

P0973 or P0974 Shift Solenoid (SS) 1 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 P0973: Shift Solenoid (SS) 1 Control Circuit Low Voltage

DTC P0974: Shift Solenoid (SS) 1 Control Circuit High Voltage

Circuit/System Description

The shift solenoid (SS) 1 is part of the control solenoid (w/body and TCM) valve assembly and is not serviced separately. The control solenoid (w/body and TCM) valve assembly supplies 12 volts to SS 1 on the high side driver 2 circuit. The control solenoid (w/body and TCM) valve assembly controls the normally closed SS 1 on the SS 1 control circuit. The SS 1 controls the transmission fluid to the Mode-2 valve. In the OFF position no oil is supplied to the clutch pressure control (PC) solenoid 3 or the transmission fluid pressure (TFP) switch 5, and the 4-5-6 clutch is fed by drive fluid. In the ON position, Reverse fluid is allowed to flow and is supplied to the 3-5-R clutch.

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

P0973

The control solenoid (w/body and TCM) valve assembly detects a short to ground on the SS 1 control circuit when the SS 1 is commanded OFF for 1.2 seconds in a 1.5 second sample.

P0974

The control solenoid (w/body and TCM) valve assembly detects high voltage (12 V) on the SS 1 control circuit when the SS 1 is commanded ON for 1.2 seconds in a 1.5 second sample.

Action Taken When the DTC Sets

P0973

- DTC P0973 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 torque converter clutch (TCC) engagement.
- The TCM commands maximum line pressure.
- The TCM freezes transmission adaptive functions.

P0974

- DTC P0974 is a Type B DTC.
- The TCM inhibits 1st gear.

Conditions for Clearing the DIC/DTC

- DTC P0973 is a Type A DTC.
- DTC P0974 is a Type B 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 2nd gear long enough to ensure at least a 3°C (5°F) rise in TCM temperature.
- 3). Place the gear selector in Reverse for 5 seconds and then idle vehicle for 5 seconds.
- 4). Verify the scan tool Shift Sol. 1 CKT Status parameter display 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.