

2010 Transmission

Automatic Transmission - 6T70/6T75 - Equinox & Terrain

DTC P0976 OR P0977

DIAGNOSTIC INSTRUCTIONS

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC DESCRIPTORS

DTC P0976

Shift Solenoid Valve 2 Control Circuit Low Voltage

DTC P0977

Shift Solenoid Valve 2 Control Circuit High Voltage

DIAGNOSTIC FAULT INFORMATION

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Shift Solenoid (SS) 2 Control	P0976	P0977	P0977	-

TYPICAL SCAN TOOL DATA

Shift Solenoid Valve 2 Control Circuit High Voltage Test Status

Circuit	Short to Ground	Open/High Resistance	Short to Voltage
Operating Conditions: Ignition ON Parameter Normal Range: OK			
Shift Solenoid 2 Control	-	-	Fault or Malfunction

Shift Solenoid Valve 2 Control Circuit Open Test Status

Circuit	Short to Ground	Open/High Resistance	Short to Voltage
Operating Conditions: Ignition ON Parameter Normal Range: OK			
Shift Solenoid 2 Control	-	Fault or Malfunction	-

Shift Solenoid Valve 2 Control Circuit Low Voltage Test Status

Circuit	Short to Ground	Open/High Resistance	Short to Voltage
Operating Conditions: Ignition ON Parameter Normal Range: OK			
Shift Solenoid 2 Control	Fault or Malfunction	-	-

CIRCUIT/SYSTEM DESCRIPTION

The shift solenoid (SS) 2 is part of the control solenoid valve assembly, which has no serviceable components. SS 2 is a normally closed (NC) ON/OFF solenoid and is controlled by the transmission control module (TCM) through a low side driver. When the SS 2 is energized, ON, SS 2 fluid pressure is directed to the clutch select valve 3, which allows the valve to overcome the spring pressure and move to the applied position. Power to the SS 2 is supplied by the TCM through a high side driver (HSD). The HSD protects the circuit and components from excessive current flow. If excessive current flow is detected, the HSD will turn OFF. When the fault is corrected, the HSD will reset.

CONDITIONS FOR RUNNING THE DTC

P0976

- The engine speed is 400 RPM or greater for 5 seconds.
- The ignition voltage is 8.6 volts or greater.
- DTC P0976 is not set.

P0977

- The engine speed is 400 RPM or greater for 5 seconds.
- The ignition voltage is 8.6 volts or greater.
- DTC P0977 is not set.

CONDITIONS FOR SETTING THE DTC

P0976

The TCM detects a short to ground on the SS 2 control circuit for 2 seconds.

P0977

The TCM detects an open or short to power on the SS 2 control circuit for 2 seconds.

ACTION TAKEN WHEN THE DTC SETS

P0976

- DTC P0976 is a Type B DTC.
- The TCM freezes transmission adaptive functions.

- The TCM commands maximum line pressure.

P0977

- DTC P0977 is a Type A DTC.
- The TCM limits the transmission to reverse and 5th gear operation.
- The TCM inhibits the torque converter clutch (TCC).
- The TCM commands maximum line pressure.
- The TCM freezes transmission adaptive functions.
- The TCM turns the HSD OFF.
- The TCM inhibits Tap Up/Down function.
- The TCM inhibits manual shifting of forward gears.

CONDITIONS FOR CLEARING THE DIC/DTC

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

REFERENCE INFORMATION

Connector End View Reference

- **Component Connector End Views**
- **Inline Harness Connector End Views**

Description and Operation

Transmission General Description

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions

Scan Tool Reference

Control Module References for scan tool information

Special Tools

DT-47825-20: Adapter Harness

For equivalent regional tools, refer to **Special Tools** .

CIRCUIT/SYSTEM VERIFICATION

1. Operate the vehicle in 3rd gear long enough to ensure at least a 3°C (5°F) rise in TCM temperature.
2. Place the gear selector in Reverse for 5 seconds and then idle the vehicle in Park for 5 seconds. Verify with a scan tool the following test status parameters display OK:
 - Shift Solenoid Valve 2 Control Circuit High Voltage Test Status
 - Shift Solenoid Valve 2 Control Circuit Open Test Status
 - Shift Solenoid Valve 2 Control Circuit Low Voltage Test Status
3. 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

NOTE: You must perform the Circuit/System Verification first.

1. Ignition OFF, remove the control solenoid valve assembly. Refer to **Control Solenoid Valve and Transmission Control Module Assembly Replacement** .
2. Perform the **Control Solenoid Valve and Transmission Control Module Assembly Inspection** .
3. Place the control solenoid valve assembly on a clean work surface near the transmission assembly.
4. Connect **DT-47825-20:** harness between the vehicle wire harness electrical connector, and the control solenoid valve assembly electrical connector.
5. Ignition ON, verify with a scan tool the following test status parameters display OK:
 - Shift Solenoid Valve 2 Control Circuit High Voltage Test Status
 - Shift Solenoid Valve 2 Control Circuit Open Test Status
 - Shift Solenoid Valve 2 Control Circuit Low Voltage Test Status
 - If any test status parameter displays Fault or Malfunction, replace the control solenoid valve assembly.

REPAIR PROCEDURES

NOTE:

- Perform the **Transmission Adaptive Values Learn** following all transmission related repairs.
- Before replacing the TCM, perform the **Control Solenoid Valve and Transmission Control Module Assembly Inspection** .

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

Control Module References for control solenoid valve assembly replacement, setup, and programming

DTC P0989 OR P0990

DIAGNOSTIC INSTRUCTIONS

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

DTC DESCRIPTORS

DTC P0989

Transmission Fluid Pressure Switch 5 Circuit Low Voltage

DTC P0990

Transmission Fluid Pressure Switch 5 Circuit High Voltage

DIAGNOSTIC FAULT INFORMATION

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
TFP Switch 1 Signal	P0842	P0843	P0843	-
TFP Switch 3 Signal	P0872	P0873	P0873	-
TFP Switch 4 Signal	P0877	P0878	P0878	-
TFP Switch 5 Signal	P0989	P0990	P0990	-

TYPICAL SCAN TOOL DATA

Transmission Fluid Pressure Switch 1

Circuit	Short to Ground	Open/High Resistance	Short to Voltage
Operating Conditions: Engine running, normal operating temperature Parameter Normal Range: 12 volts = High, 0 volts = Low			
Transmission Fluid Pressure Switch 1 Control	Low	High	High

Transmission Fluid Pressure Switch 3

		Open/High	
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Circuit	Short to Ground	Resistance	Short to Voltage
Operating Conditions: Engine running, normal operating temperature Parameter Normal Range: 12 volts = High, 0 volts = Low			
Transmission Fluid Pressure Switch 3 Control	Low	High	High

Transmission Fluid Pressure Switch 4

Circuit	Short to Ground	Open/High Resistance	Short to Voltage
Operating Conditions: Engine running, normal operating temperature Parameter Normal Range: 12 volts = High, 0 volts = Low			
Transmission Fluid Pressure Switch 4 Control	Low	High	High

Transmission Fluid Pressure Switch 5

Circuit	Short to Ground	Open/High Resistance	Short to Voltage
Operating Conditions: Engine running, normal operating temperature Parameter Normal Range: 12 volts = High, 0 volts = Low			
Transmission Fluid Pressure Switch 5 Control	Low	High	High

CIRCUIT/SYSTEM DESCRIPTION

The transmission fluid pressure (TFP) switch 5 is part of the control solenoid valve assembly which has no serviceable components. The transmission control module (TCM) supplies a signal circuit to the TFP switch 5. The TFP switch 5 has an internal case ground. TFP switch 5 is normally closed or LOW. When oil pressure is present at the TFP switch 5, the switch is open or HIGH. The normally high pressure control (PC) solenoid 3 controls pressure to the R1/4-5-6 clutch regular valve. The TCM monitors the TFP switch 5 signal circuit to determine the position of the R1/4-5-6 clutch regulator valve. When the low and reverse clutch and 4-5-6 clutch are commanded OFF, pressure is present on the TFP switch 5. When the low and reverse clutch or the 4-5-6 clutch is commanded ON, the R1/4-5-6 clutch regulator valve moves and pressure to the TFP switch 5 is exhausted through the R1/4-5-6 clutch regulator valve.

