

2009 Dodge Journey R/T

2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

2009 AUTOMATIC TRANSMISSION

Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

DIAGNOSTIC CODE INDEX

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DTC	Description
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<u>P0123</u>	TPS/APP CIRCUIT HIGH
<u>P0124</u>	TPS/APP INTERMITTENT
<u>P0218</u>	HIGH TEMPERATURE OPERATION ACTIVATED
<u>P0602</u>	CONTROL MODULE PROGRAMMING ERROR/NOT PROGRAMMED
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<u>P0871</u>	OD PRESSURE SWITCH RATIONALITY

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P0882	TCM POWER INPUT LOW
P0883	TCM POWER INPUT HIGH
P0884	POWER UP AT SPEED
P0890	SWITCHED BATTERY
P0897	TRANSMISSION FLUID DETERIORATED
P0933	HYDRAULIC PRESSURE SENSOR RANGE/PERFORMANCE
P0934	LINE PRESSURE SENSOR CIRCUIT LOW
P0935	LINE PRESSURE SENSOR CIRCUIT HIGH
P0944	LOSS OF HYDRAULIC PUMP PRIME
P0957	AUTOSTICK CIRCUIT LOW
P0992	2/4/OD HYDRAULIC PRESSURE TEST
P1684	BATTERY WAS DISCONNECTED
P1713	RESTRICTED MANUAL VALVE IN T2 RANGE
P1745	TRANSMISSION LINE PRESSURE TOO HIGH FOR TOO LONG
P1775	SOLENOID SWITCH VALVE LATCHED IN TCC POSITION
P1776	SOLENOID SWITCH VALVE LATCHED IN LR POSITION
P1790	FAULT IMMEDIATELY AFTER SHIFT
P1794	SPEED SENSOR GROUND ERROR
P1797	MANUAL SHIFT OVERHEAT

DIAGNOSIS AND TESTING

P0122-TPS/APP CIRCUIT LOW

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The powertrain controller receives the throttle position signal from the Throttle Position Sensor (TPS). The controller provides the TPS with a 5 volt pull up and a sensor ground. The signal is checked for being out of range as well as for intermittent operation (excessive signal changes). The engine controller transmits the throttle value onto the Bus. Most engine controllers will calculate the throttle value if the throttle signal is lost. If an error is detected by the transmission controller and the throttle value is available on the Bus, the Bus value will be used, normal operation will continue, and a TPS code will be set. If an error is detected and the throttle value is not available on the Bus, normal operation will be discontinued, a TPS DTC will be set, and the MIL will be turned on after 5 minutes of calculated operation.

- **When Monitored:**

Continuously with the ignition on and engine running.

- **Set Condition:**

This DTC will set if the monitored TPS voltage drops below .078 of a volt for the period of 0.48 of a

second.

Possible Causes
RELATED TPS ENGINE DTCS PRESENT POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. DETERMINING IF RELATED ENGINE TPS DTCS ARE PRESENT

1. With the scan tool, check Engine DTCS, including pending DTCS and one trip failures.

Are there any Engine TPS DTCS present?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK IF THE DTC IS CURRENT

1. With the scan tool, record the Event Data to help identify the conditions in which the DTC was set.
2. With the scan tool, erase Transmission DTCS.

NOTE: To erase the Event Data information, with the scan tool perform a Quick Learn procedure, a Battery Disconnect, or an actual disconnection of the battery.

3. Drive the vehicle and try to duplicate the conditions in which the DTC was reported by the Event Data.
4. With the scan tool, read Transmission DTCS.

Does this DTC reset?

Yes

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.

- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go to step 3

3. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. Pay particular attention to the TPS signal and sensor ground circuits.
5. With the scan tool, check the EVENT DATA to help identify the conditions in which the DTC was set.
6. Check for any Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Test Complete.

P0123-TPS/APP CIRCUIT HIGH

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The powertrain controller receives the throttle position signal from the Throttle Position Sensor (TPS). The controller provides the TPS with a 5 volt pull up and a sensor ground. The signal is checked for being out of range as well as for intermittent operation (excessive signal changes). The engine controller transmits the throttle value onto the Bus. Most engine controllers will calculate the throttle value if the throttle signal is lost. If an error is detected by the transmission controller and the throttle value is available on the Bus, the Bus value will be used, normal operation will continue, and a TPS code will be set. If an error is detected and the throttle value is not available on the Bus, normal operation will be discontinued, a TPS DTC will be set, and the MIL will be turned on after 5 minutes of calculated operation.

- **When Monitored:**

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Continuously with the ignition on and engine running.

• Set Condition:

This DTC will set if the monitored TPS voltage rises above 4.94 volts for the period of 0.48 of a second.

Possible Causes
RELATED TPS ENGINE DTCS PRESENT POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. DETERMINING IF RELATED ENGINE TPS DTCS ARE PRESENT

1. With the scan tool, check Engine DTCS, including pending DTCS and one trip failures.

Are there any Engine TPS DTCS present?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK TO SEE IF DTC IS CURRENT

1. With the scan tool, record the Event Data to help identify the conditions in which the DTC was set.
2. With the scan tool, erase Transmission DTCS.

NOTE: To erase the Event Data information, with the scan tool perform a Quick Learn procedure, a Battery Disconnect, or an actual disconnection of the battery.

3. Drive the vehicle and try to duplicate the conditions in which the DTC was reported by the Event Data.
4. With the scan tool, read Transmission DTCS.

Does this DTC reset?

Yes

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for

corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.

- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go to step 3

3. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. Pay particular attention to the TPS signal and sensor ground circuits.
5. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
6. Check for any Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Test Complete.

P0124-TPS/APP INTERMITTENT

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The powertrain controller receives the throttle position signal from the Throttle Position Sensor (TPS). The controller provides the TPS with a 5 volt pull up and a sensor ground. The signal is checked for being out of range as well as for intermittent operation (excessive signal changes). The engine controller transmits the throttle value onto the Bus. Most engine controllers will calculate the throttle value if the throttle signal is lost. If an error is detected by the transmission controller and the throttle value is available on the Bus, the Bus value will be used, normal operation will continue, and a TPS code will be set. If an error is detected and the throttle value is not available on the Bus, normal operation will be discontinued, a TPS DTC will be set, and the MIL will be turned on after 5 minutes of calculated operation.

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- **When Monitored:**

Continuously with the ignition on and engine running.

- **Set Condition:**

This DTC will set if the monitored TPS throttle angle is between 6° and 120° and the value changes by more than 5° in a period of 7.0 ms or less.

Possible Causes
RELATED TPS ENGINE DTCS PRESENT THROTTLE POSITION SENSOR (TPS) POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK IF RELATED ENGINE TPS DTCS ARE PRESENT

1. With the scan tool, check Engine DTCS, including pending DTCS and one trip failures.

Are there any Engine TPS DTCS present?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK IF THE DTC IS CURRENT

1. With the scan tool, record the Event Data to help identify the conditions in which the DTC was set.
2. With the scan tool, erase Transmission DTCS.

NOTE:

To erase the Event Data information, with the scan tool perform a Quick Learn procedure, a Battery Disconnect, or an actual disconnection of the battery.

3. Drive the vehicle and try to duplicate the conditions in which the DTC was reported by the EVENT DATA.
4. With the scan tool, read Transmission DTCS.

Does this DTC reset?

Yes

- Go to step 3

No

- Go to step 4

3. CHECK THE THROTTLE POSITION SENSOR OPERATION

1. Ignition on, engine not running.
2. With the scan tool, under Transmission Sensors, monitor the TPS voltage in the following step.
3. Slowly open and close the throttle while checking for erratic voltage changes.

Did the TPS voltage change smooth and consistent?

Yes

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Replace the Throttle Position Sensor in accordance with the Service Information.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

4. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. Pay particular attention to the TPS signal and sensor ground circuits.
5. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

Yes

- Repair as necessary.

- Perform the Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Test Complete.

P0218-HIGH TEMPERATURE OPERATION ACTIVATED

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

If the transmission oil temperature rises above 115° C (240° F), the overheat shift schedule is activated. The DTC is an informational code only and is set to aid the technician in determining a customer driveability issue. The code is also intended to alert the technician to determine if a cooling system malfunction has occurred or if an additional transmission air to oil cooler should be added to the vehicle if the customer regularly drives in a manner that overheats the transmission. Extended operation above 115° C (240° F) will reduce the durability of the transmission and should be avoided. Correcting the cooling system malfunction or installing an additional transmission oil cooler will improve transmission durability especially for customers who operate in city/construction stop and go traffic, tow trailers regularly, drive aggressively in low gear or drive regularly in mountainous areas.

- **When Monitored:**

Whenever the engine is running.

- **Set Condition:**

Immediately when an Overheat shift schedule is activated when the Transmission Oil Temperature reaches 115° C (240° F).

Possible Causes
ENGINE COOLING SYSTEM OPERATION
TRANSMISSION OIL COOLER PLUGGED
OPERATING IN LIMP-HOME MODE
TORQUE CONVERTER CLUTCH NOT ENGAGING PROPERLY

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. CHECK FOR LIMP-IN OPERATION

1. With the scan tool, check for transmission DTCs which would result in limp-in operation.

NOTE: While operating in limp-home mode (due to a ratio error, solenoid continuity or pressure switch fault, etc.) the TCC will not engage. The heat generated within the torque converter will increase significantly (especially during launches). This can result in overheated fluid. Restarting the vehicle hot, when the original fault (which caused limp-in) is no longer present, could cause the P0218 DTC to be set.

Are there any other transmission DTCs present?

Yes

- See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK TCC ENGAGEMENT

1. Operate the vehicle and check for proper TCC operation (turbine speed should be equal to engine speed when TCC is fully engaged).

Does the TCC engage properly?

Yes

- Go to step 3

No

- Repair the cause of a slipping torque converter in accordance with the Service Information.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

3. CHECK ENGINE COOLING SYSTEM

1. Perform Engine Cooling System diagnostics in accordance with the Service Information.

Is the Engine Cooling System functioning properly?

Yes

- Go to step 4

No

- Repair the cause of the engine overheating. Refer to the appropriate Service Information for the related diagnostic or repair procedures.

- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

4. TRANSMISSION OIL COOLER RESTRICTED

1. Check the Transmission Oil Cooler Flow in accordance with the Service Information.

Is the transmission oil cooler restricted or plugged?

Yes

- Repair the cause of the plugged Transmission Oil Cooler as necessary and repair or replace the Transmission Oil Cooler in accordance with the Service Information.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go to step 5

5. HIGH TEMPERATURE OPERATION

1. This DTC is an informational DTC designed to aid the Technician in diagnosing shift quality complaints.
2. This DTC indicates that the transmission has been operating in the "Overheat" shift schedule which may generate a customer complaint.
3. The customer driving patterns may indicate the need for an additional transmission oil cooler.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
5. Check for any Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Repair

- Repair the cause of transmission overheating in accordance with the Service Information.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

P0602-CONTROL MODULE PROGRAMMING ERROR/NOT PROGRAMMED

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The controller is programmed during manufacturing process with generic software to facilitate testing. This software does not have the proper calibrations to control a transmission in a vehicle. The check for generic software is made at power-up (ignition on). If generic software is detected, the MIL will illuminate, transmission will be placed in limp-in, and will stay in limp-in even if the fault is cleared or until the proper software is installed.

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- **When Monitored:**

Check for generic software is made at power-up or ignition on.

- **Set Condition:**

If generic software is found, the MIL will light immediately. This DTC is designed to notify the technician that the controller has generic software installed.

Possible Causes
PCM - PROGRAMMING ERROR

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. CONTROL MODULE PROGRAMMING ERROR

NOTE: The controller is programmed with generic software and will not allow the correct vehicle Powertrain management.

1. Record the controller part number.
2. Update the controller with the correct software in accordance with the Service Information.

Verify that the controller updated successfully.

- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

P0604-INTERNAL CONTROL MODULE RAM

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

After the controller is reset, the microprocessor checks the integrity of each RAM location by writing to it and reading back from it. The read value should be the same as the written value. MIL on after 10 seconds of vehicle operation and transmission will be placed in limp-in.

- **When Monitored:**

One time after the ignition is turned to the run position.

- **Set Condition:**

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The read value does not match the written value in any RAM location.

Possible Causes
PCM - INTERNAL ERROR

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. PCM - INTERNAL ERROR

Repair

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

P0605-INTERNAL CONTROL MODULE ROM

For complete wiring diagrams, refer to SYSTEM WIRING DIAGRAMS .

Theory of Operation

After the controller is reset, the microprocessor checks the integrity of the program memory (ROM). A checksum is calculated by adding all used bytes in the program memory. The sum should be the same as a known constant stored in memory. MIL on after 10 seconds of vehicle operation and transmission will be placed in limp-in.

- **When Monitored:**

One time after the ignition is turned to the run position.

- **Set Condition:**

If the ROM checksum does not match a known constant.

Possible Causes
PCM - INTERNAL ERROR

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test**1. PCM - INTERNAL ERROR****Repair**

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

P0613-INTERNAL TRANSMISSION PROCESSOR

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The internal watchdog is a separate hardware circuit which continuously monitors the microprocessor. To make sure the controller is operating properly, the watchdog must receive a signal from the microprocessor within a specific time window. After 10 seconds of vehicle operation and noted controller fault identification the transmission will be placed in limp-in and the MIL will illuminate.

- **When Monitored:**

After the ignition is turned to the run position and every 60 seconds thereafter.

- **Set Condition:**

Either of the following conditions occur 3 times in less than 590 milliseconds: The watchdog line remains high after the watchdog test or the transmission relay coil is energized and remains on after the watchdog delay expires.

Possible Causes
PCM - INTERNAL ERROR

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test**1. PCM - INTERNAL ERROR****Repair**

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- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

P0706-TRANSMISSION RANGE SENSOR RATIONALITY

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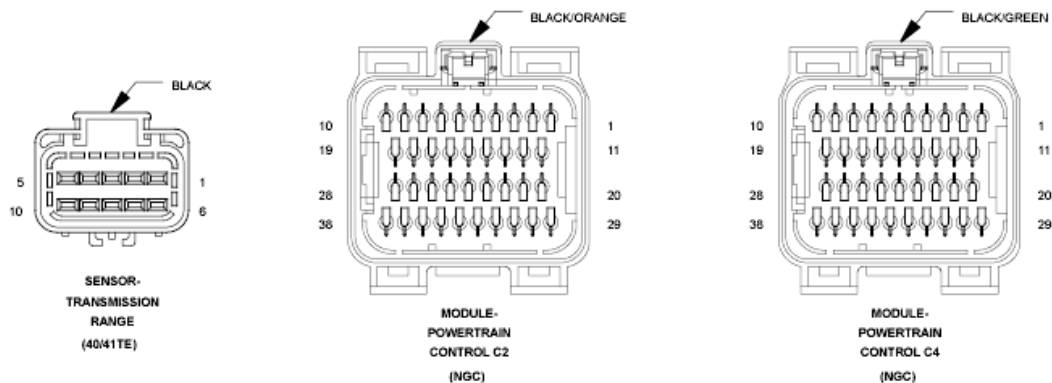
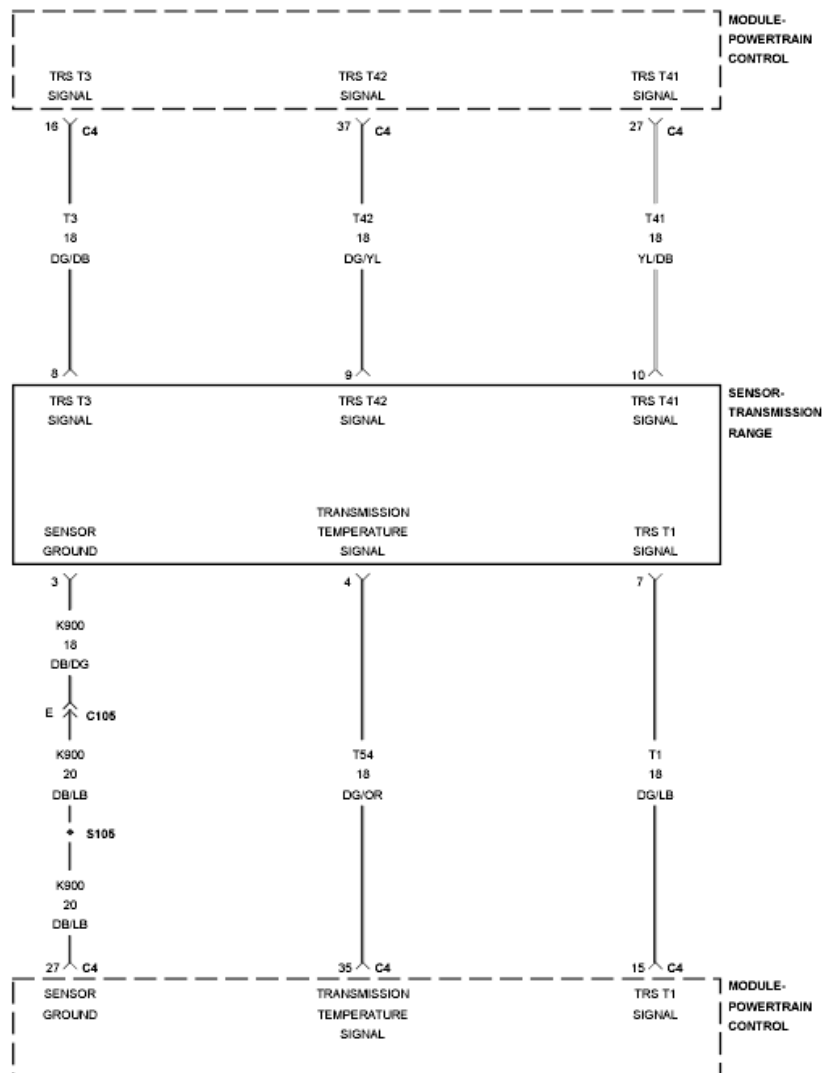


Fig. 1: Transmission Range Sensor Signal Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

The C1 through C4 (T41, T42, T3, and T1) signal circuits communicate the shift lever position to the Powertrain Control Module (PCM). Each circuit is terminated at the transmission with a switch. Each switch can be either open or closed, depending on the shift lever position. The PCM can decode this information and determine the shift lever position. Each shift lever position has a certain combination of switch positions (open or closed), this is called a PRNDL code. There are four switches, therefore: there are many possible combinations of open and closed switches (codes). However, there are only nine valid codes (eight for AutoStick), one for each gear position and three recognized between gear (transition) codes. Any other switch combinations should never occur, these are called invalid codes. The following chart shows the normal switch states for each shift lever position.

- **When Monitored:**

Continuously with the ignition on in the run position.

- **Set Condition:**

The DTC will set if an invalid PRNDL code exists for more than 100 milliseconds within one second of power-up or if the PRNDL code error does not correct itself when (or before) the shift lever is moved to a different position (P, R, N, or OD), or if the PCM sees the PRNDL code rapidly (within 7 ms) jump across more than three shift lever detent positions.

Possible Causes
SHIFT LEVER CABLE OUT OF ADJUSTMENT
METAL DEBRIS ON TRS CODE PLATE
TRS SIGNAL CIRCUIT OPEN
TRS SIGNAL CIRCUIT SHORTED TO GROUND
TRS SIGNAL CIRCUIT SHORTED TO VOLTAGE
TRANSMISSION RANGE SENSOR (TRS)
POWERTRAIN CONTROL MODULE (PCM)

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

TRS SWITCH STATES

SLP	T41 (C1)	T42 (C2)	T3 (C3)	T1 (C4)
P	CLOSED	CLOSED	CLOSED	OPEN
R	OPEN	CLOSED	OPEN	OPEN
N	CLOSED	CLOSED	OPEN	CLOSED
OD	OPEN	OPEN	OPEN	CLOSED
3 (or AUTOSTICK (ERS) if equipped)	OPEN	OPEN	CLOSED	OPEN
L	OPEN	CLOSED	CLOSED	CLOSED

SHIFT LEVER ERROR CODES REPORTED BY SCAN TOOL

ERROR CODE	SWITCH CIRCUIT STUCK	SWITCH POSITION
1	T1 (C4)	OPEN
2	T1 (C4)	CLOSED
3	T3 (C3)	OPEN
4	T3 (C3)	CLOSED
5	T42 (C2)	OPEN
6	T42 (C2)	CLOSED
7	T41 (C1)	OPEN
8	T41 (C1)	CLOSED
11	OD/TOW HAUL (if equipped)	OPEN
12	OD/TOW HAUL (if equipped)	CLOSED

Diagnostic Test**1. CHECK TO SEE IF P0706 DTC IS CURRENT**

1. With the scan tool, perform the Shift Lever Position Test.

Select the test outcome from the following:

Test passes:

- Go to step 6

Test fails with Error Code:

- Go to step 2

Test fails without Error Code:

- Perform the Gearshift Adjustment Procedure in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

2. CHECK THE TRANSMISSION RANGE SENSOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the scan tool, perform the Shift Lever Position Test.
6. When the scan tool instructs you to put the Gear Selector in a particular position, you must do so using the selector switch on the Transmission Simulator.
7. The LED for the gear position in question must be illuminated on the Transmission Simulator prior to pressing "ENTER" on the scan tool.

NOTE: If the Shift Lever Position test fails, make sure to note the identification of the TRS Signal circuit for future reference.

Did the Shift Lever Position test pass?

Yes

- Remove the Oil Pan and Main Valve Body Assembly in accordance with the Service Information. Check for metal debris on top of the Transmission Range Sensor (TRS) and the manual valve code plate. If debris is present, determine the cause of the debris and repair the transmission as necessary. If no problems are found, replace the Transmission TRS Assembly in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 3

3. CHECK THE TRS SIGNAL CIRCUIT FOR AN OPEN

1. Turn the ignition off to the lock position.
2. Disconnect the Transmission Simulator 8333A.
3. Disconnect the PCM harness connectors and install the PCM Pinout Box 8815.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install the PCM Pinout Box 8815 to perform diagnosis.

4. Measure the resistance of the identified (T41, T42, T3, or T1) TRS Signal circuit between the Transmission TRS Assembly harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

Yes

- Repair the identified (T41, T42, T3, or T1) TRS Signal circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 4

4. CHECK THE TRS SIGNAL CIRCUIT FOR A SHORT TO GROUND

1. Measure the resistance between ground and the identified (T41, T42, T3, or T1) TRS Signal circuit.

Is the resistance below 5.0 Ohms?

Yes

- Repair the identified (T41, T42, T3, or T1) TRS Signal circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 5

5. CHECK THE TRS SIGNAL CIRCUIT FOR A SHORT TO ANOTHER CIRCUIT

1. Measure the resistance between the identified (T41, T42, T3, or T1) TRS Signal circuit and all other circuits in the Transmission Solenoid/TRS Assembly harness connector.

Is the resistance below 100k Ohms between the identified (T41, T42, T3, or T1) TRS Signal circuit and any other circuit(s) in the Transmission TRS Assembly harness connector?

Yes

- Repair the identified (T41, T42, T3, or T1) TRS Signal circuit for a short to another circuit (s).
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

6. CHECK THE WIRING AND CONNECTORS

2009 Dodge Journey R/T

2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wiring and connectors while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Test Complete.

P0711-TRANSMISSION TEMPERATURE SENSOR PERFORMANCE

2009 Dodge Journey R/T

2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

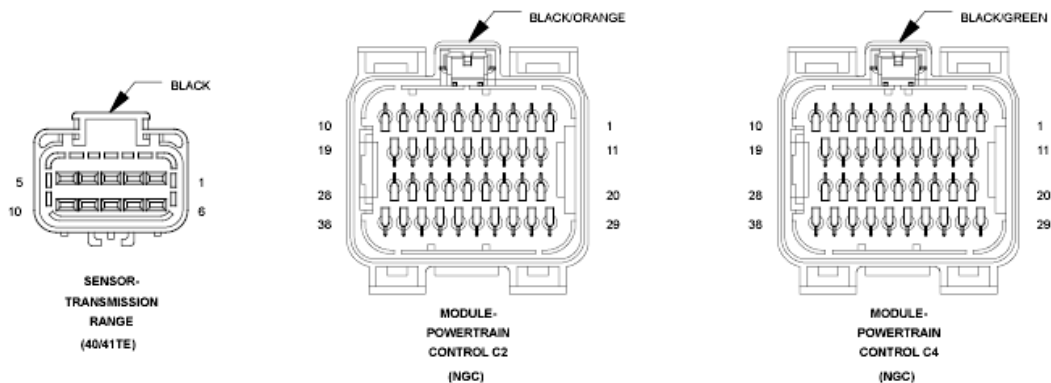
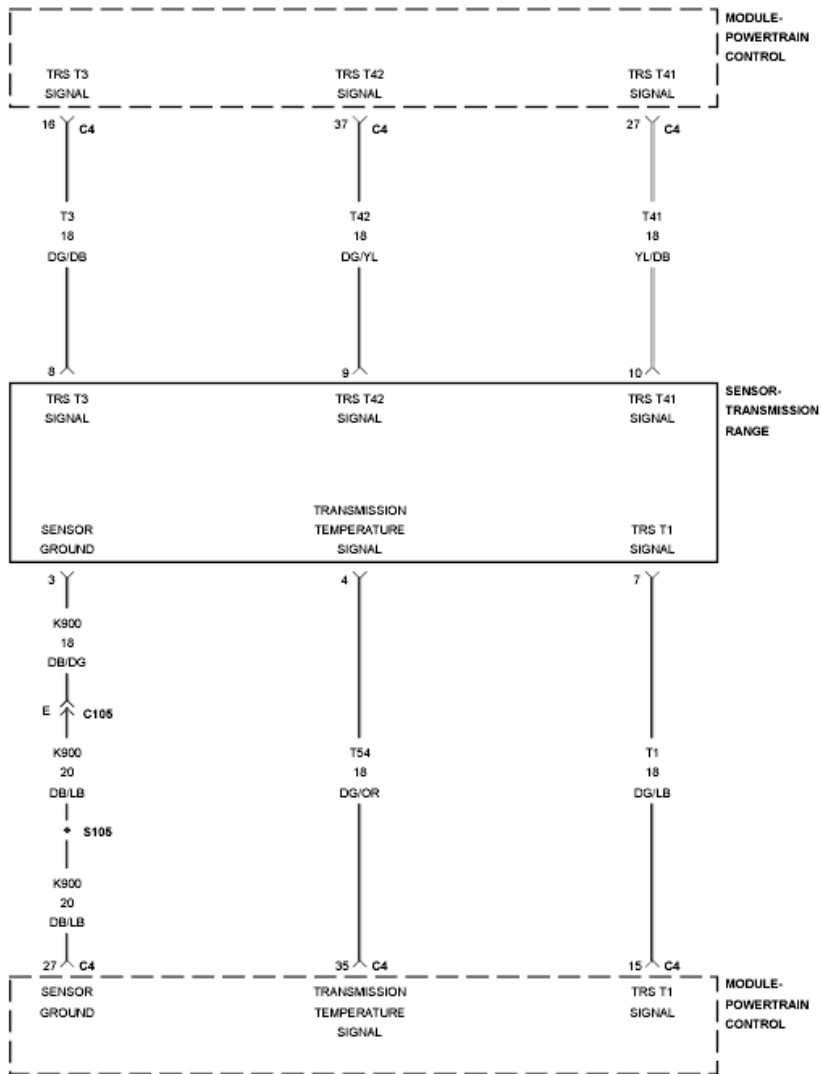


Fig. 2: Transmission Range Sensor Signal Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

The temperature sensor is used to sense the temperature of the transmission fluid. Transmission fluid temperature can affect shift quality, torque converter operation and when or if some diagnostics are run. A failed temperature sensor could affect the OBD diagnostics. If a problem occurs in the transmission temperature sensor circuit, transmission temperature will be based on a calculated value.

- **When Monitored:**

Continuously with the ignition on and engine running.

- **Set Condition:**

DTC will set when the transmission temperature does not reach a normal operating temperature within a given time frame. Time is variable due to ambient temperature. Approximate DTC set time is 10 to 35 minutes. The following are starting temperature to warm up times to set this DTC: starting temperature -40° C (-40° F) warm up time 35 minutes, starting temperature -28° C (-20° F) 25 minutes, starting temperature -6.6° C (20° F) 20 minutes, starting temperature 15.5° C (60° F) 10 minutes. When the fault is set, calculated temperature is substituted for measured temperature, however the DTC is stored only after three consecutive occurrences.

Possible Causes
RELATED TRANSMISSION TEMPERATURE DTCS PRESENT
TRANSMISSION TEMPERATURE SENSOR
POWERTRAIN CONTROL MODULE (PCM)

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK IF OTHER TRANSMISSION TEMPERATURE DTCS ARE PRESENT

1. With the scan tool, check Transmission DTCS.

Are there any other Transmission Temperature Sensor related DTCS present?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK IF DTC IS ACTIVE

1. With the scan tool, view DTCS.

Is the status Active or is the Starts Since Set counter 2 or less for this DTC?

Yes

- Go to step 3

No

- Go to step 4

3. CHECK THE PCM AND WIRING USING THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the Transmission Simulator, turn the Input/Output switch to OFF.
6. With the scan tool, monitor the Transmission Temperature Voltage while turning the Thermistor Voltage switch to all three positions on the Transmission Simulator.
7. Compare the scan tool readings with the numbers listed on the Transmission Simulator.

Do the readings on the Transmission Simulator match the scan tool readings ± 0.2 of a volt?

Yes

- Replace the Transmission Temperature Sensor (in the TRS Assembly) in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for any Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE,**

Powertrain Control (PCM) - Standard Procedure.**4. CHECK THE WIRING AND CONNECTORS**

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Test Complete.

P0712-TRANSMISSION TEMPERATURE SENSOR LOW

2009 Dodge Journey R/T

2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

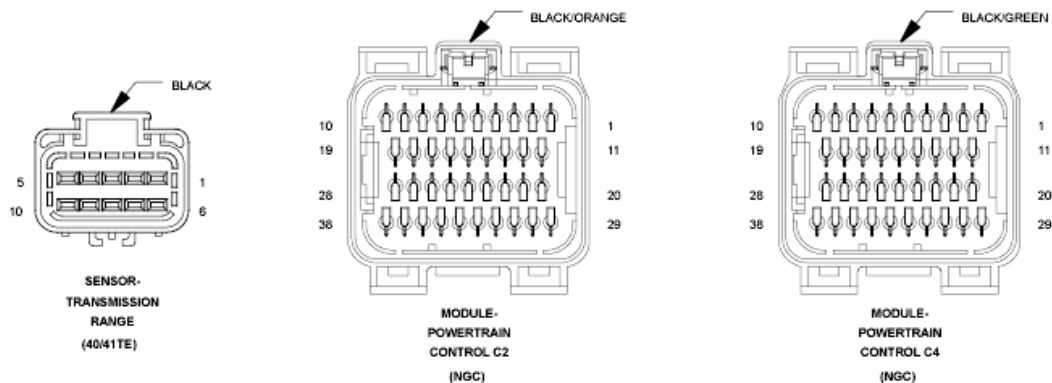


Fig. 3: Transmission Range Sensor Signal Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

The temperature sensor is used to sense the temperature of the transmission fluid. Transmission fluid temperature can affect shift quality, torque converter operation and when or if some diagnostics are run. A failed temperature sensor could affect the OBD diagnostics. If a problem occurs in the transmission temperature sensor circuit, transmission temperature will be based on a calculated value.

- **When Monitored:**

Continuously with the ignition on and engine running.

- **Set Condition:**

The DTC will set when the monitored Temperature Sensor voltage drops below 0.078 of a volt for the period of 1.45 seconds. When the fault is set, calculated temperature is substituted for measured temperature, however the fault code is stored only after three consecutive occurrences of the fault.

Possible Causes
RELATED DTCS PRESENT (T54) TRANSMISSION TEMPERATURE SENSOR SIGNAL CIRCUIT SHORTED TO GROUND TRANSMISSION TEMPERATURE SENSOR (IN TRS ASSEMBLY) POWERTRAIN CONTROL MODULE (PCM)

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK FOR RELATED DTCS

1. With the scan tool, check DTCs.

Are there any Speed Sensor DTCs present?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK IF DTC IS ACTIVE

1. With the scan tool, view DTCs.

Is the status Active or is the Starts Since Set counter 2 or less for this DTC?

Yes

- Go to step 3

No

- Go to step 5

3. CHECK THE PCM AND WIRING WITH THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the Transmission Simulator, turn the Input/Output switch to OFF.
6. With the scan tool, monitor the Transmission Temperature Voltage while turning the Thermistor Voltage switch to all three positions on the Transmission Simulator.
7. Compare the scan tool readings with the numbers listed on the Transmission Simulator.

Do the readings on the Transmission Simulator match the scan tool readings ± 0.2 of a volt?

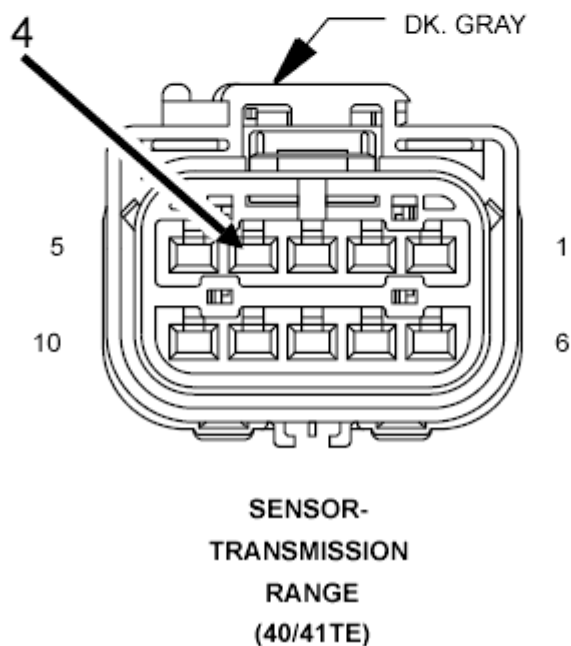
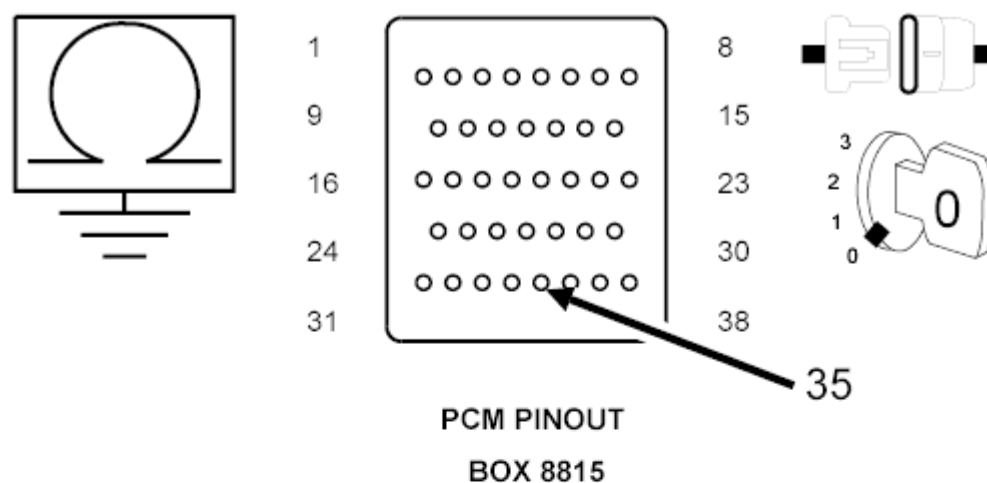
Yes

- Replace the Transmission Temperature Sensor (in the TRS Assembly) in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 4

4. CHECK THE (T54) TRANSMISSION TEMPERATURE SENSOR SIGNAL CIRCUIT FOR A SHORT TO GROUND



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Fig. 4: Checking Transmission Temperature Sensor Signal Circuit For A Short To Ground
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector.
3. Disconnect the TRS harness connector.

NOTE: Check connectors - Clean/repair as necessary.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM

harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install the PCM Pinout Box 8815 to perform diagnosis.

4. Measure the resistance between ground and the (T54) Transmission Temperature Sensor Signal circuit.

Is the resistance below 5.0 Ohms?

Yes

- Repair the (T54) Transmission Temperature Sensor Signal circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

5. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
5. Check for any Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Test Complete.

P0713-TRANSMISSION TEMPERATURE SENSOR HIGH

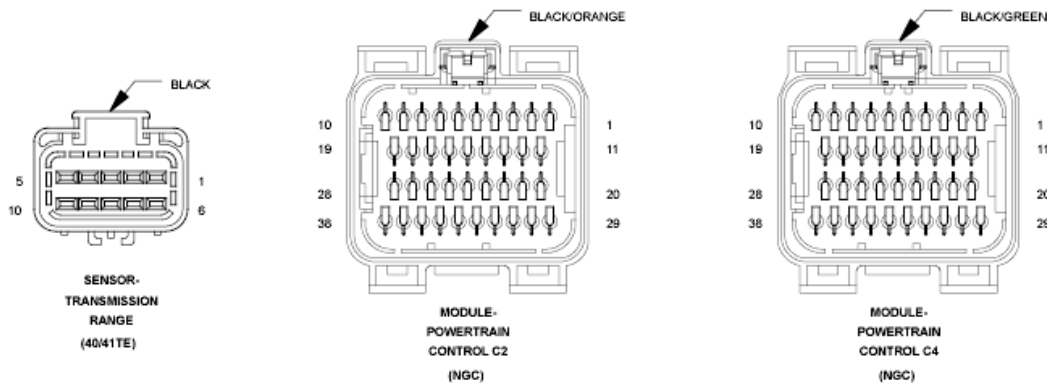
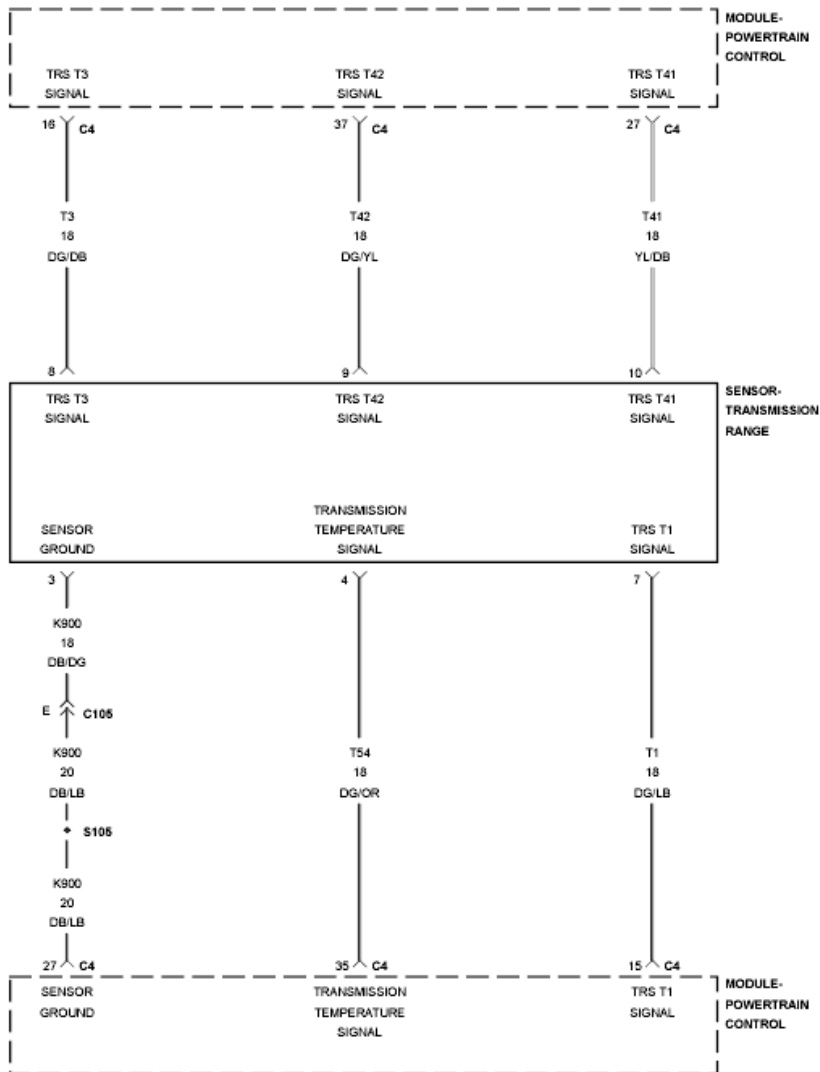


Fig. 5: Transmission Range Sensor Signal Circuit Schematic
 Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

The temperature sensor is used to sense the temperature of the transmission fluid. Transmission fluid temperature can affect shift quality, torque converter operation and when or if some diagnostics are run. A failed temperature sensor could affect the OBD diagnostics. If a problem occurs in the transmission temperature sensor circuit, transmission temperature will be based on a calculated value.

- **When Monitored:**

Continuously with the ignition on and engine running.

- **Set Condition:**

The DTC will set when the monitored Temperature Sensor voltage rises above 4.94 volts for the period of 1.45 seconds. When the fault is set, calculated temperature is substituted for measured temperature, however the fault code is stored only after three consecutive occurrences of the fault.

Possible Causes
(K900) SENSOR GROUND OPEN
(T54) TRANSMISSION TEMPERATURE SIGNAL CIRCUIT OPEN
(T54) TRANSMISSION TEMPERATURE SIGNAL CIRCUIT SHORTED TO VOLTAGE
TRANSMISSION TEMPERATURE SENSOR (IN TRS ASSEMBLY)
POWERTRAIN CONTROL MODULE (PCM)

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

Diagnostic Test

1. CHECK IF THE DTC IS CURRENT

1. With the scan tool, read DTCs.

Is the status Active for this DTC or is Starts Since Set counter 2 or less?

