P0741: TORQUE CONVERTER CLUTCH CIRCUIT PERFORMANCE OR STUCK OFF

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$100-$400**
Can I Still Drive?	:	No

What Does The P0741 Code Mean?

Modern vehicles equipped with automatic transmissions / transaxles use a torque converter between the engine and transmission to increase the engine torque output and drive the rear wheels.

The engine and transmission are actually connected by a fluid coupling mechanism inside of the torque converter which is what multiplies the torque until the speeds equalize and create a “stall” speed where the difference in actual engine RPM and transmission input RPM is around 90% efficient.

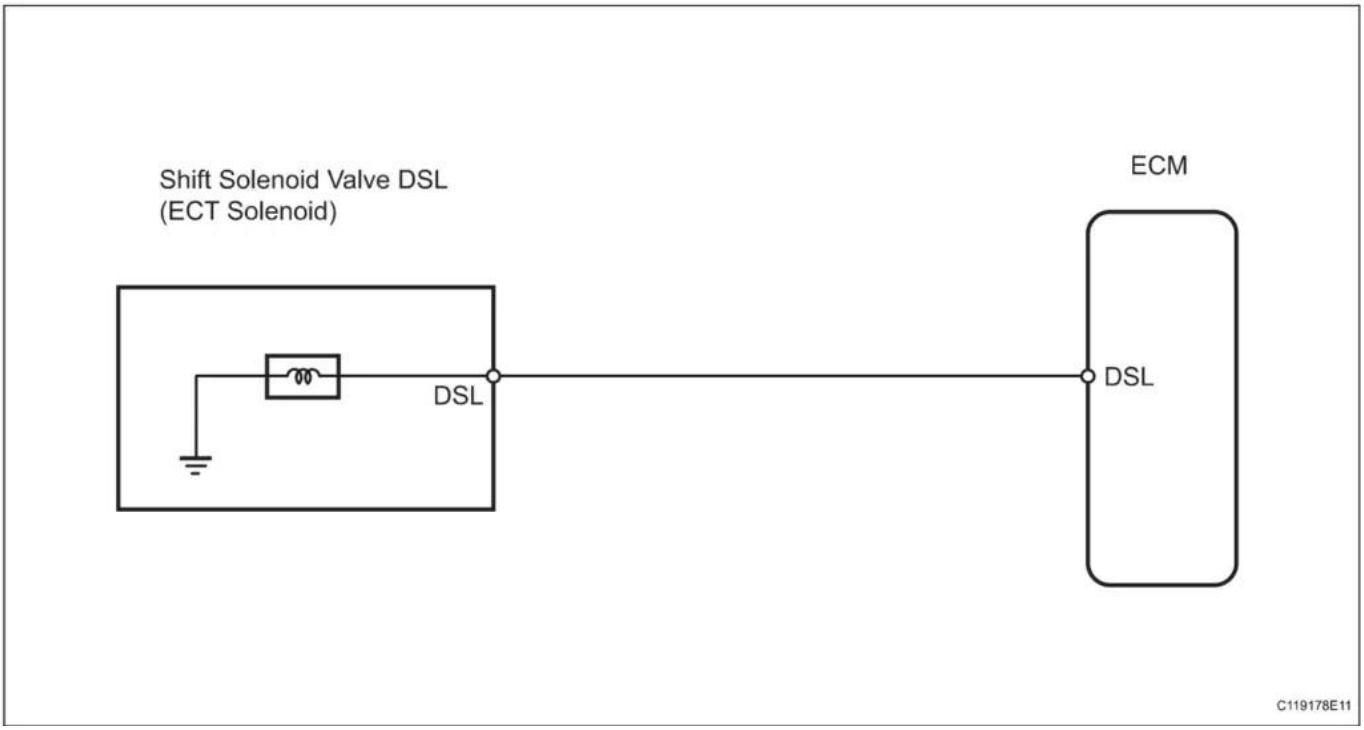
Torque converter clutch (TCC) solenoids commanded by the Powertrain control module/Engine control module (PCM/ECM) or the Transmission control module (TCM) to direct hydraulic fluid and engage the torque converter clutch to create a solid coupling and increase efficiency.