CONDITIONS FOR RUNNING THE DTC

DTC P0989 or P0990

- DTC P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0742, P0751, P0756, P0757, P0973, P0974, P0976, P0977, P1915, or P182E is not set.
- The engine speed is 400 RPM or greater for 5 seconds.
- The engine speed is 550 RPM or greater.
- Ignition voltage is 8.6 volts or greater.
- The transmission fluid temperature (TFT) is 0-120°C (32-248°F).

CONDITIONS FOR SETTING THE DTC

P0989

The TCM detects that the TFP switch 5 signal voltage remains LOW after the 4-5-6 clutch transitions from a HIGH pressure state to a LOW pressure state. The TCM counts each incident. The DTC sets when 18 counts are accumulated.

P0990

The TCM detects that the TFP switch 5 signal voltage remains HIGH after the 4-5-6 clutch transitions from a LOW pressure state to a HIGH pressure state. The TCM counts each incident. The DTC sets when 15 counts are accumulated.

ACTION TAKEN WHEN THE DTC SETS

- DTCs P0989 and P0990 are Type C DTCs.
- The TCM freezes transmission adaptive functions for the reverse and low clutch and the 4-5-6 clutch.

CONDITIONS FOR CLEARING THE DTC

DTCs P0989 and P0990 are Type C DTCs.

DIAGNOSTIC AIDS

A TFP switch may malfunction due to normal debris in the transmission fluid causing a TFP Switch DTC to intermittently set. This type of failure should not be immediately noticeable to a customer, as the switch outputs are used for shift adaptives and do not cause transmission symptoms unless the switch malfunctions continuously for an extended period of time.

REFERENCE INFORMATION

Schematic Reference

Automatic Transmission Controls Schematics

Description and Operation

- Transmission General Description
- Electronic Component Description for control solenoid valve assembly

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions

Scan Tool Reference

Control Module References for scan tool information

Special Tools

DT-47825-20: Adapter Harness

For equivalent regional tools, refer to **Special Tools** .

CIRCUIT/SYSTEM VERIFICATION

1. If there are any other transmission related DTCs set, diagnose those DTCs first. Refer to **Diagnostic Trouble Code (DTC) List - Vehicle** .
2. Engine idling in Park with parking brake applied, and drive wheels chocked.
3. Monitor the Transmission Pressure Switch 1, Transmission Pressure Switch 3, Transmission Pressure Switch 4, and Transmission Pressure Switch 5 parameters with a scan tool.
4. Place the gear select lever in Park, Reverse, and Neutral range. Verify the TFP Switch parameter states are correct for each range. Refer to **Transmission Fluid Pressure Switch Logic** .
5. Place the gear select lever in Drive range. Command the Shift Transmission with a scan tool through all forward ranges. Verify the TFP Switch parameter states are correct for each range. Refer to **Transmission Fluid Pressure Switch Logic** .
6. 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

NOTE: **You must perform the Circuit/System Verification first.**

1. Ignition OFF. Remove the control solenoid valve assembly. Refer to **Control Solenoid Valve and Transmission Control Module Assembly Replacement** .
2. Perform the **Control Solenoid Valve and Transmission Control Module Assembly Inspection** .
3. Place the control solenoid valve assembly on a clean work surface near the transmission assembly.
4. Connect **DT-47825-20:** harness between the vehicle wire harness electrical connector, and the control solenoid valve assembly electrical connector.
5. Ignition ON, verify with a scan tool that the Transmission Pressure Switch 1, Transmission Pressure Switch 3, Transmission Pressure Switch 4, and Transmission Pressure Switch 5 parameters change states when gently pushing on each TFP switch with the eraser end of a pencil.
 - If any TFP Switch parameter does not change states, replace the control solenoid valve assembly.

REPAIR PROCEDURES

- NOTE:**
- Perform the **Transmission Adaptive Values Learn** following all transmission related repairs.
 - Before replacing the TCM, perform the **Control Solenoid Valve and**

Transmission Control Module Assembly Inspection .

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

Control Module References for control solenoid valve assembly replacement, setup, or programming

DTC P1751

DIAGNOSTIC INSTRUCTIONS

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC DESCRIPTOR

DTC P1751

Shift Valve 1 Performance

CIRCUIT/SYSTEM DESCRIPTION

The shift solenoid (SS) 1 is part of the control solenoid valve assembly which has no serviceable components. SS 1 provides fluid pressure to control the operation of the clutch select valve 2, which is located in the control valve lower body assembly. SS 1, in conjunction with clutch select valve 2, controls the pressure path to the reverse and low clutch and 4-5-6 clutch. A diagnostic test is performed by the transmission control module (TCM) to determine the state of the clutch select valve 2. During this diagnostic test, the TCM commands the SS 1 ON, supplying pressure to move the clutch select valve 2 toward its spring. At the same time, line pressure is elevated slightly to assist the spring side pressure. If the spring is broken, or the clutch select valve 2 cannot move due to another mechanical condition, the DTC will set.

CONDITIONS FOR RUNNING THE DTC

- DTC P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E, P0716, P0717, P0722, P0723, P0741, P0742, P1751, P2763, or P2764 is not set.
- Current gear is not 2nd.
- The engine speed is greater than 400 RPM for greater than 5 seconds.
- The ignition voltage is 8.6 volts or greater.
- The transmission fluid temperature (TFT) is 20-130°C (68-266°F).
- The calc. throttle position is 8 percent or greater.
- The engine torque is greater than 80 N.m (59 lb ft).
- The transmission input speed is greater than 1,200 RPM.
- No upshift or downshift in process.

- The engine torque signal is valid.
- The throttle position signal is valid.
- The torque converter clutch (TCC) has transitioned from locked to unlocked.

CONDITIONS FOR SETTING THE DTC

The TCM detects attained gear slip is 100 RPM or greater for 1 second.

ACTION TAKEN WHEN THE DTC SETS

DTC P1751 is a Type B DTC.

CONDITIONS FOR CLEARING THE DTC

DTC P1751 is a Type B DTC.

DIAGNOSTIC AIDS

Before performing a road test, configure and setup the scan tool for snapshot mode. This will allow you to display, monitor, and verify multiple transmission data parameters at one time, after the road test.

REFERENCE INFORMATION

Description and Operation

Transmission General Description

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions

Scan Tool Reference

Control Module References for scan tool information

CIRCUIT/SYSTEM VERIFICATION

1. Engine idling in Park, with parking brake applied and drive wheels chocked.
2. Perform the **Transmission Fluid Level and Condition Check** to verify correct fluid level and condition.

NOTE: Perform a scan tool snapshot, during the road test.

3. Perform the **Road Test** . Verify the transmission operation performs as indicated in the road test instructions.
4. Review the scan tool snapshot transmission data parameters. Verify the engine and transmission data

parameters display the correct values in all forward gear ranges:

- Engine Speed
 - Transmission ISS
 - Transmission OSS
 - Shift Solenoid Valve 1
 - Gear Command
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.

CIRCUIT/SYSTEM TESTING

1. Perform the **Line Pressure Check** . Verify the transmission line pressure gauge is within the range specified in the Line PC Solenoid Valve Pressure table. Refer to **Solenoid Valve Pressure** .
 - If not within the specified ranges, refer to **Fluid Pressure High or Low** .
2. Ignition OFF, remove the control solenoid valve assembly. Refer to **Control Solenoid Valve and Transmission Control Module Assembly Replacement** .
3. Perform the **Control Solenoid Valve and Transmission Control Module Assembly Solenoid Performance Test** .
 - If the control solenoid valve assembly does not pass the performance test, replace the control solenoid valve assembly.
4. Listed in the chart below, are conditions for each component that could set DTC P1751. Carefully inspect each component for that condition. Repair or replace as necessary.

