

P0741 TORQUE CONVERTER CLUTCH CIRCUIT - STUCK OFF

GENERAL DESCRIPTION

The PCM/TCM controls the locking and unlocking of the Torque Converter Clutch (or Damper Clutch), to the input shaft of the transmission, by applying hydraulic pressure. The main purpose of T/C clutch control is to save fuel by decreasing the hydraulic load inside the T/C. The PCM/TCM outputs duty pulses to control the Damper Clutch Control Solenoid Valve(DCCSV) and hydraulic pressure is applied to the DC according to the DCC duty ratio value. When the duty ratio is high, high pressure is applied and the Damper Clutch is locked. The normal operating range of the Damper Clutch Control duty ratio value is from 30%(unlocked) to 85%(locked).

DTC DESCRIPTION

The PCM/TCM increases the duty ratio to engage the Damper Clutch by monitoring slip rpms (difference value between engine speed and turbine speed). To decrease the slip of the Damper Clutch, the PCM/TCM increases the duty ratio by applying more hydraulic pressure. When slip rpm does not drop under some value with 100% duty ratio, the PCM/TCM determines that the Torque Converter Clutch is stuck OFF and sets this code.

DTC DETECTING CONDITION

Item	Detecting Condition	Possible cause
DTC Strategy	• Stuck "OFF"	TORQUE CONVERTER (DAMPER) CLUTCH : TCC • Faulty TCC or oil pressure system • Faulty TCC solenoid valve • Faulty body control valve • Faulty PCM/TCM
Enable Conditions	• Always	
Threshold value	• TCC duty > 0% or TCC abnormal slip counter ≥ 4	
Diagnostic Time	• 1 second	
Fail Safe	• Damper clutch abnormal system (If diagnosis code P0741 is output four times, TORQUE CONVERTER(DAMPER) CLUTCH is not controlled by PCM/TCM)	

MONITOR SCANTOOL DATA

- 1). Connect scantool to data link connector(DLC).
- 2). Engine "ON".
- 3). Select "D RANGE" and drive vehicle.
- 4). Monitor the "TORQUE CONVERTER(DAMPER) CLUTCH" parameter on the scantool.

Specification : TCC SLIP < 160RPM(In condition that TCC SOL. DUTY > 40%)

1.2 CURRENT DATA		06/25
×	TCC SOLENOID DUTY	51.4 %
×	DAMPER CLUTCH SLIP	0 rpm
×	SHIFT POSITION	5TH GEAR
×	SELECT LEVER SW.	D
	LR SOLENOID DUTY	0.4 %
	UD SOLENOID DUTY	100.0%
	2ND SOLENOID DUTY	0.4 %
	OD SOLENOID DUTY	0.4 %

FIG.1)

FIG.1) : Normal status

- 5). Are "TCC SOLENOID DUTY and TCC SLIP" within specifications?

YES

▶ Fault is intermittent caused by poor contact in the sensor's and/or TCM(PCM)'s connector or was repaired and TCM(PCM) memory was not cleared. Thoroughly check connectors for looseness, poor connection, bending, corrosion, contamination, deterioration or damage. Repair or replace as necessary and go to "Verification of vehicle repair" procedure.

NO

▶ Go to "Component inspection" procedure.

COMPONENT INSPECTION

1). CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE

- A) Connect scantool to data link connector(DLC).
- B) Ignition "ON" & Engine "OFF".
- C) Select A/T Solenoid valve Actuator test and Operate Actuator test.
- D) Can you hear operating sound for using TCC SOLENOID VALVE Actuator Testing Function?

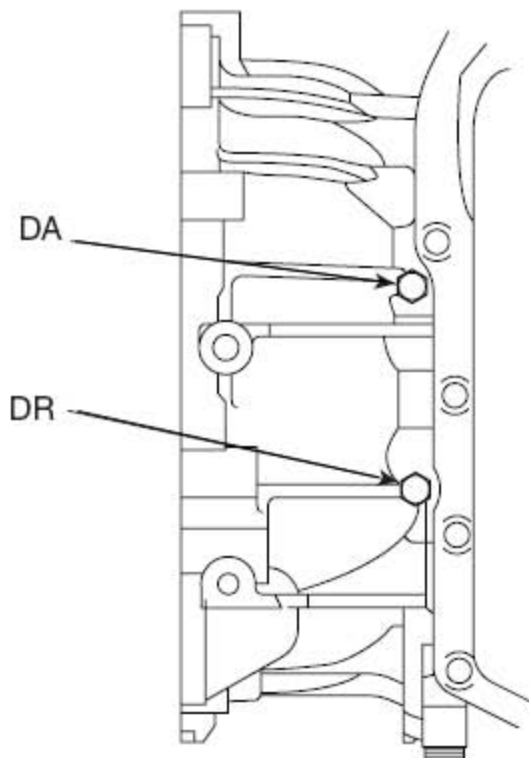
YES

- ▶ Go to "CHECK OIL PRESSURE" as below.

NO

- ▶ Replace "TCC SOLENOID VALVE" as necessary and Go to "Verification of Vehicle Repair" procedure.

2). CHECK OIL PRESSURE



- A) Connect oil pressure gauge to "DA" ports.
- B) Engine "ON".
- C) After connecting Scantool and monitor the "TCC SOLENIOD VALVE DUTY" parameter on the scantool data list.
- D) Operate vehicle with 3rd or 4th gear and operate the "TCC SOLENIOD VALVE DUTY" more than 85%.

E) Is oil pressure value within specification?

YES

- ▶ Repair TORQUE CONVERTER CLUTCH(REPLACE Torque Converter) as necessary and Go to "Verification of Vehicle Repair " procedure.

NO

- ▶ Replace A/T assembly (possible to BODY CONTROL VALVE faulty) as necessary and Go to "Verification of Vehicle Repair " procedure.

VERIFICATION OF VEHICLE REPAIR

After a repair, it is essential to verify that the fault has been corrected.

- 1). Connect scan tool and select "Diagnostic Trouble Codes(DTCs)" mode.
- 2). Using a scantool, Clear DTC.
- 3). Operate the vehicle within DTC Enable conditions in general information.
- 4). Are any DTCs present ?

YES

- ▶ Go to the applicable troubleshooting procedure.

NO

- ▶ System performing to specification at this time.