Yes

- Go to step 2

No

- Go to step 6

2. CHECK THE PCM AND WIRING WITH THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.

2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the Transmission Simulator, turn the Input/Output switch to OFF.
6. With the scan tool, monitor the Transmission Temperature Voltage while turning the Thermistor Voltage switch to all three positions on the Transmission Simulator.
7. Compare the scan tool readings with the numbers listed on the Transmission Simulator.

Do the readings on the Transmission Simulator match the scan tool readings ± 0.2 of a volt?

Yes

- Replace Transmission Temperature Sensor (TRS Assembly) in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go to step 3

3. **CHECK THE (T54) TRANSMISSION TEMPERATURE SIGNAL CIRCUIT FOR AN OPEN**

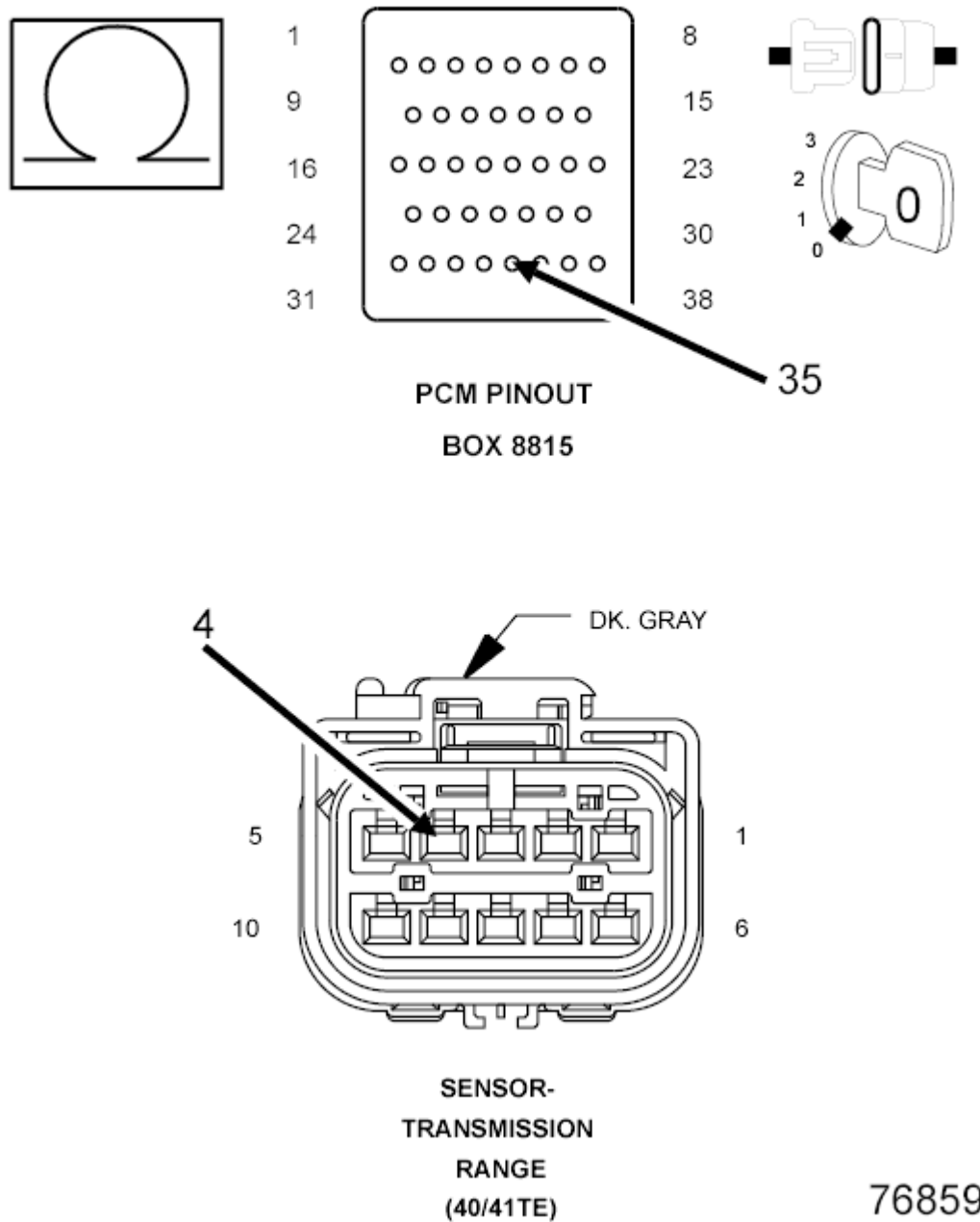


Fig. 6: Checking Transmission Temperature Signal Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector.
3. Disconnect the TRS harness connector

NOTE: Check connectors - Clean/repair as necessary.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install the PCM Pinout Box 8815 to perform diagnosis.

4. Measure the resistance of the (T54) Transmission Temperature Signal circuit between the TRS harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

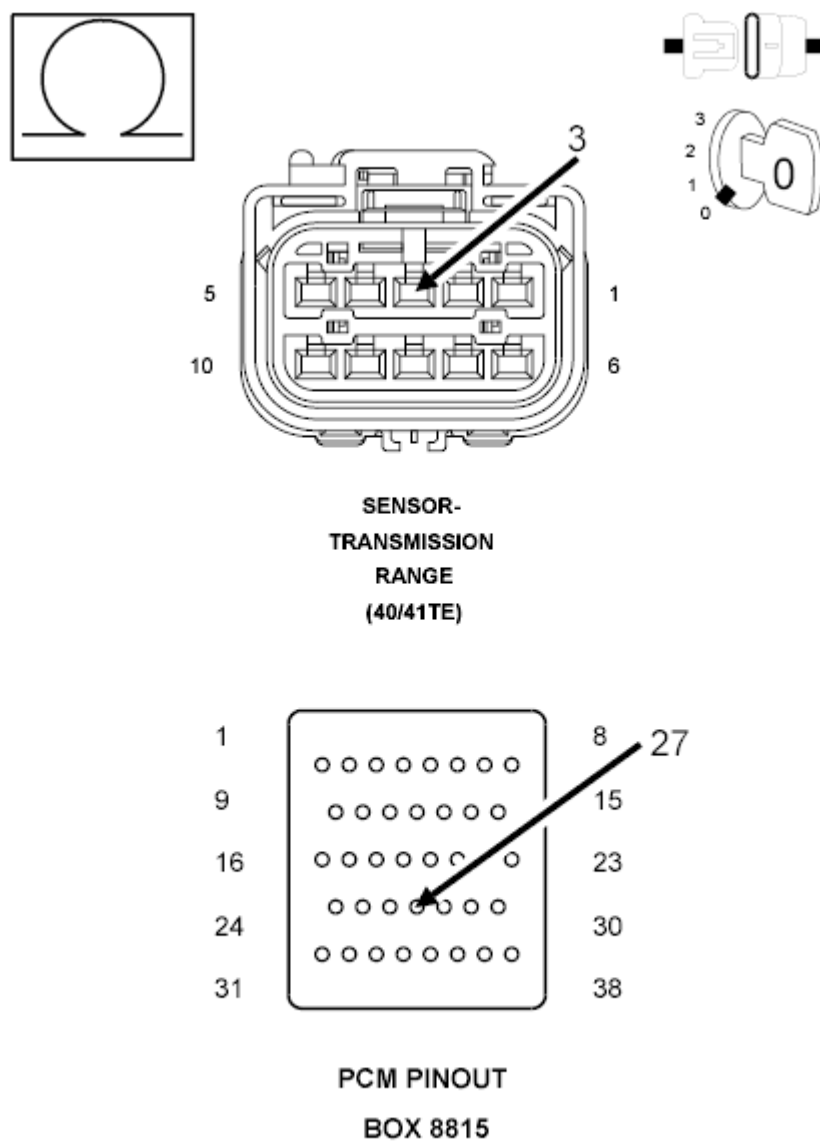
Yes

- Repair the (T54) Transmission Temperature Signal circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 4

4. **CHECK THE (K900) SENSOR GROUND CIRCUIT FOR AN OPEN**



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Fig. 7: Checking Sensor Ground Circuit For An Open
Courtesy of CHRYSLER LLC

1. Disconnect the PCM C2 harness connector.
2. Measure the resistance of the (K900) Sensor Ground circuit between the TRS harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

Yes

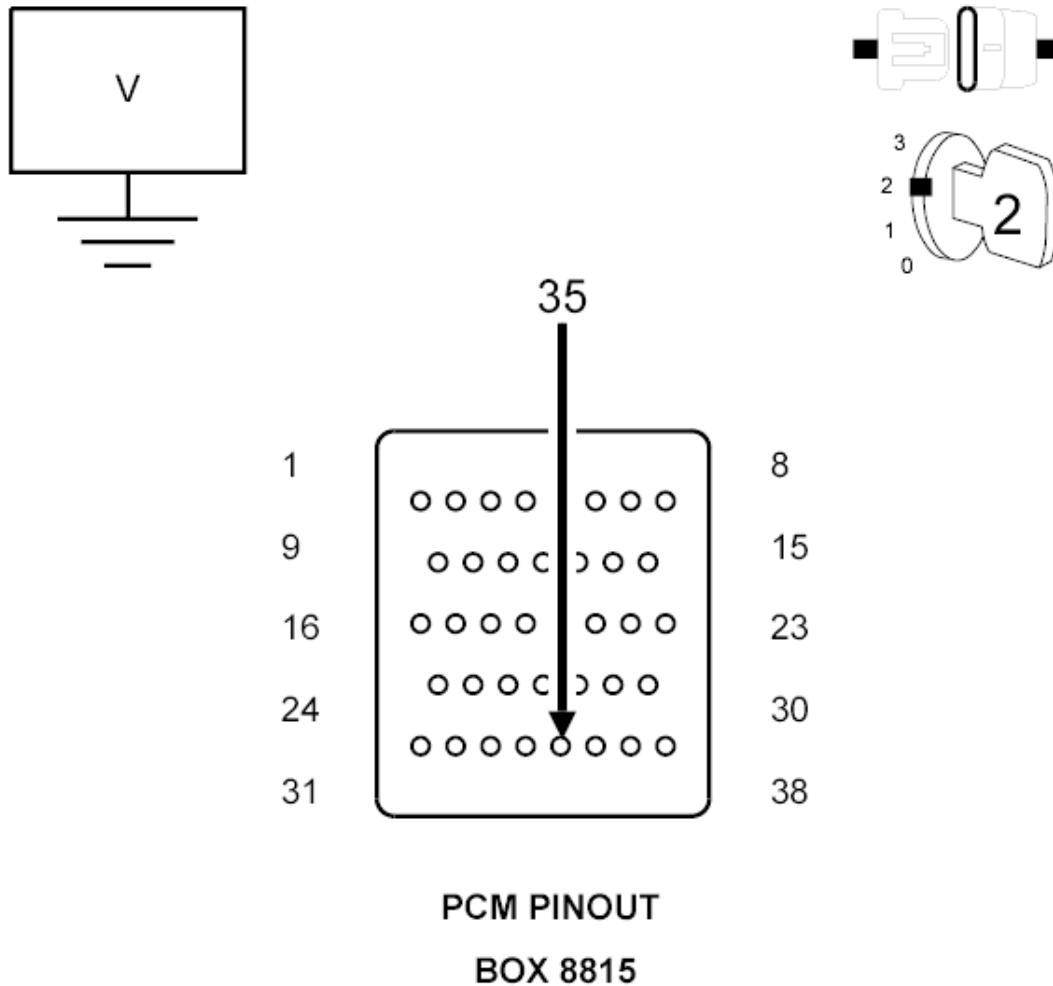
- Repair the (K900) Sensor Ground circuit for an open.

- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 5

5. CHECK THE (T54) TRANSMISSION TEMPERATURE SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE



76865

Fig. 8: Checking Transmission Temperature Signal Circuit For A Short To Voltage
Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.
2. With the scan tool under TIPM, actuate the Transmission.

3. Measure the voltage of the (T54) Transmission Temperature Signal circuit in the appropriate terminal of the PCM Pinout Box 8815.

Is the voltage above 0.5 of a volt?

Yes

- Repair the (T54) Transmission Temperature Signal circuit for a short to voltage.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

6. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
5. Check for any Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Test Complete.

P0714-TRANSMISSION TEMPERATURE SENSOR INTERMITTENT

2009 Dodge Journey R/T

2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

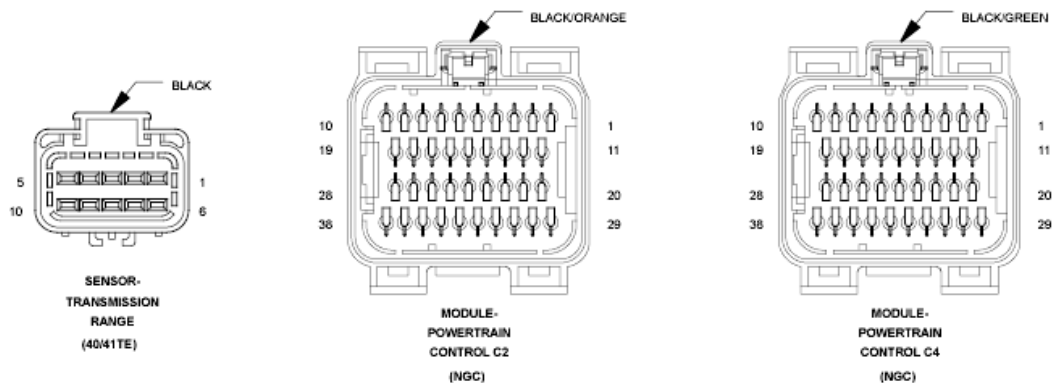


Fig. 9: Transmission Range Sensor Signal Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

The temperature sensor is used to sense the temperature of the transmission fluid. Transmission fluid temperature can affect shift quality, torque converter operation and when or if some diagnostics are run. A failed temperature sensor could affect the OBD diagnostics. If a problem occurs in the transmission temperature sensor circuit, transmission temperature will be based on a calculated value.

- **When Monitored:**

Continuously with the ignition on and engine running.

- **Set Condition:**

The DTC will set when the monitored Temperature Sensor voltage fluctuates or changes abruptly within a predetermined period of time.

Possible Causes
TRANSMISSION TEMPERATURE SENSOR (IN TRS ASSEMBLY)
POWERTRAIN CONTROL MODULE (PCM)

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test**1. CHECK IF THE DTC IS CURRENT**

1. With the scan tool, view DTCs.

Is the status Active or is the Starts Since Set counter 2 or less for this DTC?

Yes

- Go to step 2

No

- Go to step 3

2. CHECK THE PCM AND WIRING WITH THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

**WARNING: The Starter Solenoid Relay must be removed from the TIPM.
Failure to do so can result in possible serious or fatal injury.**

3. Install Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the Transmission Simulator, turn the Input/Output switch to OFF.
6. With the scan tool, monitor the Transmission Temperature Voltage while turning the Thermistor Voltage switch to all three positions on the Transmission Simulator.
7. Compare the scan tool readings with the numbers listed on the Transmission Simulator.

Do the readings on the Transmission Simulator match a non-fluctuating scan tool reading ± 0.2 of a volt?

Yes

- Replace the Transmission Temperature Sensor (in the TRS Assembly) in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for any Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

3. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
5. Check for any Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE,**

2009 Dodge Journey R/T

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Powertrain Control (PCM) - Standard Procedure.

No

- Test Complete.

P0716-INPUT SPEED SENSOR 1 CIRCUIT PERFORMANCE

2009 Dodge Journey R/T

2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

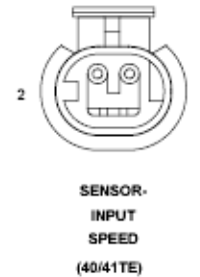
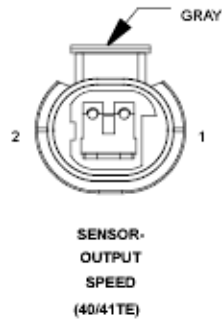
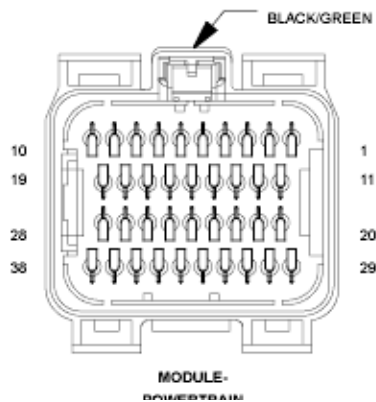
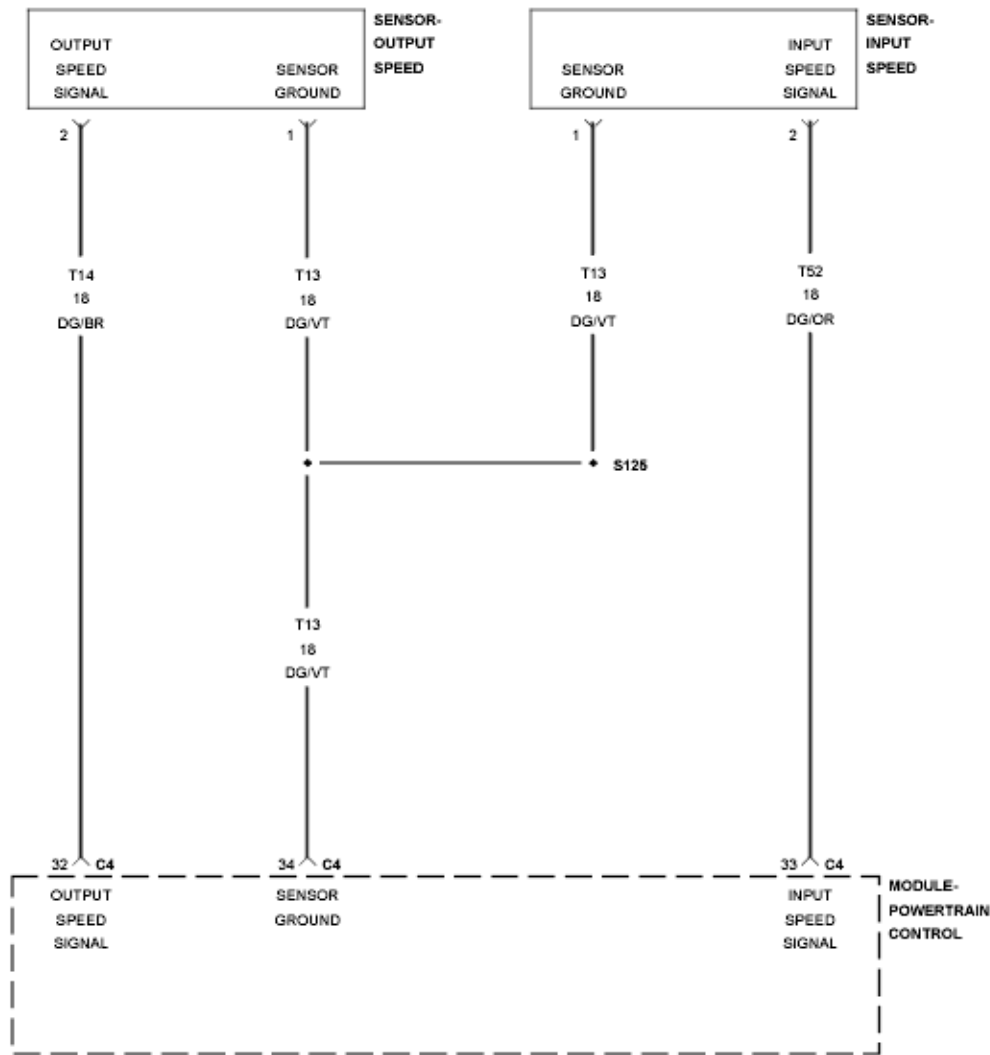


Fig. 10: Input Speed Signal Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The transmission control system uses two speed sensors, one to measure input RPM and one to measure output RPM. These inputs are essential for proper transmission operation. Therefore, the integrity of this data is verified through system checks.

- **When Monitored:**

The transmission gear ratio is monitored continuously while the transmission is in gear.

- **Set Condition:**

If there is an excessive change in the Input RPM in any valid gear (R, 1st, 2nd, 3rd, or 4th).

Possible Causes
(T52) INPUT SPEED SIGNAL CIRCUIT OPEN (T13) SENSOR GROUND CIRCUIT OPEN (T52) INPUT SPEED SIGNAL CIRCUIT SHORT TO GROUND (T52) INPUT SPEED SIGNAL CIRCUIT SHORT TO VOLTAGE (T13) SENSOR GROUND CIRCUIT SHORT TO VOLTAGE INPUT SPEED SENSOR POWERTRAIN CONTROL MODULE

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. CHECK IF THE DTC IS CURRENT

1. Start the engine.
2. Place the shift lever in park.
3. With the scan tool , read the Input Speed Sensor RPM.

Is the Input Speed Sensor reading below 400 RPM?

Yes

- Go to step 2

No

- Go to step 8

2. CHECK THE PCM AND WIRING WITH THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator, Miller tool #8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the Transmission Simulator, set the "Input/Output Speed" switch to "ON" and the rotary switch to the "3000/1250" position.
6. With the scan tool, read the Input and Output RPM.

Does the Input speed read 3000 RPM and the Output speed read 1250 RPM $\pm$ 50 RPM?

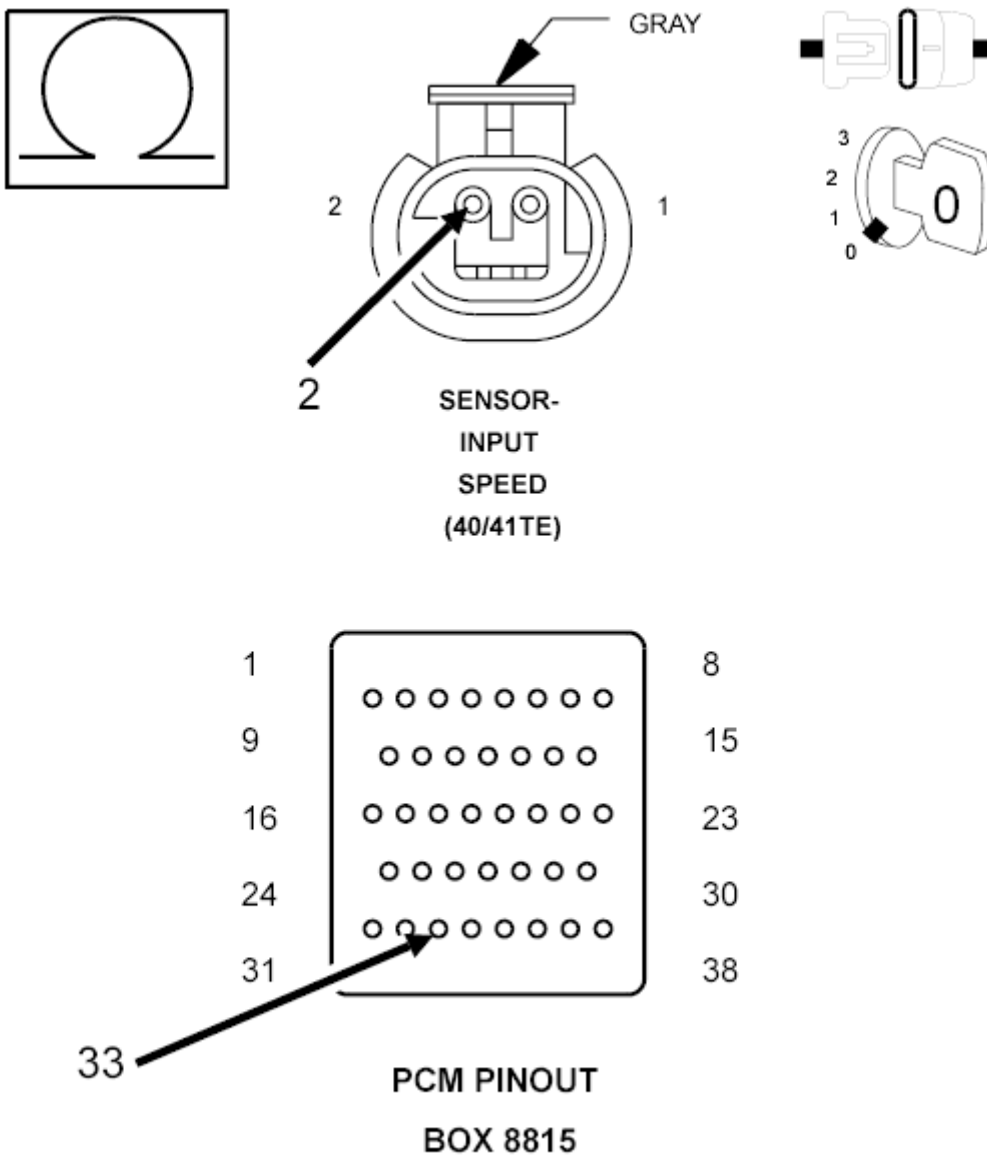
Yes

- Replace the Input Speed Sensor in accordance with the Service Information.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 3

3. CHECK THE (T52) INPUT SPEED SIGNAL CIRCUIT FOR AN OPEN



76881

Fig. 11: Checking Input Speed Signal Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector.
3. Disconnect the Input Speed Sensor harness connector.

NOTE: Check connectors - Clean/repair as necessary.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM

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harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install PCM Pinout Box 8815 to perform diagnosis.

4. Measure the resistance of the (T52) Input Speed Signal circuit between the Input Speed Sensor harness connector and the appropriate terminal of Miller tool #8815.

Is the resistance above 5.0 ohms?

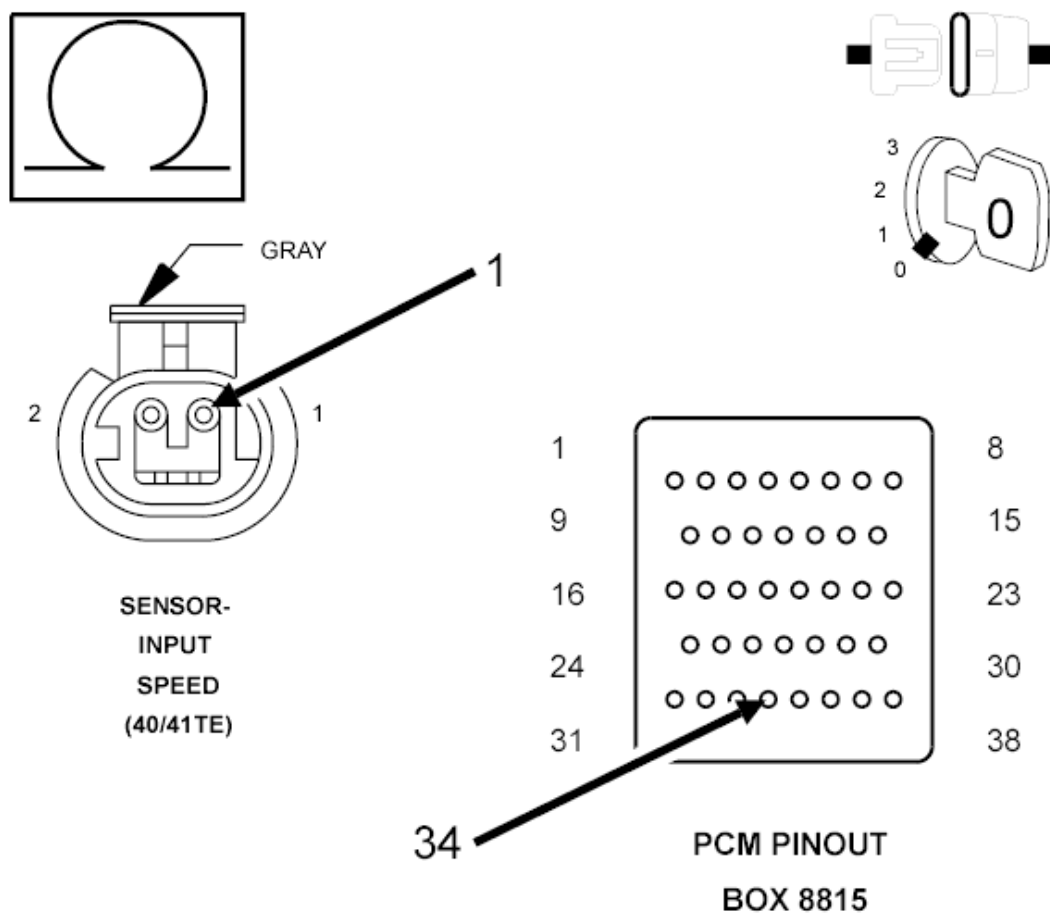
Yes

- Repair the (T52) Input Speed Signal circuit for an open.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 4

4. **CHECK THE (T13) SENSOR GROUND CIRCUIT FOR AN OPEN**



76885

Fig. 12: Checking Sensor Ground Circuit For An Open
Courtesy of CHRYSLER LLC

1. Measure the resistance of the (T13) Sensor Ground circuit between the Input Speed Sensor harness connector and the appropriate terminal of Miller tool #8815.

Is the resistance above 5.0 ohms?

Yes

- Repair the (T13) Sensor Ground circuit for an open.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 5

5. CHECK THE (T52) INPUT SPEED SIGNAL CIRCUIT FOR A SHORT TO GROUND

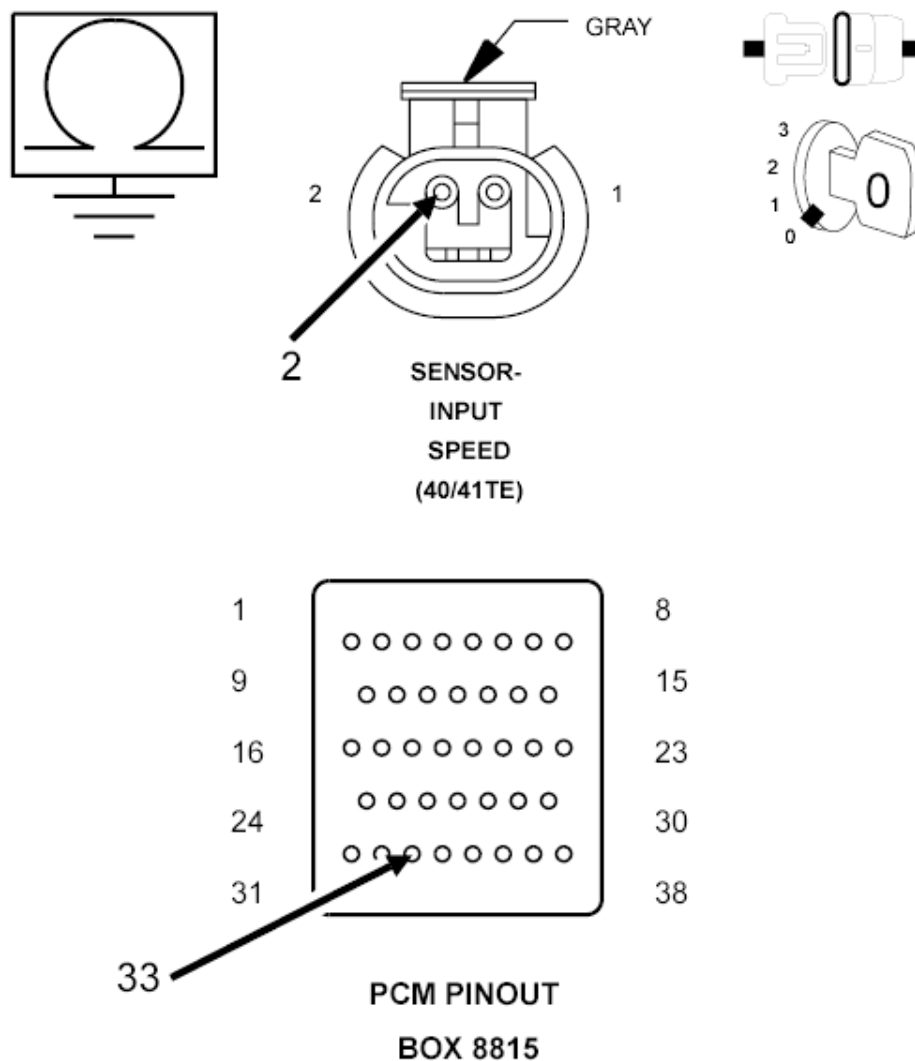


Fig. 13: Checking Input Speed Signal Circuit For A Short To Ground
Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T52) Input Speed Signal circuit.

Is the resistance Below 5.0 ohms?

Yes

- Repair the (T52) Input Speed Signal circuit for a short to ground.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE,**

Powertrain Control (PCM) - Standard Procedure

No

- Go to step 6

6. CHECK THE (T52) INPUT SPEED SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE

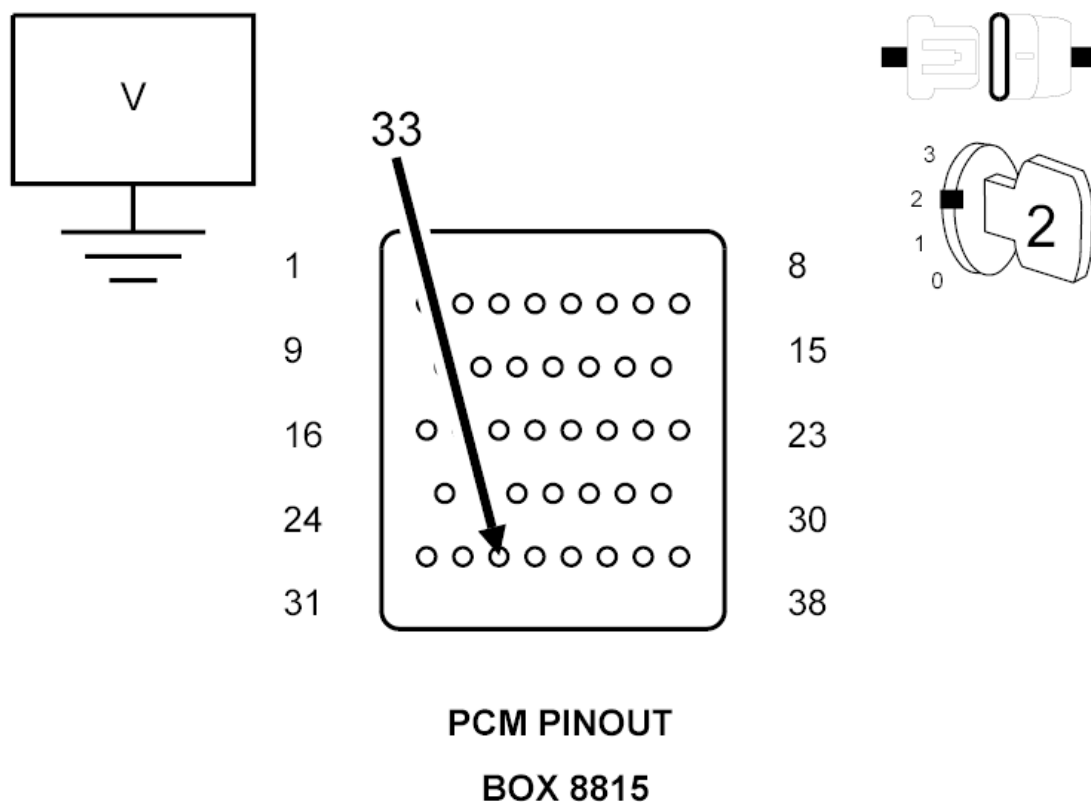


Fig. 14: Checking Input Speed Signal Circuit For A Short To Voltage
Courtesy of CHRYSLER LLC

1. Disconnect the Output Speed Sensor harness connector.
2. Ignition on, engine not running.
3. With the scan tool under TIPM, actuate the Transmission.
4. Measure the voltage of the (T52) Input Speed Signal circuit.

Is the voltage above 0.5 volt?

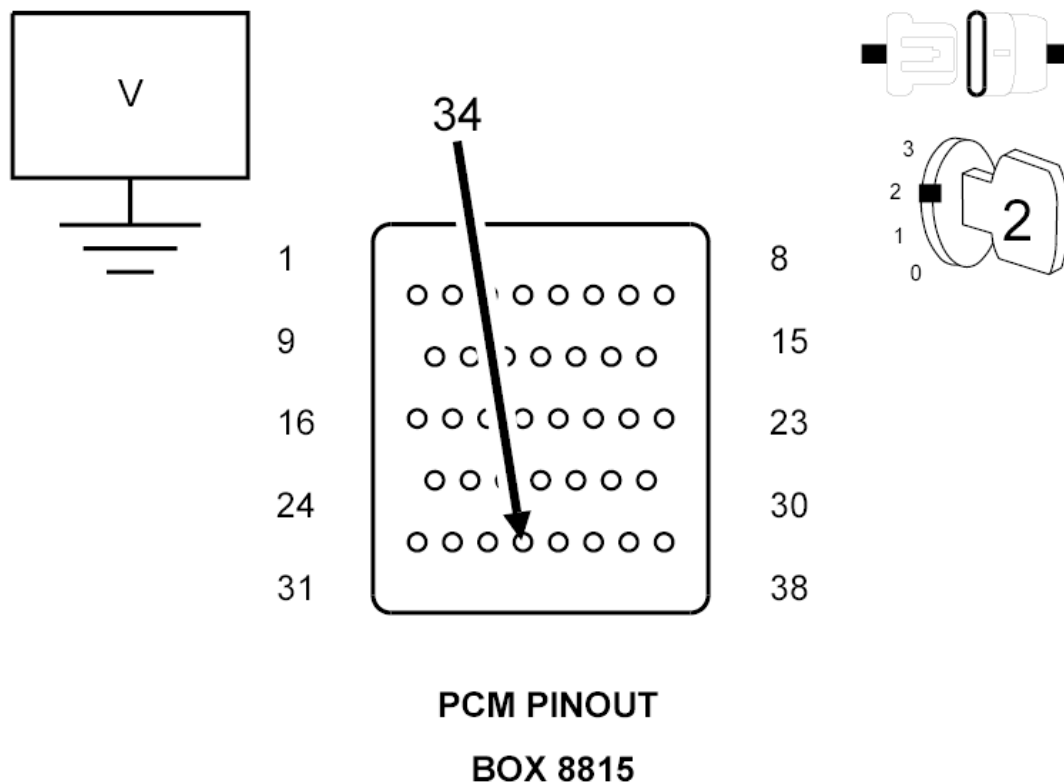
Yes

- Repair the (T52) Input Speed Signal circuit for a short to voltage.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 7

7. CHECK THE (T13) SENSOR GROUND CIRCUIT FOR A SHORT TO VOLTAGE



76891

Fig. 15: Checking Sensor Ground Circuit For A Short To Voltage

Courtesy of CHRYSLER LLC

NOTE: Continue actuation of the Transmission under TIPM using the scan tool.

1. Measure the voltage of the (T13) Sensor Ground circuit.

Is the voltage above 0.5 volts?

Yes

- Repair the (T13) Sensor Ground circuit for a short to voltage.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

8. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wiring and connectors while checking for shorted and open circuits.
4. With the scan tool , check the Event Data to help identify the conditions in which the DTC was set.
5. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any problems found?

Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Test Complete.

P0721-OUTPUT SPEED SENSOR CIRCUIT PERFORMANCE

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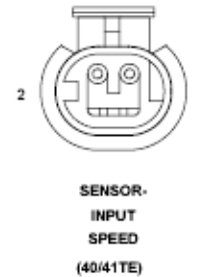
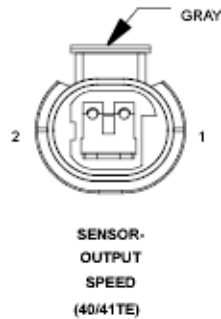
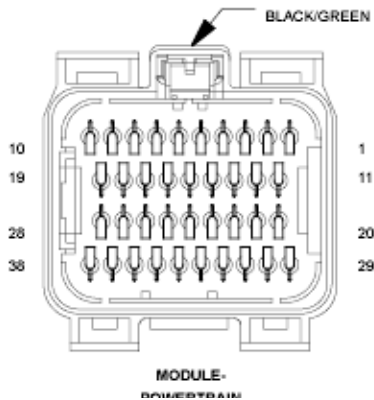
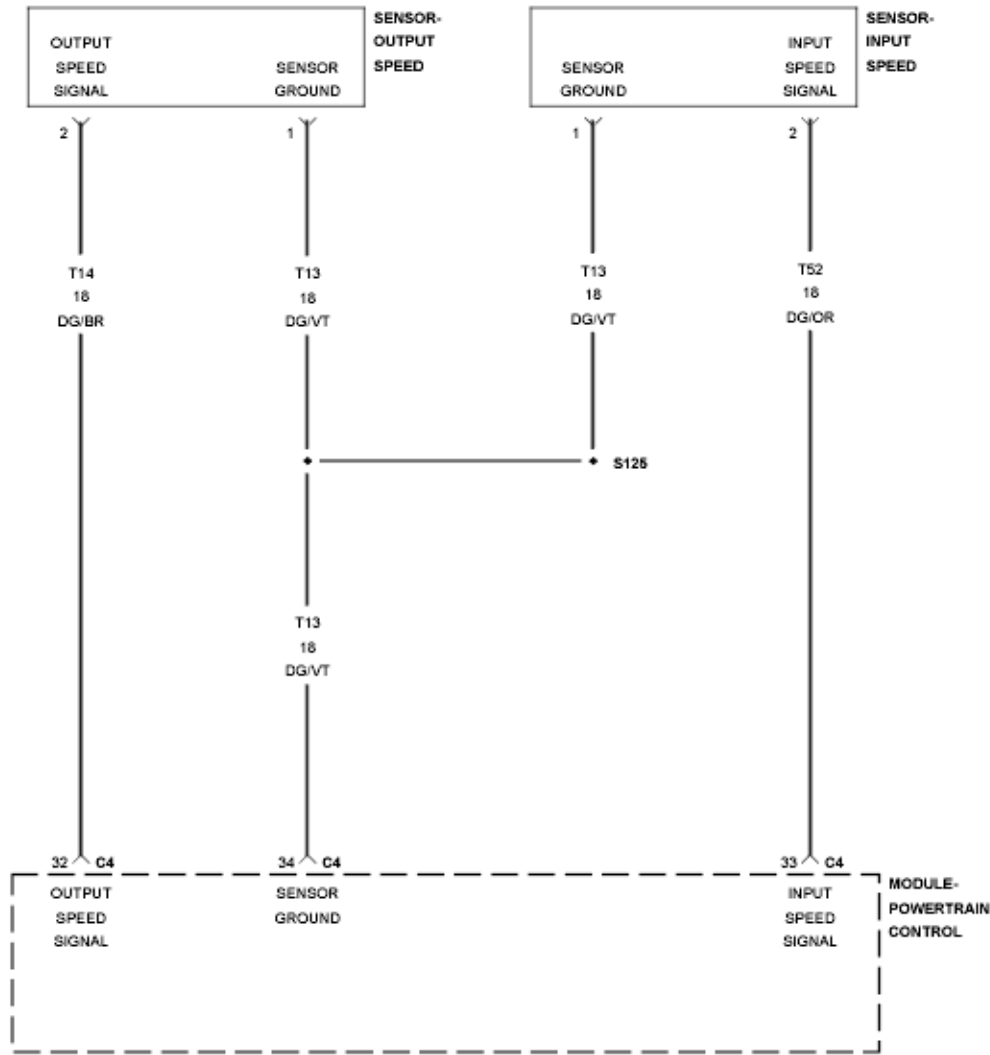


Fig. 16: Input Speed Signal Circuit Schematic

Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The transmission system uses two speed sensors, one to measure input RPM and one to measure output RPM. These inputs are essential for proper transmission operation. Therefore, the integrity of this data is verified through system checks.