DTC	Component	Condition
P1751	Upper Control Valve Body Assembly (349)	Clutch select valve 2 - spring broken, debris, valve stuck, binding, damaged valve, or scored bore
P1751	Upper Control Valve Body Assembly (349)	#4 check ball for irregularities
P1751	Upper Spacer Plate	Orifice # 14 blocked, obstructed, or irregular shaped
P1751	Control Solenoid Valve Assembly (314)	• SS1 Stuck ON/OFF • Control signal fluid supply leak - valve body filter plate assembly cracked or damaged gasket seal

REPAIR PROCEDURES

NOTE: **Perform the Transmission Adaptive Values Learn following all transmission related repairs.**

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

Control Valve Upper Body Assembly Cleaning and Inspection

DTC P1761

DIAGNOSTIC INSTRUCTIONS

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC DESCRIPTOR

DTC P1761

Up and Down Shift Switch Signal Message Counter

CIRCUIT/SYSTEM DESCRIPTION

A signal circuit is provided by the body control module (BCM) to the resistor network embedded in the plus or minus buttons. When a plus or minus button is pressed, a corresponding voltage drop occurs across the resistor network. This voltage drop is monitored by the BCM. The BCM will send the request to the transmission control module (TCM) to perform the upshift or downshift. The TCM is constantly monitoring the serial data sent from the BCM for the correct number and sequence of counts for Tap Up and Tap Down function.

CONDITIONS FOR RUNNING THE DTC

- The TCM rolling counter diagnostic is enabled.
- The Tap Up and Tap Down message health is received from the BCM.
- The engine speed is 400 RPM or greater for 5 seconds.

CONDITIONS FOR SETTING THE DTC

The TCM detects an error in the rolling count value that does not match with the BCM count, 3 times within 10 seconds.

ACTION TAKEN WHEN THE DTC SETS

- DTC P1761 is a Type C DTC.
- The TCM inhibits Tap Up/Down function.
- The TCM inhibits manual shifting of forward gears.

CONDITIONS FOR CLEARING THE DTC

DTC P1761 is a Type C DTC.

REFERENCE INFORMATION

Schematic Reference

- **Automatic Transmission Controls Schematics**
- **Data Communication Schematics**
- **Body Control System Schematics**

Connector End View Reference

- **Component Connector End Views**
- **Inline Harness Connector End Views**

Description and Operation

Electronic Component Description

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions

Scan Tool Reference

Control Module References for scan tool information

CIRCUIT/SYSTEM VERIFICATION

1. DTC P1761 is an informational DTC. Diagnose all other body control module DTCs prior to DTC P1761. Refer to **Diagnostic Trouble Code (DTC) List - Vehicle** .
2. If there are no other body control DTCs, diagnosis is accomplished by looking for an intermittent CAN circuit fault. Refer to **Scan Tool Does Not Communicate with High Speed GMLAN Device** .
3. 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 PROCEDURES

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

Perform the **Transmission Adaptive Values Learn** following all transmission related repairs.

DTC P182E OR P1915

DIAGNOSTIC INSTRUCTIONS

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC DESCRIPTORS

DTC P182E

Internal Mode Switch Indicates Invalid Range

DTC P1915

Internal Mode Switch Does Not Indicate Park/Neutral During Start

DIAGNOSTIC FAULT INFORMATION

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Transmission Range Signal A	P182E	P1915	P1915	P182E, P1915
Transmission Range Signal B	P1915	P182E	P182E	P182E, P1915
Transmission Range Signal C	P1915	P182E	P182E	P182E, P1915
Transmission Range Signal P	P182E	P1915	P1915	P182E, P1915
Ground	-	P182E	P182E	P182E, P1915

TYPICAL SCAN TOOL DATA

Internal Mode Switch A/B/C/P

Circuit	Short to Ground	Open	Short to Voltage
Operating Conditions: Ignition ON, range selector in Park			
Parameter Normal Range: High/Low			
Transmission Range Switch Signal A	Low	High	High
Transmission Range Switch Signal B	Low	High	High
Transmission Range Switch Signal C	Low	High	High
Transmission Range Switch Signal P	Low	High	High

CIRCUIT/SYSTEM DESCRIPTION

The manual shift detent lever with shaft position switch assembly, or internal mode switch (IMS) assembly, is a sliding contact switch attached to the manual shift detent lever within the transmission. The 4 inputs to the

transmission control module (TCM), from the switch, indicate the position selected by the transmission manual shaft. The input voltage at the TCM is high when the switch is open and low when the switch is closed to ground. The state of each input is displayed on the scan tool as IMS A/B/C/P. The IMS input parameters represented are transmission range Signal A, Signal B, Signal C, and Signal P.

CONDITIONS FOR RUNNING THE DTC

P182E

- DTC P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E, P0722, or P0723 is not set.
- The engine speed is 400 RPM or greater for 5 seconds.
- The ignition voltage is 8.6 volts or greater.
- The engine torque signal is valid.

P1915

- DTC P0722, P0723, or P1915 is not set.
- The transmission output shaft speed is 90 RPM or less.
- The ignition voltage was 6.0 volts or greater, and has not dropped below 2.0 volts.

CONDITIONS FOR SETTING THE DTC

P182E

The IMS does not indicate a valid Park, Reverse, Neutral or Drive Range gear position for 7 seconds.

P1915

The manual shift shaft switch assembly does not indicate Park or Neutral during the following sequence:

- The engine speed is 50 RPM or less for 0.25 second or greater.
- The engine speed is 50-480 RPM for 0.07 second or greater.
- The engine speed is 525 RPM or greater and the transmission input speed is 200 RPM or greater for 1.25 seconds.

ACTION TAKEN WHEN THE DTC SETS

- DTCs P182E and P1915 are Type A DTCs.
- The TCM commands maximum line pressure.
- The TCM forces the torque converter clutch (TCC) OFF.
- The TCM turns all the solenoids OFF.
- The TCM freezes transmission adaptive functions.

- The TCM limits the transmission to reverse and 5th gear operation.
- The TCM turns the high side driver (HSD) OFF.
- The TCM inhibits Tap Up/Down function.
- The TCM inhibits manual shifting of forward gears.

CONDITIONS FOR CLEARING THE DTC

DTCs P182E and P1915 are Type A DTCs.

REFERENCE INFORMATION

Schematic Reference

Automatic Transmission Controls Schematics

Connector End View Reference

- **Component Connector End Views**
- **Inline Harness Connector End Views**

Description and Operation

- **Transmission General Description**
- **Electronic Component Description** for manual shift detent lever with shaft position switch assembly

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions

Scan Tool Reference

Control Module References for scan tool information

Special Tools

DT-47825-20: Adapter Harness

For equivalent regional tools, refer to **Special Tools** .

CIRCUIT/SYSTEM VERIFICATION

1. Perform the **Range Selector Lever Cable Adjustment** procedure to verify proper adjustment.
2. Ignition ON, engine OFF, observe the scan tool TCM Internal Mode Switch A/B/C/P parameter while moving the gear shift lever from Park, to Reverse and through all the ranges. The parameter should match each gear range that is selected. Refer to **Transmission Internal Mode Switch Logic** .
3. Observe the scan tool engine control module (ECM) Park/Neutral Position Switch parameter while moving the gear shift lever from Park, to Reverse, Neutral and through all the ranges. The parameter should display Park/Neutral in the Park and Neutral positions, and In Gear in all other positions.
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

NOTE: **You must perform Circuit/System Verification first.**

1. Ignition OFF, disconnect the 20-way harness connector at the transmission.

NOTE: **Under certain driving conditions, DTC P182E could set due to an intermittent low voltage fault on the P/N signal circuit, before conditions for setting DTC P0851 are met.**

2. Ignition ON, verify the scan tool ECM Park/Neutral Position Switch parameter displays In Gear.
 - o If not the specified value, test the Park/Neutral signal circuit for a short to ground. If the circuit tests normal, replace the engine control module (ECM).
3. Ignition OFF, install the **DT-47825-20:** harness to the 20 way harness connector on the vehicle harness.
4. Ignition ON, connect a 3-amp fused jumper wire between the Park/Neutral signal circuit terminal 3 and ground. Verify the scan tool ECM Park/Neutral Position Switch parameter displays Park/Neutral.
 - o If not the specified value, test the Park/Neutral signal circuit for an open/high resistance. If the circuit tests normal, replace the ECM.
5. Ignition OFF, disconnect the **DT-47825-20:** harness from the vehicle harness connector.
6. Remove the control valve body cover. Refer to **Control Valve Body Cover Replacement** .
7. Connect the vehicle harness connector to the control solenoid valve assembly.
8. Disconnect the IMS connector X2 at the control solenoid valve assembly.
9. Ignition ON, verify the scan tool Internal Mode Switch A/B/C/P parameter displays High for all 4 signal circuits and verify the scan tool ECM Park/Neutral Position Switch parameter displays In Gear.
 - o If not the specified value, replace the control solenoid valve assembly. Refer to **Control Solenoid Valve and Transmission Control Module Assembly Replacement** .
10. Connect a 3-amp fused jumper wire between each transmission range signal circuit or park/neutral circuit terminal listed below and the IMS ground circuit, terminal A on the TCM assembly. The corresponding scan tool TCM Internal Mode Switch A/B/C/P parameter should display Low and the ECM Park/Neutral parameter should display Park/Neutral when the terminal is connected to the IMS ground.