The transmission control module has detected a fault with the circuit that operates the torque converter clutch solenoid.

Note: This code is similar to codes P0740, P0742, P0743, P0744, P2769, and P2770.

There may be other diagnostic trouble codes associated with the transmission control module that can only be accessed by using an advanced scan tool. If any additional transmission related DTC’s

appear in addition to the P0741, an electrical failure is likely.



P0741 wiring diagram

What Are The Symptoms Of The P0741 Code?

Symptoms of a P0741 trouble code may include:

- Performance or Stuck Off Indicator Lamp (MIL) illuminated (a.k.a. Check Engine Light)
- Minimal decrease in fuel economy, this will not affect engine performance

What Are The Potential Causes Of The P0741 Code?

Causes of this DTC may include:

- Wiring harness to transmission shorted to ground
- Torque converter clutch (TCC) solenoid internal short
- Transmission control module (TCM)

How Can You Fix The P0741 Code?

Step 1

Wiring harness- Check transmission wiring harness for damage or loose connections. Use a factory wiring diagram to locate the appropriate power source and all connection points between circuits. The transmission may be powered by a fuse or relay, and triggered by the TCM. Disconnect the

transmission harness at the transmission connector, power source and TCM.

Step 2

Check for a short to ground inside the transmission internal wiring harness by locating the appropriate + and – pins for the torque converter clutch solenoid. Using a digital volt ohm meter (DVOM) set to ohms scale, check for a short to ground in the circuit with the positive lead on either pin and the negative lead to a known good ground.

If resistance is low, suspect a short to ground the internal harness or the TCC solenoid – removing the transmission oil pan may be necessary to further diagnose the TCC solenoid.

Step 3

Test the wiring between the TCM and the wiring harness connector at the transmission case using the DVOM set to ohms. Check for a possible short to ground by moving the negative lead on the DVOM to a known good ground, resistance should be very high or over limit (OL).

Step 4

Torque converter clutch (TCC) solenoid- Check the resistance in the TCC solenoid and internal transmission wiring at the transmission case after removing the transmission harness plug (if applicable, some makes/models use a TCM bolted directly to the transmission case). Some makes/models use a transmission wire harness with the TCC solenoid and internal harness as a single unit.

Using the DVOM set to ohms, check for a short to ground with the positive lead on either circit to the TCC and the negative lead on a known good ground. Resistance should be very high or over limit (OL), if it is low, suspect a short to ground.

Check for voltage on the power side circuit of the TCC solenoid or at the wire harness connector at the TCM with the DVOM set to volts scale, positive lead at the wire being tested and the negative to a known good ground with the vehicles key on/engine off, battery voltage should be present.

If no voltage is present, determine the loss of power back through the circuit using the manufacturers wiring diagrams for reference.

Step 5

Transmission control module (TCM)- Since the torque converter clutch is only activated during certain driving conditions, it will be necessary to monitor the TCM with an advanced scan tool to determine if the TCM is commanding the TCC solenoid and what the actual feedback reading is at the TCM.

The TCC solenoid is normally controlled by a duty cycle to engage a more comfortable torque converter cluch engagement. To test if the TCM is actually sending the signal, a graphing multimeter set to duty cycle or a digital storage oscilloscope will be required as well.

The positive lead is probed into the wiring harness plugged into the TCM and the negative lead to a known good ground. The duty cycle shold be the same as being commanded by the TCM in the advanced scan tool reading. If the cycle stays at 0% or 100% or is intermittent, re-check connections and if all wiring / solenoid is OK, the TCM may be at fault.

Reference Sources

P0741 Torque Converter Clutch Circuit Performance or Stuck Off, OBD-Codes.