- **When Monitored:**

The transmission gear ratio is monitored continuously while the transmission is in gear.

- **Set Condition:**

If there is an excessive change in the Output RPM in any gear.

Possible Causes
(T14) OUTPUT SPEED SIGNAL CIRCUIT OPEN
(T14) OUTPUT SPEED SIGNAL CIRCUIT SHORT TO GROUND
(T14) OUTPUT SPEED SIGNAL CIRCUIT SHORT TO VOLTAGE
(T13) SENSOR GROUND CIRCUIT OPEN
(T13) SENSOR GROUND CIRCUIT SHORT TO VOLTAGE
OUTPUT SPEED SENSOR
POWERTRAIN CONTROL MODULE

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test**1. CHECK IF THE DTC IS CURRENT**

1. Start the engine in park.
2. Raise the drive wheels off of the ground.

WARNING: Properly support the vehicle.

3. Firmly apply the brakes and place the transmission selector in drive.

WARNING: Be sure to keep hands and feet clear of rotating wheels.

4. Release the brakes and allow the drive wheels to spin freely.

NOTE: **The drive wheels must be turning at this point.**

5. With the scan tool, read the Output RPM.

Is the Output RPM below 100?

Yes

- Go to step 2

No

- Go to step 8

2. CHECK THE PCM AND WIRING USING THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator, Miller tool #8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the Transmission Simulator, set the "Input/Output Speed" switch to "ON" and the rotary switch to the "3000/1250" position.
6. With the scan tool, read the Input and Output RPM.

Does the Input RPM read 3000 and the Output RPM read 1250 (within 50 RPM)?

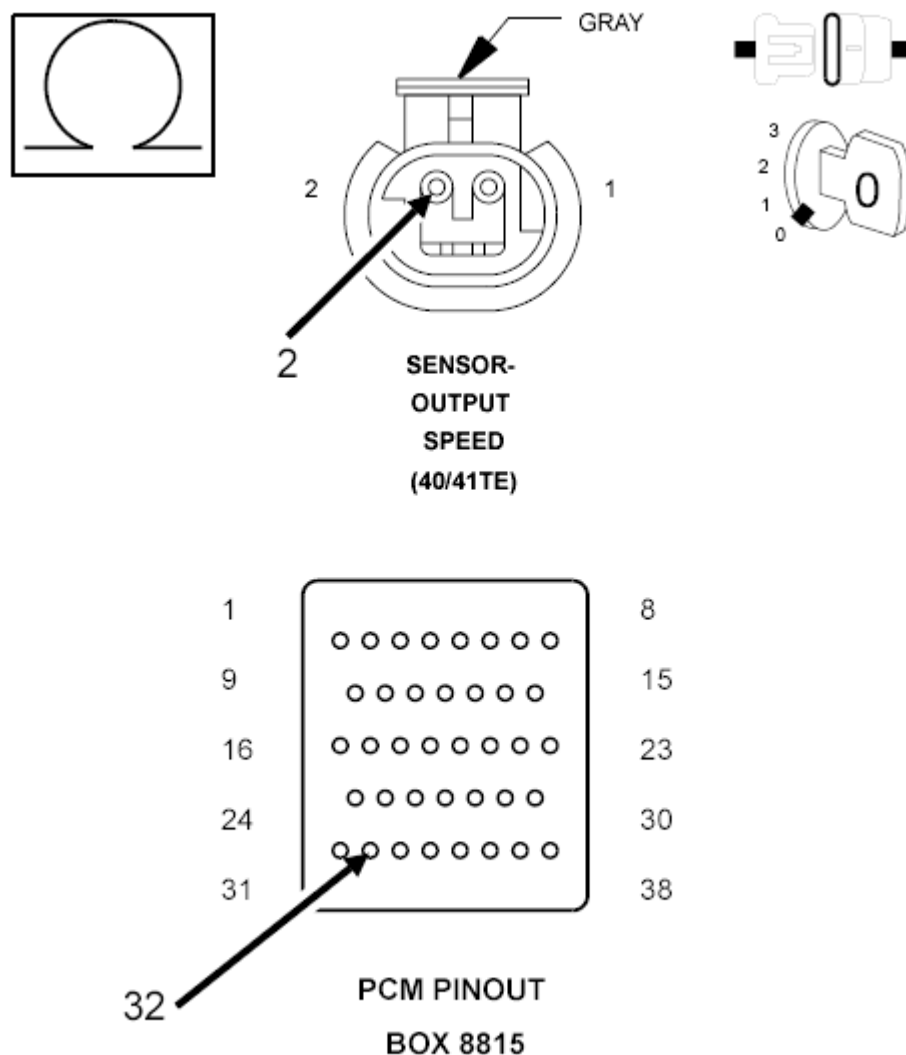
Yes

- Replace the Output Speed Sensor in accordance with the Service Information.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 3

3. CHECK THE (T14) OUTPUT SPEED SIGNAL CIRCUIT FOR AN OPEN



76903

Fig. 17: Checking Output Speed Signal Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector.
3. Disconnect the Output Speed Sensor harness connector.

NOTE: Check connectors - Clean/repair as necessary.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install PCM Pinout Box 8815 to

perform diagnosis.

4. Measure the resistance of the (T14) Output Speed Signal circuit between the Output Speed Sensor harness connector and the appropriate terminal of Miller tool #8815.

Is the resistance above 5.0 ohms?

Yes

- Repair the (T14) Output Speed Signal circuit for an open.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 4

4. CHECK THE (T13) SENSOR GROUND CIRCUIT FOR AN OPEN

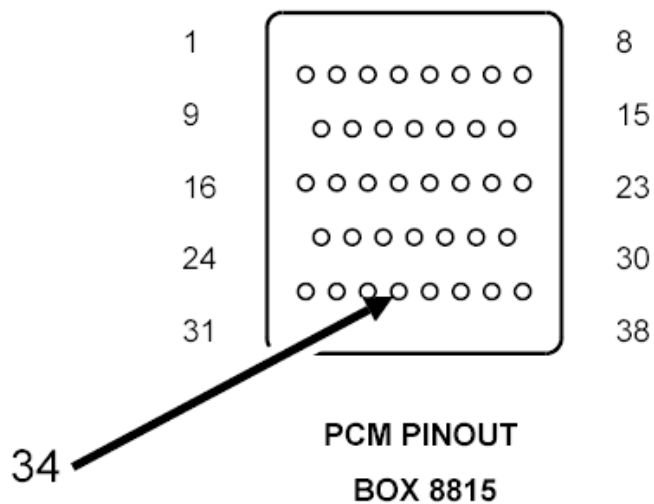
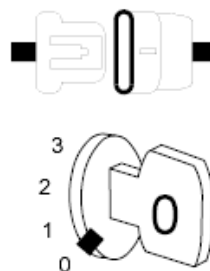
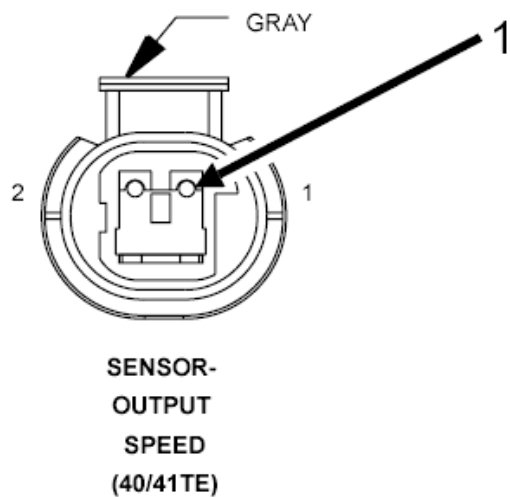
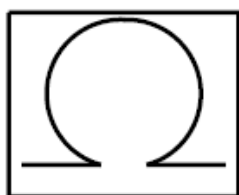


Fig. 18: Checking Sensor Ground Circuit For An Open
Courtesy of CHRYSLER LLC

1. Measure the resistance of the Sensor Ground circuit between the Output Speed Sensor harness connector and the appropriate terminal of Miller tool #8815.

Is the resistance above 5.0 ohms?

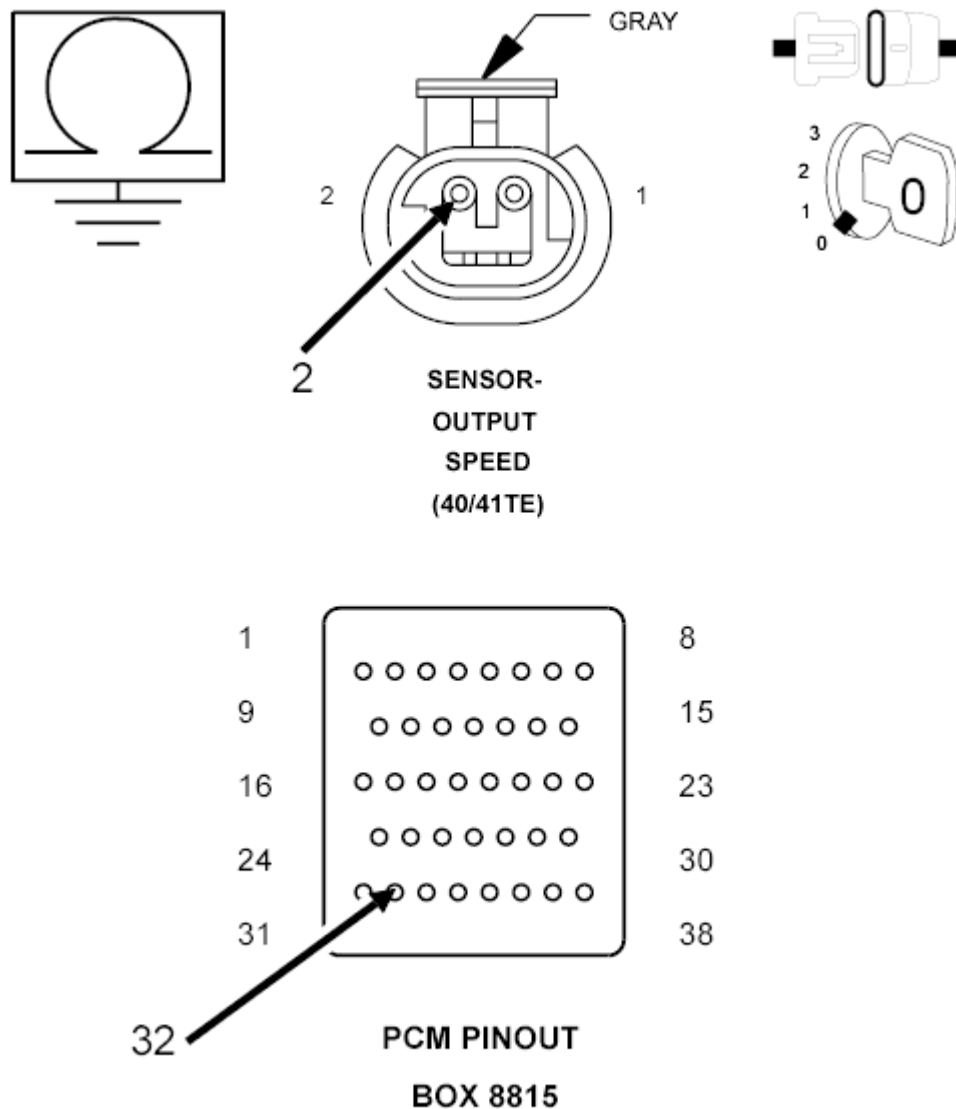
Yes

- Repair the (T13) Sensor Ground circuit for an open.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 5

5. CHECK THE (T14) OUTPUT SPEED SIGNAL CIRCUIT FOR A SHORT TO GROUND



76909

Fig. 19: Checking Output Speed Signal Circuit For A Short To Ground

Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T14) Output Speed Signal circuit.

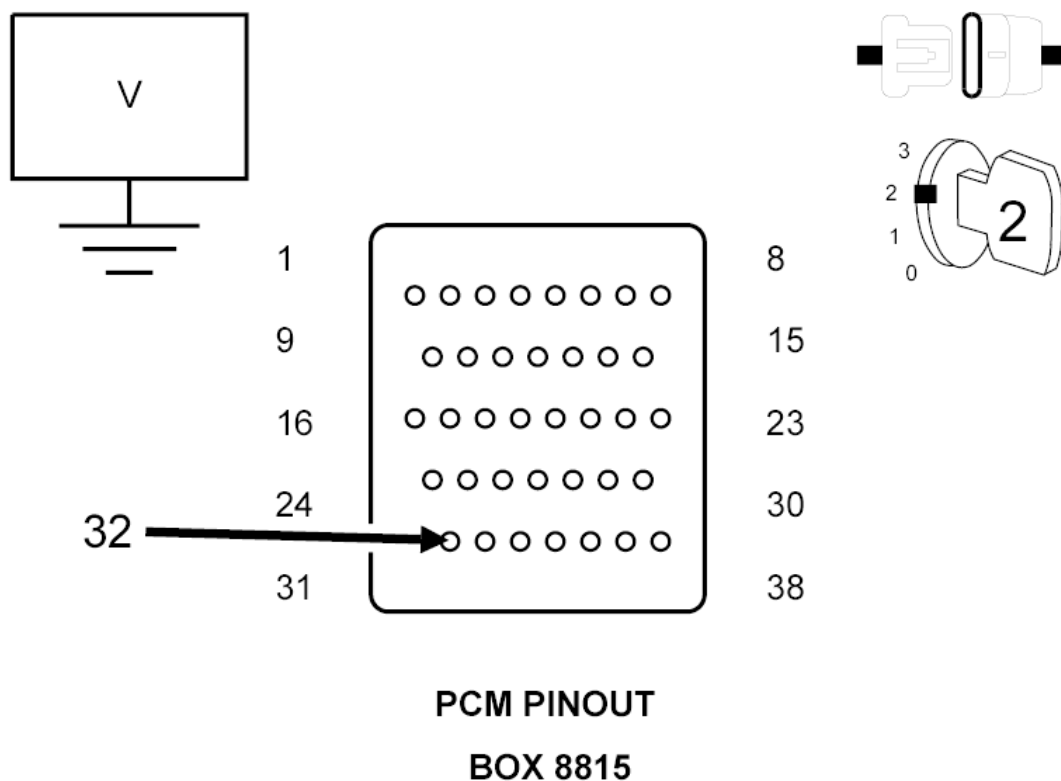
Is the resistance below 5.0 ohms?

Yes

- Repair the (T14) Output Speed Signal circuit for a short to ground.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE,**

Powertrain Control (PCM) - Standard Procedure**No**

- Go to step 6

6. CHECK THE (T14) OUTPUT SPEED SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE

76911

Fig. 20: Checking Output Speed Signal Circuit For A Short To Voltage
 Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.
2. With the scan tool under TIPM, actuate the Transmission.
3. Measure the voltage of the (T14) Output Speed Signal circuit.

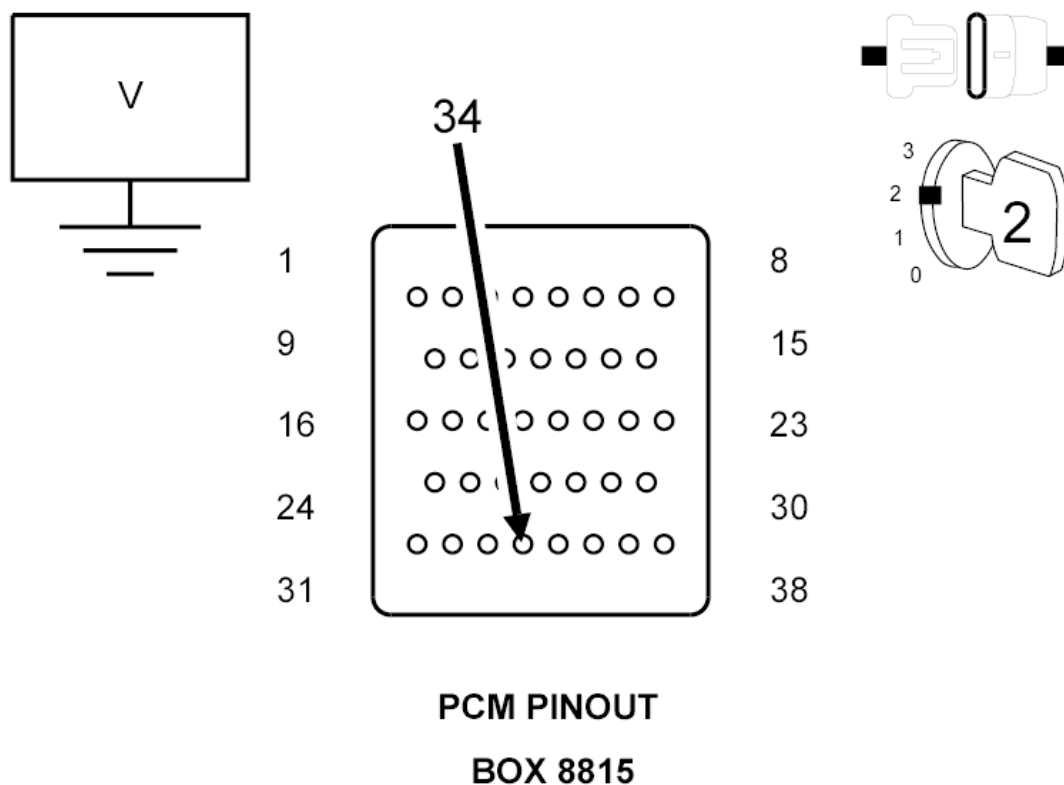
Is the voltage above 0.5 volt?

Yes

- Repair the (T14) Output Speed Signal circuit for a short to voltage.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE**.

Powertrain Control (PCM) - Standard Procedure**No**

- Go to step 7

7. CHECK THE (T13) SENSOR GROUND CIRCUIT FOR A SHORT TO VOLTAGE

76891

Fig. 21: Checking Sensor Ground Circuit For A Short To Voltage
 Courtesy of CHRYSLER LLC

NOTE: Continue the actuation of the Transmission under TIPM using the scan tool.

1. Measure the voltage of the (T13) Sensor Ground circuit.

Is the voltage above 0.5 volts?

Yes

- Repair the (T13) Sensor Ground circuit for a short to voltage.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE**.

Powertrain Control (PCM) - Standard Procedure**No**

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

8. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wiring and connectors while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
5. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any problems found?

Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Test Complete.

P0726-ENGINE SPEED INPUT CIRCUIT RANGE/PERFORMANCEFor complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .**Theory of Operation**

The PCM uses a dual port RAM internal to the controller to send the engine speed signal to the Transmission Control System. The calculated engine RPM is compared to a minimum and maximum value. If the PCM interprets this signal to be out of range when the engine is running the code is set. The MIL illuminates after 10 seconds of vehicle operation and the transmission system defaults to Limp-in mode.

- **When Monitored:**

Whenever the engine is running.

• **Set Condition:**

The Engine RPM is less than 390 or greater than 8000 for more than 2 seconds while the engine is running.

Possible Causes
ENGINE DTCS PRESENT POWERTRAIN CONTROL MODULE

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. CHECK IF THE DTC IS CURRENT

1. Start the engine.

NOTE: This DTC is not a Transmission Input Speed Sensor DTC.

2. With the scan tool, read transmission DTCs.

Is the status Active for this DTC or is the Starts Since Set counter set at 0?

Yes

- Go to step 2

No

- Go to step 3

2. CHECK IF ENGINE DTCS ARE PRESENT

1. With the scan tool, read engine DTCs.

Are there any engine DTCs present?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** and perform the appropriate diagnostic procedure.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for

corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.

- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

3. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wiring and connectors while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
5. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any problems found?

Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Test Complete.

P0731-GEAR RATIO ERROR IN 1ST

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The Powertrain Control Module (PCM) uses two speed sensors, one to measure input RPM and one to measure output RPM. These inputs are essential for proper transmission operation. Therefore, the integrity of this data is verified through data checks. When in gear, if the gear ratio does not compare to a known gear ratio, the corresponding gear ratio error trouble code is set. The transmission will go into Limp-in mode after four gear ratio error events occur in a given driving cycle.

- **When Monitored:**

The Transmission gear ratio is monitored continuously while the transmission is in gear.

- **Set Condition:**

If the ratio of the Input RPM to the Output RPM does not match the current gear ratio when compared to

the known gear ratio.

Possible Causes
RELATED TRANSMISSION DTCS PRESENT INPUT OR OUTPUT SPEED SENSOR ERRORS LOW LINE PRESSURE FAILED UD OR LR CLUTCH CUT OR TORN UD OR LR CLUTCH PISTON SEAL CUT UD OR LR ACCUMULATOR PISTON SEAL STUCK MAIN REGULATOR VALVE SOLENOID MODULE BROKEN INPUT SHAFT FAILED UD SHAFT FAILED REAR SUN GEAR, CARRIER, OR ANNULUS GEAR

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. DETERMINING IF RELATED TRANSMISSION DTCS ARE PRESENT

1. With the scan tool, read DTCS.
2. If any of these DTCS are present, perform their respective tests first.

Are there any Loss of Prime, Line Pressure and/or Speed Sensor DTCS present?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure. If any of these DTCS are present, they will cause a gear ratio error. Perform the test for Loss of Prime first if it is present.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

No

- Go to step 2

2. CHECK TO SEE IF P0731 IS CURRENT

1. With the scan tool, perform the 1st gear clutch test. Follow the instructions on the scan tool.
2. Increase the throttle angle or TPS degree to 30° for no more than a few seconds.

CAUTION: Do not overheat the transmission.

Did the Clutch Test pass, Input Speed remain at zero?

Yes

- Go to step 3

No

- Repair internal Transmission as necessary. Refer to the appropriate Service Information for the proper repair procedures.
- Air check the UD and LR clutch passages for excessive leakage.
- Check all of the components related to the UD and LR clutches, and the rear planetary gearset.
- Check the UD and LR accumulator pistons and seals.
- Check that the main regulator valve moves freely in its bore.
- If the UD or LR clutch is burned but no cause is evident (such as a cut piston seal, cracked sump filter, stuck regulator valve, etc.) replace the solenoid/pressure switch assembly.
- Inspect the Oil Pump.
- Inspect the input shaft and UD shaft.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

3. CHECK FOR INTERMITTENT OPERATION

1. The conditions to set this DTC are not current at this time.
2. Check the gearshift linkage adjustment.
3. Gear ratio DTCs can be set by problems in the Input and Output Speed Sensor circuits. If the vehicle passes the Clutch Test and still sets Gear Ratio DTC, check the Speed Sensors for proper operation.
4. Turn the ignition off to the lock position.
5. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

6. Check the wiring and connectors for the Speed Sensors for a good connection, then perform a wiggle test using the Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
7. This DTC can also be set under extreme temperature conditions. This is usually caused by an internal problem. Verify if the problem is only experienced under extreme hot or cold conditions.
8. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

9. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Test Complete.

P0732-GEAR RATIO ERROR IN 2ND

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

The Powertrain Control Module (PCM) uses two speed sensors, one to measure input RPM and one to measure output RPM. These inputs are essential for proper transmission operation. Therefore, the integrity of this data is verified through data checks. When in gear, if the gear ratio does not compare to a known gear ratio, the corresponding gear ratio error trouble code is set. The transmission will go into Limp-in mode after four gear ratio error events occur in a given driving cycle.

- **When Monitored:**

The Transmission gear ratio is monitored continuously while the transmission is in gear.

- **Set Condition:**

If the ratio of the Input RPM to the Output RPM does not match the current gear ratio when compared to the known gear ratio.

Possible Causes
RELATED TRANSMISSION DTCS PRESENT INPUT OR OUTPUT SPEED SENSOR ERRORS LOW LINE PRESSURE FAILED UD OR 2/4 CLUTCH CUT OR TORN UD OR 2/4 CLUTCH PISTON SEAL CUT UD OR 2/4 ACCUMULATOR PISTON SEAL STUCK MAIN REGULATOR VALVE SOLENOID MODULE

BROKEN INPUT SHAFT
FAILED UD SHAFT
GEARTRAIN FAILURE

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test**1. CHECK IF RELATED TRANSMISSION DTCS ARE PRESENT**

1. With the scan tool, read DTCs.
2. If any of these DTCs are present, perform their respective tests first.

Are there any Loss of Prime, Line Pressure and/or Speed Sensor DTCs present?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure. If any of these DTCs are present, they will cause a gear ratio error. Perform the test for Loss of Prime first if it is present.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

No

- Go to step 2

2. CHECK IF THE DTC IS CURRENT

1. With the scan tool, perform the 2nd gear clutch test. Follow the instructions on the scan tool.
2. Increase the throttle angle or TPS degree to 30° for no more than a few seconds.

CAUTION: Do not overheat the transmission.

Did the Clutch Test pass, Input Speed remain at zero?

Yes

- Go to step 3

No

- Go to step 4

3. CHECK FOR INTERMITTENT OPERATION

1. The conditions to set this DTC are not current at this time.

2. Check the gearshift linkage adjustment.
3. Gear ratio DTCs can be set by problems in the Input and Output Speed Sensor circuits. If the vehicle passes the Clutch Test and still sets Gear Ratio DTC, check the Speed Sensors for proper operation.
4. Turn the ignition off to the lock position.
5. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

6. Check the wiring and connectors to the Speed Sensors for a good connection, then perform a wiggle test using the Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
7. This DTC can also be set under extreme temperature conditions. This is usually caused by an internal problem. Verify if the problem is only experienced under extreme hot or cold conditions.
8. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Test Complete.

4. CHECK FOR RELATED PRESSURE SWITCH DTCS

1. With the scan tool, read Transmission DTCS.

Are the DTCS P0845 and/or P0846 present also?

Yes

- Replace the Transmission Solenoid/Pressure Switch Assembly in accordance with the Service Information.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Repair internal Transmission in accordance with the Service Information.
- Air check the UD and 2/4 clutch passages for excessive leakage.
- Check all of the components related to the UD and 2/4 clutches, and the planetary gear sets.
- Check the UD and 2/4 accumulator pistons and seals.
- Check that the main regulator valve moves freely in its bore.
- If the UD or 2/4 clutch is burned but no cause is evident (such as a cut piston seal, cracked sump filter, stuck regulator valve, etc.) replace the solenoid/pressure switch assembly.
- Inspect the Transmission Oil Pump.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

P0733-GEAR RATIO ERROR IN 3RD

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The Powertrain Control Module (PCM) uses two speed sensors, one to measure input RPM and one to measure output RPM. These inputs are essential for proper transmission operation. Therefore, the integrity of this data is verified through data checks. When in gear, if the gear ratio does not compare to a known gear ratio, the corresponding gear ratio error trouble code is set. The transmission will go into Limp-in mode after four gear ratio error events occur in a given driving cycle.

- **When Monitored:**

The Transmission gear ratio is monitored continuously while the transmission is in gear.

- **Set Condition:**

If the ratio of the Input RPM to the Output RPM does not match the current gear ratio when compared to the known gear ratio.

Possible Causes
RELATED TRANSMISSION DTCS PRESENT INPUT OR OUTPUT SPEED SENSOR ERRORS LOW LINE PRESSURE FAILED UD OR OD CLUTCH CUT OR TORN UD OR OD CLUTCH PISTON SEAL CUT UD OR OD ACCUMULATOR PISTON SEAL STUCK MAIN REGULATOR VALVE SOLENOID MODULE BROKEN INPUT SHAFT FAILED UD SHAFT FAILED OD SHAFT

FAILED REAR PLANETARY GEARSET
FAILED FRONT CARRIER
FAILED REAR ANNULUS SHELL / SNAP RINGS

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK IF RELATED TRANSMISSION DTCS ARE PRESENT

1. With the scan tool, read DTCs.
2. If any of these DTCs are present, perform their respective tests first.

Are there any Loss of Prime, Line Pressure and/or Speed Sensor DTCs present?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure. If any of these DTCs are present, they will cause a gear ratio error. Perform the test for Loss of Prime first if it is present.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

No

- Go to step 2

2. CHECK IF THE DTC IS CURRENT

1. With the scan tool, perform the 3rd gear clutch test. Follow the instructions on the scan tool.
2. Increase the throttle angle or TPS degree to 30° for no more than a few seconds.

CAUTION: Do not overheat the transmission.

Did the Clutch Test pass, Input Speed remain at zero?

Yes

- Go to step 3

No

- Go to step 4

3. CHECK FOR INTERMITTENT OPERATION

1. The conditions to set this DTC are not current at this time.

2. Check the gearshift linkage adjustment.
3. Gear ratio DTCs can be set by problems in the Input and Output Speed Sensor circuits. If the vehicle passes the Clutch Test and still sets Gear Ratio DTC, check the Speed Sensors for proper operation.
4. Turn the ignition off to the lock position.
5. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

6. Check the wiring and connectors for the Speed Sensors for a good connection, then perform a wiggle test using the Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
7. This DTC can also be set under extreme temperature conditions, this is usually caused by an internal problem. Verify if the problem is only experienced under extreme hot or cold conditions.
8. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Test Complete.

4. CHECK FOR RELATED PRESSURE SWITCH DTCS

1. With the scan tool, read Transmission DTCS.

Are the DTCS P0870 and/or P0871 present also?

Yes

- Replace the Transmission Solenoid/Pressure Switch Assembly in accordance with the Service Information.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Repair internal Transmission in accordance with the Service Information.
- Air check the UD and OD clutch passages for excessive leakage.
- Check all of the components related to the UD and O/D clutches, the front planetary carrier, and the rear planetary gearset.
- Check the UD and OD accumulator pistons and seals.
- Check that the main regulator valve moves freely in its bore.
- If the UD or OD clutch is burned but no cause is evident (such as a cut piston seal, cracked sump filter, stuck regulator valve, etc.) replace the solenoid/pressure switch assembly.
- Inspect the Transmission Oil Pump.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

P0734-GEAR RATIO ERROR IN 4TH

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The Powertrain Control Module (PCM) uses two speed sensors, one to measure input RPM and one to measure output RPM. These inputs are essential for proper transmission operation. Therefore, the integrity of this data is verified through data checks. When in gear, if the gear ratio does not compare to a known gear ratio, the corresponding gear ratio error trouble code is set. The transmission will go into Limp-in mode after four gear ratio error events occur in a given driving cycle.

- **When Monitored:**

The Transmission gear ratio is monitored continuously while the transmission is in gear.

- **Set Condition:**

If the ratio of the Input RPM to the Output RPM does not match the current gear ratio when compared to the known gear ratio.

Possible Causes
RELATED TRANSMISSION DTCS PRESENT INPUT OR OUTPUT SPEED SENSOR ERRORS LOW LINE PRESSURE FAILED OD OR 2/4 CLUTCH CUT OR TORN OD OR 2/4 CLUTCH PISTON SEAL CUT OD OR 2/4 ACCUMULATOR PISTON SEAL STUCK MAIN REGULATOR VALVE SOLENOID MODULE BROKEN INPUT SHAFT FAILED OD SHAFT

FAILED 2/4 CLUTCH HUB
FAILED PLANETARY GEARSET

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test**1. CHECK IF RELATED TRANSMISSION DTCS ARE PRESENT**

1. With the scan tool, read DTCs.
2. If any of these DTCs are present, perform their respective tests first.

Are there any Loss of Prime, Line Pressure and/or Speed Sensor DTCs present?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure. If any of these DTCs are present, they will cause a gear ratio error. Perform the test for Loss of Prime first if it is present.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

No

- Go to step 2

2. CHECK IF THE DTC IS CURRENT

1. With the scan tool, perform the 4th gear clutch test. Follow the instructions on the scan tool.
2. Increase the throttle angle or TPS degree to 30° for no more than a few seconds.

CAUTION: Do not overheat the transmission.

Did the Clutch Test pass, Input Speed remain at zero?

Yes

- Go to step 3

No

- Go to step 4

3. CHECK FOR INTERMITTENT OPERATION

1. The conditions to set this DTC are not current at this time.

2. Check the gearshift linkage adjustment.
3. Gear ratio DTCs can be set by problems in the Input and Output Speed Sensor circuits. If the vehicle passes the Clutch Test and still sets a Gear Ratio DTC, check the Speed Sensors for proper operation.
4. Turn the ignition off to the lock position.
5. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

6. This DTC can also be set under extreme temperature conditions, this is usually caused by an internal problem. Verify if the problem is only experienced under extreme hot or cold conditions.
7. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
8. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Test Complete.

4. CHECK FOR RELATED PRESSURE SWITCH DTCS

1. With the scan tool, read Transmission DTCS.

Are the DTCS P0870 and/or P0871 present also?

Yes

- Replace the Transmission Solenoid/Pressure Switch Assembly in accordance with the Service Information.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Repair internal Transmission in accordance with the Service Information.
- Air check the OD and 2/4 clutch passages for excessive leakage.
- Check all of the components related to the O/D and 2/4 clutches, and the planetary gear sets.
- Check the OD and 2/4 accumulator pistons and seals.
- Check that the main regulator valve moves freely in its bore.
- If the OD or 2/4 clutch is burned but no cause is evident (such as a cut piston seal, cracked sump filter, stuck regulator valve, etc.) replace the solenoid/pressure switch assembly.
- Inspect the Transmission Oil Pump.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

P0736-GEAR RATIO ERROR IN REVERSE

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The Powertrain Control Module (PCM) uses two speed sensors, one to measure input RPM and one to measure output RPM. These inputs are essential for proper transmission operation. Therefore, the integrity of this data is verified through data checks. When in gear, if the gear ratio does not compare to a known gear ratio, the corresponding gear ratio error trouble code is set. The transmission will go into Limp-in mode after four gear ratio error events occur in a given driving cycle.

• When Monitored:

The Transmission gear ratio is monitored continuously while the transmission is in gear.

• Set Condition:

If the ratio of the Input RPM to the Output RPM does not match the current gear ratio when compared to the known gear ratio.

Possible Causes
RELATED TRANSMISSION DTCS PRESENT INPUT OR OUTPUT SPEED SENSOR ERRORS LOW LINE PRESSURE FAILED REVERSE OR LR CLUTCH CUT OR TORN REVERSE OR LR CLUTCH PISTON SEAL CUT LR ACCUMULATOR PISTON SEAL STUCK MAIN REGULATOR VALVE SOLENOID MODULE BROKEN INPUT SHAFT FAILED REVERSE CLUTCH HUB FAILED FRONT PLANETARY GEARSET

FAILED REAR ANNULUS GEAR DRIVE SHELL

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test**1. DETERMINING IF RELATED TRANSMISSION DTCS ARE PRESENT**

1. With the scan tool, read DTCs.
2. If any of these DTCs are present, perform their respective tests first.

Are there any Loss of Prime, Line Pressure and/or Speed Sensor DTCs present?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure. If any of these DTCs are present, they will cause a gear ratio error. Perform the test for Loss of Prime first if it is present.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

No

- Go to step 2

2. CHECK TO SEE IF THE DTC IS CURRENT

1. With the scan tool, perform the Reverse gear clutch test. Follow the instructions on the scan tool.
2. Increase the throttle angle or TPS degree to 30° for no more than a few seconds.

CAUTION: Do not overheat the transmission.

Did the Clutch Test pass, Input Speed remain at zero?

Yes

- Go to step 3

No

- Repair internal Transmission in accordance with the Service Information. and repair or replace as necessary.
- Air check the Reverse and LR clutch passages for excessive leakage.
- Check all of the components related to the Reverse and LR clutches, and the front planetary gearset.

- Check the LR accumulator piston and seals.
- Check that the main regulator valve moves freely in its bore.
- If the LR clutch is burned but no cause is evident (such as a cut piston seal, cracked sump filter, stuck regulator valve, etc.) replace the solenoid/pressure switch assembly.
- Inspect the Transmission Oil Pump.
- Inspect the input shaft and reverse clutch hub (including the weld to the front sun gear).
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

3. CHECK FOR INTERMITTENT OPERATION

1. The conditions to set this DTC are not current at this time.
2. Check the gearshift linkage adjustment.
3. Gear ratio DTCs can be set by problems in the Input and Output Speed Sensor circuits. If the vehicle passes the Clutch Test and still sets Gear Ratio DTC, check the Speed Sensors for proper operation.
4. Turn the ignition off to the lock position.
5. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in personal injury or death.

6. Check the wiring and connectors for the Speed Sensors for a good connection, then perform a wiggle test using the Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
7. This DTC can also be set under extreme temperature conditions, this is usually caused by an internal problem. Verify if the problem is only experienced under extreme hot or cold conditions.
8. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
9. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Test Complete.

P0740-TCC OUT OF RANGE

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

When in 2nd, 3rd, or 4th gear, the Torque Converter Clutch (TCC) can be locked or partially locked when certain conditions are met. The TCC piston is electronically modulated by increasing the duty cycle of the LR/TCC solenoid until the torque converter slip difference (difference between engine and turbine speed) is within 60 RPM. Then the LR/TCC solenoid is fully energized (FEMCC / 100% duty cycle). Torque converter slip is monitored in FEMCC to ensure adequate clutch capacity. The MIL will illuminate if the trans accumulates five minutes of inadequate TCC capacity (slip) while in FEMCC mode. The transmission will still attempt normal EMCC operation (will not be in Limp-in) even after the MIL is illuminated.

- **When Monitored:**

The Torque Converter Clutch (TCC) is in FEMCC or PEMCC, Transmission temperature is hot, Engine temperature is greater than 38° C or 100° F, Transmission Input Speed greater than engine speed, TPS less than 30°, and brake not applied.

- **Set Condition:**

The TCC is modulated by controlling the duty cycle of the L/R Solenoid until the difference between the Engine RPM and the Transmission Input Speed RPM or duty cycle is within a desired range. The DTC is set after the period of 10 seconds and three occurrences of either: FEMCC - with slip greater than 100 RPM or PEMCC - duty cycle greater than 85%.

Possible Causes
RELATED L/R SOLENOID OR PRESSURE SWITCH DTCS PRESENT

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK IF RELATED DTCS ARE PRESENT

1. With the scan tool, read DTCS.

Are the DTCS P0750 and/or P0841 present also?

Yes

- See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK IF THE DTC IS CURRENT

1. Ignition on, engine not running.
2. With the scan tool, record and erase DTCs.
3. Drive the vehicle until it is fully warmed up to at least 43° C (110° F).
4. Perform the following step three times.
5. Drive the vehicle at 80 Km/h (50 mph) and allow 4th gear to engage for at least 10 seconds. Close the throttle, then tip back in until the throttle angle is between 25 and 29 degrees. Note that if you go over 30 degrees, you must back off of the throttle and retry.

Did the TCC engage during any of the attempts?

Yes

- Go to step 3

No

- Perform the Hydraulic Pressure test in accordance with the Service Information and repair the internal transmission components and Torque convertor as necessary.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

3. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wiring and connectors while checking for shorted and open circuits.
4. This DTC can also be set under extreme temperature conditions. This is usually caused by an internal problem. Verify if the problem is only experienced under extreme hot or cold conditions.
5. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
6. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any problems found?

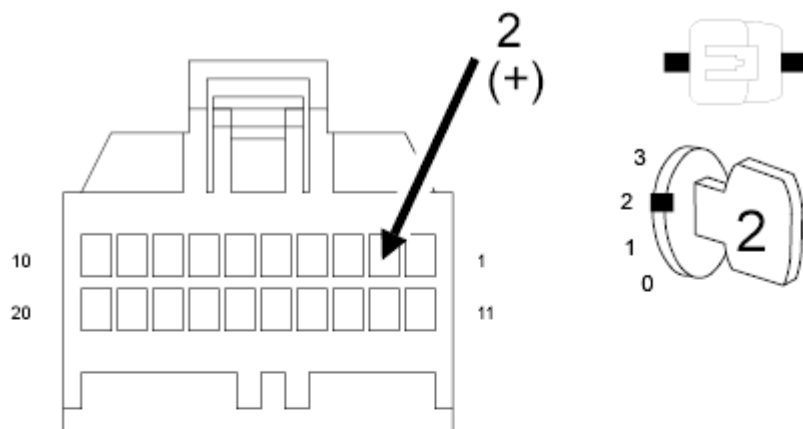
Yes

- Repair as necessary.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

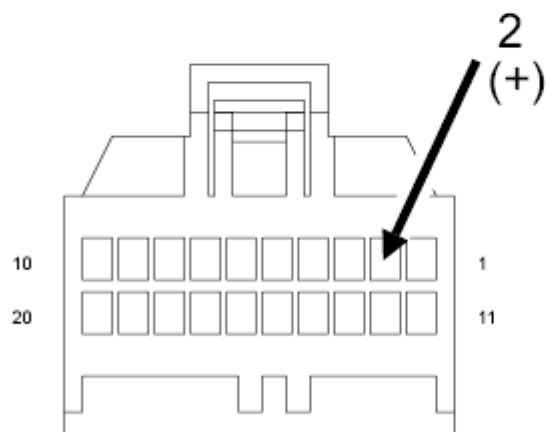
No

- Test Complete.