- Switch Signal A terminal E
- Switch Signal B terminal D
- Switch Signal C terminal C
- Switch Signal P terminal B
- Park/Neutral Signal terminal F
- If not the specified value, replace the control solenoid valve assembly.

11. If all circuits test normal, replace the IMS.

REPAIR PROCEDURES

NOTE:

- Perform the Transmission Adaptive Values Learn following all transmission related repairs.
- Perform the Control Solenoid Valve and Transmission Control Module Assembly Inspection before replacing the TCM.

Perform the Diagnostic Repair Verification after completing the diagnostic procedure.

- Manual Shift Detent Lever with Shaft Position Switch Assembly Replacement
- Range Selector Lever Cable Adjustment
- Control Module References for ECM or control solenoid valve assembly replacement, setup, and programming

DTC P1876

DIAGNOSTIC INSTRUCTIONS

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

DTC DESCRIPTOR

DTC P1876

Up and Down Shift Enable Switch Circuit Low Voltage

CIRCUIT/SYSTEM DESCRIPTION

The TAP Shift system allows the driver to manually shift gears by using the TAP shift switches located on the automatic transmission shifter. Pushing the Up switch will command an upshift and pushing the Down switch will command a downshift. The TAP shift system is activated when the gear selector is in the L (M) position and is deactivated in all other positions.

If the transmission control module (TCM) detects TAP enable switch Active and the IMS switch does not indicate L (M), DTC P1876 sets. DTC P1876 is a type C DTC.

CONDITIONS FOR RUNNING THE DTC

- No TAP system DTCs P0815, P0816, or P0826.
- No IMS DTCs P1825 or P1915.
- No Communication DTC U0100.
- The engine speed is greater than 500 RPM for 5 seconds.
- The ignition voltage is between 8.6 volts and 19.0 volts.

CONDITIONS FOR SETTING THE DTC

The Tap Up/Tap Down switch signal is Active when the IMS does not indicate L (M) for 2 seconds or greater 3 times during the same ignition cycle.

ACTION TAKEN WHEN THE DTC SETS

- DTC P1876 is a Type C DTC.
- The TCM disables Tap shift functions.

CONDITIONS FOR CLEARING THE DIC/DTC

DTC P1876 is a Type C DTC.

REFERENCE INFORMATION

Schematic Reference

Automatic Transmission Controls Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

- **Transmission General Description**
- **Electronic Component Description**

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**

- **Wiring Repairs**

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions

Scan Tool Reference

Control Module References for scan tool information

CIRCUIT/SYSTEM VERIFICATION

1. Verify there are no IMS DTCs set.
 - If IMS DTCs are set, diagnose them first.
2. Ignition ON, transmission in Park, observe the scan tool Driver Shift Control parameter. The reading should display Inactive.
3. 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

1. Ignition OFF, disconnect the harness connector at the transmission shift lever.
2. Ignition ON, verify that a test lamp illuminates between the ignition circuit terminal A and ground.
 - If the test lamp does not illuminate, test the IGN circuit for a short to ground or an open/high resistance. If the circuit tests normal, replace the BCM.
3. Verify the scan tool Driver Shift Request parameter indicates Invalid.
 - If not the specified value, replace the BCM.
4. Ignition OFF, test for 300-600 ohms between the signal circuit terminal B and ground.
 - If less than the specified range, test the signal circuit for a short to ground. If the circuit tests normal, replace the BCM.
 - If greater than the specified range, test the signal circuit for an open/high resistance. If the circuit tests normal, replace the BCM.
5. If all circuits test normal, test or replace the transmission shift lever.

COMPONENT TESTING

1. Ignition OFF, disconnect the harness connector at the transmission control.
2. Test for 6.74-6.94 k ohms between terminals A and B.
 - If not within the specified range, replace the transmission control.
3. Test for 1.77-1.97 k ohms between terminals A and B while pressing the upshift button.
 - If not within the specified range, replace the transmission control
4. Test for 3.87-4.07 k ohms between terminals A and B while pressing the downshift button.

- If not within the specified range, replace the transmission control.

REPAIR PROCEDURES

NOTE:

- Perform the Transmission Adaptive Values Learn following all transmission related repairs.
- Before replacing the TCM, perform the Control Solenoid Valve and Transmission Control Module Assembly Inspection .

Perform the Diagnostic Repair Verification after completing the diagnostic procedure.

- Transmission Control Replacement for AT TAP shift switch replacement.
- Control Module References for body control module (BCM) or control solenoid valve assembly replacement, setup, and programming

DTC P2714 OR P2715

DIAGNOSTIC INSTRUCTIONS

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

DTC DESCRIPTORS

DTC P2714

Clutch Pressure Control Solenoid Valve 4 Stuck Off

DTC P2715

Clutch Pressure Control Solenoid Valve 4 Stuck On

CIRCUIT/SYSTEM DESCRIPTION

The clutch pressure control (PC) solenoid 4 is part of the control solenoid valve assembly which has no serviceable components. The PC solenoid 4 regulates transmission fluid pressure to the 2-6 clutch regulator valve which controls pressure to the 2-6 clutch. The transmission control module (TCM) calculates gear ratio based on the RPM signals from the 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

P2714

- DTC P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E, P0716, P0717, P0722, P0723, or P182E is not set.
- The ignition voltage is 8.6 volts or greater.
- The output speed is 16 RPM or greater, or the throttle position is 0.4 percent or greater.
- The throttle position signal is valid.
- The engine speed is greater than 400 RPM for 5 seconds.
- The transmission fluid temperature is 0°C (32°F) or greater.
- 2-6 clutch is commanded ON.
- The high side driver (HSD) is enabled.

P2715

- DTC P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E, P0716, P0717, P0722, P0723, or P182E is not set.
- The ignition voltage is 8.6 volts or greater.
- The HSD is enabled.
- The transmission fluid temperature is 0°C (32°F) or greater.
- The transmission output shaft speed is 350 RPM or greater.
- The transmission input shaft speed is 200 RPM or greater.
- The 2-6 clutch is commanded OFF.
- The commanded and attained gear is not 1st.

CONDITIONS FOR SETTING THE DTC

P2714

The TCM detects an incorrect on-coming clutch gear ratio, or flare, when the 2-6 clutch is commanded ON and the transmission input shaft speed is 200 RPM or greater from the anticipated input shaft speed for 2 seconds, a total of 3 times in second gear, or a total of 3 times in sixth gear.

P2715

The TCM detects an incorrect off-going clutch gear ratio, or tie-up, when the 2-6 clutch is commanded OFF and the transmission input shaft speed is 40 RPM or less from the anticipated input shaft speed for 1.2 seconds, a total of 3 times from second gear or a total of 3 times from sixth gear.

ACTION TAKEN WHEN THE DTC SETS

P2714

- DTC P2714 is a Type A DTC.

- The TCM commands maximum line pressure.
- The TCM inhibits Tap Up/Down function.
- The TCM inhibits manual shifting of forward gears.
- The TCM freezes transmission adaptive functions.
- The TCM limits the transmission to first, third, or reverse operation.

P2715

- DTC P2715 is a Type A DTC.
- The TCM commands maximum line pressure.
- The TCM inhibits Tap Up/Down function.
- The TCM inhibits manual shifting of forward gears.
- The TCM freezes transmission adaptive functions.
- The TCM limits the transmission to reverse and second gear operation.

CONDITIONS FOR CLEARING THE DIC/DTC

DTCs P2714 and P2715 are Type A DTCs.

