission fluid pressure to the 3-5-R clutch. The TCM calculates gear ratio based on data from the automatic transmission input speed sensor (ISS) and the output speed sensor (OSS). The TCM compares the expected transmission gear ratio to the calculated gear ratio for each commanded gear.

Conditions for Running the DTC

P0776
- No ISS DTCs P0716 or P0717.
- No OSS DTCs P0722 or P0723.
- No IMS DTCs P1825 or P1915.
- The transmission fluid temperature is 0°C (32°F) or greater.
- The transmission input speed is 60 RPM or greater.
- 3-5-R clutch is commanded ON.

P0777
- No ISS DTCs P0716 or P0717.
- No OSS DTCs P0722 or P0723.
- No IMS DTCs P1825 or P1915.
- The transmission fluid temperature is 0°C (32°F) or greater.
- The transmission output shaft speed is 200 RPM or greater.
- 3-5-R clutch is commanded OFF.

Conditions for Setting the DTC

P0776
The TCM detects an incorrect on-coming clutch gear ratio, or flare, when the 3-5-R clutch is commanded ON for 2.25 seconds and the transmission input shaft speed is 100 RPM or greater from the anticipated input shaft speed.

P0777
The TCM detects an incorrect off-going clutch gear ratio, or tie-up, when the 3-5-R clutch is commanded OFF for 1.2 seconds and the transmission input shaft speed is 40 RPM or less from the anticipated input shaft speed.

Action Taken When the DTC Sets

- DTCs P0776 and P0777 are Type A DTCs.
- The TCM commands maximum line pressure.
- The TCM inhibits TCC.
- The TCM freezes transmission adaptive functions.

Conditions for Clearing the DIC/DTC

DTCs P0776 and P0777 are Type A DTCs.

Reference Information

Schematic Reference
Automatic Transmission Controls Schematics on page 17-8

Connector End View Reference
Component Connector End Views on page 11-211

Description and Operation

Transmission General Description on page 17-278

Electrical Information Reference
- Circuit Testing on page 11-456
- Connector Repairs on page 11-478
- Testing for Intermittent Conditions and Poor Connections on page 11-460
- Wiring Repairs on page 11-465

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

Special Tools

- DT-47825 Control Solenoid Test Plate
- J 21867 Pressure Gage

Circuit/System Verification

1). Perform the Transmission Fluid Check on page 17-102 to verify correct fluid level and condition. The transmission fluid level should be within the crosshatch band and the transmission fluid should be red or dark brown.
If the transmission fluid is low or discolored, refer to Transmission Fluid Replacement on page 17-151.

2). Engine idling at operating temperature. Attempt to clean or free up a potential sticking valve with the scan tool Service Cleaning Procedure. Refer to Control Solenoid Valve and Transmission Control Module Assembly Cleaning on page 17-99 for further instructions.
3). Operate the vehicle in drive with the calculated throttle position greater than 8 percent and ensure TCC is commanded ON and OFF a minimum of 5 times. The DTCs should not set.
4). 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.

Circuit/System Testing

5). Ignition OFF, remove the line pressure test hole plug and install the J 21867 to the transmission.

6). Perform the Line Pressure Check on page 17-103. Verify the transmission line pressure gage is within the range specified in the Line PC Solenoid Valve Pressure table. Refer to Solenoid Valve Pressure on page 17-6.

If not within the specified range, repair as necessary. Refer to Fluid Pressure High or Low on page 17-129 for further diagnosis.

7). Ignition OFF, remove the control solenoid (w/body and TCM) valve assembly.

8). Install the DT-47825 to the control solenoid (w/body and TCM) valve assembly. Refer to Control Solenoid Valve and Transmission Control Module Assembly Solenoid Performance Test on page 17-100 for detailed instructions.

9). Perform the Control Solenoid Valve and Transmission Control Module Assembly Solenoid Performance Test on page 17-100. A pressure change should occur.

10).If a pressure change does not occur, replace the control solenoid (w/body and TCM) valve assembly.

11).Inspect for the following conditions and repair/replace as necessary:

- The control valve lower body assembly for sticking valves, damage, scored bores, or debris
- The 3-5-R clutch assembly for damage

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 Valve Lower Body and Upper Body Replacement on page 17-164
- Low and Reverse Clutch and 1-2-3-4 Clutch Plate Removal on page 17-193
- Control Module References on page 6-1 for control solenoid (w/body and TCM) valve assembly replacement, setup, and programming