P0750-LR SOLENOID CIRCUIT



MODULE-
DOOR-
DRIVER C2



MODULE-
DOOR-
PASSENGER C2

123213

Fig. 22: L/R Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

Four solenoids are used to control the friction elements (clutches). The continuity of the solenoids circuits are periodically tested. Each solenoid is turned on or off depending on its current state. An inductive spike should be detected by the PCM during this test. If no spike is detected, the circuit is tested again to verify the failure. In

In addition to the periodic testing, the solenoid circuits are tested if a gear ratio or pressure switch error occurs. In this case, one failure will result in the appropriate DTC being set. The MIL will illuminate and the transmission goes into neutral, if the DTC is set above 35 Km/h (22 mph), Limp-in mode when vehicle speed is below 35 Km/h (22 mph).

• **When Monitored:**

Initially at ignition on, then every 10 seconds thereafter. The solenoids will also be tested immediately after a gear ratio error or pressure switch error is detected.

• **Set Condition:**

Three consecutive solenoid continuity test failures, or one failure if test is run in response to a gear ratio or pressure switch error.

Possible Causes
RELATED DTCS PRESENT (T20) L/R CONTROL CIRCUIT OPEN (T20) L/R CONTROL CIRCUIT SHORT TO GROUND (T20) L/R CONTROL CIRCUIT SHORT TO VOLTAGE TRANSMISSION SOLENOID/PRESSURE SWITCH ASSEMBLY POWERTRAIN CONTROL MODULE

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. CHECK IF RELATED DTCS ARE PRESENT

1. With the scan tool, read DTCs

Are there any Transmission Control Relay, TCM Power Input, or TIPM TCM Power Control circuit DTCs present also?

Yes

- Refer to DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK IF THE DTC IS CURRENT

1. With the scan tool, read DTCs.

Is the status Active or is Starts Since Set counter set at 0 for this DTC?

Yes

- Go to step 3

No

- Go to step 8

3. CHECK THE PCM AND WIRING USING THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator, Miller tool #8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the scan tool, actuate the L/R Solenoid.
6. Monitor the L/R Solenoid LED on the Transmission Simulator.

Did the L/R Solenoid LED on the Transmission Simulator blink on and off during actuation?

Yes

- Go to step 4

No

- Go to step 5

4. WIGGLE TEST THE WIRING AND CONNECTORS USING THE TRANSMISSION SIMULATOR

1. With the scan tool, continue to actuate the L/R Solenoid.
2. While monitoring the L/R Solenoid LED on the Transmission Simulator, wiggle the related wiring harness and connectors.

Did the L/R Solenoid LED on the Transmission Simulator continue to blink on and off during the wiggle test?

Yes

2009 Dodge Journey R/T

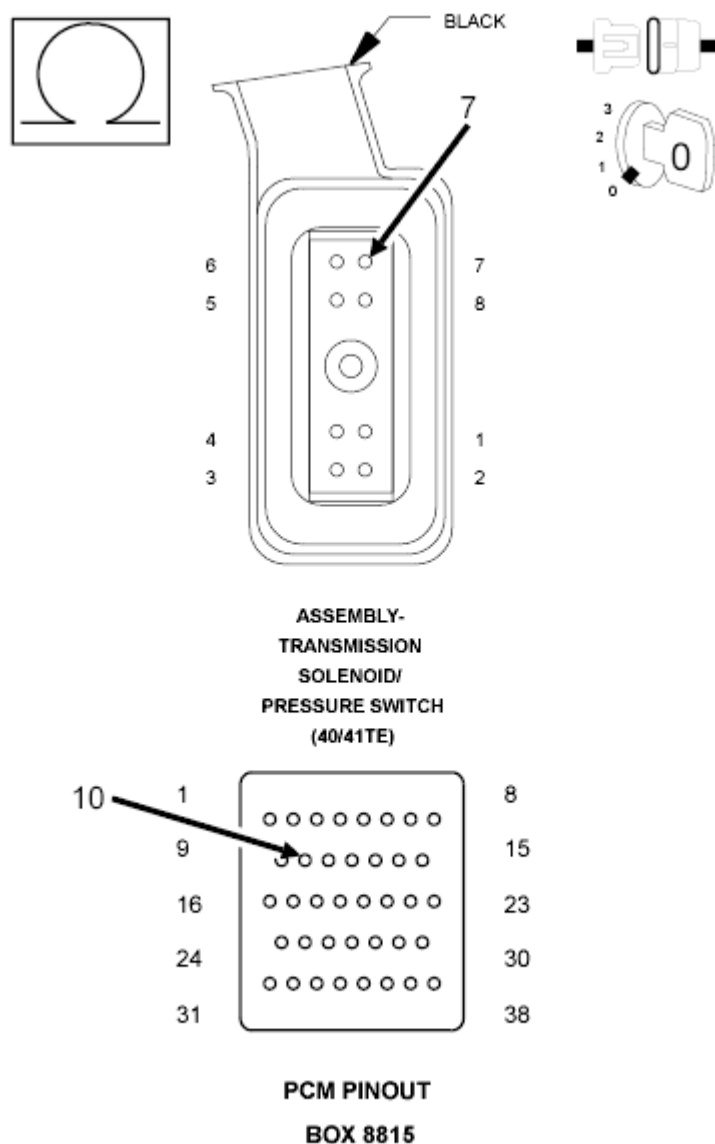
2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

- Replace the Transmission Solenoid/Pressure Switch Assembly in accordance with the Service Information.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Repair wiring or connectors as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

5. CHECK THE (T20) L/R CONTROL CIRCUIT FOR AN OPEN



76965

Fig. 23: Checking L/R Control Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector.
3. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install PCM Pinout Box 8815 to perform diagnosis.

2009 Dodge Journey R/T

2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

4. Measure the resistance of the (T20) L/R Control circuit between the appropriate terminal of Miller tool #8815 and the Solenoid/Pressure Switch Assembly harness connector.

Is the resistance above 5.0 ohms?

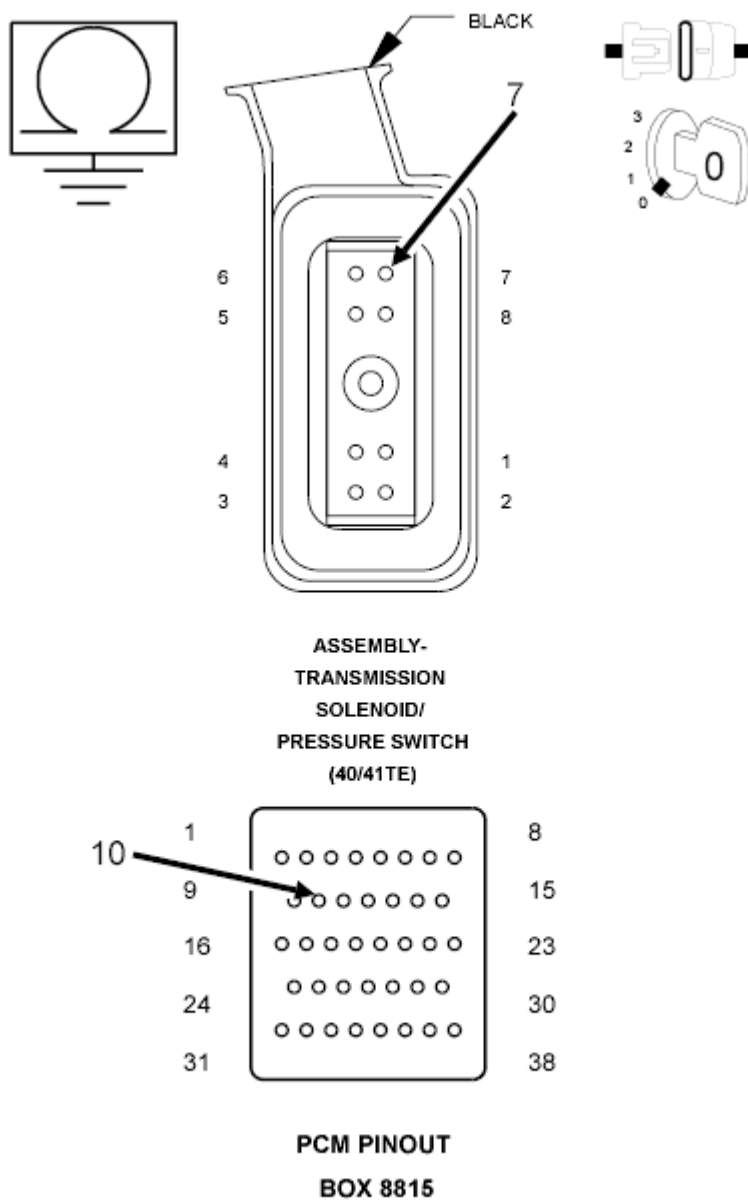
Yes

- Repair the (T20) L/R Control circuit for an open.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 6

6. CHECK THE (T20) L/R CONTROL CIRCUIT FOR A SHORT TO GROUND



76969

Fig. 24: Checking L/R Control Circuit For A Short To Ground
 Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T20) L/R Control circuit.

Is the resistance below 5.0 ohms?

Yes

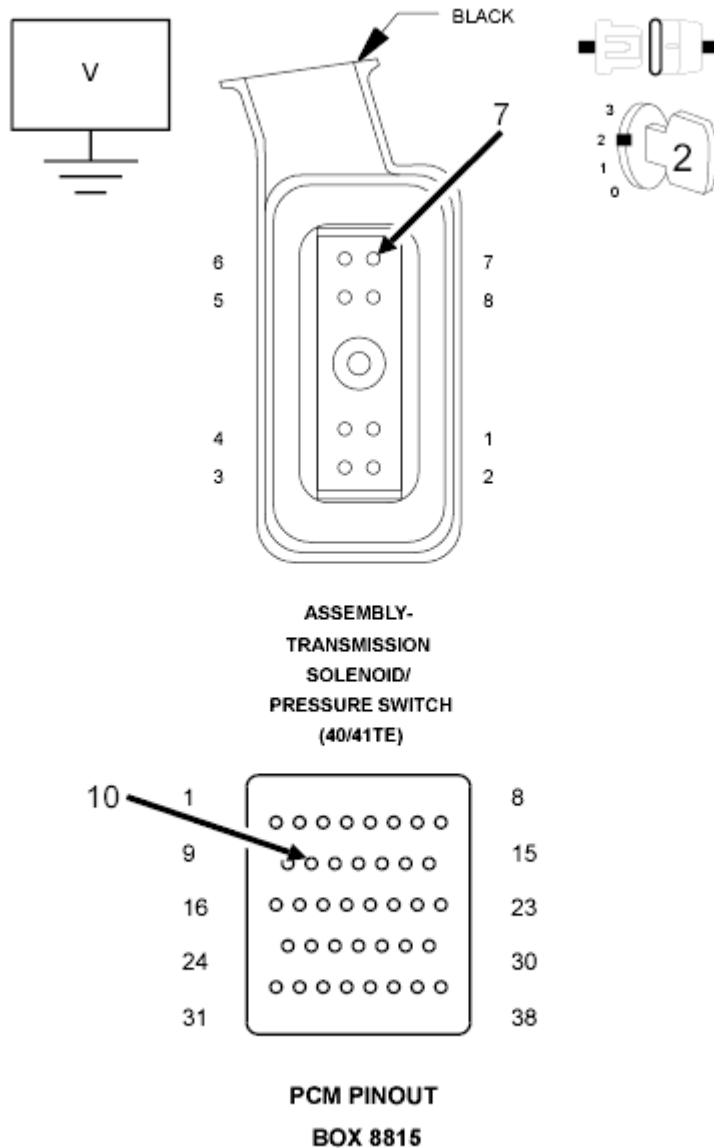
- Repair the (T20) L/R Control circuit for a short to ground.

- Perform 40/41TE VERIFICATION TEST. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

No

- Go to step 7

7. CHECK THE (T20) L/R CONTROL CIRCUIT FOR A SHORT TO VOLTAGE



76971

Fig. 25: Checking L/R Control Circuit For A Short To Voltage
Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.
2. With the scan tool under TIPM, actuate the Transmission.
3. Measure the voltage of the (T20) L/R Control circuit.

Is the voltage above 0.5 volts?

Yes

- Repair the (T20) L/R Control circuit for a short to voltage.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

8. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
5. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any problems found?

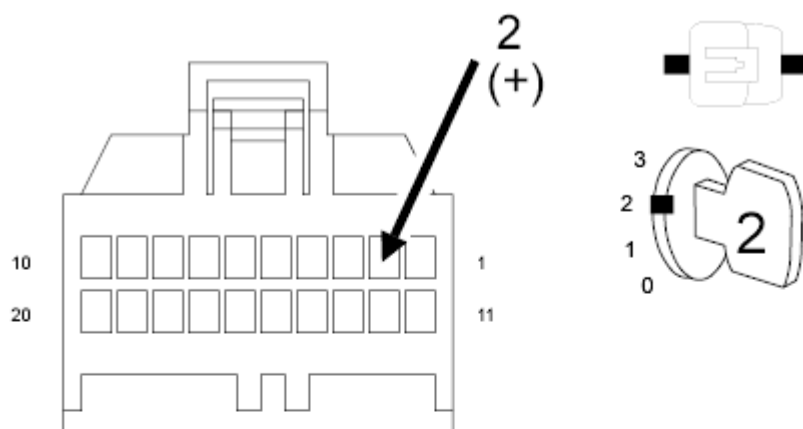
Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

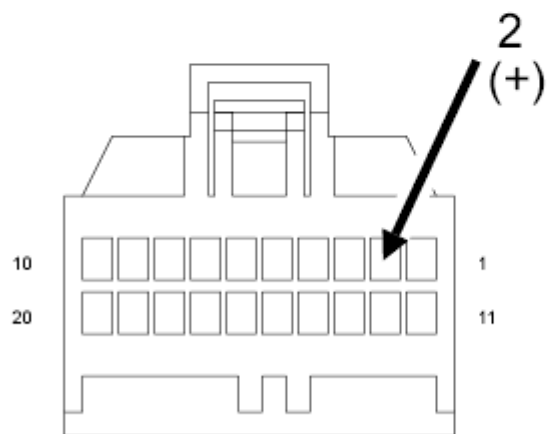
No

- Test Complete.

P0755-2/4 SOLENOID CIRCUIT



MODULE-
DOOR-
DRIVER C2



MODULE-
DOOR-
PASSENGER C2

123213

Fig. 26: L/R Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

Four solenoids are used to control the friction elements (clutches). The continuity of the solenoids circuits are periodically tested. Each solenoid is turned on or off depending on its current state. An inductive spike should be detected by the Powertrain Control Module (PCM) during this test. If no spike is detected, the circuit is tested again to verify the failure. In addition to the periodic testing, the solenoid circuits are tested if a gear ratio or pressure switch error occurs. In this case, one failure will result in the appropriate DTC being set. The MIL will illuminate and the transmission goes into neutral, if the DTC is set above 35 Km/h (22 mph), Limp-in mode when vehicle speed is below 35 Km/h (22 mph).

• **When Monitored:**

Initially at ignition on, then every 10 seconds thereafter. The solenoids will also be tested immediately after a gear ratio error or pressure switch error is detected.

• **Set Condition:**

Three consecutive solenoid continuity test failures, or one failure if test is run in response to a gear ratio or pressure switch error.

Possible Causes
RELATED DTCS PRESENT (T19) 2/4 CONTROL CIRCUIT OPEN (T19) 2/4 CONTROL CIRCUIT SHORTED TO GROUND (T19) 2/4 CONTROL CIRCUIT SHORTED TO VOLTAGE TRANSMISSION SOLENOID/PRESSURE SWITCH ASSEMBLY POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK IF RELATED DTCS ARE PRESENT

1. With the scan tool, read DTCs.

Are there any Transmission Control Relay, TCM Power Input, or TIPM TCM Power Control circuit DTCs present also?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK TO SEE IF THE DTC IS CURRENT

1. With the scan tool, read DTCs.

Is the status Active or is the Starts Since Set counter set at 0 for this DTC?

Yes

- Go to step 3

No

- Go to step 8

3. CHECK THE PCM AND WIRING USING THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the scan tool, actuate the 2/4 Solenoid.
6. Monitor the 2/4 Solenoid LED on the Transmission Simulator.

Did the 2/4 Solenoid LED on the Transmission Simulator blink on and off during actuation?

Yes

- Go to step 4

No

- Go to step 5

4. WIGGLE TEST THE WIRING AND CONNECTORS USING THE TRANSMISSION SIMULATOR

1. With the scan tool, continue to actuate the 2/4 Solenoid.
2. While monitoring the 2/4 Solenoid LED on the Transmission Simulator, wiggle the related wiring harness and connectors.

Did the 2/4 Solenoid LED on the Transmission Simulator continue to blink on and off during the wiggle test?

Yes

- Replace the Transmission Solenoid/Pressure Switch Assembly in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Repair wiring or connectors as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

5. CHECK THE (T19) 2/4 CONTROL CIRCUIT FOR AN OPEN

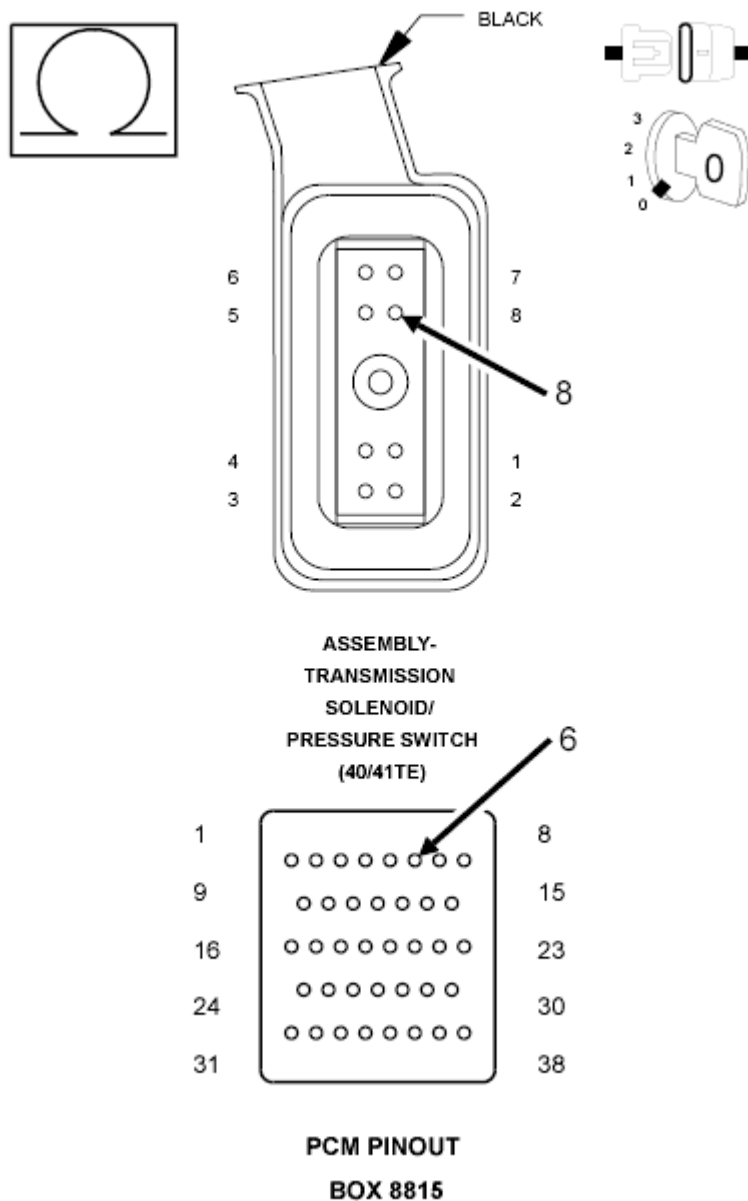


Fig. 27: Checking 2/4 Control Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector.

3. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install PCM Pinout Box 8815 to perform diagnosis.

4. Measure the resistance of the (T19) 2/4 Control circuit between the Solenoid/Pressure Switch Assembly harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

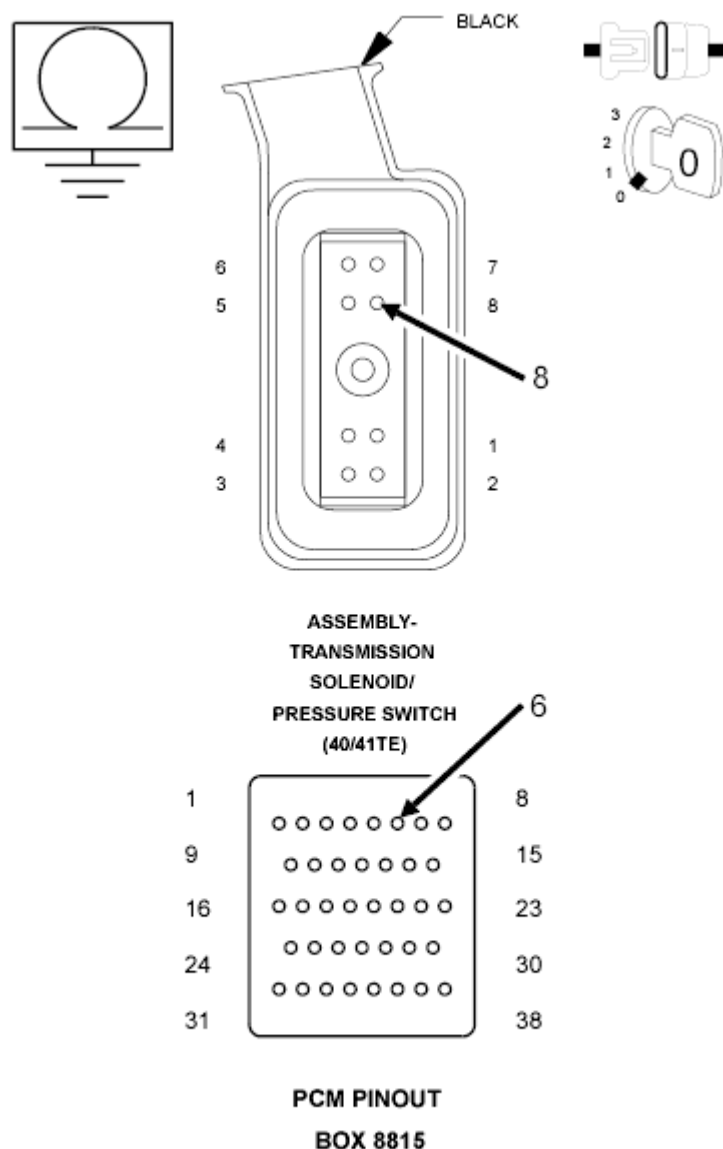
Yes

- Repair the (T19) 2/4 Control circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 6

6. **CHECK THE (T19) 2/4 CONTROL CIRCUIT FOR A SHORT TO GROUND**



76983

Fig. 28: Checking 2/4 Control Circuit For A Short To Ground
 Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T19) 2/4 Control circuit.

Is the resistance below 5.0 Ohms?

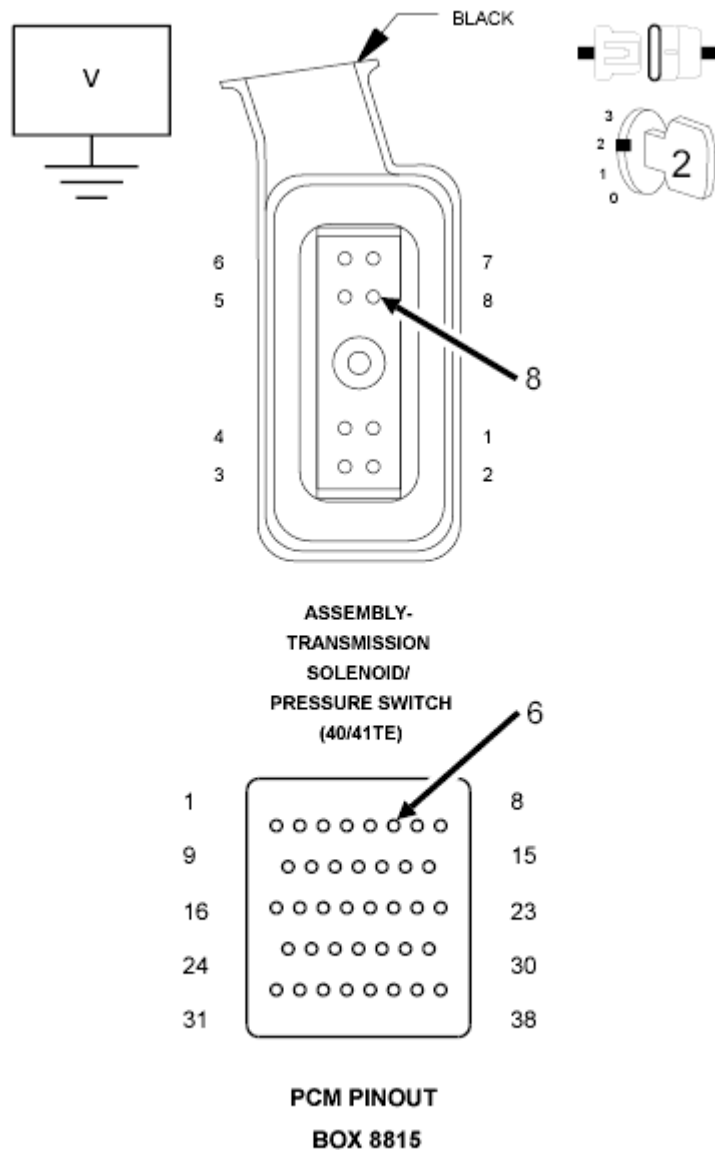
Yes

- Repair the (T19) 2/4 Control circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 7

7. CHECK THE (T19) 2/4 CONTROL CIRCUIT FOR A SHORT TO VOLTAGE



76985

Fig. 29: Checking 2/4 Control Circuit For A Short To Voltage
 Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.
2. With the scan tool in the TIPM, actuate the TCM output.
3. Measure the voltage of the (T19) 2/4 Control circuit.

Is the voltage above 0.5 of a volt?

Yes

- Repair the (T19) 2/4 Control circuit for a short to voltage.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

8. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
5. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any problems found?

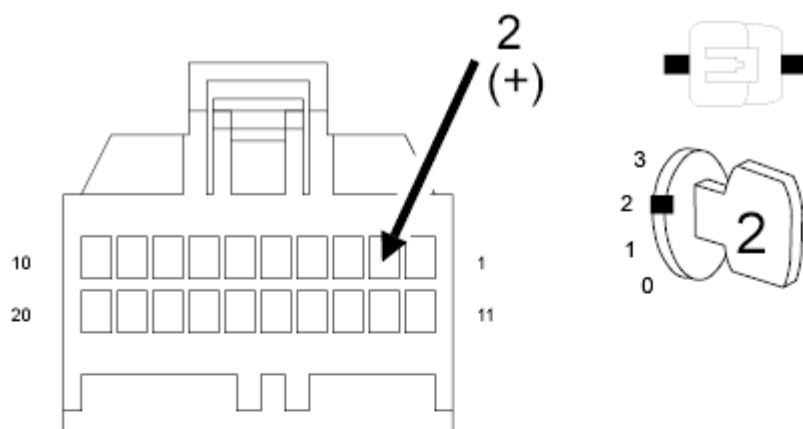
Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

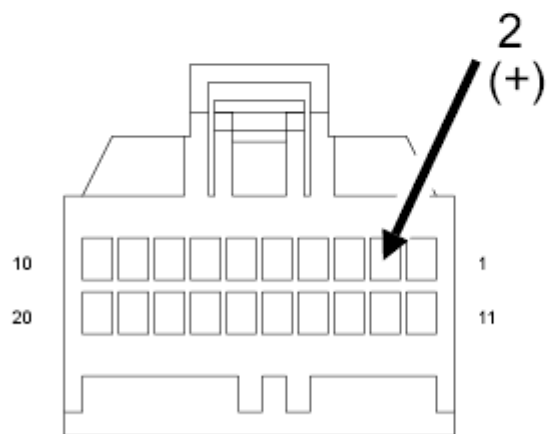
No

- Test Complete.

P0760-OD SOLENOID CIRCUIT



MODULE-
DOOR-
DRIVER C2



MODULE-
DOOR-
PASSENGER C2

123213

Fig. 30: L/R Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

Four solenoids are used to control the friction elements (clutches). The continuity of the solenoid circuits is periodically tested. Each solenoid is turned on or off depending on its current state. An inductive spike should be detected by the PCM during this test. If no spike is detected, the circuit is tested again to verify the failure. In addition to the periodic testing, the solenoid circuits are tested if a gear ratio or pressure switch error occurs. In this case, one failure will result in the appropriate DTC being set. The MIL will illuminate and the transmission goes into neutral, if the DTC is set above 35 Km/h (22 mph), Limp-in mode when vehicle speed is below 35 Km/h (22 mph).

• **When Monitored:**

Initially at ignition on, then every 10 seconds thereafter. The solenoids will also be tested immediately after a gear ratio error or pressure switch error is detected.

• **Set Condition:**

Three consecutive solenoid continuity test failures, or one failure if test is run in response to a gear ratio or pressure switch error.

Possible Causes
RELATED DTCS PRESENT (T60) OD CONTROL CIRCUIT OPEN (T60) OD CONTROL CIRCUIT SHORT TO GROUND (T60) OD CONTROL CIRCUIT SHORT TO VOLTAGE TRANSMISSION SOLENOID/PRESSURE SWITCH ASSEMBLY POWERTRAIN CONTROL MODULE

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. CHECK IF RELATED DTCS ARE PRESENT

1. With the scan tool, read DTCs.

Are there any Transmission Control Relay, TCM Power Input, or TIPM TCM Power Control circuit DTCs present also?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK IF THE DTC IS CURRENT

1. With the scan tool, read DTCs.

Is the status Active or is the Starts Since Set counter set at 0 for this DTC?

Yes

- Go to step 3

No

- Go to step 8

3. CHECK THE PCM AND WIRING USING THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator, Miller tool #8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the scan tool, actuate the OD Solenoid.
6. Monitor the OD Solenoid LED on the Transmission Simulator.

Did the OD Solenoid LED on the Transmission Simulator blink on and off during actuation?

Yes

- Go to step 4

No

- Go to step 5

4. WIGGLE TEST THE WIRING AND CONNECTORS USING THE TRANSMISSION SIMULATOR

1. With the scan tool, continue to actuate the OD Solenoid.
2. While monitoring the OD Solenoid LED on the Transmission Simulator, wiggle the related wiring harness and connectors.

Did the OD Solenoid LED on the Transmission Simulator continue to blink on and off during the wiggle test?

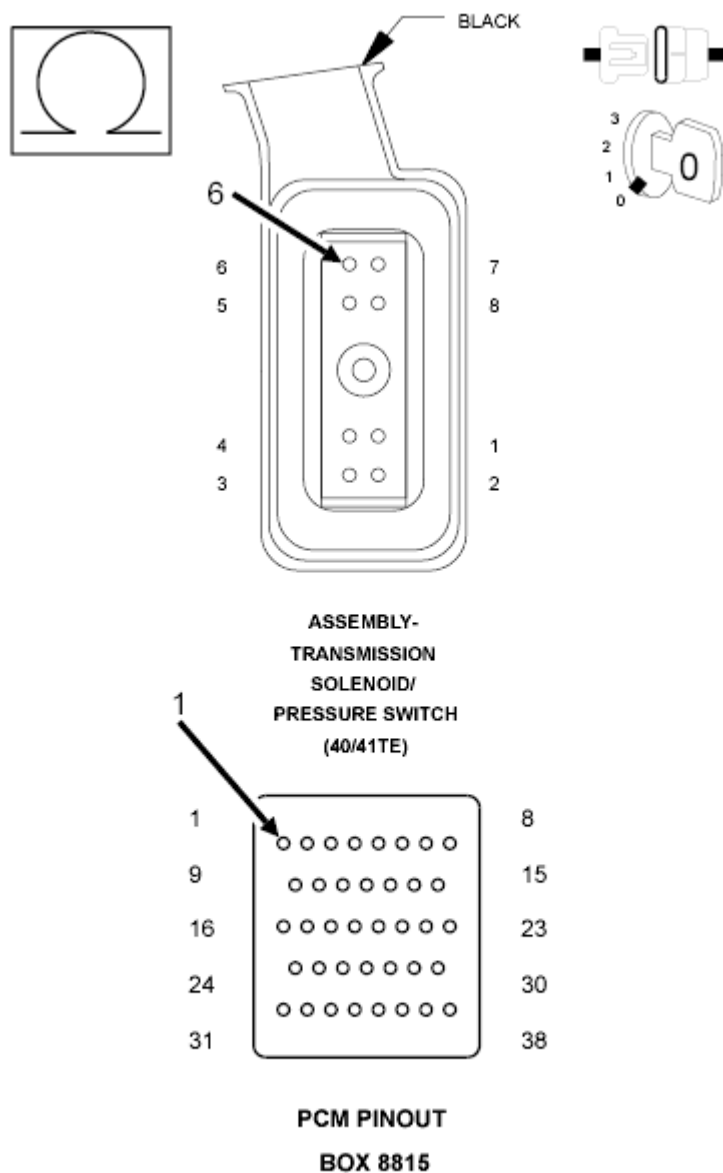
Yes

- Replace the Transmission Solenoid/Pressure Switch Assembly in accordance with the Service Information.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Repair wiring or connectors as necessary.
- Perform 40/41TE VERIFICATION TEST. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

5. CHECK THE (T60) OD CONTROL CIRCUIT FOR AN OPEN



76993

Fig. 31: Checking OD Control Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.

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2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

2. Disconnect the PCM C4 harness connector.
3. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install the PCM Pinout Box 8815 to perform diagnosis.

4. Measure the resistance of the (T60) OD Control circuit between the appropriate terminal of Miller tool #8815 and the Solenoid/Pressure Switch Assembly harness connector.

Is the resistance above 5.0 ohms?

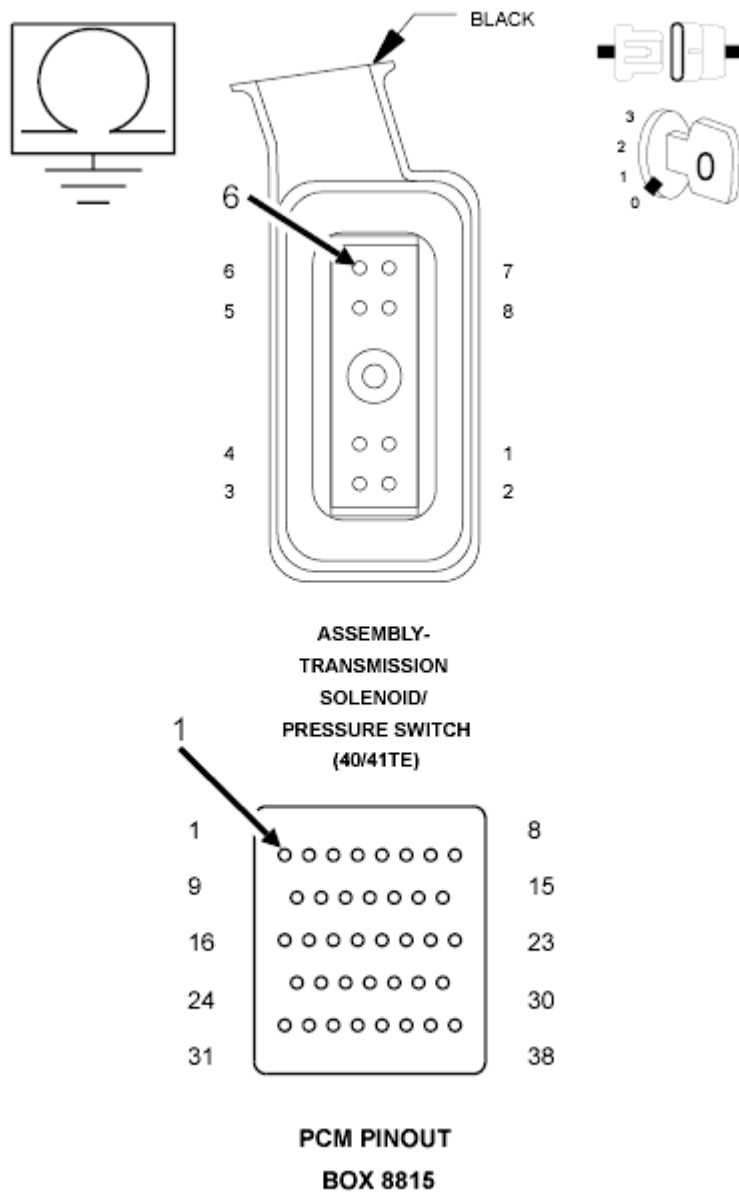
Yes

- Repair the (T60) OD Control circuit for an open.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 6

6. CHECK THE (T60) OD CONTROL CIRCUIT FOR A SHORT TO GROUND



76997

Fig. 32: Checking OD Control Circuit For A Short To Ground
Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T60) OD Control circuit.

Is the resistance below 5.0 ohms?

Yes

- Repair the (T60) OD Control circuit for a short to ground.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE**,

Powertrain Control (PCM) - Standard Procedure

No

- Go to step 7

7. CHECK THE (T60) OD CONTROL CIRCUIT FOR A SHORT TO VOLTAGE

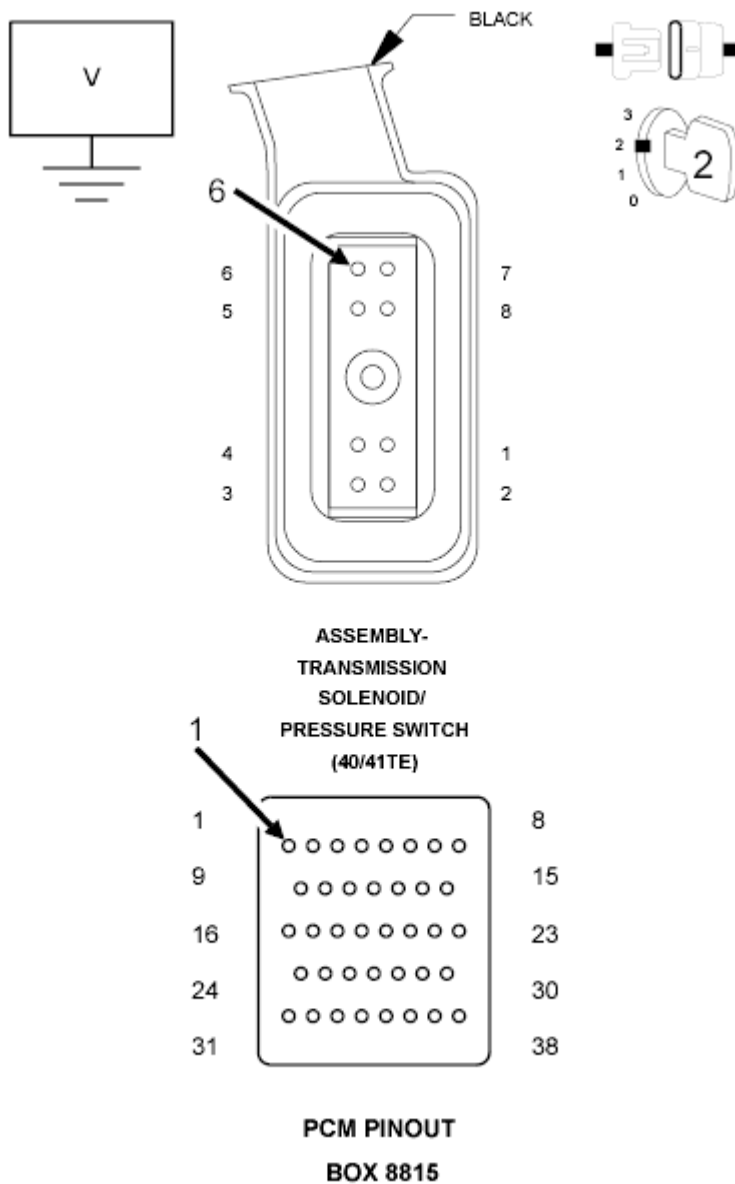


Fig. 33: Checking OD Control Circuit For A Short To Voltage
 Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.
2. With the scan tool under TIPM, actuate the Transmission.

3. Measure the voltage of the (T60) OD Control circuit.

Is the voltage above 0.5 volts?