DIAGNOSTIC AIDS

Before performing a road test, configure and setup the scan tool for snapshot mode. This will allow you to display, monitor, and verify multiple transmission data parameters at one time, after the road test.

REFERENCE INFORMATION

Connector End View Reference

- **Component Connector End Views**
- **Inline Harness Connector End Views**

Description and Operation

Transmission General Description

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions

Scan Tool Reference

Control Module References for scan tool information

CIRCUIT/SYSTEM VERIFICATION

NOTE: **If other DTCs are set, diagnose those DTCs first.**

1. Engine idling in Park, with parking brake applied and drive wheels chocked.
2. Perform the **Transmission Fluid Level and Condition Check** to verify correct fluid level and condition.
3. Monitor the Transmission Fluid Pressure Switch 3 parameter with a scan tool. Place the gear select lever in Park, Reverse, and Neutral range. Verify the Transmission Fluid Pressure Switch 3 parameter states are correct for Park, Reverse, and Neutral. Refer to **Transmission Fluid Pressure Switch Logic** .
4. Place the gear select lever in Drive range. Command the shift transmission with a scan tool through all forward ranges. Verify the Transmission Fluid Pressure Switch 3 parameter states are correct for all forward ranges. Refer to **Transmission Fluid Pressure Switch Logic** .
5. Engine idling in Park, verify with a scan tool the Transmission ISS/OSS Supply Voltage parameter displays OK.
6. Engine idling in Park. Observe the Transmission ISS parameter on the scan tool, while varying the engine speed. The Transmission ISS parameter should vary with engine speed and not drop out.
7. Operate the vehicle at 16-32 km/h (10-20 mph) while observing the Transmission OSS parameter on the scan tool. The Transmission OSS parameter should vary with the vehicle speed and not drop out.

NOTE: **Perform a scan tool snapshot during the road test.**

8. Perform the **Road Test** . Verify the transmission operation performs as indicated in the road test instructions.
9. Review the scan tool snapshot data. Verify the following transmission data parameters display the correct values for each gear range.
 - Transmission ISS
 - Transmission OSS
 - Pressure Control Solenoid Valve 4 Pressure Command
 - Transmission Fluid Pressure Switch 3
10. 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

1. Perform the **Line Pressure Check** . Verify the transmission line pressures are within the ranges specified in the Line PC Solenoid Valve Pressure table. Refer to **Solenoid Valve Pressure** .

- If not within the specified ranges, refer to **Fluid Pressure High or Low**.
- 2. Ignition OFF, remove the control solenoid valve assembly. Refer to **Control Solenoid Valve and Transmission Control Module Assembly Replacement**.
- 3. Perform the **Control Solenoid Valve and Transmission Control Module Assembly Solenoid Performance Test**. A pressure change should occur for each solenoid valve.
 - If the control solenoid valve assembly does not pass the performance test, replace the control solenoid valve assembly.
- 4. Listed in the table below, are conditions for each component that could set DTC P2714 or P2715. Carefully inspect each component for that condition. Repair or replace as necessary.

DTCs	Component	Condition
P2714 P2715	Control Valve Upper Body Assembly (349)	2-6 clutch regulator valve (334) and (333) stuck/sticking - debris, binding, damaged valve, or scored bore
P2714	Lower Control Valve Body Assembly (374)	Actuator feed limit circuit supply fluid to solenoid restricted or not available - debris or sediment blockage
P2714 P2715	Control Solenoid Valve Assembly (314)	• Clutch pressure control solenoid 4 stuck ON or stuck OFF • Control signal fluid supply leak - valve body filter plate assembly cracked or damaged gasket seal • Clutch pressure control solenoid 2 stuck OFF
P2714 P2715	A/Trans Case Cover (403)	• 2-6 clutch return spring retaining ring (407) not seated in groove • 2-6 clutch piston assembly (405) - seal damaged or leaking • 2-6 clutch plates (446-447) worn or damaged
P2714	1-2-3-4 Clutch Plate Assembly (51)	• 2-6 clutch return spring retaining ring (407) not seated in groove • 2-6 clutch piston assembly (405) - seal damaged or leaking • 2-6 clutch plates (446-447) worn or damaged • 1-2-3-4 clutch backing plate retaining ring (429) not seated/oriented correctly • 1-2-3-4 clutch piston (414) - seals damaged or leaking • 1-2-3-4 clutch piston (414) - cracked or damaged
P2714	A/Trans Fluid Pump Assembly (203)	• Fluid pump housing/vanes/rotor/slide damaged/scored

		• A/Trans pump fluid outlet seal assembly (57) damaged/leaking
P2714	A/Trans Fluid Filter Assembly (201)	Oil filter (201) or filter seal (202) loose or damaged

REPAIR PROCEDURES

NOTE:

- Perform the **Transmission Adaptive Values Learn** following all transmission related repairs.
- Before replacing the TCM, perform the **Control Solenoid Valve and Transmission Control Module Assembly Inspection** .

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Control Valve Lower Body and Upper Body Replacement**
- **Low and Reverse Clutch and 1-2-3-4 Clutch Plate Removal**
- **Control Module References** for control solenoid valve assembly replacement, setup, and programming

DTC P2719-P2721

DIAGNOSTIC INSTRUCTIONS

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC DESCRIPTORS

DTC P2719

Pressure Control Solenoid Valve 4 Performance

DTC P2720

Pressure Control Solenoid Valve 4 Control Circuit Low Voltage

DTC P2721

Pressure Control Solenoid Valve 4 Control Circuit High Voltage

DIAGNOSTIC FAULT INFORMATION

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance

Clutch PC Solenoid 4 Control	P2720	P2721	P2721	P2719
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TYPICAL SCAN TOOL DATA

Pressure Control Solenoid Valve 4 Performance Test Status

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Operating Conditions: Ignition ON Parameter Normal Range: OK				
Pressure Control Solenoid Valve 4 Control	-	-	-	Fault or Malfunction

Pressure Control Solenoid Valve 4 Control Circuit Low Voltage Test Status

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Operating Conditions: Ignition ON Parameter Normal Range: OK				
Pressure Control Solenoid Valve 4 Control	Fault or Malfunction	-	-	-

Pressure Control Solenoid Valve 4 Control Circuit High Voltage Test Status

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Operating Conditions: Ignition ON Parameter Normal Range: OK				
Pressure Control Solenoid Valve 4 Control	-	Fault or Malfunction	Fault or Malfunction	-

CIRCUIT/SYSTEM DESCRIPTION

The clutch pressure control (PC) solenoid 4 is part of the control solenoid valve assembly which has no serviceable components. The normally low PC solenoid 4 regulates and directs oil pressure to the 2-6 clutch regulator valve. Increasing PC solenoid 4 pressure increases pressure to the 2-6 clutch regulator valve. The transmission control module (TCM) varies the current to the PC solenoid 4 through a low side driver. Increasing the current to PC solenoid 4 increases oil pressure by closing OFF the solenoid exhaust port. Decreasing the current to PC solenoid 4 decreases oil pressure by opening the exhaust port. PC solenoid 4 power is supplied by the TCM through a high side driver (HSD). The HSD protects the circuit and components from excessive current flow. If excessive current flow is detected, the HSD will turn OFF. When the fault is corrected the HSD will reset.

CONDITIONS FOR RUNNING THE DTC

P2719

- The engine speed is 400 RPM or greater for 5 seconds.

- The ignition voltage is 8.6 volts or greater.
- DTC P2719 is not set.

P2720

- The engine speed is 400 RPM or greater for 5 seconds.
- The ignition voltage is 8.6 volts or greater.
- DTC P2720 is not set.

P2721

- The engine speed is 400 RPM or greater for 5 seconds.
- The ignition voltage is 8.6 volts or greater.
- DTC P2721 is not set.

CONDITIONS FOR SETTING THE DTC

P2719

The TCM detects an internal electrical malfunction on the clutch PC solenoid 4 control circuit where the measured PC solenoid 4 current does not equal the commanded clutch PC solenoid 4 current for 5 seconds.

P2720

The TCM detects a short to ground on the clutch PC solenoid 4 control circuit for 1 second.

P2721

The TCM detects an open or short to voltage on the clutch PC solenoid 4 control circuit for 1 second.

