

DTC P0751 The TCM monitors the actual gear ratio, and compares the actual gear ratio with the commanded gear ratio

Circuit Description

The 1–2 shift solenoid (SS) valve is a normally-closed exhaust valve that, in conjunction with the 2–3 shift solenoid (SS) valve, allows 4 different shifting combinations. The 1–2 SS valve is attached to the control valve body, within the transmission. The TCM monitors the actual gear ratio, and compares the actual gear ratio with the commanded gear ratio. DTC P0751 sets under two conditions:

- A stuck ON 1–2 SS valve
- A stuck ON 1–2 shift valve

If the TCM detects a 2–2–3–3–3 shift pattern, then DTC P0751 sets. DTC P0751 is a type B DTC.

Conditions for Running the DTC

- No TP sensor DTC P0120.
- No ISS DTCs P0716 or P0717.
- No OSS DTCs P0722 or P0723.
- No TCC performance DTC P0742.
- No shift solenoid electrical DTCs P0973, P0974, P0976, P0977, P0979, or P0980.
- No IMS DTCs P1815, P1820, P1822, P1823, P1825 or P1826.
- No engine torque delivered signal DTC P2637.
- The engine run time is greater than 5 seconds.
- The IMS range is not PARK, NEUTRAL or REVERSE.
- The transmission fluid temperature is 20–130°C (68–266°F).
- The throttle position is greater than 10 percent.
- The input shaft speed is 200–6,800 RPM.
- The output shaft speed is greater than 100 RPM.

Conditions for Setting the DTC

Both of the following conditions must occur twice during the same trip:

- The TCM commands 1st gear when the engine torque is greater than 40 N·m (30 lb ft) and the resulting gear ratio is 2.16:1–2.27:1 for 1.25 seconds.
- The TCM commands 4th or 5th gear when the engine torque is greater than 36 N·m (27 lb ft) and the resulting gear ratio is 1.56:1–1.64:1 for 5 seconds.

Action Taken When the DTC Sets

- The TCM requests the ECM to illuminate the malfunction indicator lamp (MIL) during the second consecutive trip in which the Conditions for Setting the DTC are met.
- The TCM commands maximum line pressure.
- The TCM freezes transmission adaptive functions.
- At the time of the first failure, the TCM records the operating conditions when the Conditions for Setting the DTC are met. The TCM stores this information as a Failure Record.
- At the time of the second failure, the ECM records the operating conditions when the Conditions for Setting the DTC are met. The ECM stores this information as a Freeze Frame.
- The TCM stores DTC P0751 in TCM history during the second consecutive trip in which the Conditions for Setting the DTC are met.

Conditions for Clearing the DTC

- The ECM turns OFF the MIL after the sixth consecutive drive trip in which the TCM does not send a MIL illumination request.
- A scan tool can clear the DTC.
- The TCM clears the DTC from TCM history if the vehicle completes 40 warm-up cycles without a non emission related diagnostic fault occurring.
- The TCM cancels the DTC default actions when the ignition is OFF long enough in order to power down the TCM.

Diagnostic Aids

- 1). If you clear DTC P0751, and then cannot reset DTC P0751, the following conditions may exist:
 - Fluid contamination
 - Plugged fluid circuits
 - Restricted fluid circuits
- 2). Refer to Shift Solenoid Valve State and Gear Ratio on page 7-3.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

3. This step verifies a 2–2–3–3–3 shift pattern.

4. This step tests for a mechanical or hydraulic condition causing the 1–2 SS valve to bestuck ON, or the circuit to be released.

DTC P0751

Step	Action	Value(s)	Yes	No
1	Did you perform the Diagnostic System Check – Vehicle?	—	Go to Step 2	Go to Diagnostic System Check -Vehicle in Vehicle DTC Information
2	Perform the Transmission Fluid Checking Procedure. Refer to Transmission Fluid Checking Procedure. Did you perform the Transmission Fluid Checking Procedure?	—	Go to Step 3	Go to Transmission Fluid Checking Procedure
3	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. Important: <ul style="list-style-type: none"> • Before clearing the DTC, use the scan tool in order to record the ECM Freeze Frame and the TCM Failure Records. Using the Clear Info function erases the Freeze Frame and Failure Records from the ECM and the TCM. • Using the Clear Info function erases stored DTCs in both the ECM and TCM. 3. Record the DTC Freeze Frame and Failure Records. 4. Clear the DTC. 5. Use the scan tool snapshot mode in order to record commanded gear and gear ratio. 6. Drive the vehicle in D5, in order to obtain 1–2, 2–3, 3–4, and 4–5 shifts with a throttle position of 10 percent or greater. Are the commanded gear and gear ratio within the specified range?	1st 2.16: 1–2.27:1 4th /5th 1.56: 1–1.64:1	Go to Step 4	Go to Intermittent Conditions in Engine Controls – 4.6L

Step	Action	Value(s)	Yes	No
4	<p>1. Inspect the 1–2 shift circuit for the following conditions:</p> <ul style="list-style-type: none"> • 1–2 SS valve mechanically stuck ON Refer to Shift Solenoid Leak Test on page 7-251. • 1–2 SS valve O-ring worn or damaged • 1–2 shift valve stuck in the released position. Refer to Shift Solenoid Replacement. <p>2. Repair the circuit as necessary. Did you complete the repair?</p>	—	Go to Step 5	—
5	<p>Perform the following procedure in order to verify the repair:</p> <ol style="list-style-type: none"> 1. Select DTC. 2. Select Clear Info. 3. Operate the vehicle twice under the following conditions: <ul style="list-style-type: none"> • Drive the vehicle in D5 with a throttle angle of 10 percent or greater. • Allow the transmission to shift through all the gears 2 times. • Monitor the commanded gear and gear ratios. The actual gear ratios must match the commanded gears for 1 second, for all gears. 4. Select Specific DTC. 5. Enter DTC P0751. <p>Has the test run and passed? With the scan tool, observe the stored information, capture info and DTC info.</p>	—	Go to Step 6 Go to Diagnostic Trouble	Go to Step 2

Step	Action	Value(s)	Yes	No
6	Does the scan tool display any DTCs that you have not diagnosed?	—	Code (DTC) List - Vehicle in Vehicle DTC Information	System OK

LAUNCH