Yes

- Repair the (T60) OD Control circuit for a short to voltage.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

8. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

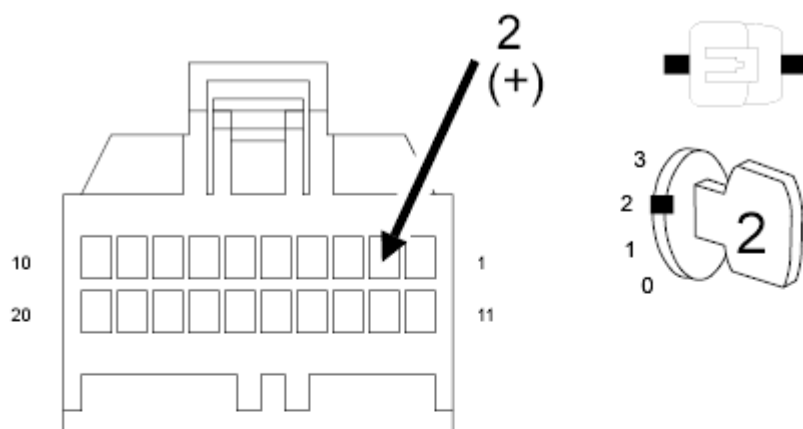
Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

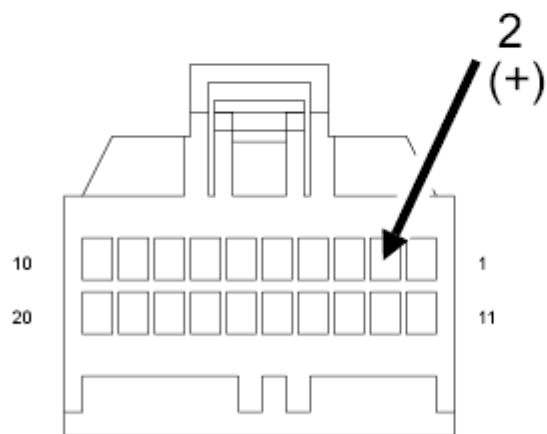
No

- Test Complete.

P0765-UD SOLENOID CIRCUIT



MODULE-
DOOR-
DRIVER C2



MODULE-
DOOR-
PASSENGER C2

123213

Fig. 34: L/R Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

Four solenoids are used to control the friction elements (clutches). The continuity of the solenoid circuits is periodically tested. Each solenoid is turned on or off depending on its current state. An inductive spike should be detected by the PCM during this test. If no spike is detected, the circuit is tested again to verify the failure. In addition to the periodic testing, the solenoid circuits are tested if a gear ratio or pressure switch error occurs. In this case, one failure will result in the appropriate DTC being set. The MIL will illuminate and the transmission goes into neutral, if the DTC is set above 35 Km/h (22 mph), Limp-in mode when vehicle speed is below 35 Km/h (22 mph).

• **When Monitored:**

Initially at ignition on, then every 10 seconds thereafter. The solenoids will also be tested immediately after a gear ratio error or pressure switch error is detected.

• **Set Condition:**

Three consecutive solenoid continuity test failures, or after one failure if a test is run in response to a gear ratio or pressure switch error.

Possible Causes
RELATED DTCS PRESENT (T59) UD CONTROL CIRCUIT OPEN (T59) UD CONTROL CIRCUIT SHORT TO GROUND (T59) UD CONTROL CIRCUIT SHORT TO VOLTAGE TRANSMISSION SOLENOID/PRESSURE SWITCH ASSEMBLY POWERTRAIN CONTROL MODULE

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. CHECK IF RELATED ARE PRESENT

1. With the scan tool, read DTCs.

Are there any Transmission Control Relay, TCM Power Input, or TIPM TCM Power Control circuit DTCs present also?

Yes

- Refer to **TRANSMISSION CONTROL MODULE (TCM) - ELECTRICAL DIAGNOSTICS** and perform the appropriate diagnostic procedure(s).

No

- Go to step 2

2. CHECK IF THE DTC IS CURRENT

1. With the scan tool, read DTCs.

Is the status Active or is the STARTS SINCE SET counter set at 0 for this DTC?

Yes

- Go to step 3

No

- Go to step 8

3. CHECK THE PCM AND WIRING USING THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator, Miller tool #8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the scan tool, actuate the UD Solenoid.
6. Monitor the UD Solenoid LED on the Transmission Simulator.

Did the UD Solenoid LED on the Transmission Simulator blink on and off during actuation?

Yes

- Go to step 4

No

- Go to step 5

4. WIGGLE TEST THE WIRING AND CONNECTORS USING THE TRANSMISSION SIMULATOR

1. With the scan tool, continue to actuate the UD Solenoid.
2. While monitoring the UD Solenoid LED on the Transmission Simulator, wiggle the related wiring harness and connectors.

Did the UD Solenoid LED on the Transmission Simulator continue to blink on and off during the wiggle test?

Yes

- Replace the Transmission Solenoid/Pressure Switch Assembly per the Service Information.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Repair wiring or connectors as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

5. CHECK THE (T59) UD CONTROL CIRCUIT FOR AN OPEN

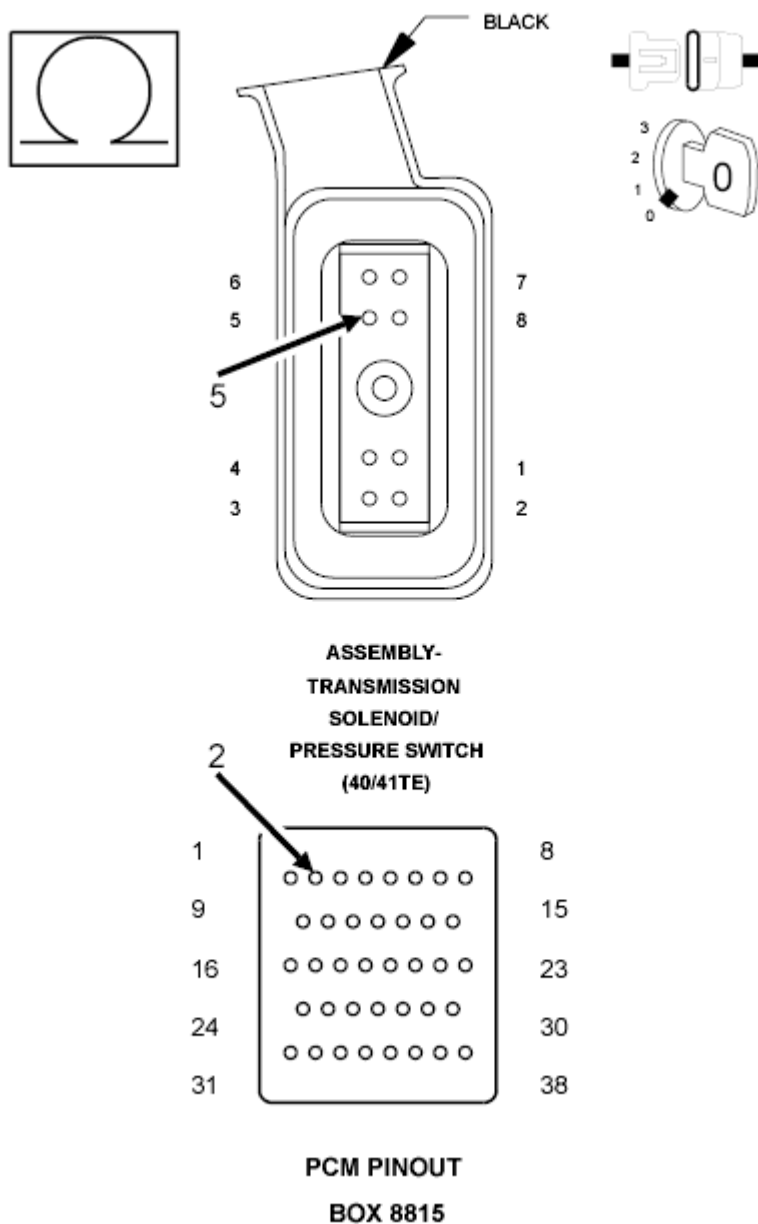


Fig. 35: Checking UD Control Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector.
3. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install PCM Pinout Box 8815 to perform diagnosis.

4. Measure the resistance of the (T59) UD Control circuit between the Solenoid/Pressure Switch Assembly harness connector and the appropriate terminal of Miller tool #8815.

Is the resistance above 5.0 ohms?

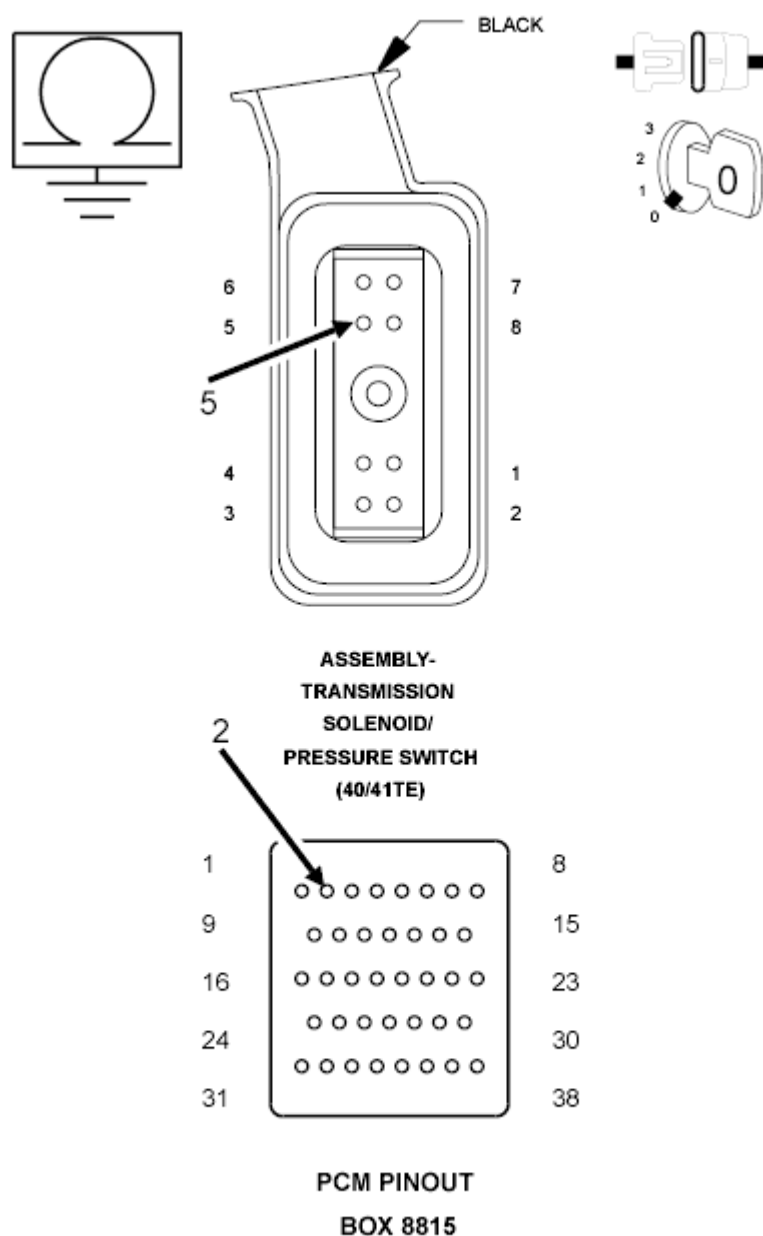
Yes

- Repair the (T59) UD Control circuit for an open.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 6

6. CHECK THE (T59) UD CONTROL CIRCUIT FOR A SHORT TO GROUND



77011

Fig. 36: Checking UD Control Circuit For A Short To Ground
Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T59) UD Control circuit.

Is the resistance below 5.0 ohms?

Yes

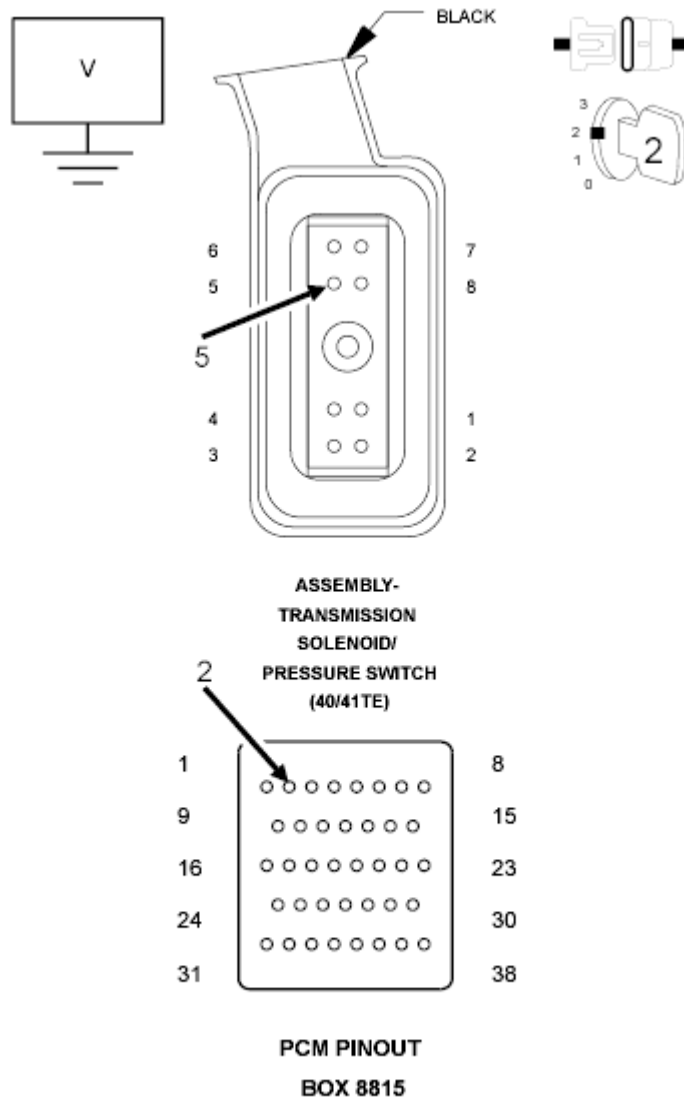
- Repair the (T59) UD Control circuit for a short to ground.

- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 7

7. CHECK THE (T59) UD CONTROL CIRCUIT FOR A SHORT TO VOLTAGE



77013

Fig. 37: Checking UD Control Circuit For A Short To Voltage
 Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.
2. With the scan tool under TIPM, actuate the Transmission.

3. Measure the voltage of the (T59) UD Control circuit.

Is the voltage above 0.5 volts?

Yes

- Repair the (T59) UD Control circuit for a short to voltage.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM per the Service Information. With the scan tool, perform QUICK LEARN.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

8. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the DTC EVENT DATA to help identify the conditions in which the DTC was set.

Were there any problems found?

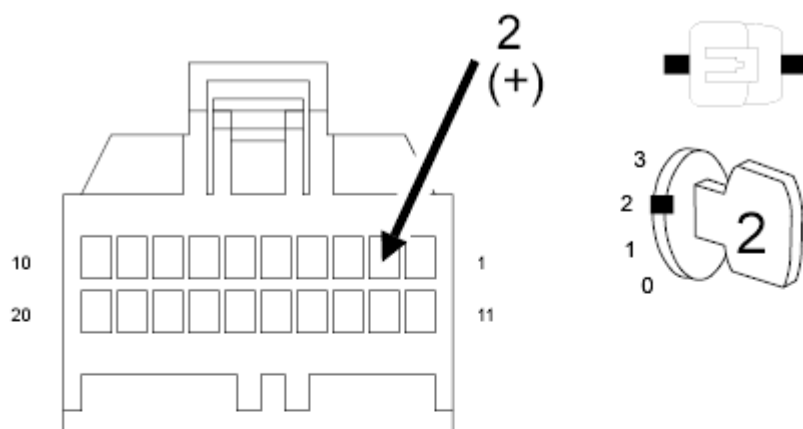
Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

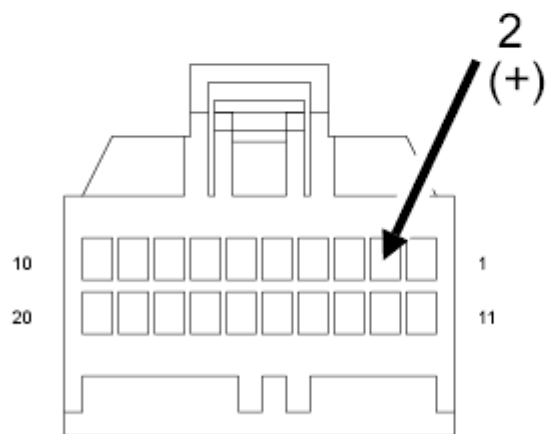
No

- Test Complete.

P0841-LR PRESSURE SWITCH RATIONALITY



MODULE-
DOOR-
DRIVER C2



MODULE-
DOOR-
PASSENGER C2

123213

Fig. 38: L/R Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The Transmission system uses three pressure switches to monitor the fluid pressure in the L/R, 2/4, and OD elements. The pressure switches are continuously monitored for the correct states in each gear. If the set condition (invalid LR pressure switch state) is identified, 1st gear and torque converter lock-up (EMCC) will be inhibited. The vehicle will launch in 2nd gear and shift normally through the gears without allowing EMCC. If during the same key start, the invalid LR pressure switch state is no longer present, the transmission will return to normal operation (1st and EMCC available). Limp-in will not occur unless DTC P0841 is accompanied by a code P0706 and the MIL will illuminate after five minutes of substituted operation.

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- **When Monitored:**

Whenever the engine is running.

- **Set Condition:**

The DTC is set if the L/R pressure switch is open or closed at the wrong time in a given gear. If the problem is identified for three successive key starts, the transmission will go into Limp-in mode and the MIL will turn on after 10 seconds of vehicle operation.

Possible Causes

RELATED DTCS PRESENT
LOSS OF PRIME DTC PRESENT
(T50) L/R PRESSURE SIGNAL CIRCUIT OPEN
(T50) L/R PRESSURE SIGNAL CIRCUIT SHORTED TO GROUND
(T50) L/R PRESSURE SIGNAL CIRCUIT SHORTED TO VOLTAGE
TRANSMISSION SOLENOID/PRESSURE SWITCH ASSEMBLY
POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

PRESSURE SWITCH STATES

GEAR	L/R	2/4	OD
REVERSE	OPEN	OPEN	OPEN
P/N	CLOSED	OPEN	OPEN
1ST	CLOSED	OPEN	OPEN
2ND	OPEN	CLOSED	OPEN
DRIVE	OPEN	OPEN	CLOSED
OD	OPEN	CLOSED	CLOSED

Diagnostic Test

1. CHECK IF RELATED DTCS ARE PRESENT

1. With the scan tool, read DTCs.

Are there any Transmission Control Relay, TCM Power Input, or TIPM TCM Power Control circuit DTCs present also?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK FOR LOSS OF PRIME DTC

1. With the scan tool, read DTCs.

Is the DTC P0944 present also?

Yes

- See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

No

- Go to step 3

3. CHECK TO SEE IF P0841 IS CURRENT

1. With the scan tool, read DTCs.

Is the status active for this DTC or is the Starts Since Set counter 2 or less?

Yes

- Go to step 4

No

- Go to step 8

4. CHECK THE PCM AND WIRING USING THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the Transmission Simulator, turn the Pressure Switch selector to L/R.
6. With the scan tool, monitor the L/R Pressure Switch state while pressing the Pressure Switch Test button on the Transmission Simulator.

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Did the L/R Pressure Switch state change?

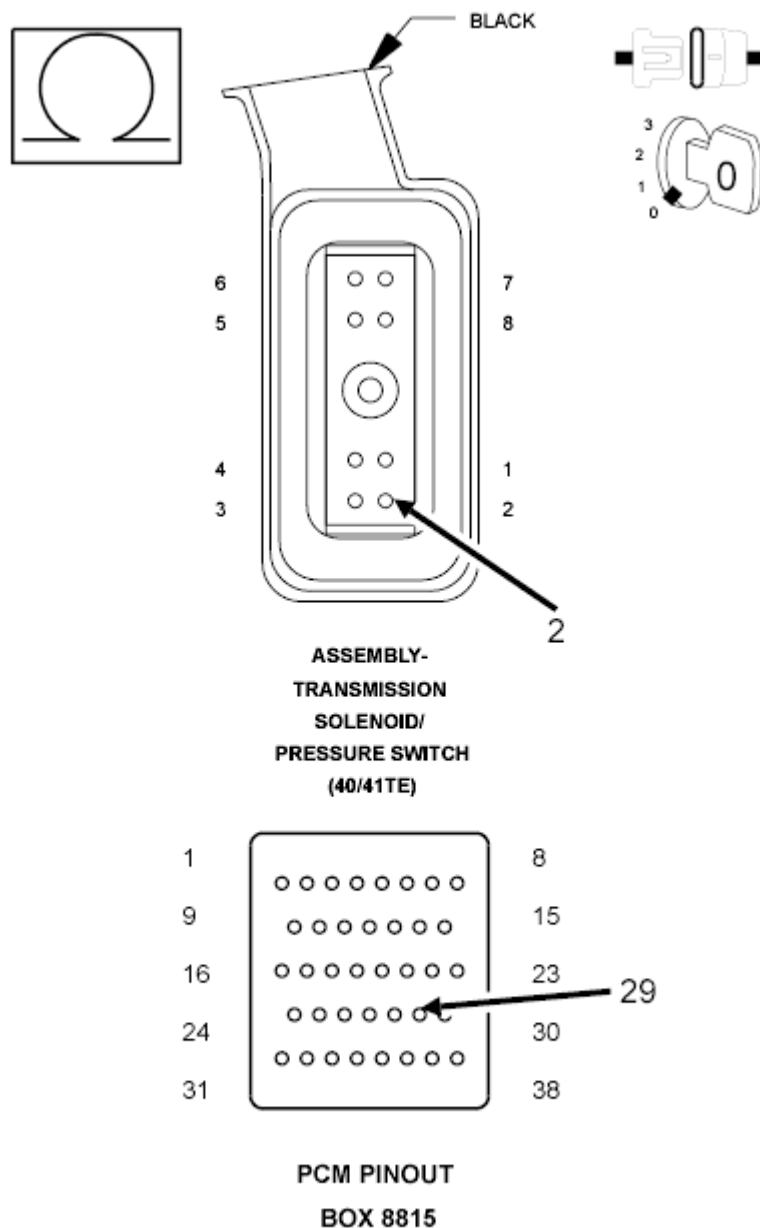
Yes

- Replace the Transmission Solenoid/Pressure Switch Assembly in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go to step 5

5. **CHECK THE (T50) L/R PRESSURE SIGNAL CIRCUIT FOR AN OPEN**



77021

Fig. 39: Checking L/R Pressure Signal Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector.
3. Disconnect the Transmission Solenoid/Pressure Assembly harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in

poor terminal to pin connection. Install PCM Pinout Box 8815 to perform diagnosis.

4. Measure the resistance of the (T50) L/R Pressure Signal circuit between the Transmission Solenoid/Pressure Switch Assembly harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

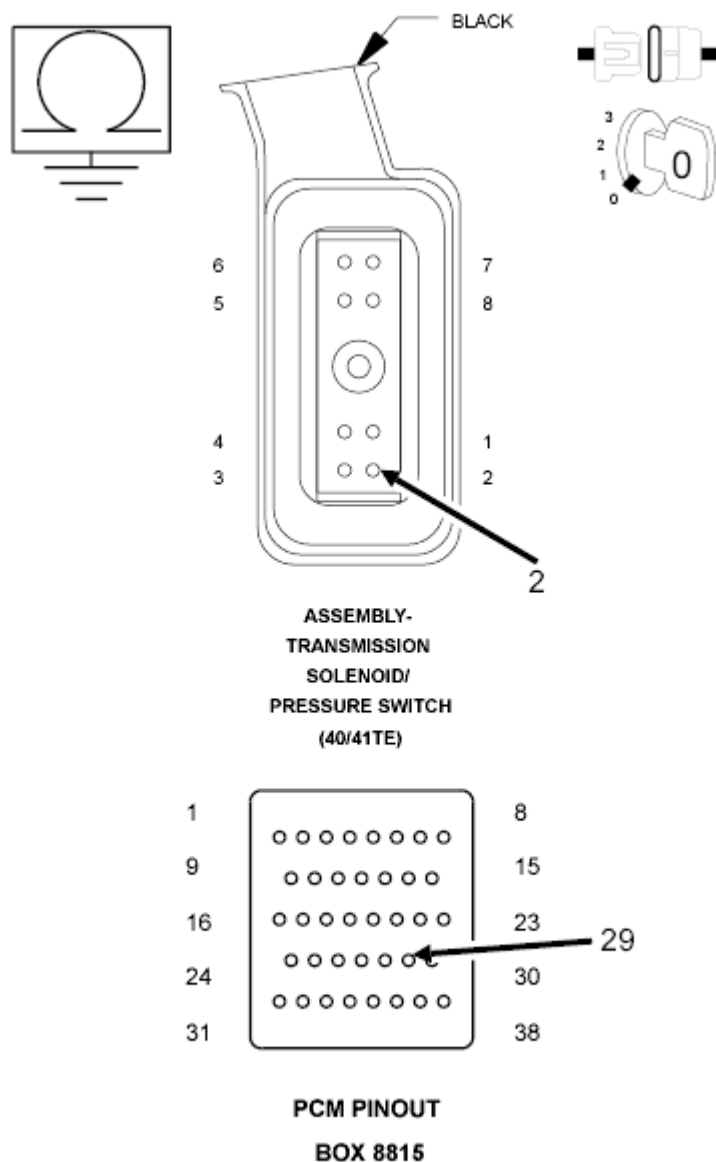
Yes

- Repair the (T50) L/R Pressure Signal circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 6

6. **CHECK THE (T50) L/R PRESSURE SIGNAL CIRCUIT FOR A SHORT TO GROUND**



77025

Fig. 40: Checking L/R Pressure Signal Circuit For A Short To Ground
 Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T50) L/R Pressure Signal circuit.

Is the resistance below 5.0 Ohms?

Yes

- Repair the (T50) L/R Pressure Signal circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 7

7. CHECK THE (T50) L/R PRESSURE SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE

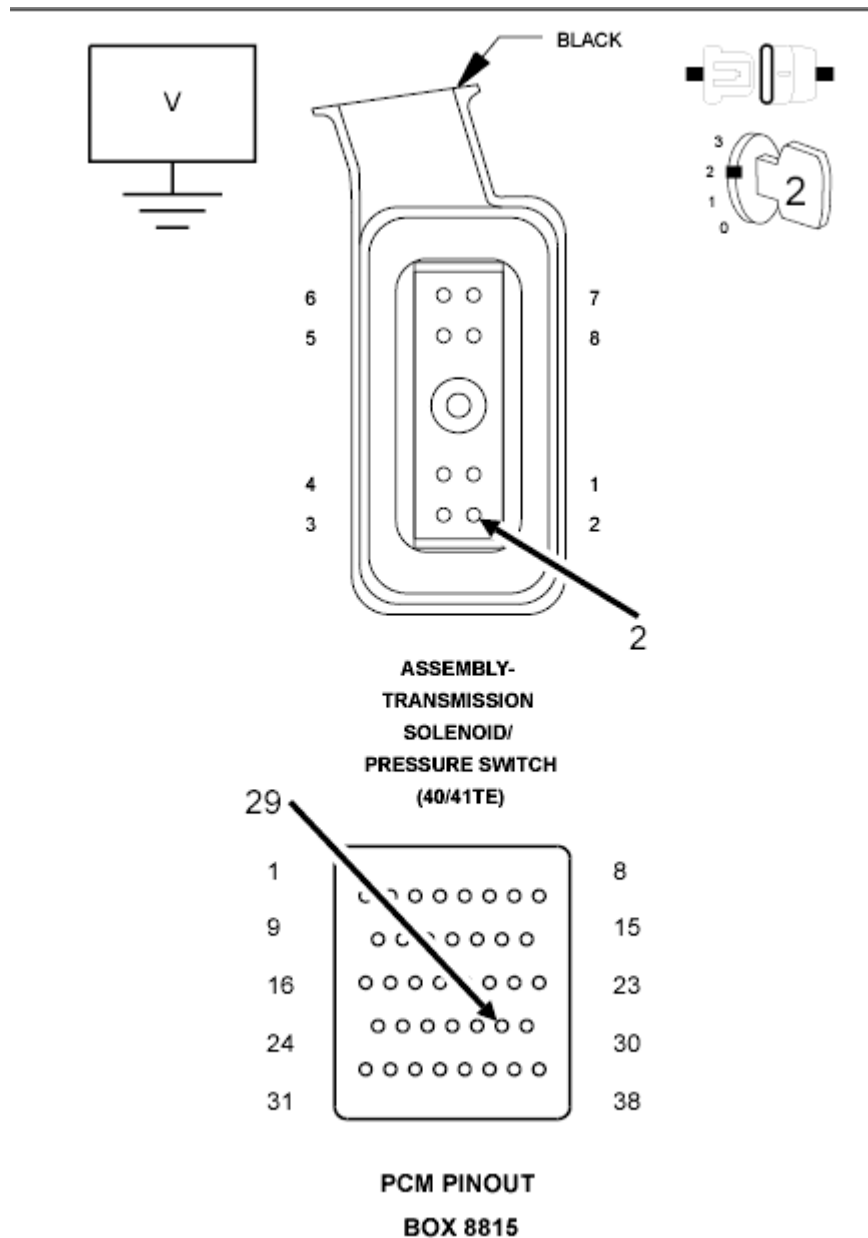


Fig. 41: Checking L/R Pressure Signal Circuit For A Short To Voltage
Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.
2. With the scan tool under TIPM, actuate the Transmission.
3. Measure the voltage of the (T50) L/R Pressure Signal circuit.

Is the voltage above 0.5 of a volt?

Yes

- Repair the (T50) L/R Pressure Signal circuit for a short to voltage.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

8. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

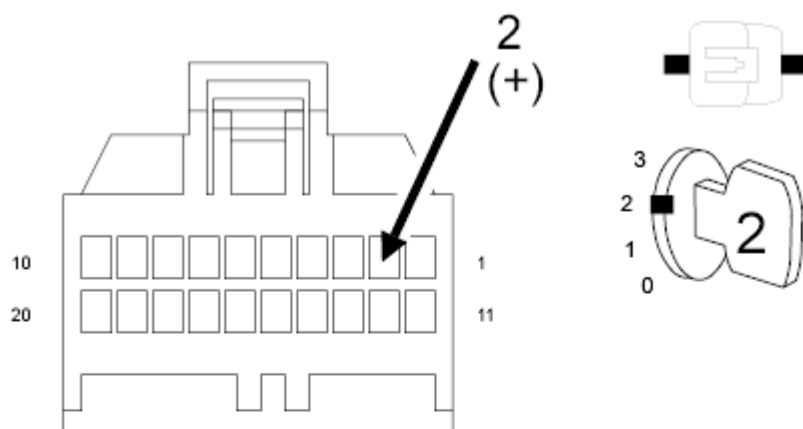
Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

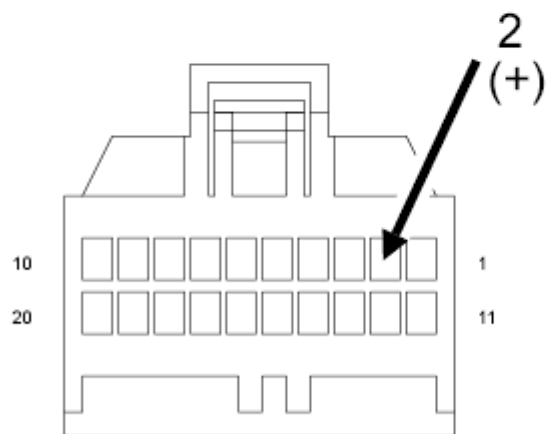
No

- Test Complete.

P0845-2/4 HYDRAULIC PRESSURE TEST



MODULE-
DOOR-
DRIVER C2



MODULE-
DOOR-
PASSENGER C2

123213

Fig. 42: L/R Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

Pressure switches are normally off or open (no pressure applied) and read high (+12 volts). When an element is applied, the corresponding pressure switch closes to ground (0 volts) or turns on. The controller tests the OD and 2/4 pressure switches when they are off (when the corresponding friction element is not applied) by briefly applying the OD and 2/4 elements which will cause the corresponding pressure switch to close. The test verifies that the switches are operational and that the switch will close when the corresponding element is applied. If a switch fails to respond, it is re-tested. If the repeat test also fails, the MIL illuminates and the transmission system defaults to Limp-in mode.

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- **When Monitored:**

In any forward gear with engine speed above 1000 RPM, shortly after a shift and every minute thereafter.

- **Set Condition:**

After a shift into a forward gear, with engine speed greater than 1000 RPM, the PCM momentarily turns on element pressure to the clutch circuits that don't have pressure to verify that the correct pressure switch closes. If the pressure switch does not close two times the DTC sets.

Possible Causes
LOSS OF PRIME P0944 PRESENT (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT OPEN (T47) 2/4 PRESSURE SIGNAL CIRCUIT OPEN (T47) 2/4 PRESSURE SIGNAL CIRCUIT SHORTED TO GROUND (T47) 2/4 PRESSURE SIGNAL CIRCUIT SHORTED TO VOLTAGE TRANSMISSION SOLENOID/PRESSURE SWITCH ASSEMBLY CONTAMINATED FLUID (TYPICALLY WATER CONTAMINATION) VALVE BODY INTERNAL LEAKAGE POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECKING FOR LOSS OF PRIME DTC

1. With the scan tool, read DTCs.

Is the DTC P0944 present also?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK FOR RELATED TRANSMISSION DTCS

1. With the scan tool, read DTCs.

Are any of the DTCs P0732, P0734 and/or P0846 present also?

Yes

- Replace the Transmission Solenoid/Pressure Switch Assembly in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go to step 3

3. CHECK FOR CONTAMINATED FLUID

1. Check the transmission fluid for water or other contamination.

Is the transmission fluid contaminated?

Yes

- Repair the cause of the transmission fluid contamination in accordance with the Service Information.

No

- Go to step 4

4. CHECK IF DTC P0845 IS CURRENT

1. With the scan tool, read DTCs.

Is the status Active or is the Starts Since Set counter 2 or less for this DTC?

Yes

- Go to step 5

No

- Go to step 10

5. CHECK THE PCM AND WIRING USING THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the Transmission Simulator, turn the Pressure Switch selector switch to 2/4.
6. With the scan tool, monitor the 2/4 Pressure Switch state while pressing the Pressure Switch Test button on the Transmission Simulator.
7. Wiggle the wires leading to the PCM while pressing and holding the Pressure Switch Test button.

Did the 2/4 Pressure Switch state change from open to closed when the test button was pressed, and remain closed while wiggling the wires?

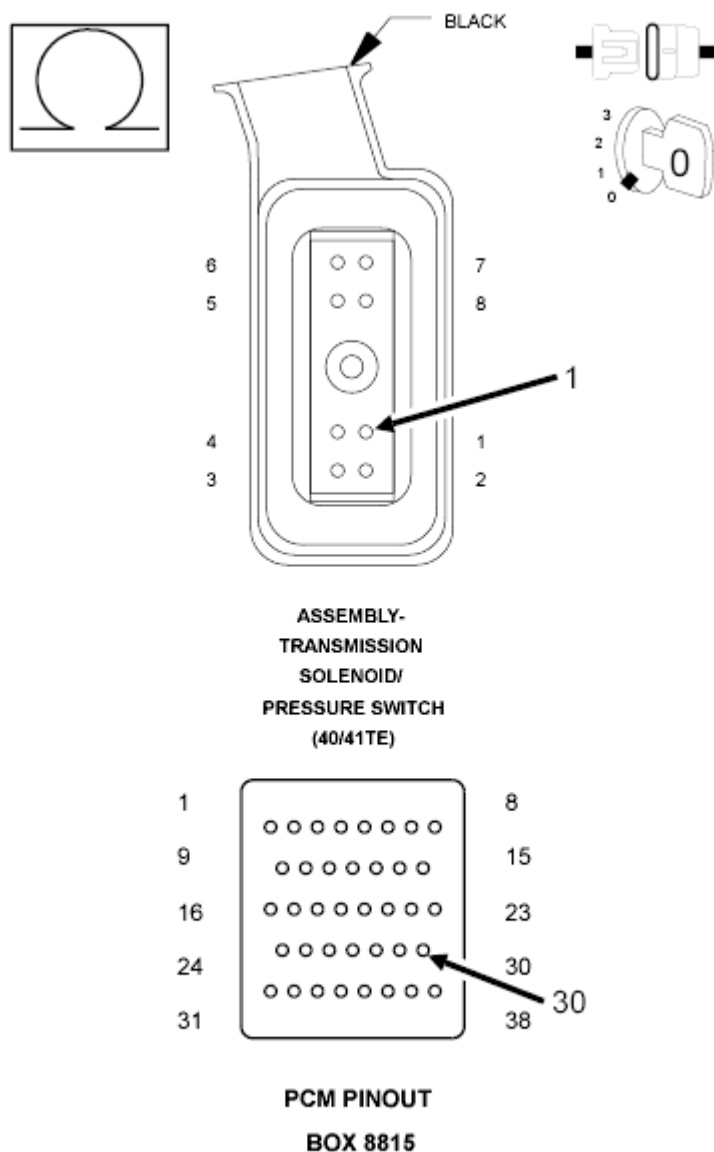
Yes

- Disassemble and inspect the Valve Body in accordance with the Service Information. If no problems are found in **BODY**, replace the Transmission Solenoid/Pressure Switch Assembly.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 6

6. CHECK THE (T47) 2/4 PRESSURE SIGNAL CIRCUIT FOR AN OPEN



77035

Fig. 43: Checking 2/4 Pressure Signal Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector.
3. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install PCM Pinout Box 8815 to perform diagnosis.

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4. Measure the resistance of the (T47) 2/4 Pressure Signal circuit between the Transmission Solenoid/Pressure Switch Assembly harness connector and appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

Yes

- Repair the (T47) 2/4 Pressure Signal circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 7

7. (T47) 2/4 PRESSURE SIGNAL CIRCUIT SHORTED TO GROUND

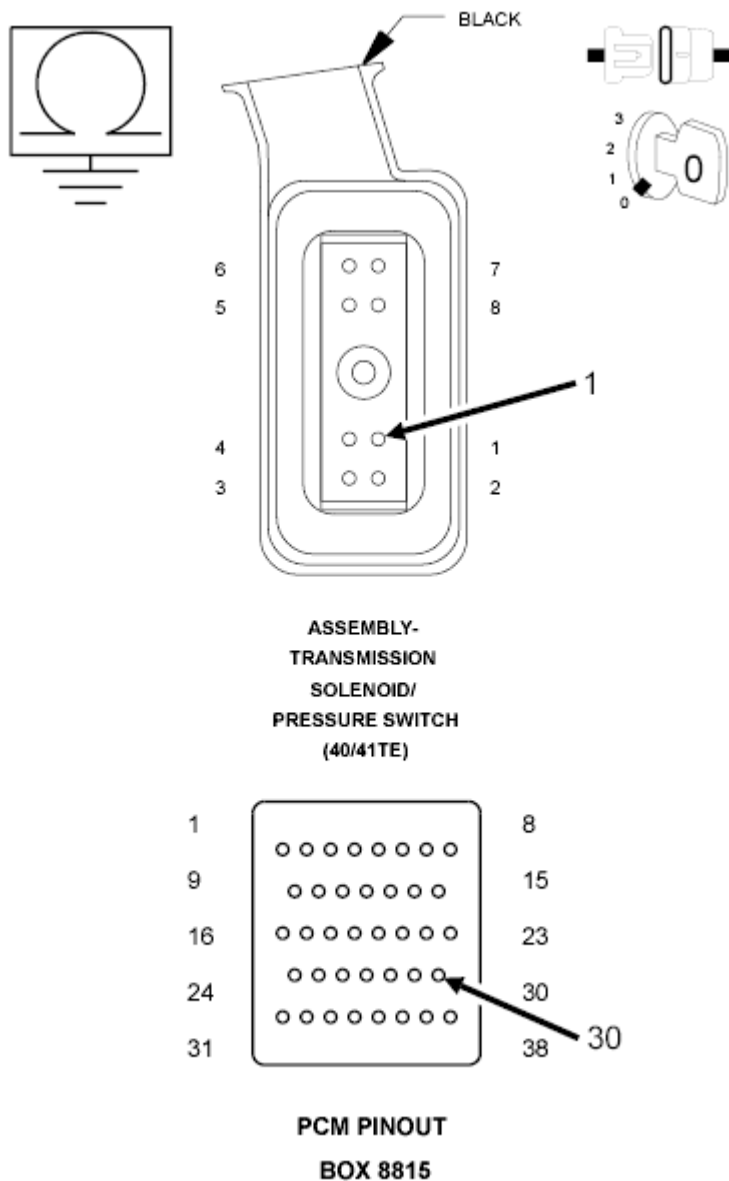


Fig. 44: Checking 2/4 Pressure Signal Circuit Shorted To Ground
Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T47) 2/4 Pressure Signal circuit.

Is the resistance below 5.0 Ohms?