ACTION TAKEN WHEN THE DTC SETS

P2719

- DTC P2719 is a Type C DTC.
- The TCM freezes transmission adaptive functions on the 2-6 clutch.

P2720

- DTC P2720 is a Type A DTC.
- The TCM commands maximum line pressure.
- The TCM freezes transmission adaptive functions.
- The TCM inhibits Tap Up/Down function.
- The TCM inhibits manual shifting of forward gears.

- The TCM limits the transmission to reverse and 2nd gear operation.

P2721

- DTC P2721 is a Type A DTC.
- The TCM commands maximum line pressure.
- The TCM freezes transmission adaptive functions.
- The TCM inhibits Tap Up/Down function.
- The TCM inhibits manual shifting of forward gears.
- The TCM limits the transmission to reverse, 1st, and 3rd gear operation.

CONDITIONS FOR CLEARING THE DTC

- DTC P2719 is a Type C DTC.
- DTCs P2720 and P2721 are Type A DTCs.

REFERENCE INFORMATION

Connector End View Reference

- **Component Connector End Views**
- **Inline Harness Connector End Views**

Description and Operation

Transmission General Description

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions

Scan Tool Reference

Control Module References for scan tool information

Special Tools

DT-47825-20: Adapter Harness

For equivalent regional tools, refer to **Special Tools** .

CIRCUIT/SYSTEM VERIFICATION

1. Operate the vehicle in second gear long enough to ensure at least a 3°C (5°F) rise in TCM temperature, then operate the vehicle in Park for 5 seconds.
2. Operate the vehicle in drive range. Allow the transmission to shift through all forward gear ranges. Verify with a scan tool the following test status parameters display OK:
 - Pressure Control Solenoid Valve 4 Performance Test Status
 - Pressure Control Solenoid Valve 4 Control Circuit High Voltage Test Status
 - Pressure Control Solenoid Valve 4 Control Circuit Low Voltage Test Status
3. 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

NOTE: **You must perform the Circuit/System Verification first.**

1. Ignition OFF, remove the control solenoid valve assembly. Refer to **Control Solenoid Valve and Transmission Control Module Assembly Replacement** .
2. Perform the **Control Solenoid Valve and Transmission Control Module Assembly Inspection** .
3. Place the control solenoid valve assembly on a clean work surface near the transmission assembly.
4. Connect **DT-47825-20:** harness between the vehicle wire harness electrical connector, and the control solenoid valve assembly electrical connector.
5. Ignition ON, verify with a scan tool the following test status parameters display OK:
 - Pressure Control Solenoid Valve 4 Performance Test Status
 - Pressure Control Solenoid Valve 4 Control Circuit High Voltage Test Status
 - Pressure Control Solenoid Valve 4 Control Circuit Low Voltage Test Status
 - If any test status parameter displays Fault or Malfunction, replace the control solenoid valve assembly.

REPAIR PROCEDURES

NOTE:

- Perform the **Transmission Adaptive Values Learn** following all transmission related repairs.
- Before replacing the TCM, perform the **Control Solenoid Valve and Transmission Control Module Assembly Inspection** .

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

Control Module References for control solenoid valve assembly replacement, setup, and programming

DTC P2723 OR P2724

DIAGNOSTIC INSTRUCTIONS

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC DESCRIPTORS

DTC P2723

Pressure Control Solenoid Valve 5 Stuck Off

DTC P2724

Pressure Control Solenoid Valve 5 Stuck On

CIRCUIT/SYSTEM DESCRIPTION

The clutch pressure control (PC) solenoid 5 is part of the control solenoid valve assembly which has no serviceable components. The clutch PC solenoid 5 regulates the transmission fluid pressure (TFP) to the 1-2-3-4 clutch regulator valve, which controls pressure to the 1-2-3-4 clutch. The transmission control module (TCM) calculates gear ratio based on the RPM signals from the 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

P2723

- DTC P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E, P0716, P0717, P0722, P0723, or P182E is not set.
- The ignition voltage is 8.6 volts or greater.
- The high side driver (HSD) is enabled.
- The output speed is 16 RPM or greater, or the throttle position is 0.4 percent or greater.
- The throttle position signal is valid.
- The engine speed is greater than 400 RPM for 5 seconds.
- The transmission fluid temperature (TFT) is 0°C (32°F) or greater.

P2724

- DTC P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E, P0716, P0717, P0722, P0723, or P182E is not set.
- The ignition voltage is 8.6 volts or greater.
- The HSD is enabled.
- The TFT is 0°C (32°F) or greater.
- The transmission output shaft speed is 350 RPM or greater.
- The transmission input speed is 200 RPM or greater.

CONDITIONS FOR SETTING THE DTC

P2723

The TCM detects an incorrect on-coming clutch gear ratio, or flare, when the 1-2-3-4 clutch is commanded ON and the transmission input speed is 200 RPM or greater from the anticipated input shaft speed for 3.5 seconds, a total of 2 times in any one range that the 1-2-3-4 clutch is commanded ON.

P2724

The TCM detects an incorrect off-going clutch gear ratio, or tie-up, when the 1-2-3-4 clutch is commanded OFF and the transmission input speed is 40 RPM or less from the anticipated input shaft speed for 1.2 seconds, a total of 5 times.

ACTION TAKEN WHEN THE DTC SETS

P2723

- DTC P2723 is a Type A DTC.
- The TCM freezes transmission adaptive functions.
- The TCM commands maximum line pressure.
- The TCM inhibits Tap Up/Down function.
- The TCM inhibits manual shifting of forward gears.
- The TCM limits the transmission to reverse and fifth gear operation.

P2724

- DTC P2724 is a Type A DTC.
- The TCM freezes transmission adaptive functions.
- The TCM commands maximum line pressure.
- The TCM inhibits Tap Up/Down function.
- The TCM inhibits manual shifting of forward gears.
- The TCM limits the transmission to reverse, first, or third gear operation.

CONDITIONS FOR CLEARING THE DIC/DTC

DTCs P2723 and P2724 are Type A DTCs.

DIAGNOSTIC AIDS

Before performing a road test, configure and setup the scan tool for snapshot mode. This will allow you to display, monitor, and verify multiple transmission data parameters at one time, after the road test.

REFERENCE INFORMATION

Connector End View Reference

- Component Connector End Views
- Inline Harness Connector End Views

Description and Operation

Transmission General Description

Electrical Information Reference

- Circuit Testing
- Connector Repairs
- Testing for Intermittent Conditions and Poor Connections
- Wiring Repairs

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions

Scan Tool Reference

Control Module References for scan tool information

CIRCUIT/SYSTEM VERIFICATION

NOTE: If other DTCs are set, diagnose those DTCs first.

1. Engine idling in Park, with parking brake applied and drive wheels chocked.
2. Perform the Transmission Fluid Level and Condition Check to verify correct fluid level and condition.
3. Monitor the Transmission Fluid Pressure Switch 4 parameter with a scan tool. Place the gear select lever in Park, Reverse, and Neutral range. Verify the Transmission Fluid Pressure Switch 4 parameter states are correct for Park, Reverse, and Neutral. Refer to Transmission Fluid Pressure Switch Logic.
4. Place the gear select lever in Drive range. Command the shift transmission with a scan tool through all

forward ranges. Verify the Transmission Fluid Pressure Switch 4 parameter states are correct for all forward ranges. Refer to **Transmission Fluid Pressure Switch Logic** .

5. Engine idling in Park, verify with a scan tool the Transmission ISS/OSS Supply Voltage parameter displays OK.
6. Engine idling in Park. Observe the Transmission ISS parameter on the scan tool, while varying the engine speed. The Transmission ISS parameter should vary with engine speed and not drop out.
7. Operate the vehicle at 16-32 km/h (10-20 mph) while observing the Transmission OSS parameter on the scan tool. The Transmission OSS parameter should vary with the vehicle speed and not drop out.

