

P0741 or P0742 Torque Converter Clutch (TCC)

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 P0741: Torque Converter Clutch (TCC) – Stuck Off

DTC P0742: Torque Converter Clutch (TCC) – Stuck On

Circuit/System Description

The torque converter clutch (TCC) pressure control (PC) solenoid is part of the control solenoid (w/body and TCM) valve assembly and is not serviced separately. The shift solenoid (SS) 1 supplies transmission fluid to the TCC PC solenoid when commanded OFF. The TCC PC solenoid regulates transmission fluid through the TCC regulator valve in the lower valve body and the TCC control valve in the pump, to the TCC when commanded ON and exhausts fluid when commanded OFF. When the TCC is applied, the engine is coupled directly to the transmission.

Conditions for Running the DTC

P0741

- No ISS DTCs P0716 or P0717.
- No OSS DTCs P0722 or P0723.
- No TCC DTC P0742.
- No TCC DTCs P2762, P2763, or P2764.
- DTC P0741 has not passed this key ON.
- The ignition voltage is between 8.6 volts and 19.0 volts.
- The transmission fluid temperature (TFT) is 20– 130°C (68–266°F).

- The throttle position is greater than 8 percent.
- The engine torque is greater than 50 N·m (36 lb ft).
- The 2nd gear ratio is between 2.67–3.07.
- The 3rd gear ratio is between 1.71–1.97.
- The 4th gear ratio is between 1.32–1.51.
- The 5th gear is between 0.93–1.07.
- The 6th gear is between 0.69–0.79.
- The TCC is commanded ON.

P0742

- No ISS DTCs P0716 or P0717.
- No OSS DTCs P0722 or P0723.
- No TCC DTC P0741.
- No shift valve 1 DTC P1751.
- No TCC DTCs P2762, P2763, or P2764.
- DTC P0742 has not passed this key ON.
- The ignition voltage is between 8.6 volts and 19.0 volts.
- The transmission fluid temperature (TFT) is 20– 130°C (68–266°F).
- The calc. throttle position is greater than 8 percent.
- The engine torque is greater than 80 N·m (59 lb ft).
- The engine speed is greater than 500 RPM.
- The vehicle speed is greater than 16 km/h (10 mph).
- The gear ratio is between 0.69–1.97.
- The commanded gear is 2nd.
- The solenoid A is enabled.
- The TCC is commanded OFF.

Conditions for Setting the DTC

P0741

- The TCC Pressure is greater than 800 Kpa for 5 seconds.
- The TCM detects TCC slip greater than 50 RPM for 6 seconds when the TCC is commanded ON three times during the same ignition cycle.

P0742

The TCM detects the TCC slip between -20 and +30 RPM for 2.5 seconds or greater when the TCC is commanded OFF six times during the same ignition cycle.

Action Taken When the DTC Sets

- DTCs P0741 and P0742 are Type B DTCs.

- Inhibit high gear in Hot Mode.
- The TCM inhibits TCC.
- The TCM freezes transmission adaptive functions.

Conditions for Clearing the DIC/DTC

DTCs P0741 and P0742 are Type B 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

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 throttle position greater than 8 percent and ensure TCC is commanded ON and OFF a minimum of 6 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 control solenoid (w/body and TCM) valve assembly.
- 6). 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.
- 7). Perform the Control Solenoid Valve and Transmission Control Module Assembly Solenoid Performance Test on page 17-100. A pressure change should occur.

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

- 8). Inspect for the following conditions and repair/replace as necessary:
 - Lower control valve body for a stuck valve, debris or damage
 - TCC control valve in the pump for a stuck valve, debris or damage
 - Torque converter assembly for damage or Discoloration

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

- Torque Converter Removal on page 17-185
- Torque Converter Installation on page 17-274
- Torque Converter and Differential Housing, Front Differential Transfer Drive Gear, and Front Differential Carrier Removal on page 17-193 and Torque Converter and Differential Housing Installation on page 17-233
- Control Module References on page 6-1 for control solenoid (w/body and TCM) valve assembly replacement, setup, and programming

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