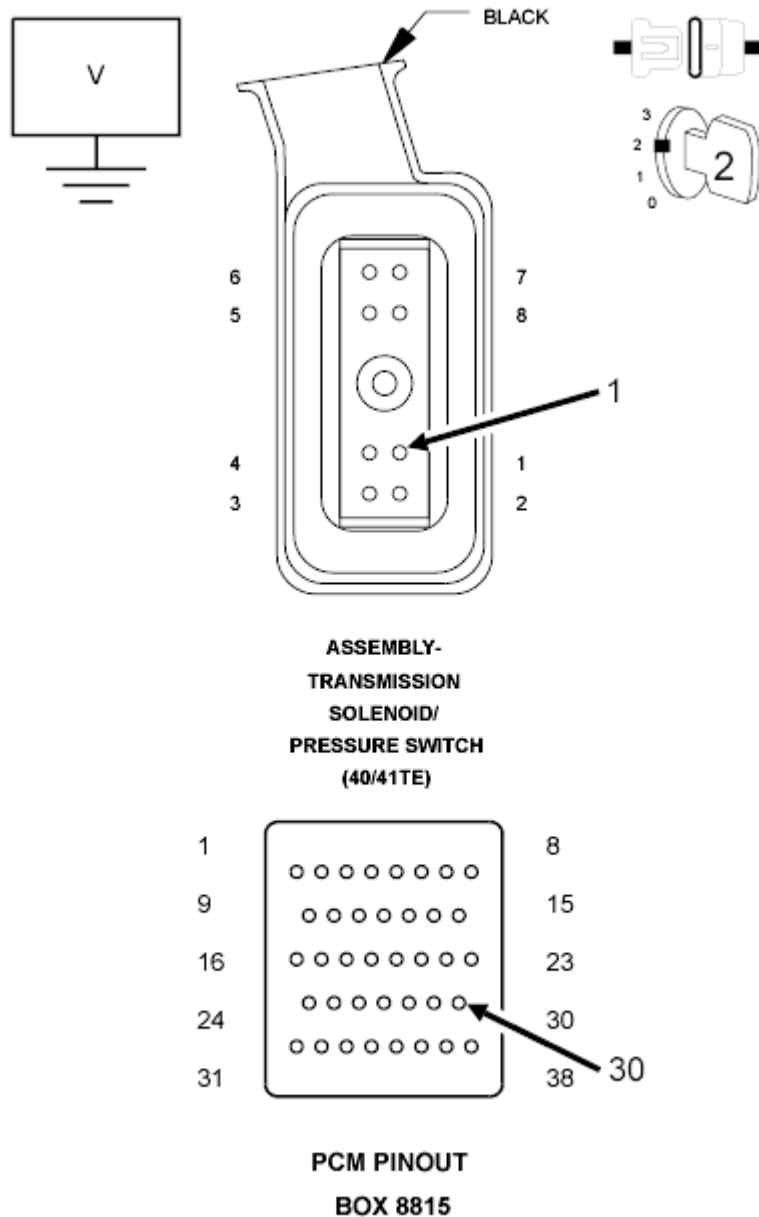
Yes

- Repair the (T47) 2/4 Pressure Signal circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 8

8. CHECK THE (T47) 2/4 PRESSURE SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE



77041

Fig. 45: Checking 2/4 Pressure Signal Circuit For A Short To Voltage
Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.

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2. With the scan tool under TIPM, actuate the Transmission.
3. Measure the voltage of the (T47) 2/4 Pressure Signal circuit.

Is the voltage above 0.5 of a volt?

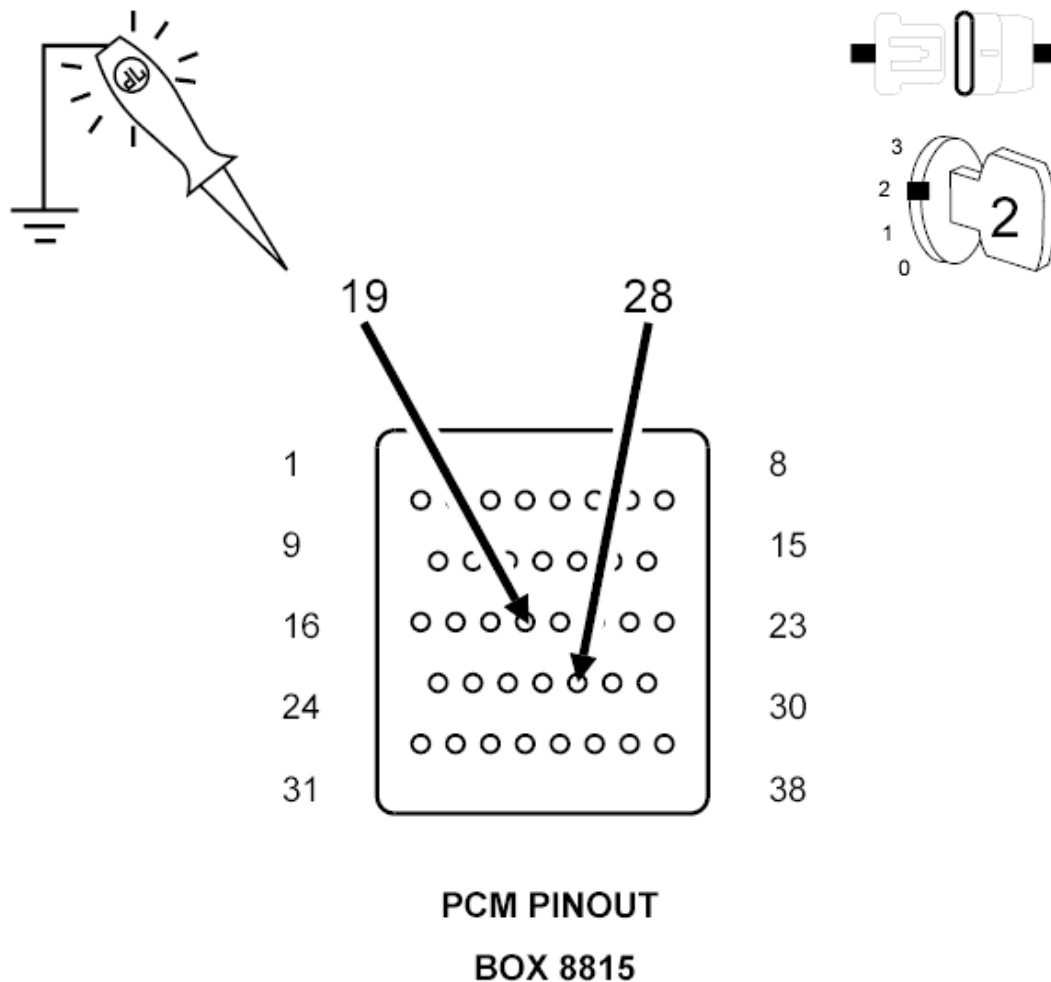
Yes

- Repair the (T47) 2/4 Pressure Signal circuit for a short to voltage.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 9

9. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT FOR AN OPEN



77043

Fig. 46: Checking Transmission Control Output Circuit For An Open
Courtesy of CHRYSLER LLC

1. While still actuating the TCM output in the TIPM and using a 12-volt test light connected to ground, check (T16) Transmission Control Output circuit in the Transmission Solenoid/Pressure Switch Assembly harness connector.

NOTE: The test light must illuminate brightly. Compare the brightness to that of a direct connection to the battery.

Does the test light illuminate brightly?

Yes

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for

corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.

- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Repair the Transmission Control Output circuit for an open or high resistance. If the fuse is open make sure to check for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

10. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

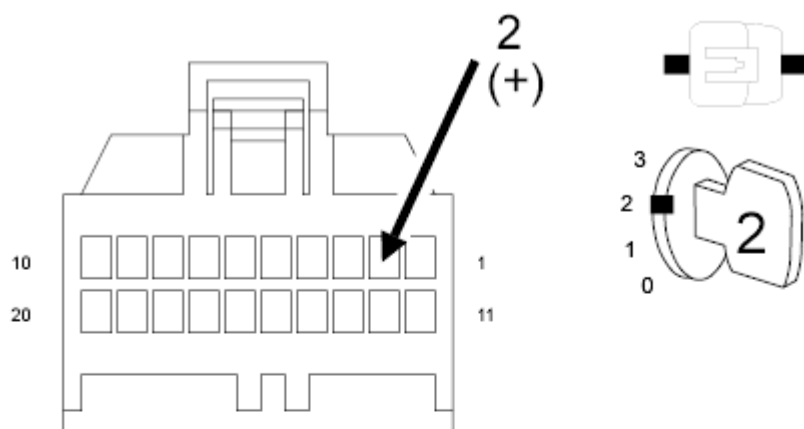
Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

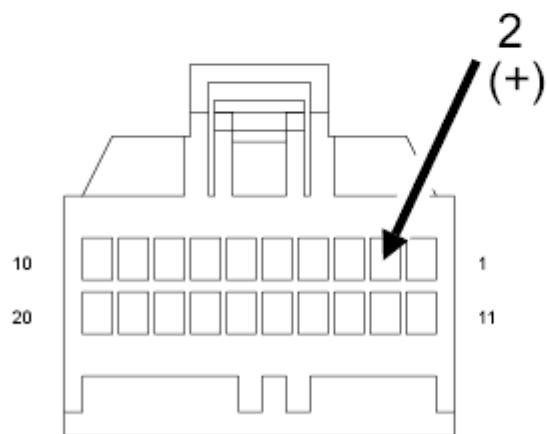
No

- Test Complete.

P0846-2/4 PRESSURE SWITCH RATIONALITY



MODULE-
DOOR-
DRIVER C2



MODULE-
DOOR-
PASSENGER C2

123213

Fig. 47: L/R Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The Transmission control system uses three pressure switches to monitor the fluid pressure in the LR, 2/4, and OD elements. The pressure switches are continuously monitored for the correct states in each gear. The 2/4 pressure switch monitors the fluid pressure to the 2/4 clutch to confirm proper operation of the 2/4 solenoid. If the 2/4 pressure switch is identified as closed in Park or Neutral, the code will immediately be set and normal operation will be allowed for that given ignition start. If the 2/4 pressure switch is identified as closed in 1st or 3rd gear, the code will immediately be set, and the trans will shift to 2nd or 4th gear as appropriate. If the 2/4 pressure switch fails three times (in 1st or 3rd gear) during a single key start, the transmission will go into limp-

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in and the MIL will illuminate.

- **When Monitored:**

Whenever the engine is running.

- **Set Condition:**

The DTC is set if the 2/4 pressure switch is open or closed at the wrong time in a given gear. If the problem is identified for three successive ignition starts, the transmission will go into Limp-in mode and the MIL will turn on after 10 seconds of vehicle operation.

Possible Causes

RELATED DTCS PRESENT
LOSS OF PRIME DTC PRESENT
(T47) 2/4 PRESSURE SIGNAL CIRCUIT OPEN
(T47) 2/4 PRESSURE SIGNAL CIRCUIT SHORTED TO GROUND
(T47) 2/4 PRESSURE SIGNAL CIRCUIT SHORTED TO VOLTAGE
TRANSMISSION SOLENOID/PRESSURE SWITCH ASSEMBLY
POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

PRESSURE SWITCH STATES

GEAR	L/R	2/4	OD
REVERSE	OPEN	OPEN	OPEN
P/N	CLOSED	OPEN	OPEN
1ST	CLOSED	OPEN	OPEN
2ND	OPEN	CLOSED	OPEN
DRIVE	OPEN	OPEN	CLOSED
OD	OPEN	CLOSED	CLOSED

Diagnostic Test

1. CHECK IF RELATED DTCS ARE PRESENT

1. With the scan tool, read DTCs.

Are there any Transmission Control Relay, TCM Power Input, or TIPM TCM Power Control circuit DTCs present also?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and

Testing and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK FOR LOSS OF PRIME DTC

1. With the scan tool, read DTCs.

Is the DTC P0944 present also?

Yes

- See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

No

- Go to step 3

3. CHECK TO SEE IF P0846 IS CURRENT

1. With the scan tool, read DTCs.

Is the status Active or is the Starts Since Set counter 2 or less for this DTC?

Yes

- Go to step 4

No

- Go to step 8

4. CHECK THE PCM AND WIRING USING THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the Transmission Simulator, turn the Pressure Switch selector to 2/4.

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6. With the scan tool, monitor the 2/4 Pressure Switch state while pressing the Pressure Switch Test button on the Transmission Simulator.

Did the 2/4 Pressure Switch state change?

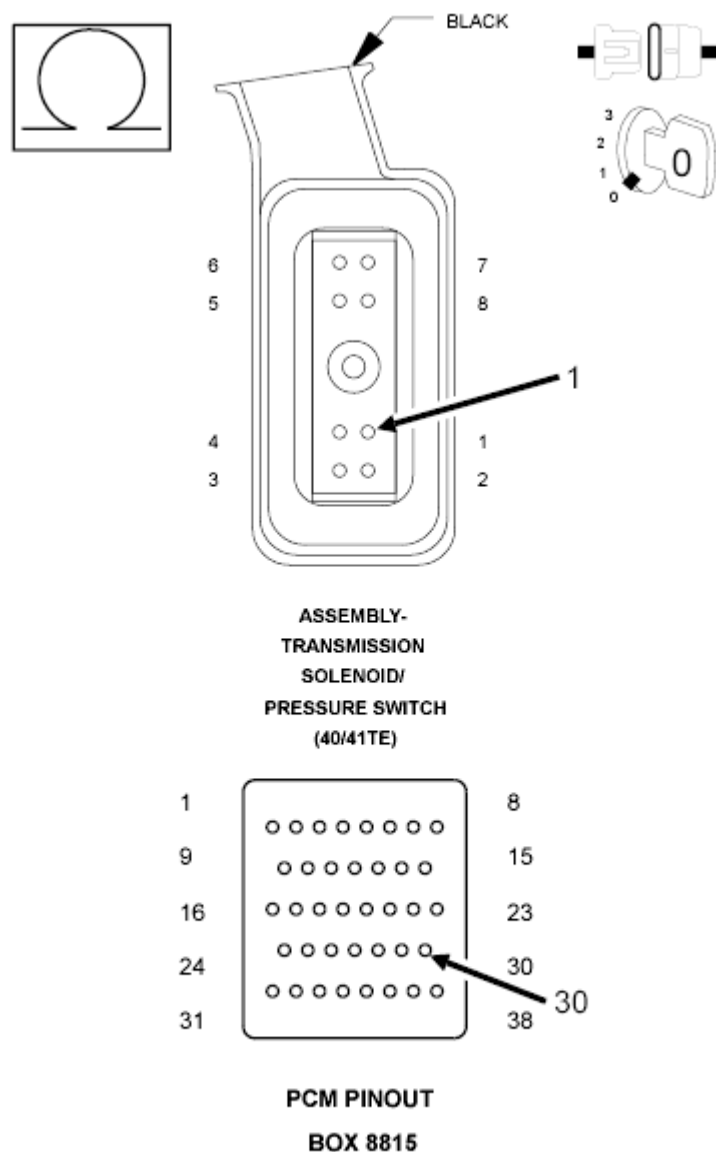
Yes

- Replace the Transmission Solenoid/Pressure Switch Assembly in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go to step 5

5. **CHECK THE (T47) 2/4 PRESSURE SIGNAL CIRCUIT FOR AN OPEN**



77035

Fig. 48: Checking 2/4 Pressure Signal Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector.
3. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install PCM Pinout Box 8815 to perform diagnosis.

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4. Measure the resistance of the (T47) 2/4 Pressure Signal circuit between the Transmission Solenoid/Pressure Switch Assembly harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

Yes

- Repair the (T47) 2/4 Pressure Signal circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 6

6. **CHECK THE (T47) 2/4 PRESSURE SIGNAL CIRCUIT FOR A SHORT TO GROUND**

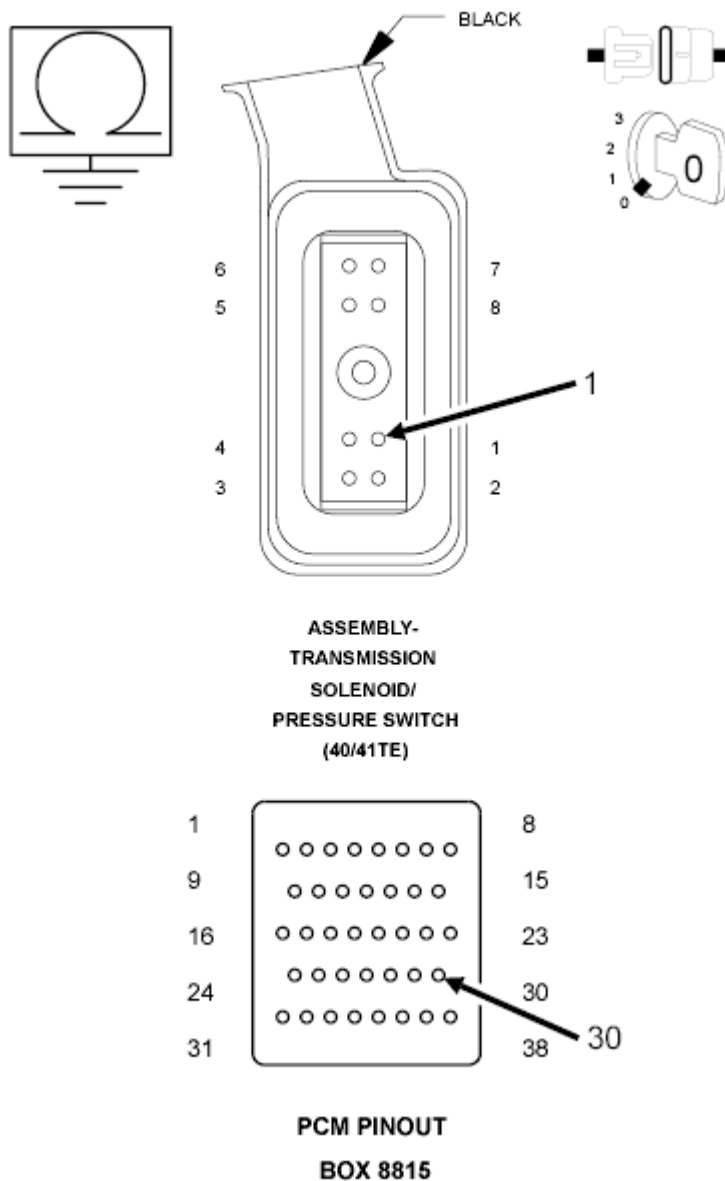


Fig. 49: Checking 2/4 Pressure Signal Circuit Shorted To Ground
Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T47) 2/4 Pressure Signal circuit.

Is the resistance below 5.0 Ohms?

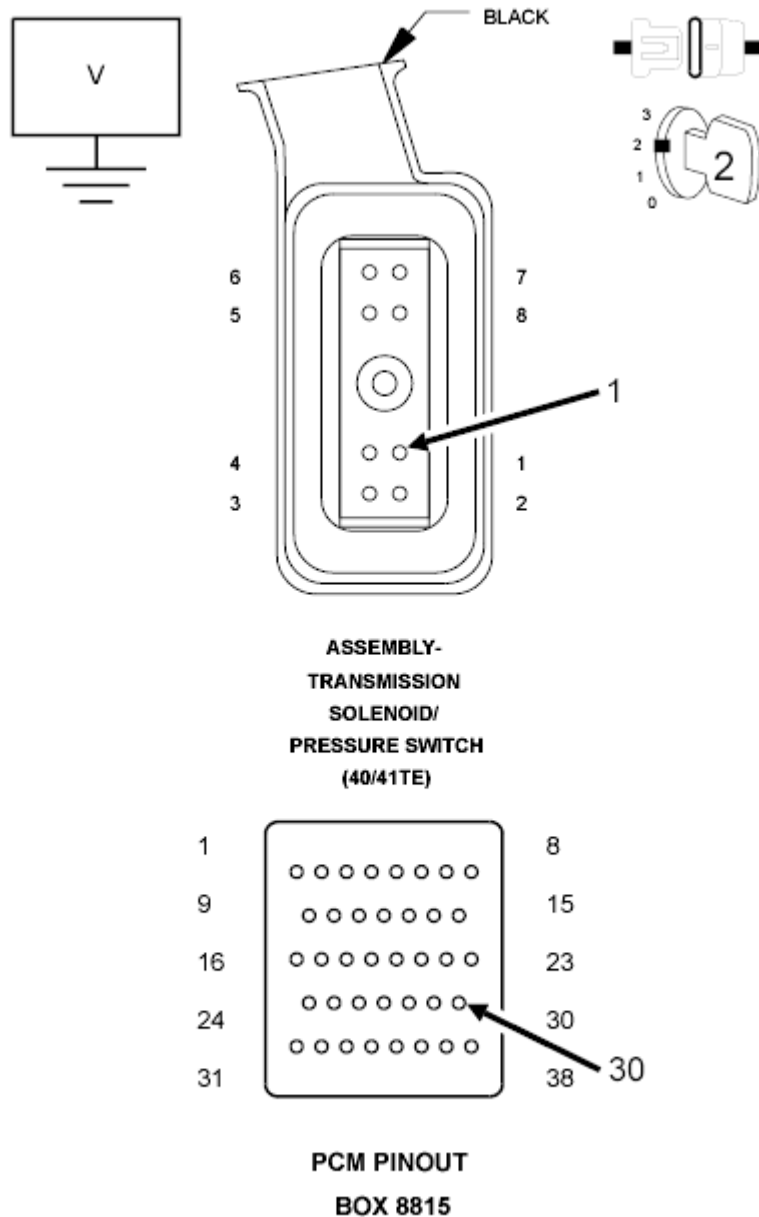
Yes

- Repair the (T47) 2/4 Pressure Signal circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 7

7. CHECK THE (T47) 2/4 PRESSURE SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE



77041

Fig. 50: Checking 2/4 Pressure Signal Circuit For A Short To Voltage
Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.

2. With the scan tool under TIPM, actuate the Transmission.
3. Measure the voltage of the (T47) 2/4 Pressure Signal circuit.

Is the voltage above 0.5 of a volt?

Yes

- Repair the (T47) 2/4 Pressure Signal circuit for a short to voltage.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

8. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Test Complete.

P0868-LINE PRESSURE LOW

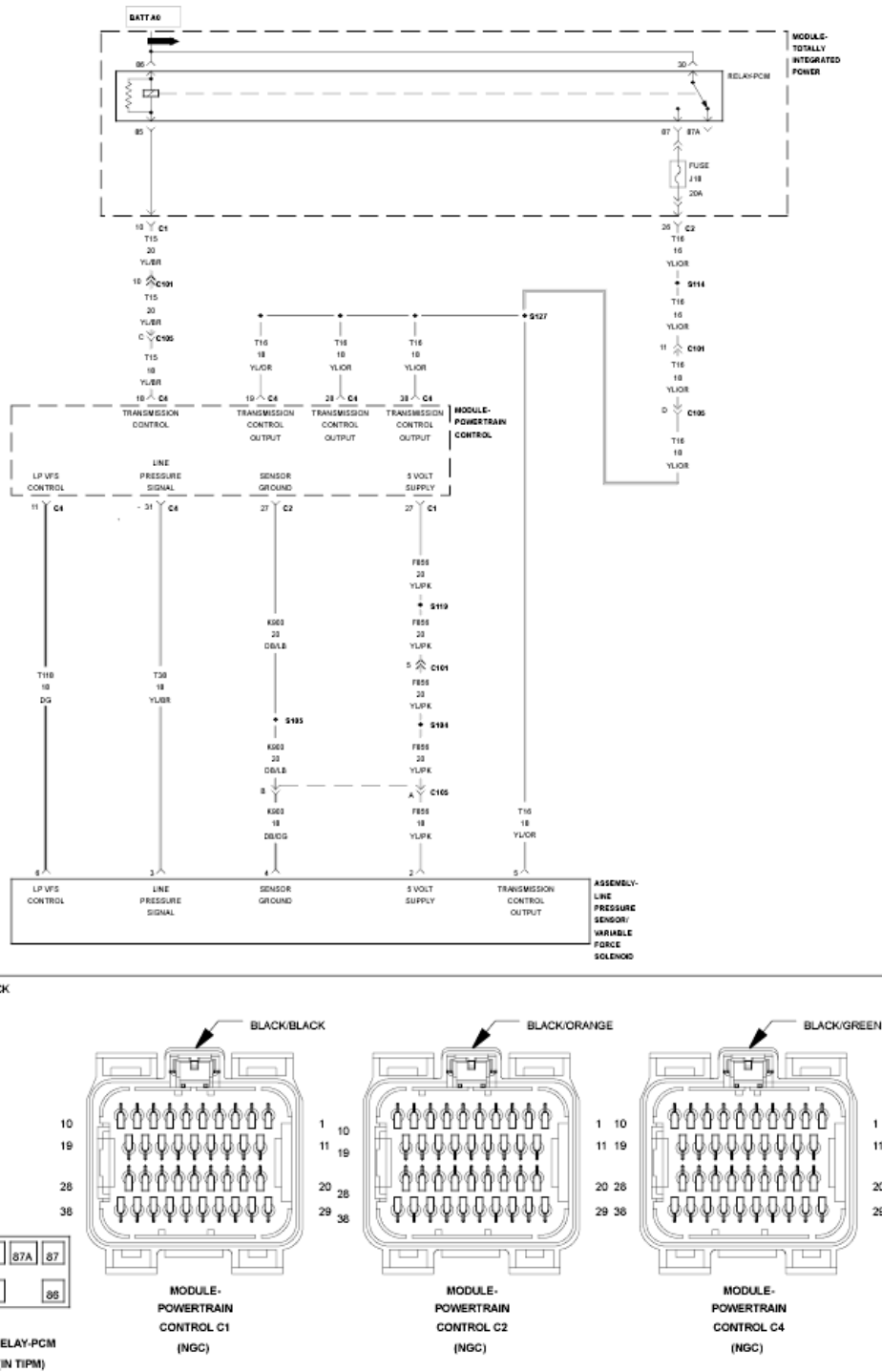


Fig. 51: Pressure Control Solenoid Control & 5-Volt Supply Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

Line pressure is measured by the Line Pressure Sensor (LPS) and regulation is achieved by changing the duty cycle of the Pressure Control Solenoid (PCS) controlled by the Transmission Control System. (5% duty cycle = solenoid off = Max line pressure, 62% duty cycle = solenoid on = Min line pressure). The Transmission Control System calculates the desired line pressure based on inputs from both the engine and transmission.

The Transmission Control System calculates torque input to the transmission and uses it as the primary input to the desired line pressure calculation. This is called Torque Based Line Pressure. In addition, the line pressure is set to a preset level during shifts and in Park and Neutral to ensure consistent shift quality. The desired line pressure is continuously being compared to the actual line pressure. If the actual line pressure is consistently lower than the target while driving, the line pressure low DTC P0868 will set.

- **When Monitored:**

Continuously while driving in a forward gear.

- **Set Condition:**

The Powertrain Control Module (PCM) continuously monitors Actual Line Pressure and compares it to Desired Line Pressure. If the Actual Line Pressure is more than 5 psi below Desired Line Pressure while the PCS duty cycle is at or near its minimum value, this DTC will set.

Possible Causes
CHECK FOR RELATED DTCS
LOW FLUID LEVEL
(F856) 5-VOLT SUPPLY CIRCUIT OPEN
(F856) 5-VOLT SUPPLY CIRCUIT SHORTED TO GROUND
(F856) 5-VOLT SUPPLY CIRCUIT SHORTED TO VOLTAGE
(T118) PRESSURE CONTROL SOLENOID CONTROL CIRCUIT SHORTED TO ANOTHER CIRCUIT
INTERNAL TRANSMISSION
LINE PRESSURE SENSOR
CRACKED, PLUGGED, OR MIS-INSTALLED PRIMARY OIL FILTER
STUCK OR STICKING MAIN REGULATOR VALVE
POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK FOR RELATED DTCS

1. With the scan tool, read transmission DTCs.

Is the DTC P0933 present also?

Yes

- See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK IF THE DTC IS CURRENT

1. With the scan tool, check the Starts Since Set counter for P0868.

NOTE: This counter only applies to the last DTC set.

Is the Starts Since Set Counter 2 or less?

Yes

- Go to step 3

No

- Go to step 10

3. CHECK THE PCM AND WIRING

1. Turn the ignition off to the lock position.
2. Remove the Starter Relay.

CAUTION: Removal of the Starter Relay will prevent the vehicle from being started in gear.

WARNING: The Starter Relay must be removed. Failure to do so can result in possible serious or fatal injury.

3. Install the Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. On the Transmission Simulator select the "OFF" position of the "Input/Output Speed" switch.
5. Ignition on, engine not running.
6. With the scan tool, monitor the Line Pressure during the following steps.
7. Using the Transmission Simulator, set the rotary knob to each of the three line pressure positions.

NOTE: All three scan tool Line Pressure readings should be steady and ± 14 kPa or 2.0 psi (0.2 of a volt) of the reading specified on the Transmission Simulator.

Did the Line Pressure read within ± 14 kPa or 2.0 psi (0.2 of a volt) in all three positions?

Yes

- Go to step 4

No

- Go to step 6

4. CHECK THE LINE PRESSURE SENSOR

1. Turn the ignition off to the lock position.
2. Disconnect the Transmission Simulator 8333A and reconnect all previously disconnected connectors.
3. Install a Pressure Gauge, 0 to 2000 kPa or 0 to 300 psi to the L/R test port.
4. Start the engine in park.
5. Monitor the line pressure readings of both the scan tool and the pressure gauge and compare the two readings.

Is the line pressure gauge reading within 34 kPa or 5 psi of the scan tool reading?

Yes

- Go to step 5

No

- Replace the Line Pressure Sensor in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

5. CHECK FOR A PLUGGED TRANSMISSION OIL FILTER

1. Turn the ignition off to the lock position.
2. Remove and inspect the Transmission Oil Pan for excessive debris in accordance with the Service Information.
3. Remove and inspect the Transmission Oil Filter in accordance with the Service Information.

Does the Oil Pan contain excessive debris and/or is the Transmission Oil Filter plugged?

Yes

- Repair as necessary. If the Transmission Oil Filter is plugged or there is excessive debris, refer to the appropriate Service Information for the proper Hydraulic repair procedure.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Repair internal transmission and inspect the Transmission Oil Pump in accordance with the Service Information and replace if necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

6. CHECK THE (F856) 5-VOLT SUPPLY CIRCUIT FOR A SHORT TO VOLTAGE

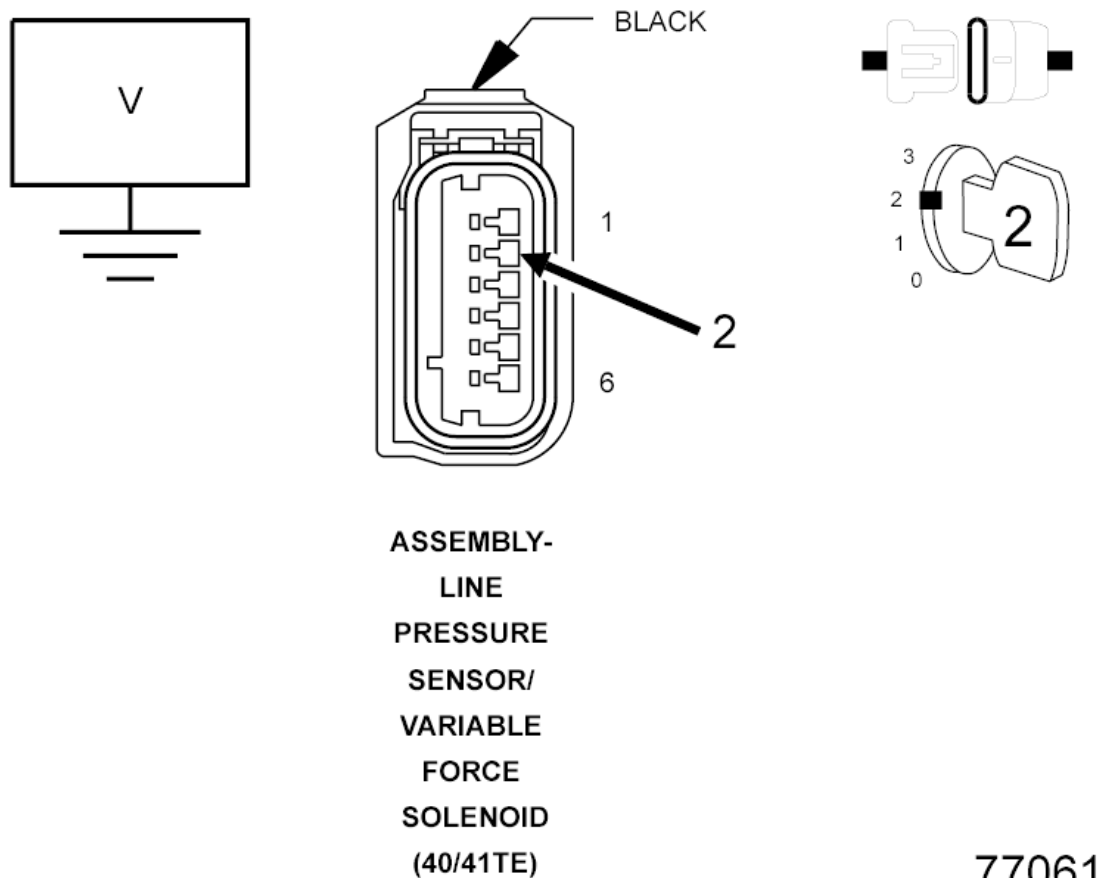


Fig. 52: Checking 5-Volt Supply Circuit For A Short To Voltage
 Courtesy of CHRYSLER LLC

1. Disconnect the Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
2. Reconnect all previously disconnected connectors except the Line Pressure Sensor/Variable Force Solenoid Assembly harness connector.
3. Ignition on, engine not running.
4. Measure the voltage of the (F856) 5-volt Supply circuit.

Is the voltage above 5.5 volts?

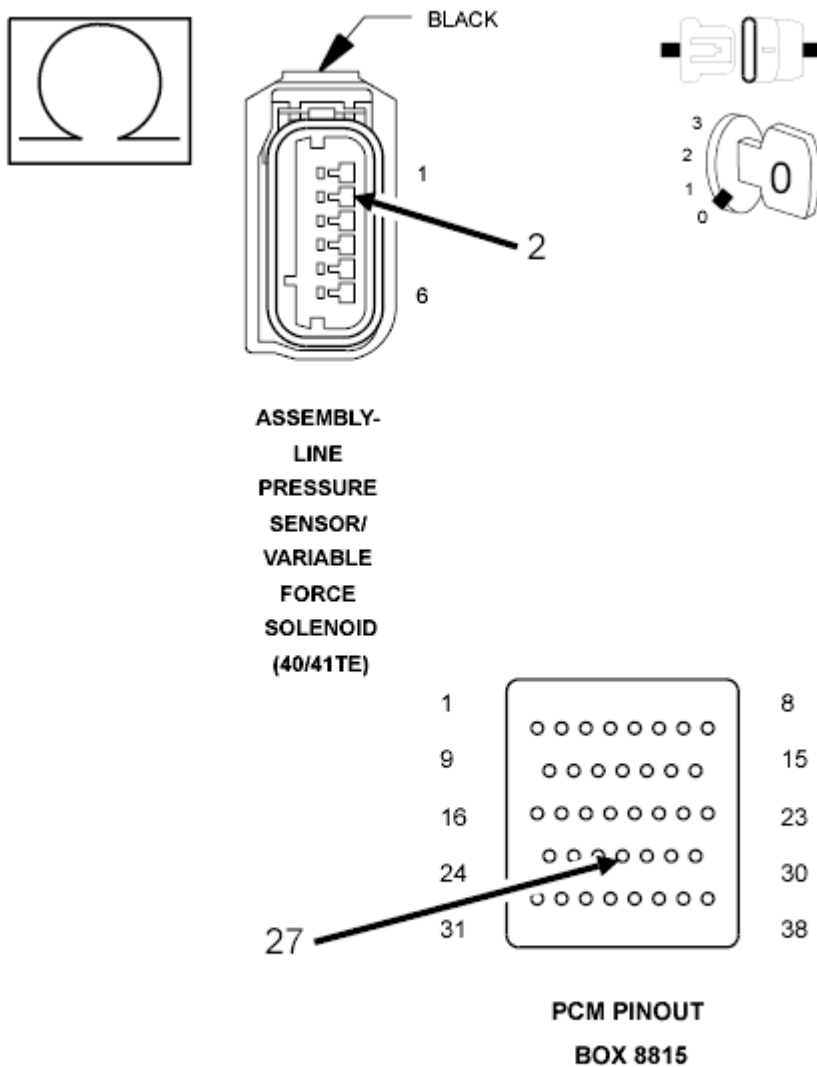
Yes

- Repair the (F856) 5-volt Supply circuit for a short to voltage.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go to step 7

7. CHECK THE (F856) 5-VOLT SUPPLY CIRCUIT FOR AN OPEN



77063

Fig. 53: Checking 5-Volt Supply Circuit For An Open
 Courtesy of CHRYSLER LLC

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1. Turn the ignition off to the lock position.
2. Disconnect the PCM C1 harness connector and connect the PCM Pinout Box 8815.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install the PCM Pinout Box 8815 to perform diagnosis.

3. Measure the resistance of the (F856) 5-volt Supply circuit between the Line Pressure Sensor/Variable Force Solenoid Assembly harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

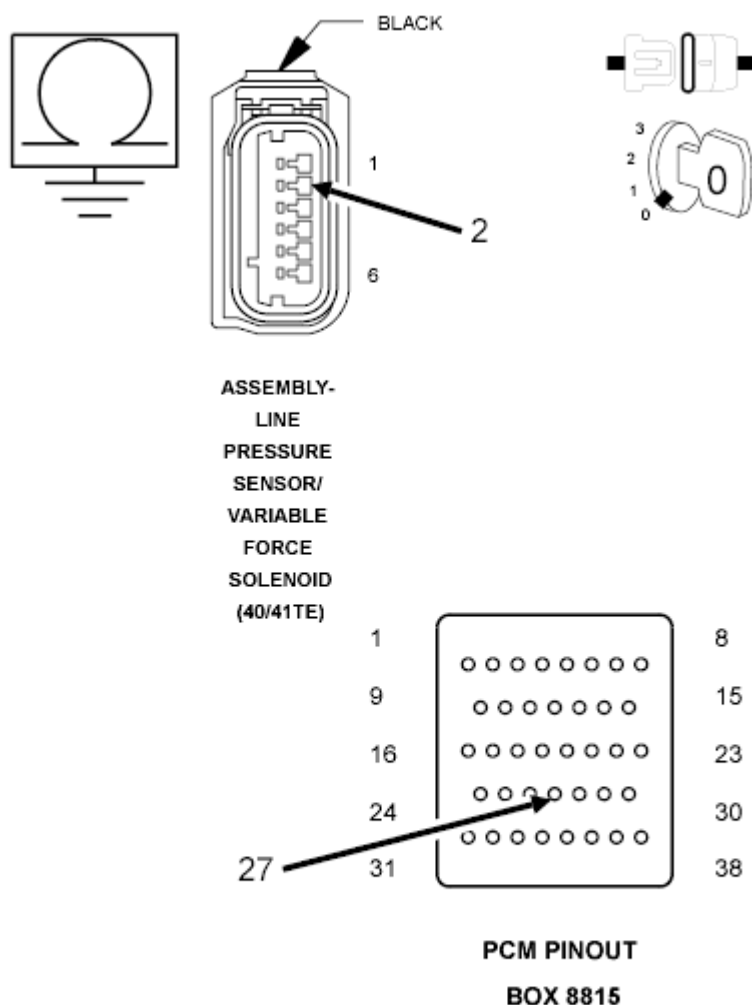
Yes

- Repair the (F856) 5-volt Supply circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 8

8. CHECK THE (F856) 5-VOLT SUPPLY CIRCUIT FOR A SHORT TO GROUND



77067

Fig. 54: Checking 5-Volt Supply Circuit For A Short To Ground
Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (F856) 5-volt Supply circuit.

Is the resistance below 5.0 Ohms?

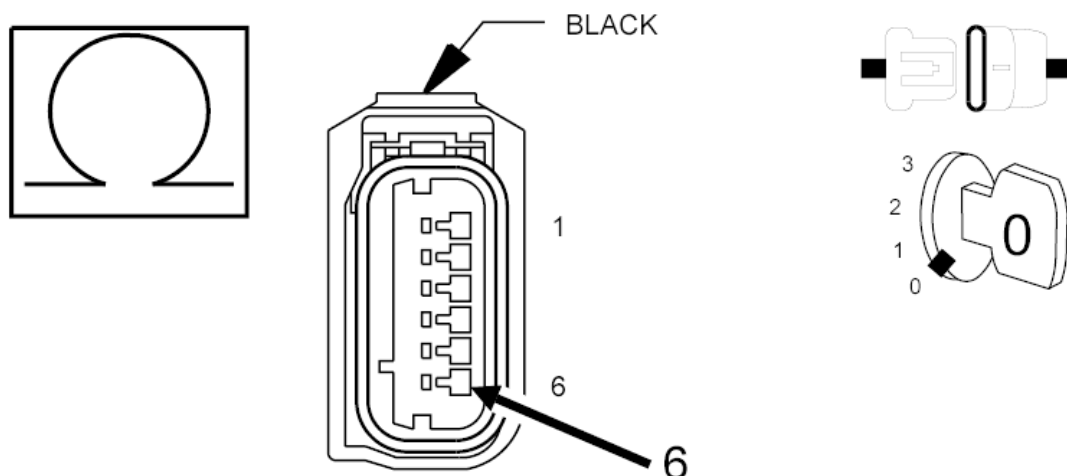
Yes

- Repair the (F856) 5-volt Supply circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 9

9. CHECK THE (T118) PRESSURE CONTROL SOLENOID CONTROL CIRCUIT FOR A SHORT TO ANOTHER CIRCUIT



ASSEMBLY-
LINE
PRESSURE
SENSOR/
VARIABLE
FORCE
SOLENOID
(40/41TE)

77069

Fig. 55: Checking Pressure Control Solenoid Control Circuit For A Short To Another Circuit
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the Line Pressure Sensor/Variable Force Solenoid Assembly harness connector.
3. Disconnect all PCM harness connectors.
4. Measure the resistance between the (T118) Pressure Control Solenoid Control circuit and all other circuits in the Line Pressure Sensor/Variable Force Solenoid Assembly harness connector.

Is the resistance below 5.0 Ohms between the (T118) Pressure Control Solenoid Control circuit and any other circuit(s) in the Line Pressure Sensor/Variable Force Solenoid Assembly harness connector?

Yes

- Repair the (T118) Pressure Control Solenoid Control circuit for a short to another circuit(s).

- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for any Service Bulletins that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool perform the Quick Learn procedure.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

10. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
5. Check for any Service Bulletins that may apply.

Where there any problems found?

Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Test Complete.