NOTE: **Perform a scan tool snapshot during the road test.**

8. Perform the **Road Test** . Verify the transmission operation performs as indicated in the road test instructions
9. Review the scan tool snapshot data. Verify the following transmission data parameters display the correct values for each gear range.
 - Transmission ISS
 - Transmission OSS
 - Pressure Control Solenoid 5 Pressure Command
 - Transmission Fluid Pressure Switch 4
10. 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

1. Perform the **Line Pressure Check** . Verify the transmission line pressures are within the range specified in the Line PC Solenoid Valve Pressure table. Refer to **Solenoid Valve Pressure** .
 - If not within the specified ranges, refer to **Fluid Pressure High or Low** .
2. Ignition OFF, remove the control solenoid valve assembly. Refer to **Control Solenoid Valve and Transmission Control Module Assembly Replacement** .
3. Perform the **Control Solenoid Valve and Transmission Control Module Assembly Solenoid Performance Test** . A pressure change should occur for each solenoid valve.
 - If the control solenoid valve assembly does not pass the performance test, replace the control solenoid valve assembly.
4. Listed in the table below, are conditions for each component that could set DTC P2714 or P2715. Carefully inspect each component for that condition. Repair or replace as necessary.

DTCs	Component	Condition
P2723	Control Valve Upper Body Assembly (349)	Manual shift detent (w/shaft position switch) lever assembly not engaged with manual shaft
P2723	Control Valve Upper Body Assembly (349)	Clutch select valve 3 (345) stuck OFF - debris, binding, damaged valve, or scored bore
		• Actuator feed limit circuit supply fluid to

P2723 P2724	Lower Control Valve Body Assembly (374)	solenoid restricted or not available - debris or sediment blockage • 1-2-3-4 clutch boost valve (369) - binding or scored bore - can cause harsh shifts • 1-2-3-4 clutch regulator valve (372) stuck/sticking - debris, binding, damaged valve, or scored bore
P2723 P2724	Control Solenoid Valve Assembly (314)	• Clutch pressure control solenoid 5 stuck ON or stuck OFF • Clutch pressure control solenoid 2 stuck OFF - P2724 • Control solenoid filter plate assembly blocked, or damaged gasket seal
P2723	1-2-3-4 Clutch Assembly (51)	1-2-3-4 clutch piston (414) cracked/damaged/leaking
P2723	1-2-3-4 Clutch Assembly (51)	1-2-3-4 clutch backing plate retaining ring (429) not seated/oriented, causing clutch pack/piston overtravel
P2723	Low and Reverse Clutch Assembly (OWC)	• OWC (455) will not hold torque • OWC (455) friction plate support face cracked/damaged
P2723	A/Trans Case (51)	1-2-3-4 clutch fluid passage seal (65) damaged/leaking
P2723	• A/Trans Fluid Pump (203) • Torque Converter Assembly (27)	• Fluid pump housing vanes/rotor/slide damaged/scored • A/Trans pump fluid outlet seal assembly (57) damaged/leaking • Fluid pump or torque converter overstressed due to high temperatures
P2723	A/Trans Fluid Filter Assembly (201)	Oil filter (201) or filter seal (202) loose or damaged
P2723	Reaction Sun Gear Assembly (466)	• Reaction sun gear broke away from shell • Input sun gear missing or broken

REPAIR PROCEDURES

NOTE:

- Perform the Transmission Adaptive Values Learn following all transmission related repairs.
- Before replacing the TCM, perform the Control Solenoid Valve and Transmission Control Module Assembly Inspection .

Perform the Diagnostic Repair Verification after completing the diagnostic procedure.

- **Control Valve Lower Body and Upper Body Replacement**
- **Low and Reverse Clutch and 1-2-3-4 Clutch Plate Removal**
- **Control Module References** for control solenoid valve assembly replacement, setup, and programming

DTC P2728-P2730

DIAGNOSTIC INSTRUCTIONS

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC DESCRIPTORS

DTC P2728

Pressure Control Solenoid Valve 5 Performance

DTC P2729

Pressure Control Solenoid Valve 5 Control Circuit Low Voltage

DTC P2730

Pressure Control Solenoid Valve 5 Control Circuit High Voltage

DIAGNOSTIC FAULT INFORMATION

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Clutch PC Solenoid 5 Control	P2729	P2730	P2730	P2728

TYPICAL SCAN TOOL DATA

Pressure Control Solenoid Valve 5 Performance Test Status

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Operating Conditions: Ignition ON Parameter Normal Range: OK				
Pressure Control Solenoid Valve 5 Control	-	-	-	Fault or Malfunction

Pressure Control Solenoid Valve 5 Control Circuit Low Voltage Test Status

	Short to	Open/High	Short to	Signal
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Circuit	Ground	Resistance	Voltage	Performance
Operating Conditions: Ignition ON Parameter Normal Range: OK				
Pressure Control Solenoid Valve 5 Control	Fault or Malfunction	-	-	-

Pressure Control Solenoid Valve 5 Control Circuit High Voltage Test Status

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Operating Conditions: Ignition ON Parameter Normal Range: OK				
Pressure Control Solenoid Valve 5 Control	-	Fault or Malfunction	Fault or Malfunction	-

CIRCUIT/SYSTEM DESCRIPTION

The clutch pressure control (PC) solenoid 5 is part of the control solenoid valve assembly which has no serviceable components. The normally low PC solenoid 5 regulates and directs oil pressure to the 1-2-3-4 clutch regulator valve and 1-2-3-4 clutch boost valve. Increasing PC solenoid 5 pressure increases pressure to the 1-2-3-4 clutch. The transmission control module (TCM) varies the current to the PC solenoid 5 through a low side driver. Increasing the current to PC solenoid 5 increases oil pressure by closing OFF the solenoid exhaust port. Decreasing the current to PC solenoid 5 decreases oil pressure by opening the exhaust port. PC solenoid 5 power is supplied by the TCM through a high side driver (HSD). The HSD protects the circuit and components from excessive current flow. If excessive current flow is detected, the HSD will turn OFF. When the fault is corrected, the HSD will reset.

CONDITIONS FOR RUNNING THE DTC

P2728

- DTC P2728 is not set.
- The engine speed is 400 RPM or greater for 5 seconds.
- The ignition voltage is 8.6 volts or greater.

P2729

- DTC P2729 is not set.
- The engine speed is 400 RPM or greater for 5 seconds.
- The ignition voltage is 8.6 volts or greater.

P2730

- DTC P2730 is not set.
- The engine speed is 400 RPM or greater for 5 seconds.
- The ignition voltage is 8.6 volts or greater.

CONDITIONS FOR SETTING THE DTC

P2728

The TCM detects an internal electrical performance malfunction of the clutch PC solenoid 5 control circuit where the measured clutch PC solenoid 5 current does not equal the commanded clutch PC solenoid 5 current for 5 seconds.

P2729

The TCM detects a short to ground on the clutch PC solenoid 5 control circuit for 1 second.

P2730

The TCM detects an open or short to voltage on the clutch PC solenoid 5 control circuit for 1 second.

ACTION TAKEN WHEN THE DTC SETS

P2728

- DTC P2728 is a Type C DTC.
- The TCM freezes transmission adaptive functions on the 1-2-3-4 clutch.

P2729

- DTC P2729 is a Type A DTC.
- The TCM commands maximum line pressure.
- The TCM freezes transmission adaptive functions.
- The TCM inhibits Tap Up/Down function.
- The TCM inhibits manual shifting of forward gears.
- The TCM limits the transmission to reverse, 1st and 3rd gear operation.

P2730

- DTC P2730 is a Type A DTC.
- The TCM inhibits the TCC.
- The TCM forces the HSD OFF.
- The TCM commands maximum line pressure.
- The TCM freezes transmission adaptive functions.
- The TCM inhibits Tap Up/Down function.
- The TCM inhibits manual shifting of forward gears.
- The TCM limits the transmission to reverse and 5th gear operation.

CONDITIONS FOR CLEARING THE DTC

- DTC P2728 is a Type C DTC.
- DTCs P2729 and P2730 are Type A DTCs.

REFERENCE INFORMATION

Connector End View Reference

- Component Connector End Views
- Inline Harness Connector End Views

Description and Operation

Transmission General Description

Electrical Information Reference

- Circuit Testing
- Connector Repairs
- Testing for Intermittent Conditions and Poor Connections
- Wiring Repairs

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions

Scan Tool Reference

Control Module References for scan tool information

Special Tools

DT-47825-20: Adapter Harness

For equivalent regional tools, refer to **Special Tools** .