P0869-LINE PRESSURE HIGH

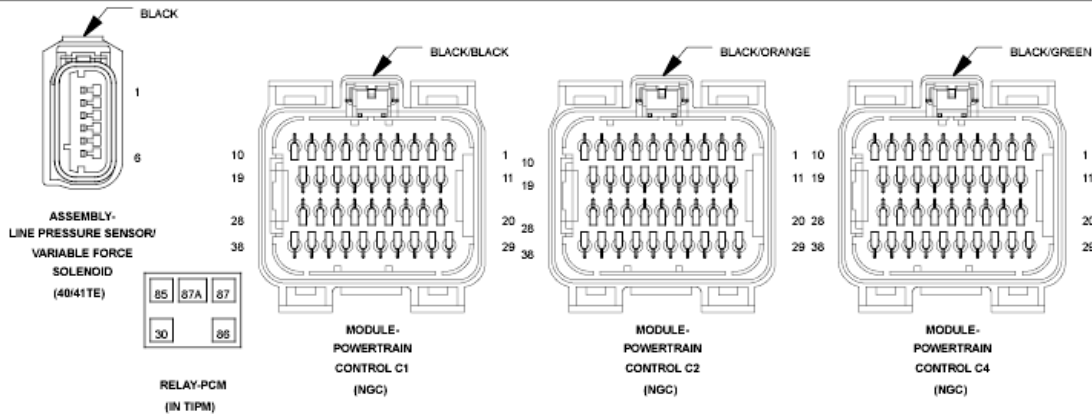
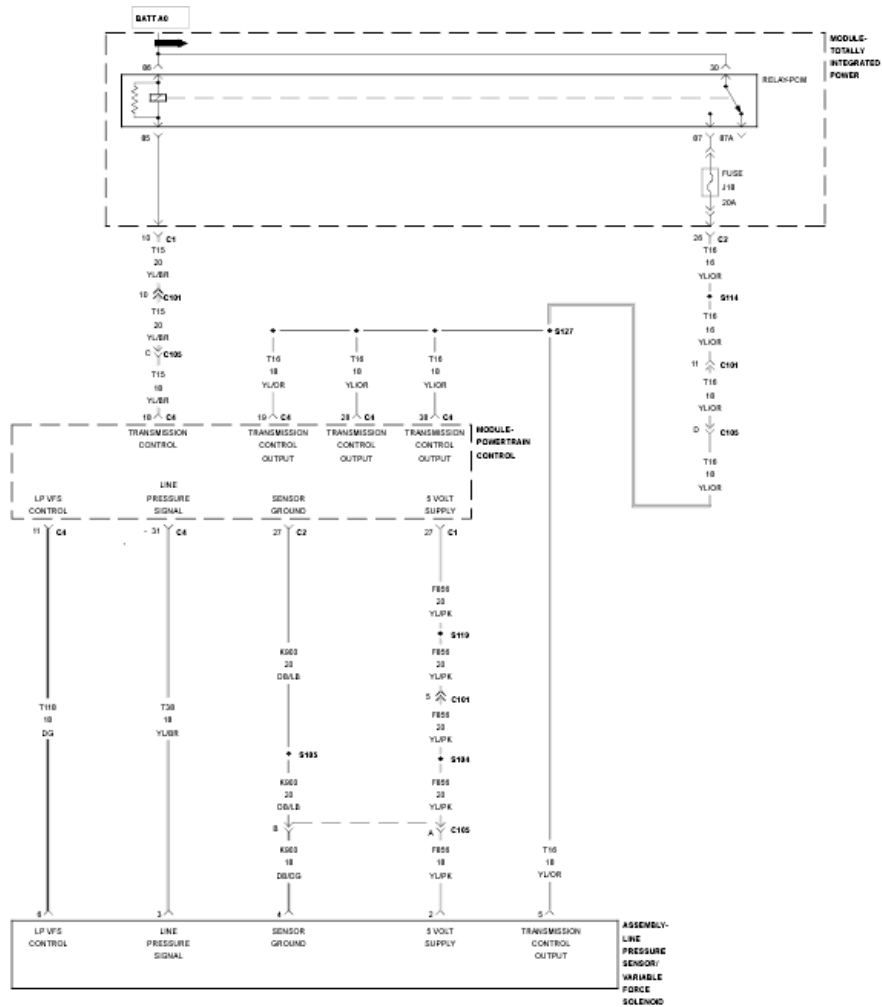


Fig. 56: Pressure Control Solenoid Control & 5-Volt Supply Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

Line pressure is measured by the Line Pressure Sensor (LPS) and regulation is achieved by changing the duty cycle of the Pressure Control Solenoid (PCS) controlled by the Transmission Control System. (5% duty cycle = solenoid off = Max line pressure, 62% duty cycle = solenoid on = Min line pressure). The Transmission Control System calculates the desired line pressure based on inputs from both the engine and transmission.

The Transmission Control System calculates torque input to the transmission and uses it as the primary input to the desired line pressure calculation. This is called Torque Based Line Pressure. In addition, the line pressure is set to a preset level during shifts and in Park and Neutral to ensure consistent shift quality. The desired line pressure is continuously being compared to the actual line pressure. If the actual line pressure is consistently higher than the highest desired line pressure ever used in the current gear, the line pressure high DTC P0869 will set.

- **When Monitored:**

Continuously while driving in a forward gear.

- **Set Condition:**

The Powertrain Control Module (PCM) continuously monitors Actual Line Pressure. If the Actual Line Pressure reading is greater than the highest Desired Line Pressure ever used in the current gear, while the Pressure Control Solenoid duty cycle is at or near its maximum value (which should result in minimum line pressure), the DTC will set.

Possible Causes
(F856) 5-VOLT SUPPLY CIRCUIT OPEN LINE PRESSURE SENSOR CONNECTION (T118) PRESSURE CONTROL SOLENOID CONTROL CIRCUIT OPEN (F856) 5-VOLT SUPPLY CIRCUIT SHORTED TO GROUND (T118) PRESSURE CONTROL SOLENOID CONTROL CIRCUIT SHORTED TO GROUND TRANSMISSION CONTROL OUTPUT CIRCUIT LINE PRESSURE SENSOR STUCK OR STICKING MAIN REGULATOR VALVE POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK FOR RELATED DTCS

1. With the scan tool, check for other Transmission DTCS.

Are there any Line Pressure Sensor or Transmission Relay or TCM Power Input DTCS present also?

Yes

- See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK IF THE DTC IS CURRENT

1. With the scan tool, check the Starts Since Set counter for P0869.

Is the Starts Since Set COUNTER 2 or less?

Yes

- Go to step 3

No

- Go to step 9

3. CHECK THE PCM AND WIRING

1. Turn the ignition off to the lock position.
2. Remove the Starter Relay.

CAUTION: Removal of the Starter Relay will prevent the vehicle from being started in gear.

WARNING: The Starter Relay must be removed. Failure to do so can result in possible serious or fatal injury.

3. Install the Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. With the Transmission Simulator select the "OFF" position on the "Input/Output Speed" switch.
5. Ignition on, engine not running.
6. With the scan tool, monitor the Line Pressure during the following step.
7. Using the Transmission Simulator, set the rotary switch to each of the 3 line pressure positions.

NOTE: All three scan tool Line Pressure readings should be steady and ± 14 kPa or 2.0 psi (0.2 of a volt) of the reading specified on the Transmission Simulator.

Did the Line Pressure read within ± 14 kPa or 2.0 psi (0.2 of a volt) in all three positions?

Yes

- Go to step 4

No

- Go to step 5

4. CHECK THE LINE PRESSURE SENSOR CALIBRATION

1. Turn the ignition off to the lock position.
2. Disconnect the Transmission Simulator 8333A and the Electronic Transmission Adapter kit and reconnect all previously disconnected connectors.
3. Install the Line Pressure Gauge C-3293, 0 to 2000 kPa or 0 to 300 psi in the L/R pressure port.
4. Start the engine in park.
5. Monitor the Line Pressure readings on the scan tool and the pressure gauge.
6. Compare the Line Pressure readings between the scan tool and the pressure gauge.

Is the pressure gauge reading within 34 kPa or 5 psi of the scan tool reading?

Yes

- Repair the internal transmission and inspect the Transmission Oil Pump in accordance with the Service Information and replace if necessary. If no problem is found, replace the Pressure Control Solenoid.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Replace the Line Pressure Sensor per the Service information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

5. CHECK THE (T118) PRESSURE CONTROL SOLENOID CONTROL CIRCUIT FOR AN OPEN

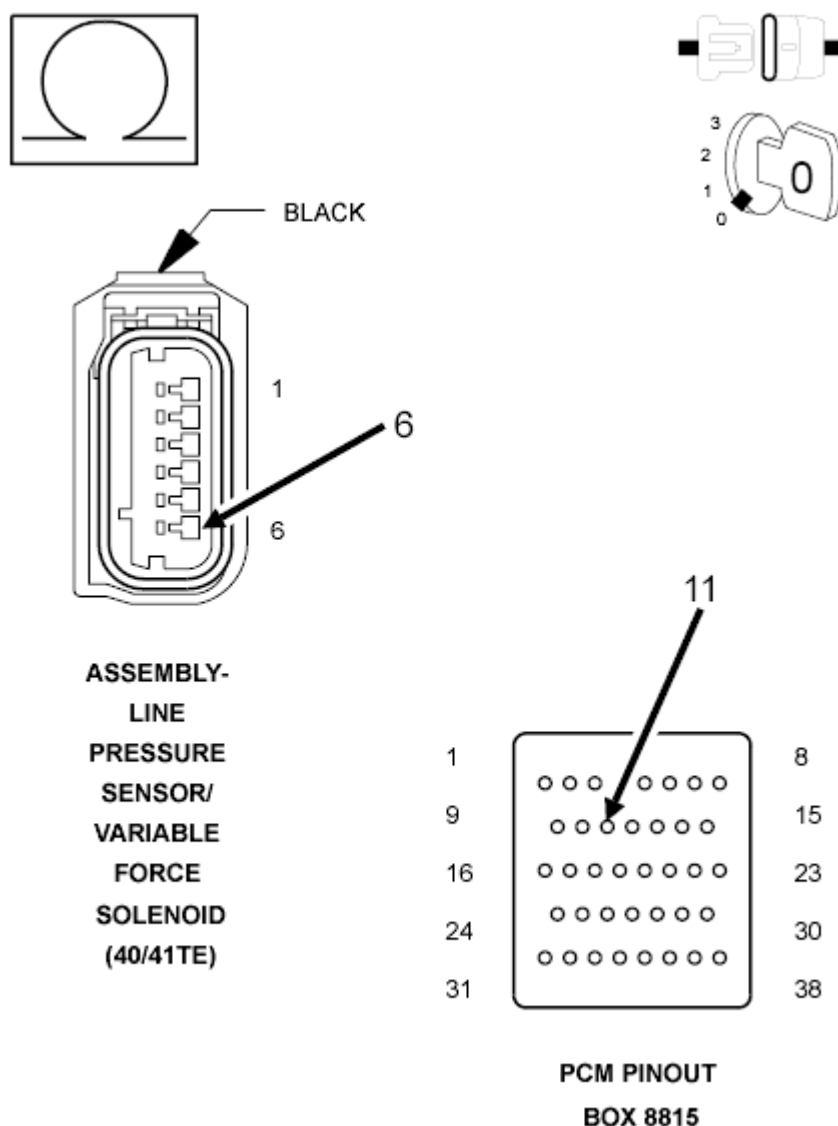


Fig. 57: Checking Pressure Control Solenoid Control Circuit For An Open
 Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the Transmission Simulator 8333A.
3. Disconnect the Powertrain Control Module C4 harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install the PCM Pinout Box 8815 to perform diagnosis.

4. Measure the resistance of the (T118) Pressure Control Solenoid Control circuit between the Line

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Pressure Sensor/Variable Force Solenoid Assembly harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

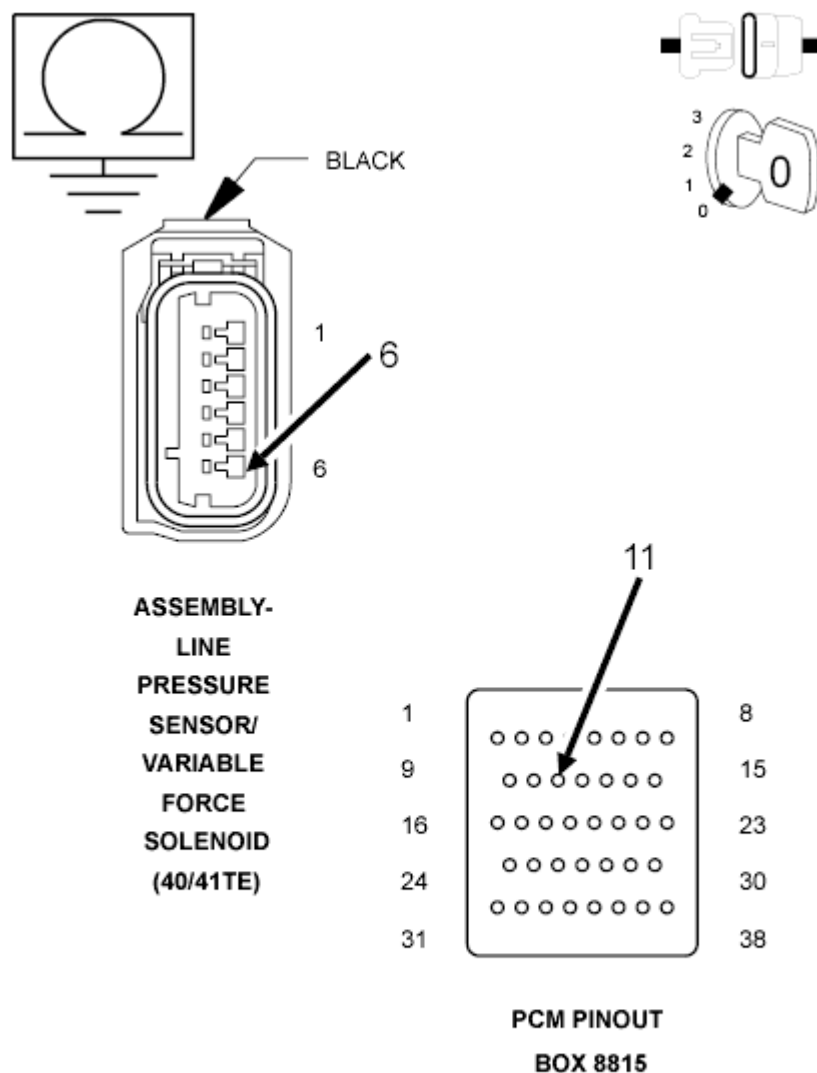
Yes

- Repair the (T118) Pressure Control Solenoid Control circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 6

6. CHECK THE (T118) PRESSURE CONTROL SOLENOID CONTROL CIRCUIT FOR A SHORT TO GROUND



77081

Fig. 58: Checking Pressure Control Solenoid Control Circuit For A Short To Ground
Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T118) Pressure Control Solenoid Control circuit.

Is the resistance below 5.0 Ohms?

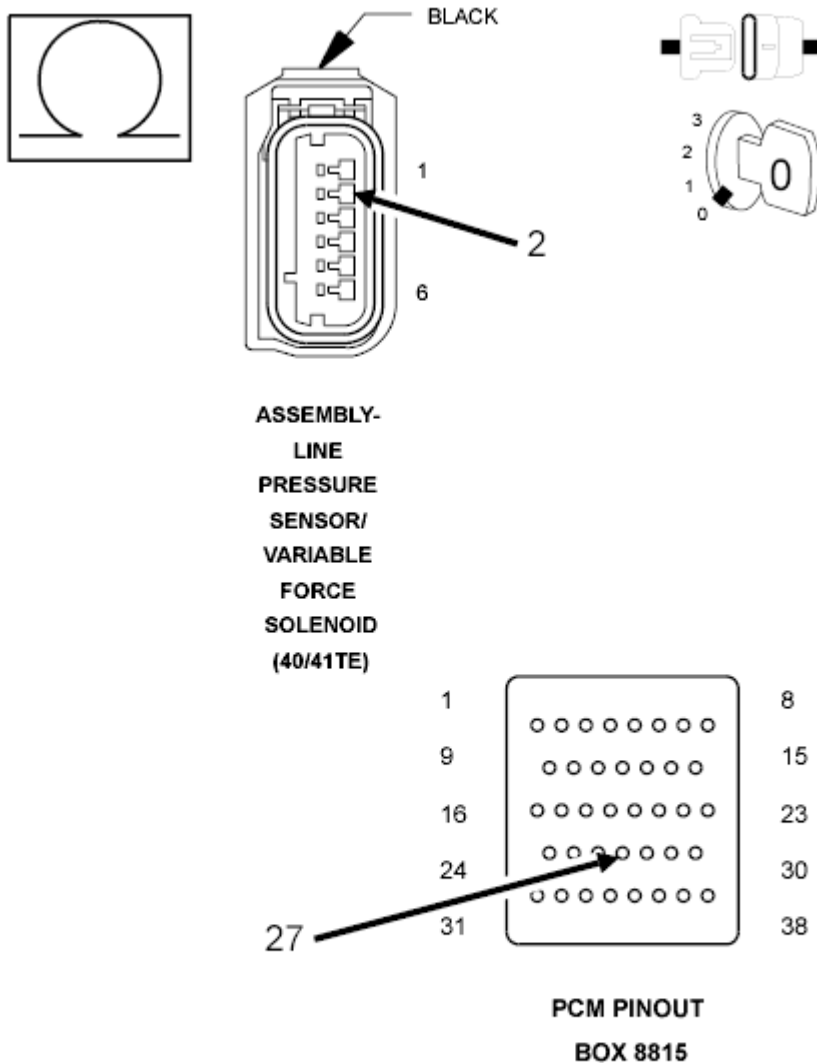
Yes

- Repair the (T118) Pressure Control Solenoid Control circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 7

7. CHECK THE (F856) 5-VOLT SUPPLY CIRCUIT FOR AN OPEN



77063

Fig. 59: Checking 5-Volt Supply Circuit For An Open
Courtesy of CHRYSLER LLC

1. Measure the resistance of the (F856) 5-volt Supply circuit between the Line Pressure Sensor/Variable Force Solenoid Assembly harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

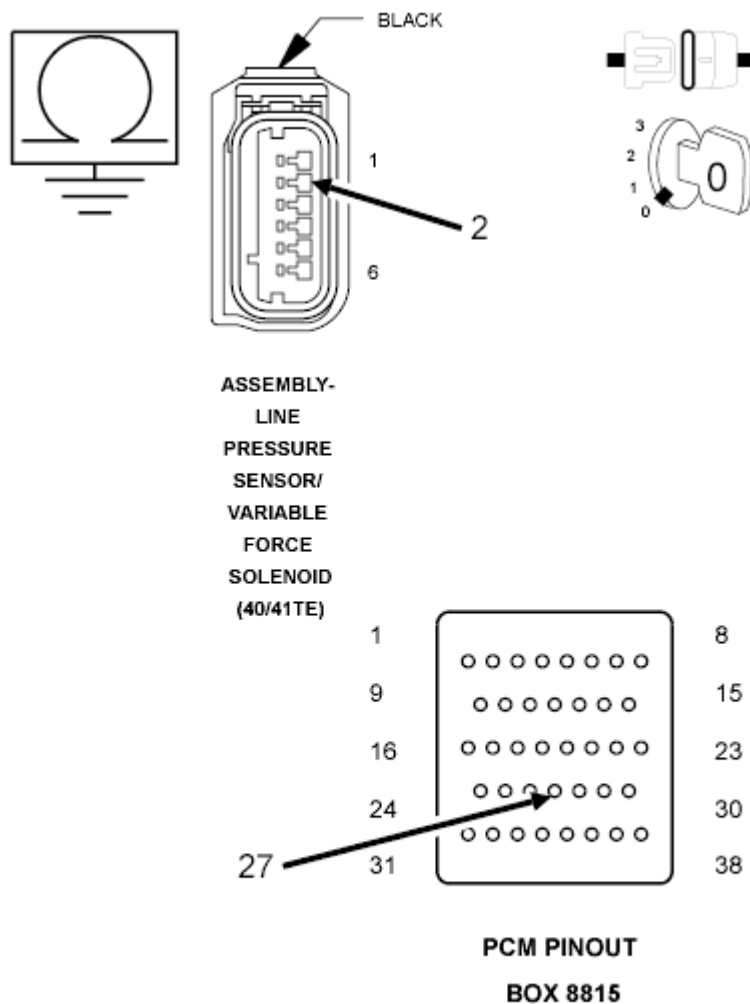
Yes

- Repair the (F856) 5-volt Supply circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 8

8. CHECK THE (F856) 5-VOLT SUPPLY CIRCUIT FOR A SHORT TO GROUND



77067

Fig. 60: Checking 5-Volt Supply Circuit For A Short To Ground

Courtesy of CHRYSLER LLC

1. Disconnect the PCM C1 harness connector.
2. Disconnect the Line Pressure Sensor/Variable Force Solenoid Assembly harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install the PCM Pinout Box 8815 to perform diagnosis.

3. Measure the resistance between ground and the (F856) 5-volt Supply circuit.

Is the resistance below 5.0 Ohms?

Yes

- Repair the (F856) 5-volt Supply circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for any Service Bulletins that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool perform the Quick Learn procedure.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

9. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
5. Perform any technical service bulletins that may apply.

Where there any problems found?

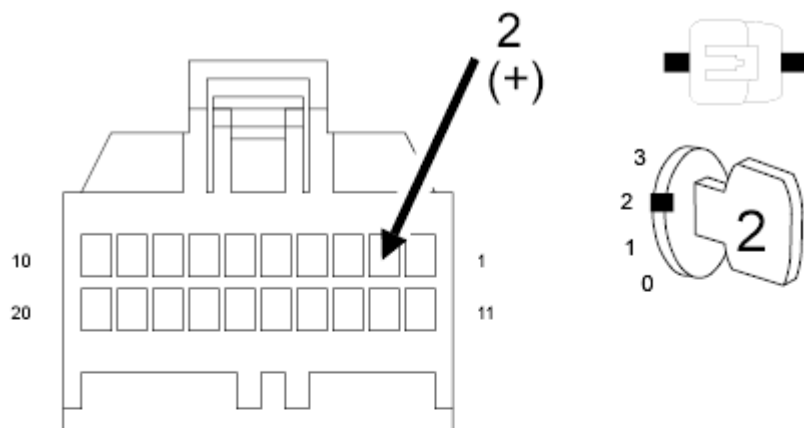
Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

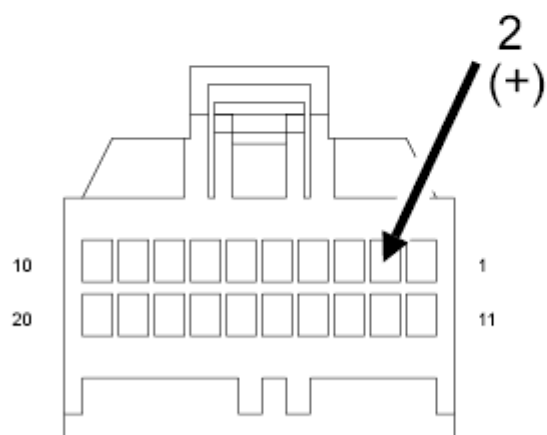
No

- Test Complete.

P0870-OD HYDRAULIC PRESSURE TEST



MODULE-
DOOR-
DRIVER C2



MODULE-
DOOR-
PASSENGER C2

123213

Fig. 61: L/R Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

Pressure switches are normally off or open (no pressure applied) and read high (+12 volts). When an element is

applied, the corresponding pressure switch closes to ground (0 volts) or turns on. The controller tests the OD and 2/4 pressure switches when they are off (when the corresponding friction element is not applied) by briefly applying the OD and 2/4 elements which will cause the corresponding pressure switch to close. The test verifies that the switches are operational and that the switch will close when the corresponding element is applied. If a switch fails to respond, it is re-tested. The MIL illuminates and the transmission system defaults to Limp-in mode.

• **When Monitored:**

In any forward gear with engine speed above 1000 RPM, shortly after a shift and every minute thereafter.

• **Set Condition:**

After a shift into a forward gear, with engine speed greater than 1000 RPM, the Powertrain Control Module (PCM) momentarily turns on element pressure to the clutch circuits that don't have pressure to identify the correct pressure switch closes. If the pressure switch does not close two times the DTC sets.

Possible Causes
LOSS OF PRIME P0944 OR OTHER TRANSMISSION PRESENT
(T9) OD PRESSURE SIGNAL CIRCUIT OPEN
(T9) OD PRESSURE SIGNAL CIRCUIT SHORT TO GROUND
(T9) OD PRESSURE SIGNAL CIRCUIT SHORT TO VOLTAGE
TRANSMISSION SOLENOID/PRESSURE SWITCH ASSEMBLY
CONTAMINATED FLUID (TYPICALLY WATER CONTAMINATION)
VALVE BODY INTERNAL LEAKAGE
POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK FOR LOSS OF PRIME DTC

1. With the scan tool, read DTCs.

Is the DTC P0944 present also?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK FOR RELATED TRANSMISSION DTCS

1. With the scan tool, read DTCs.

Are any of the DTCs P0732, P0734 and/or P0846 present also?

Yes

- Replace the Transmission Solenoid/Pressure Switch Assembly in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 3

3. CHECK FOR CONTAMINATED FLUID

1. Check the transmission fluid for water or other contamination.

Is the transmission fluid contaminated?

Yes

- Repair the cause of the transmission fluid contamination in accordance with the Service Information.

No

- Go to step 4

4. CHECK IF DTC IS CURRENT

1. With the scan tool, read DTCs.

Is the status Active or is the Starts Since Set counter 2 or less for this DTC?

Yes

- Go to step 5

No

- Go to step 10

5. CHECK THE PCM AND WIRING USING THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the Transmission Simulator, turn the Pressure Switch selector switch to OD.
6. With the scan tool, monitor the OD Pressure Switch state while pressing the Pressure Switch Test button on the Transmission Simulator.
7. Wiggle the wires leading to the PCM while pressing and holding the Pressure Switch Test button.

Did the OD Pressure Switch state change from open to closed and remain closed when the button was pressed, while wiggling the wires?

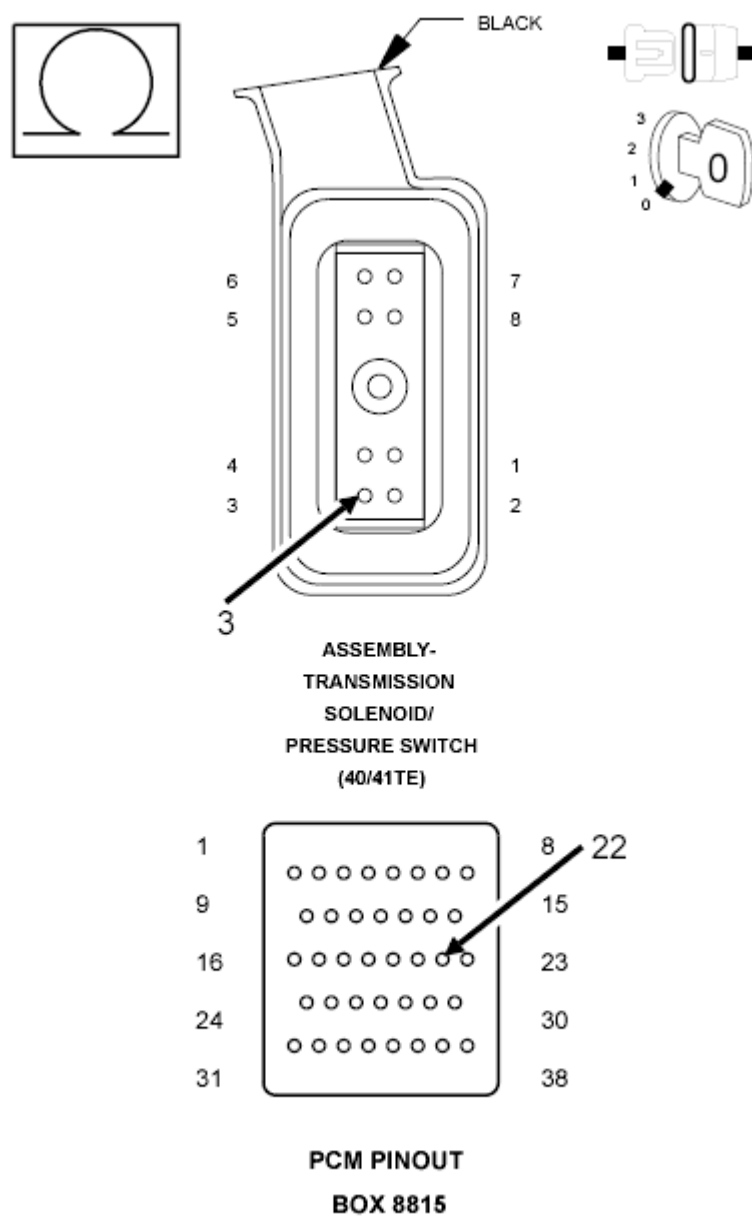
Yes

- Disassemble and inspect the Valve Body in accordance with the Service Information and repair or replace as necessary. If no problems are found in **BODY**, replace the Transmission Solenoid/Pressure Switch Assembly.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go to step 6

6. CHECK THE (T9) OD PRESSURE SIGNAL CIRCUIT FOR AN OPEN



77091

Fig. 62: Checking OD Pressure Signal Circuit For An Open
 Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector.
3. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in

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poor terminal to pin connection. Install PCM Pinout Box 8815 to perform diagnosis.

4. Measure the resistance of the (T9) OD Pressure Signal circuit between the Transmission Solenoid/Pressure Switch Assembly harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

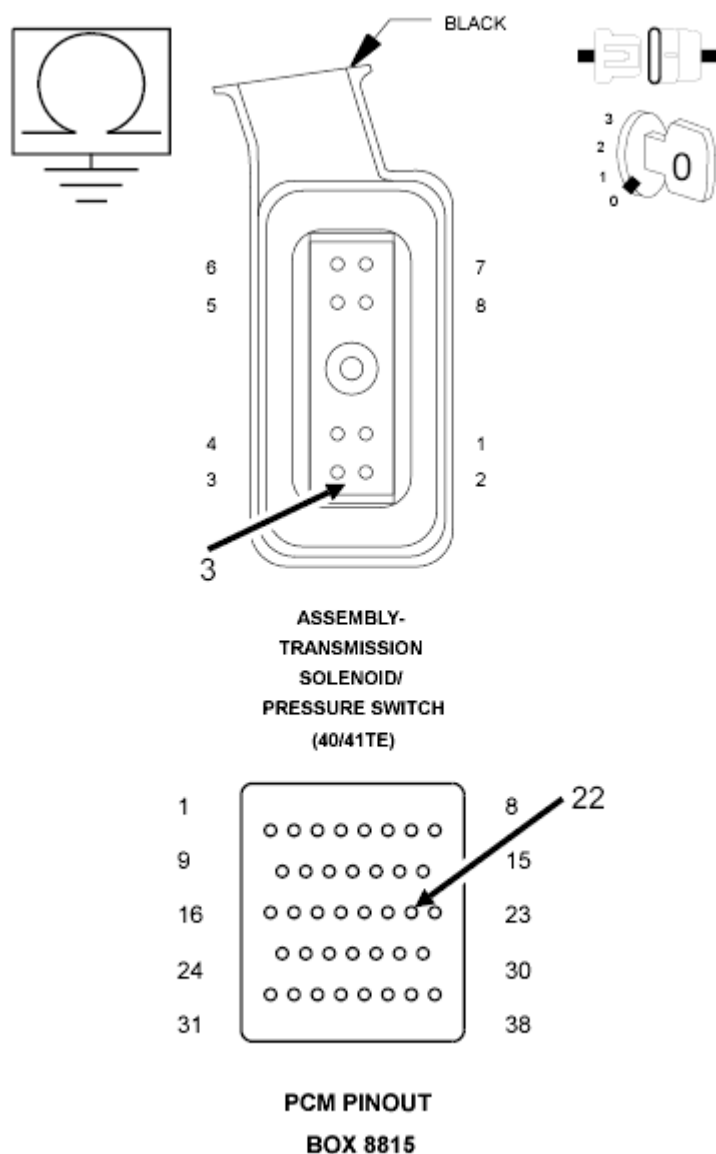
Yes

- Repair the (T9) OD Pressure Signal circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go to step 7

7. CHECK THE (T9) OD PRESSURE SIGNAL CIRCUIT FOR A SHORT TO GROUND



77095

Fig. 63: Checking OD Pressure Signal Circuit For A Short To Ground
 Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T9) OD Pressure Signal circuit.

Is the resistance below 5.0 Ohms?

Yes

- Repair the (T9) OD Pressure Signal circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 8

8. CHECK THE (T9) OD PRESSURE SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE

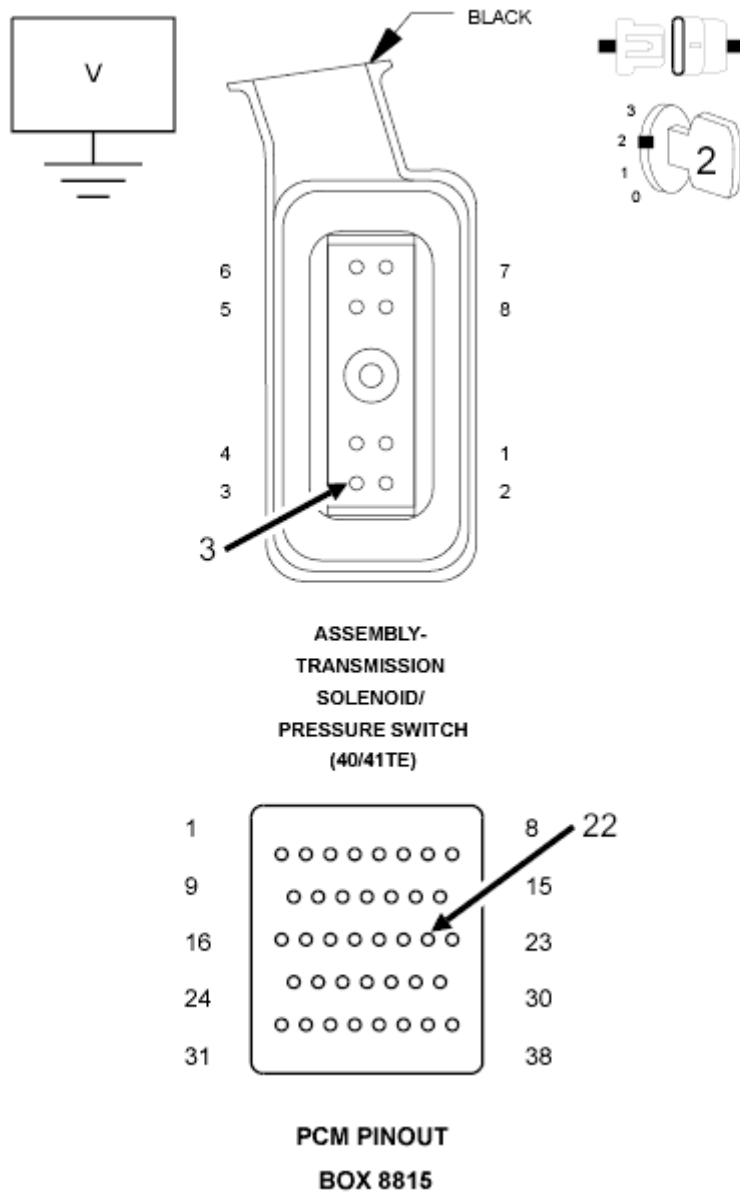


Fig. 64: Checking OD Pressure Signal Circuit For A Short To Voltage
Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.
2. With the scan tool under TIPM, actuate the Transmission.
3. Measure the voltage of the (T9) OD Pressure Signal circuit.

Is the voltage above 0.5 of a volt?

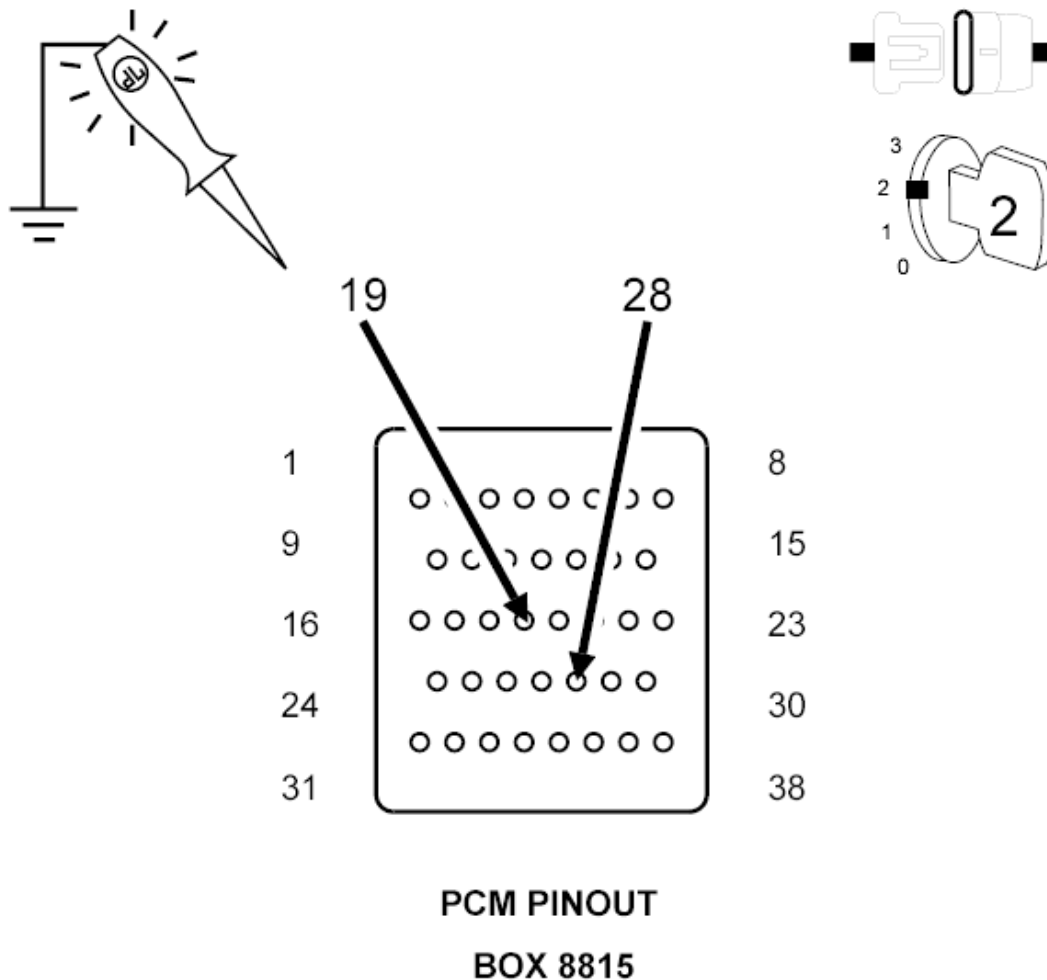
Yes

- Repair the (T9) OD Pressure Signal circuit for a short to voltage.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 9

9. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT FOR AN OPEN



77043

Fig. 65: Checking Transmission Control Output Circuit For An Open
 Courtesy of CHRYSLER LLC

1. While still actuating the Transmission under TIPM with the scan tool, and using a 12-volt test light connected to ground, check (T16) Transmission Control Output circuit in the Transmission Solenoid/Pressure Switch Assembly harness connector.

NOTE: **The test light must illuminate brightly. Compare the brightness to that of a direct connection to the battery.**

Does the test light illuminate brightly?

Yes

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Repair the (T16) TCM power input circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

10. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

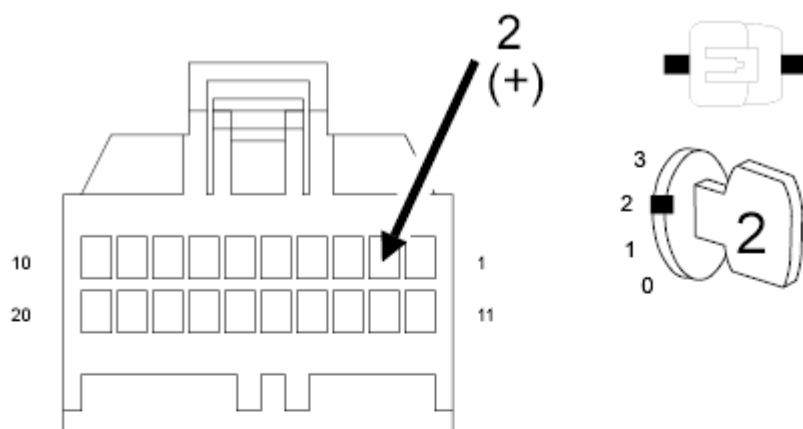
Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

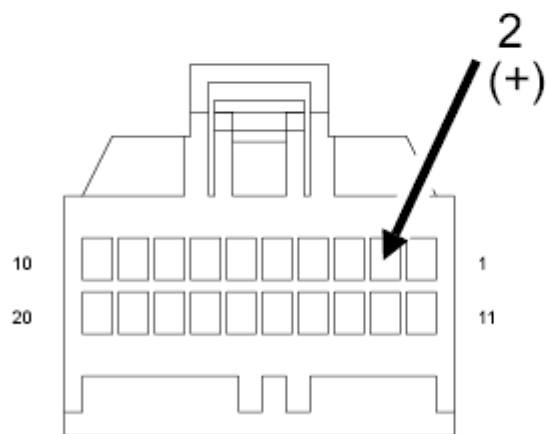
No

- Test Complete.

P0871-OD PRESSURE SWITCH RATIONALITY



MODULE-
DOOR-
DRIVER C2



MODULE-
DOOR-
PASSENGER C2

123213

Fig. 66: L/R Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

The Transmission Control system uses three pressure switches to monitor the fluid pressure in the L/R, 2/4, and OD elements. The pressure switches are continuously monitored for the correct states in each gear. If the Transmission Control System detects an invalid OD pressure switch state, normal operation will continue if no other codes are present. Transmission Control System will ignore the invalid OD pressure switch state. Limp-in condition will only occur if DTC P0871 is present with a DTC P0706.