CIRCUIT/SYSTEM VERIFICATION

1. Operate the vehicle in second gear long enough to ensure at least a 3°C (5°F) rise in TCM temperature, then operate the vehicle in Park for 5 seconds.
2. Operate the vehicle in drive range. Allow the transmission to shift through all forward gear ranges. Verify with a scan tool the following test status parameters display OK:
 - Pressure Control Solenoid Valve 5 Performance Test Status
 - Pressure Control Solenoid Valve 5 Control Circuit High Voltage Test Status
 - Pressure Control Solenoid Valve 5 Control Circuit Low Voltage Test Status

3. 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

NOTE: You must perform the **Circuit/System Verification** first.

1. Ignition OFF, remove the control solenoid valve assembly. Refer to **Control Solenoid Valve and Transmission Control Module Assembly Replacement** .
2. Perform the **Control Solenoid Valve and Transmission Control Module Assembly Inspection** .
3. Place the control solenoid valve assembly on a clean work surface near the transmission assembly.
4. Connect **DT-47825-20**: harness between the vehicle wire harness electrical connector, and the control solenoid valve assembly electrical connector.
5. Ignition ON, verify with a scan tool the following test status parameters display OK:
 - Pressure Control Solenoid Valve 5 Performance Test Status
 - Pressure Control Solenoid Valve 5 Control Circuit High Voltage Test Status
 - Pressure Control Solenoid Valve 5 Control Circuit Low Voltage Test Status
 - If any test status parameter displays Fault or Malfunction, replace the control solenoid valve assembly.

REPAIR PROCEDURES

- NOTE:**
- Perform the **Transmission Adaptive Values Learn** following all transmission related repairs.
 - Before replacing the TCM, perform the **Control Solenoid Valve and Transmission Control Module Assembly Inspection** .

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

Control Module References for control solenoid valve assembly replacement, setup, and programming

DTC P2762, P2763, OR P2764

DIAGNOSTIC INSTRUCTIONS

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC DESCRIPTORS

DTC P2762

Torque Converter Clutch (TCC) Pressure Control Solenoid Valve Performance

DTC P2763

Torque Converter Clutch (TCC) Pressure Control Solenoid Valve Control Circuit High Voltage

DTC P2764

Torque Converter Clutch (TCC) Pressure Control Solenoid Valve Control Circuit Low Voltage

DIAGNOSTIC FAULT INFORMATION

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
TCC Pressure Control Solenoid	P2764	P2763	P2763	P2762

TYPICAL SCAN TOOL DATA

TCC Pressure Control Solenoid Valve Control Circuit Status

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Operating Conditions: Ignition ON Parameter Normal Range: OK				
TCC Pressure Control Solenoid Valve Control	-	-	-	Fault or Malfunction

TCC Pressure Control Solenoid Valve Control Circuit Low Voltage Test Status

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Operating Conditions: Ignition ON Parameter Normal Range: OK				
TCC Pressure Control Solenoid Valve Control	Fault or Malfunction	-	-	-

TCC Pressure Control Solenoid Valve Control Circuit High Voltage Test Status

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Operating Conditions: Ignition ON Parameter Normal Range: OK				
TCC Pressure Control Solenoid Valve Control	-	Fault or Malfunction	Fault or Malfunction	-

CIRCUIT/SYSTEM DESCRIPTION

The torque converter clutch (TCC) pressure control (PC) solenoid is part of the control solenoid valve assembly

which has no serviceable components. The normally low TCC PC solenoid regulates oil pressure to the TCC regulator valve and TCC control valve. Increasing TCC PC solenoid oil pressure increases oil pressure to the torque converter to apply the clutch. The transmission control module (TCM) varies the current to the TCC PC solenoid through a low side driver. Increasing current to the TCC PC solenoid increases oil pressure by closing OFF the solenoid exhaust port. Decreasing current to the TCC PC solenoid decreases oil pressure by opening up the solenoid exhaust port. The TCC PC solenoid power is supplied by the TCM through a high side driver (HSD). The HSD protects the circuit and components from excessive current flow. If excessive current flow is detected, the HSD will turn OFF. When the fault is corrected, the HSD will reset.

CONDITIONS FOR RUNNING THE DTC

P2762

- DTC P2762 is not set.
- The engine speed is 400 RPM or greater for 5 seconds.
- The ignition voltage is 8.6 volts or greater.

P2763

- DTC P0658, P0659, or P2763 is not set.
- The engine speed is 400 RPM or greater for 5 seconds.
- The ignition voltage is 8.6 volts or greater.
- The high side driver is enabled.

P2764

- DTC P0658, P0659, or P2764 is not set.
- The engine speed is 400 RPM or greater for 5 seconds.
- The ignition voltage is 8.6 volts or greater.
- The high side driver is enabled.

CONDITIONS FOR SETTING THE DTC

P2762

The TCM detects an internal electrical performance malfunction of the TCC PC solenoid control circuit where the measured TCC PC solenoid current does not equal the commanded TCC PC solenoid for 5 seconds.

P2763

The TCM detects an open/high resistance or short to voltage on the TCC pressure solenoid control circuit for 5 seconds.

P2764

The TCM detects a short to ground on the TCC pressure solenoid control circuit for 5 seconds.

ACTION TAKEN WHEN THE DTC SETS

P2762

DTC P2762 is a Type C DTC.

P2763

- DTC P2763 is a Type B DTC.
- The TCM inhibits 6th gear.
- The TCM forces TCC OFF.
- The TCM commands the hot mode shift pattern.
- The TCM inhibits Tap Up/Down function.
- The TCM inhibits manual shifting of forward gears.

P2764

- DTC P2764 is a Type A DTC.
- The TCM inhibits TCC.
- The TCM freezes transmission adaptive functions.
- The TCM commands maximum line pressure.
- The TCM inhibits Tap Up/Down function.
- The TCM inhibits manual shifting of forward gears.
- The TCM limits the transmission to reverse and 5th gear operation.
- The TCM commands the HSD OFF.

CONDITIONS FOR CLEARING THE DIC/DTC

- DTC P2762 is a Type C DTC.
- DTC P2763 is a Type B DTC.
- DTC P2764 is a Type A DTC.

REFERENCE INFORMATION

Connector End View Reference

- **Component Connector End Views**
- **Inline Harness Connector End Views**

Description and Operation

Transmission General Description

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions

Scan Tool Reference

Control Module References for scan tool information

Special Tools

DT-47825-20: Adapter Harness

For equivalent regional tools, refer to **Special Tools** .

CIRCUIT/SYSTEM VERIFICATION

1. Operate the vehicle in second gear long enough to ensure at least a 3°C (5°F) rise in TCM temperature.
2. Operate the vehicle in drive range and ensure TCC is commanded ON for 1 minute. Verify with a scan tool the following test status parameters display OK:
 - TCC Pressure Control Solenoid Valve Control Circuit Status
 - TCC Pressure Control Solenoid Valve Control Circuit High Voltage Test Status
 - TCC Pressure Control Solenoid Valve Control Circuit Low Voltage Test Status
3. 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

NOTE: **You must perform the Circuit/System Verification first.**

1. Ignition OFF, remove the control solenoid valve assembly. Refer to **Control Solenoid Valve and Transmission Control Module Assembly Replacement** .
2. Perform the **Control Solenoid Valve and Transmission Control Module Assembly Inspection** .
3. Place the control solenoid valve assembly on a clean work surface near the transmission assembly.
4. Connect the **DT-47825-20:** harness between the vehicle wire harness electrical connector, and the control solenoid valve assembly electrical connector.
5. Ignition ON, verify with a scan tool the following test status parameters display OK:
 - TCC Pressure Control Solenoid Valve Control Circuit Status

- TCC Pressure Control Solenoid Valve Control Circuit High Voltage Test Status
- TCC Pressure Control Solenoid Valve Control Circuit Low Voltage Test Status

○ If any test status parameter displays Fault or Malfunction, replace the control solenoid valve assembly.

REPAIR PROCEDURES

NOTE:

- Perform the Transmission Adaptive Values Learn following all transmission related repairs.
- Before replacing the TCM, perform the Control Solenoid Valve and Transmission Control Module Assembly Inspection .

Perform the Diagnostic Repair Verification after completing the diagnostic procedure.

Control Module References for control solenoid valve assembly replacement, setup, and programming