- **When Monitored:**

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Whenever the engine is running.

• Set Condition:

The DTC is set if the OD pressure switch is open or closed at the wrong time in a given gear. If the P0706 fault condition is also present, the transmission will go into Limp-in mode and the MIL will turn on.

Possible Causes

RELATED DTCS PRESENT
LOSS OF PRIME DTC PRESENT
(T9) OD PRESSURE SIGNAL CIRCUIT OPEN
(T9) OD PRESSURE SIGNAL CIRCUIT SHORTED TO GROUND
(T9) OD PRESSURE SIGNAL CIRCUIT SHORTED TO VOLTAGE
TRANSMISSION SOLENOID/PRESSURE SWITCH ASSEMBLY
POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

PRESSURE SWITCH STATES

GEAR	L/R	2/4	OD
REVERSE	OPEN	OPEN	OPEN
P/N	CLOSED	OPEN	OPEN
1ST	CLOSED	OPEN	OPEN
2ND	OPEN	CLOSED	OPEN
DRIVE	OPEN	OPEN	CLOSED
OD	OPEN	CLOSED	CLOSED

Diagnostic Test

1. CHECK IF RELATED TCM DTCS ARE PRESENT

1. With the scan tool, read DTCs.

Are there any Transmission Control Relay, TCM Power Input, or TIPM TCM Power Control circuit DTCs present also?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK FOR LOSS OF PRIME DTC

1. With the scan tool, read DTCs.

Is the DTC P0944 present also?

Yes

- See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

No

- Go to step 3

3. CHECK TO SEE IF P0841 IS CURRENT

1. With the scan tool, read DTCs

Is the status Active or is the Starts Since Set counter 2 or less for this DTC?

Yes

- Go to step 4

No

- Go to step 8

4. CHECK THE PCM AND WIRING USING THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the Transmission Simulator, turn the Pressure Switch selector to OD.
6. With the scan tool, monitor the OD Pressure Switch state while pressing the Pressure Switch Test button on the Transmission Simulator.

Did the OD Pressure Switch state change?

2009 Dodge Journey R/T

2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

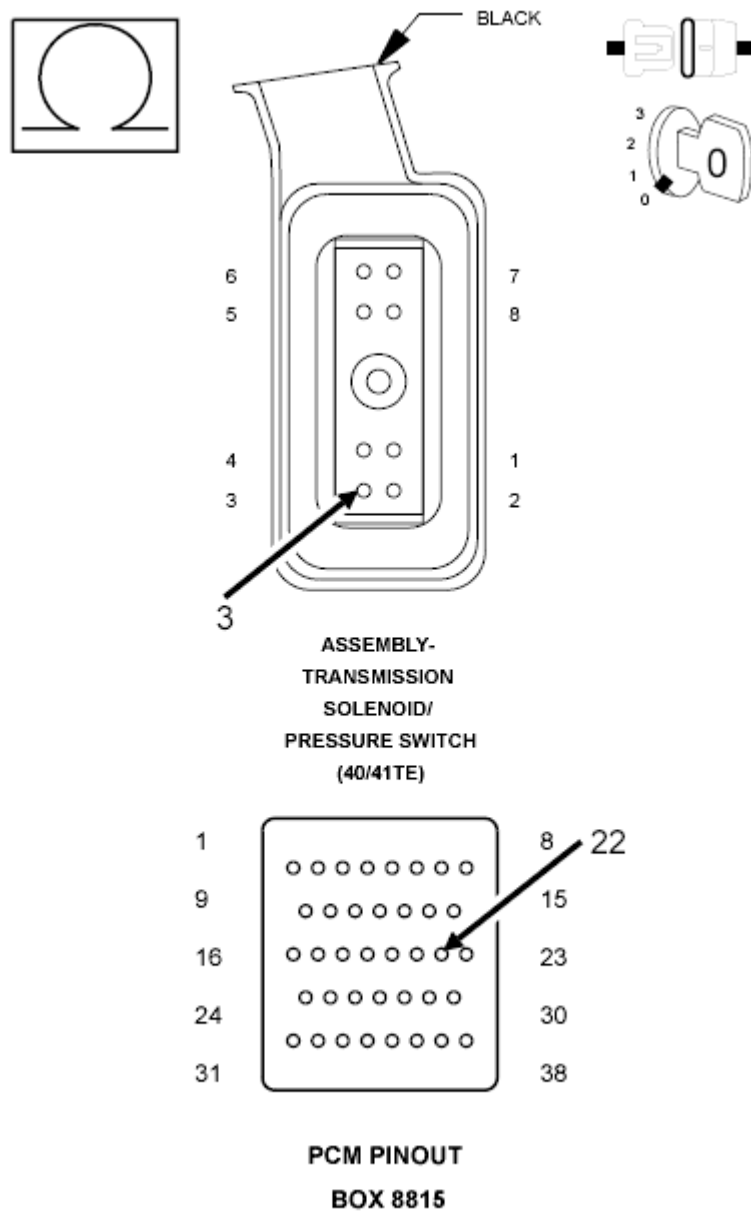
Yes

- Replace the Transmission Solenoid/Pressure Switch Assembly in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go to step 5

5. CHECK THE (T9) OD PRESSURE SIGNAL CIRCUIT FOR AN OPEN



77091

Fig. 67: Checking OD Pressure Signal Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector.
3. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.

NOTE: Check connectors - Clean/repair as necessary.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install PCM Pinout Box 8815 to perform diagnosis.

4. Measure the resistance of the (T9) OD Pressure Signal circuit between the Transmission Solenoid/Pressure Switch Assembly harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

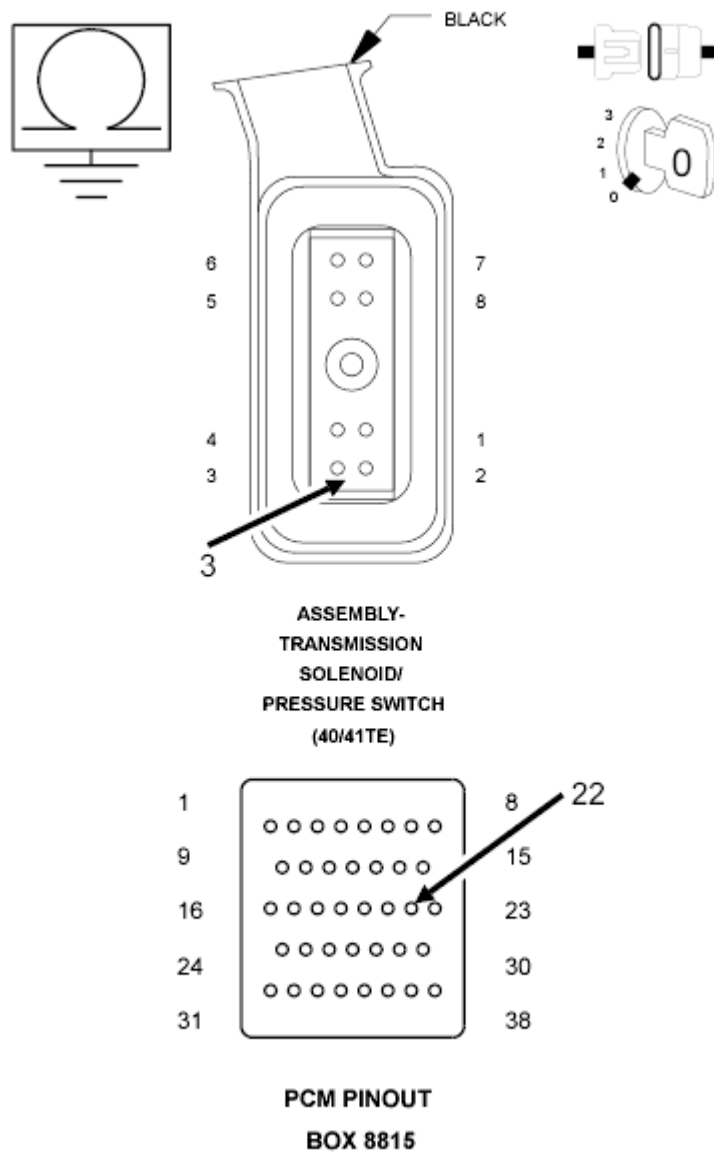
Yes

- Repair the (T9) OD Pressure Signal circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 6

6. CHECK THE (T9) OD PRESSURE SIGNAL CIRCUIT FOR A SHORT TO GROUND



77095

Fig. 68: Checking OD Pressure Signal Circuit For A Short To Ground
Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T9) OD Pressure Signal circuit.

Is the resistance below 5.0 Ohms?

Yes

- Repair the (T9) OD Pressure Signal circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 7

7. CHECK THE (T9) OD PRESSURE SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE

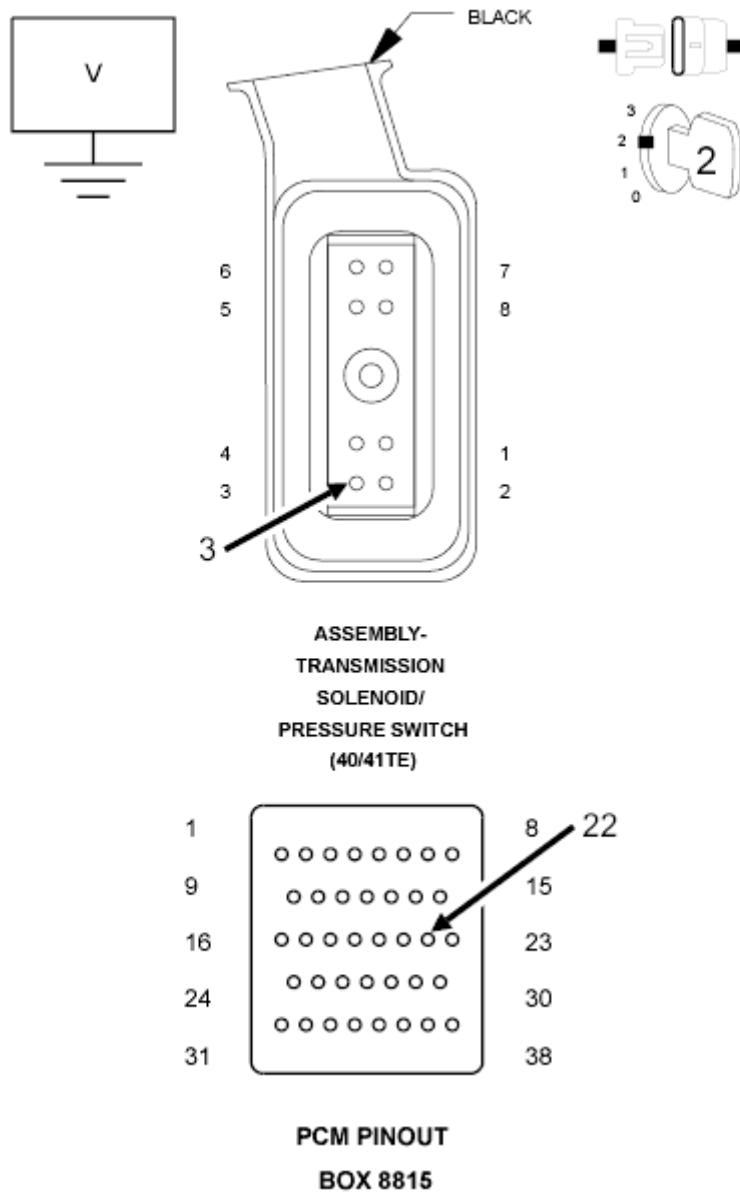


Fig. 69: Checking OD Pressure Signal Circuit For A Short To Voltage
Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.
2. With the scan tool under TIPM, actuate the Transmission.
3. Measure the voltage of the (T9) OD Pressure Signal circuit.

Is the voltage above 0.5 of a volt?

Yes

- Repair the (T9) OD Pressure Signal circuit for a short to voltage.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

8. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Test Complete.

P0882-TCM POWER INPUT LOW

2009 Dodge Journey R/T

2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

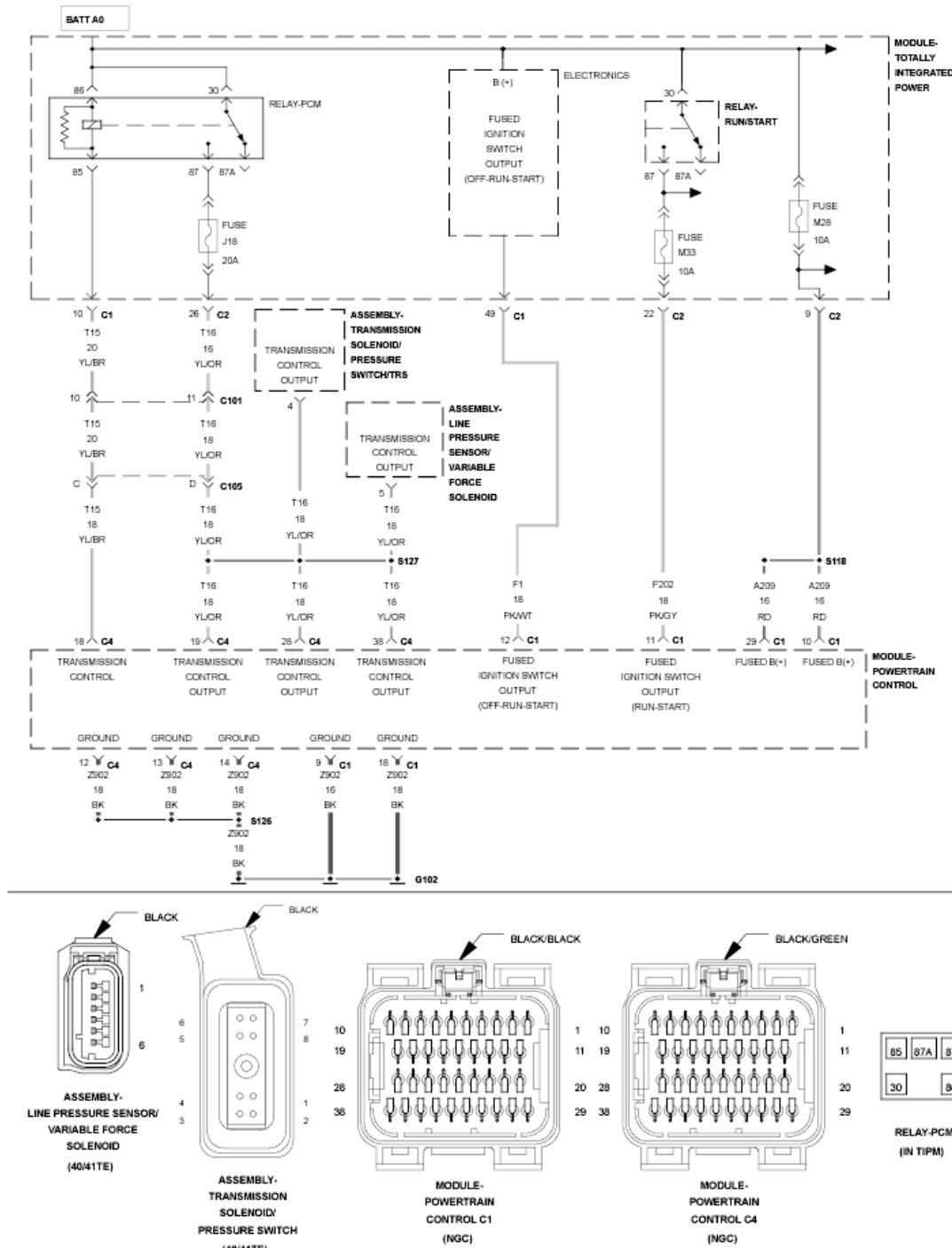


Fig. 70: Transmission Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

The Transmission Control Output circuit is used to supply power to the Transmission Solenoid/Pressure Switch Assembly and to the PCM when in normal operating mode. The purpose of the Transmission Output circuit is to allow the Transmission Control System to turn off the power to the Transmission Solenoid/Pressure Switch Assembly in the event that the transmission should need to be placed into "limp-in" mode due to a DTC.

After a PCM reset, (ignition switch turned to the run position, or after cranking the engine) the Transmission Control System verifies that the Transmission Output circuit is open by checking for voltage on the Transmission Output circuits before the Transmission Control System request for the circuit to be powered up. The request is sent by a direct circuit control from the PCM to the TIPM. If the Transmission Control System detects less than 3.0 volts when the output is commanded on, the DTC will set. **Note: Inadequate Transmission Control Output voltage can also cause DTCs P0846, or P0871, to set. This does not indicate an internal transmission or solenoid/pressure switch problem. Repairing the P0882 fault should also eliminate these related DTCs.**

- **When Monitored:**

When the ignition is turned from "OFF" position to "RUN" position and/or the ignition is turned from "START" position to "RUN" position.

- **Set Condition:**

This DTC is set when there is less than 3.0 volts present at the transmission control output circuits located in the Powertrain Control Module (PCM) when the Transmission Control System requests the power up of those circuits.

Possible Causes
RELATED TIPM DTCS TRANSMISSION CONTROL RELAY (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT OPEN (T15) TRANSMISSION CONTROL CIRCUIT SHORT TO GROUND (T15) TRANSMISSION CONTROL CIRCUIT OPEN POWERTRAIN CONTROL MODULE

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. CHECK FOR TIPM RELATED DTCS

1. With the scan tool, check TIPM DTCS.

Are there any TIPM TCM Power Control circuit DTCs present?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard**

Procedure and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK IF THE DTC IS CURRENT

1. With the scan tool, read DTCs.

Is the status Active or is Starts Since Set counter set at 0 for this DTC?

Yes

- Go to step 3

No

- Go to step 7

3. TRANSMISSION CONTROL RELAY

1. Turn the ignition off to the lock position.
2. Remove the Transmission Control Relay.

NOTE: Due to different power control configurations, the Transmission Control Relay may be referred to as a PCM relay.

NOTE: Check connectors - clean/repair as necessary.

3. Install a substitute Relay in place of the Transmission Control Relay.
4. Ignition on, engine not running.
5. With the scan tool erase P0882.
6. Turn the ignition off to the lock position for 15 seconds, then turn the ignition on, engine not running.
7. With the scan tool, monitor the Switched Battery voltage in the next step.

NOTE: The switched battery voltage should remain steady at around 12-volts

Does the Switched Battery voltage remain a steady voltage (12-volts) and the DTC not reset?

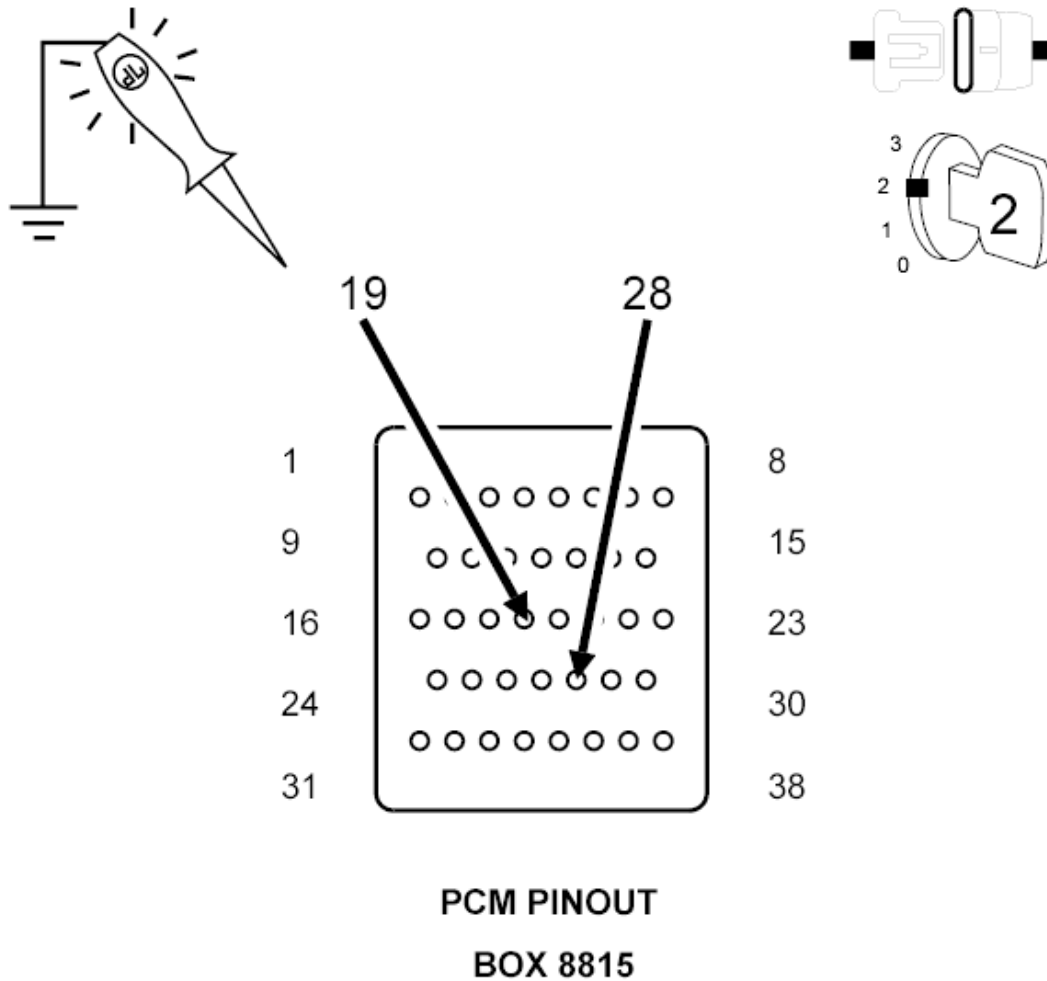
Yes

- Replace the Transmission Control Relay.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 4

4. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT FOR AN OPEN



77043

Fig. 71: Checking Transmission Control Output Circuit For An Open

Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector and connect Miller tool #8815.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install the PCM Pinout Box

8815 to perform diagnosis.

3. Ignition on, engine not running.
4. With the scan tool under TIPM, actuate the transmission.

CAUTION: Using a low impedance test light can damage computer circuitry. Make sure to double check the circuit identification before testing.

5. Using a low impedance test light connected to ground, check all the (T16) Transmission Control Output circuits.

Does the test light illuminate brightly on all the (T16) Transmission Control Output circuits?

Yes

- Go to step 5

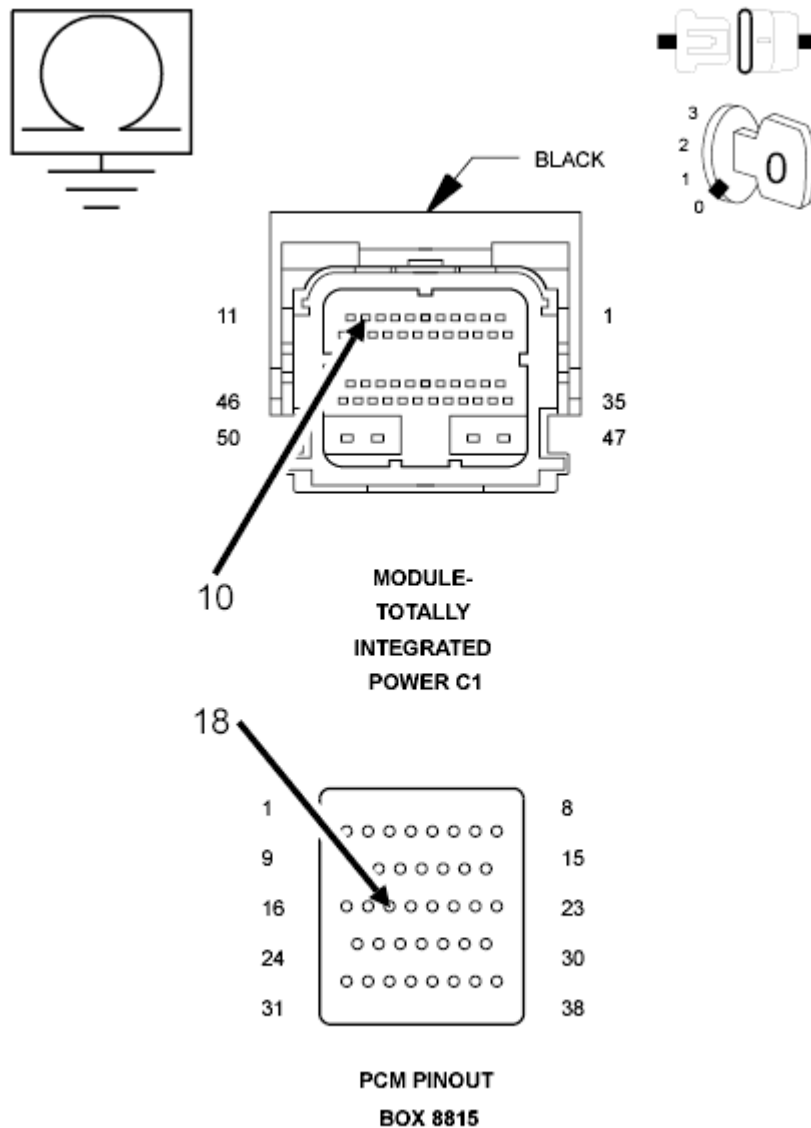
No

- Repair the (T16) Transmission Control Output circuits for an open or high resistance.

NOTE: There are multiple Transmission Control Output circuits that usually derive from a common splice. Make sure to inspect the splice for corrosion or water intrusion and repair as necessary.

- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

5. CHECK THE (T15) TRANSMISSION CONTROL CIRCUIT FOR A SHORT TO GROUND



77115

Fig. 72: Checking Transmission Control Circuit For A Short To Ground
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the TIPM C2 harness connector.
3. Measure the resistance between ground and the (T15) Transmission Control circuit.

Is the resistance below 100k ohms?

Yes

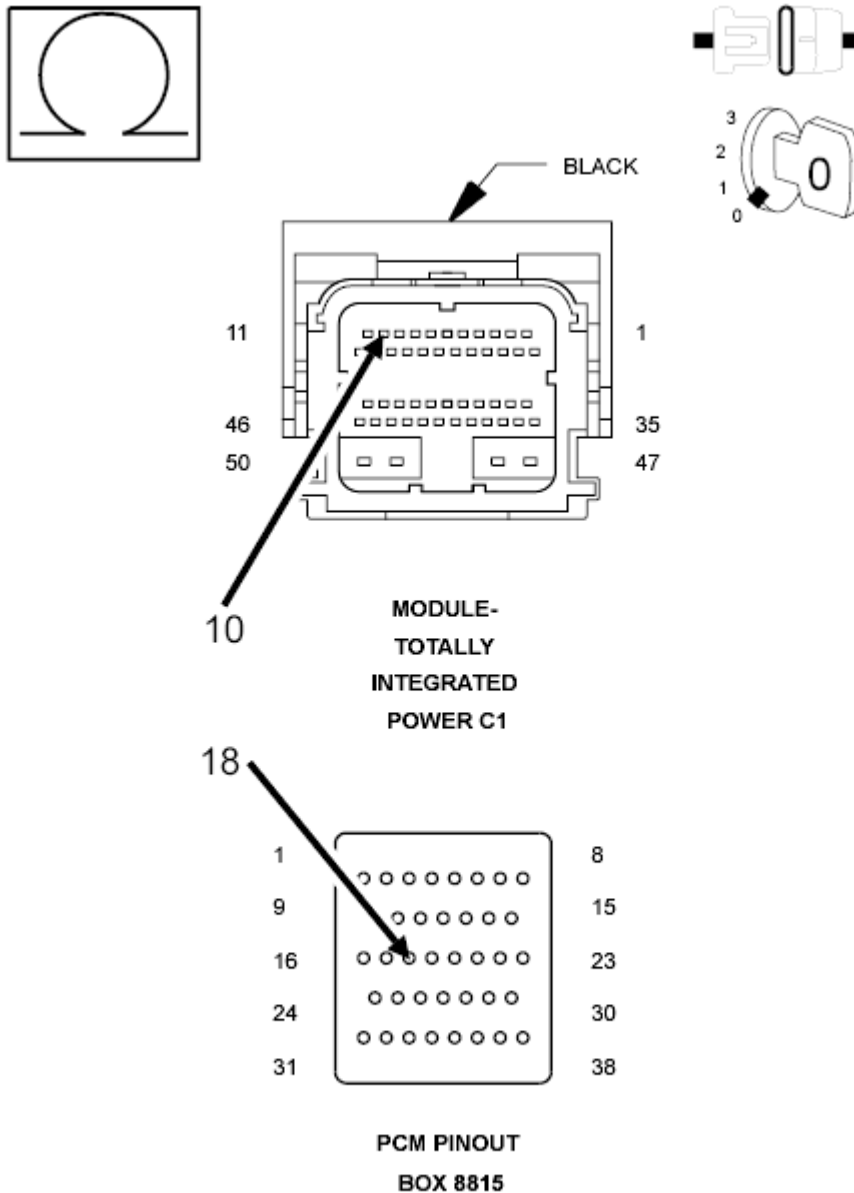
- Repair the (T15) Transmission Control circuit for a short to ground.

- Perform 40/41TE VERIFICATION TEST. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

No

- Go to step 6

6. CHECK THE (T15) TRANSMISSION CONTROL CIRCUIT FOR AN OPEN



77117

Fig. 73: Checking Transmission Control Circuit For An Open
Courtesy of CHRYSLER LLC

1. Measure the resistance of the (T15) Transmission Control circuit between the TIPM C2 harness connector and the appropriate terminal of Miller tool #8815.

Is the resistance above 100k ohms?

Yes

- Repair the (T15) Transmission Control circuit for an open.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

7. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Where there any problems found?

Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Test Complete.

P0883-TCM POWER INPUT HIGH

2009 Dodge Journey R/T

2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

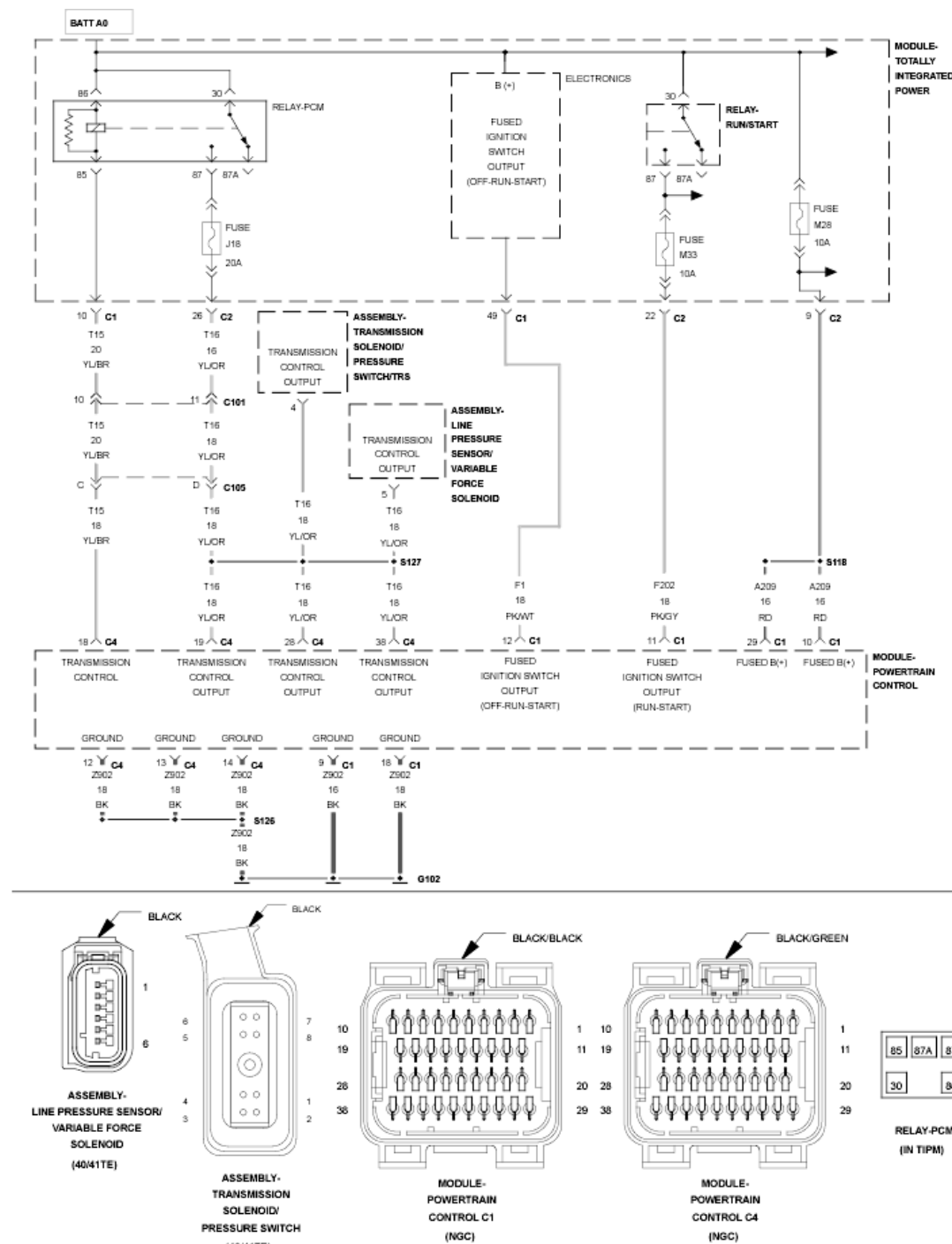


Fig. 74: Transmission Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

The Transmission Control Output circuit is used to supply power to the Transmission Solenoid/Pressure Switch Assembly and to the PCM when in normal operating mode. The purpose of the Transmission Output circuit is to allow the Transmission Control System to turn off the power to the Transmission Solenoid/Pressure Switch Assembly in the event that the transmission should need to be placed into "limp-in" mode due to a DTC.

After a PCM reset, (ignition switch turned to the run position, or after cranking the engine) the Transmission Control System verifies that the Transmission Output circuit is open by checking for voltage on the Transmission Output circuits before the Transmission Control System request for the circuit to be powered up. The request is sent by a direct circuit control from the PCM to the TIPM. If voltage is detected on the Transmission Output circuits before the request is sent, the DTC will set.

• **When Monitored:**

When the ignition is turned from "OFF" position to "RUN" position and/or the ignition is turned from "START" position to "RUN" position.

• **Set Condition:**

This DTC is set if the Powertrain Control Module senses greater than 3.0 volts on the Transmission Control Relay Output circuits prior to a request from the PCM to TIPM to energize the Transmission Output circuits.

Possible Causes
TIPM DTCS PRESENT
TRANSMISSION CONTROL RELAY
(T15) TRANSMISSION CONTROL CIRCUIT SHORT TO VOLTAGE
(T16) TRANSMISSION CONTROL OUTPUT CIRCUIT SHORT VOLTAGE
TRANSMISSION SOLENOID/PRESSURE SWITCH ASSEMBLY
POWERTRAIN CONTROL MODULE

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. CHECK FOR TCM TIPM DTCS

1. With the scan tool, check TIPM DTCS.

Are there any TIPM TCM Power Control circuit DTCS present?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK IF THE DTC IS CURRENT

1. With the scan tool, read DTCs.

Is the status Active or is Starts Since Set counter set at 0 for this DTC?

Yes

- Go to step 3

No

- Go to step 7

3. CHECK THE TRANSMISSION CONTROL RELAY

1. Turn the ignition off to the lock position.
2. Remove the Transmission Control Relay.

NOTE: Due to different power control configurations, the Transmission Control Relay may be referred to as a PCM relay.

NOTE: Check connectors - clean/repair as necessary.

3. Install a substitute Relay in place of the Transmission Control Relay.
4. Ignition on, engine not running.
5. With the scan tool erase P0883.
6. Turn the ignition off to the lock position for 15 seconds, then turn the ignition on, engine not running.
7. With the scan tool, monitor the Switched Battery voltage in the next step.

NOTE: The switched battery voltage should remain steady at around 12-volts

Does the Switched Battery voltage remain a steady voltage (12-volts) and the DTC not reset?

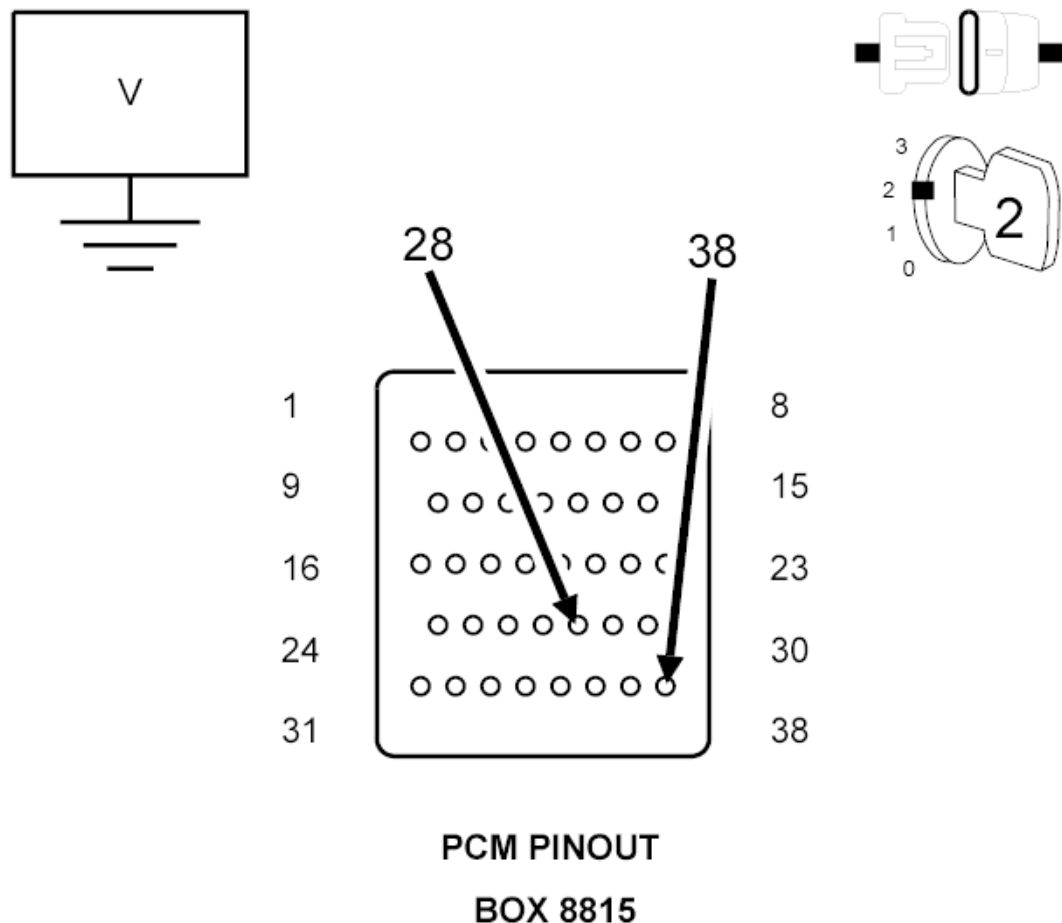
Yes

- Replace the Transmission (PCM) Control Relay.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 4

4. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT FOR A SHORT TO VOLTAGE



77121

Fig. 75: Checking Transmission Control Output Circuit For A Short To Voltage
 Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector and connect Miller tool #8815.
3. Disconnect the TIPM C2 harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install the PCM Pinout Box 8815 to perform diagnosis.

4. Ignition on, engine not running.
5. Measure the voltage of the (T16) Transmission Control Output circuit.

Is the voltage above 0.5 volts?

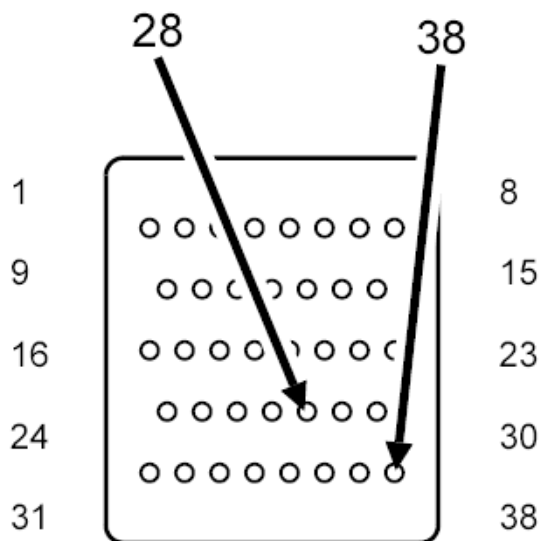
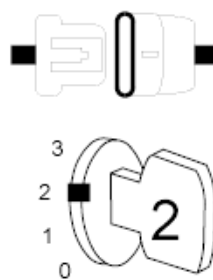
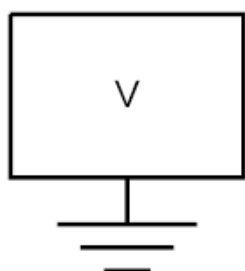
Yes

- Go to step 5

No

- Go to step 6

5. CHECK THE TRANSMISSION SOLENOID/PRESSURE SWITCH ASSEMBLY



**PCM PINOUT
BOX 8815**

Fig. 76: Checking Transmission Control Output Circuit For A Short To Voltage
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.
3. Ignition on, engine not running.
4. Measure the voltage of the (T16) Transmission Control Output circuits in the Miller tool #8815.

Is the voltage above 0.5 volts?

Yes

- Repair the (T16) Transmission Control Output circuit for a short to voltage.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Replace the Transmission Solenoid/Pressure Switch Assembly in accordance with the Service Information.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

6. CHECK THE (T15) TRANSMISSION CONTROL CIRCUIT FOR A SHORT TO VOLTAGE

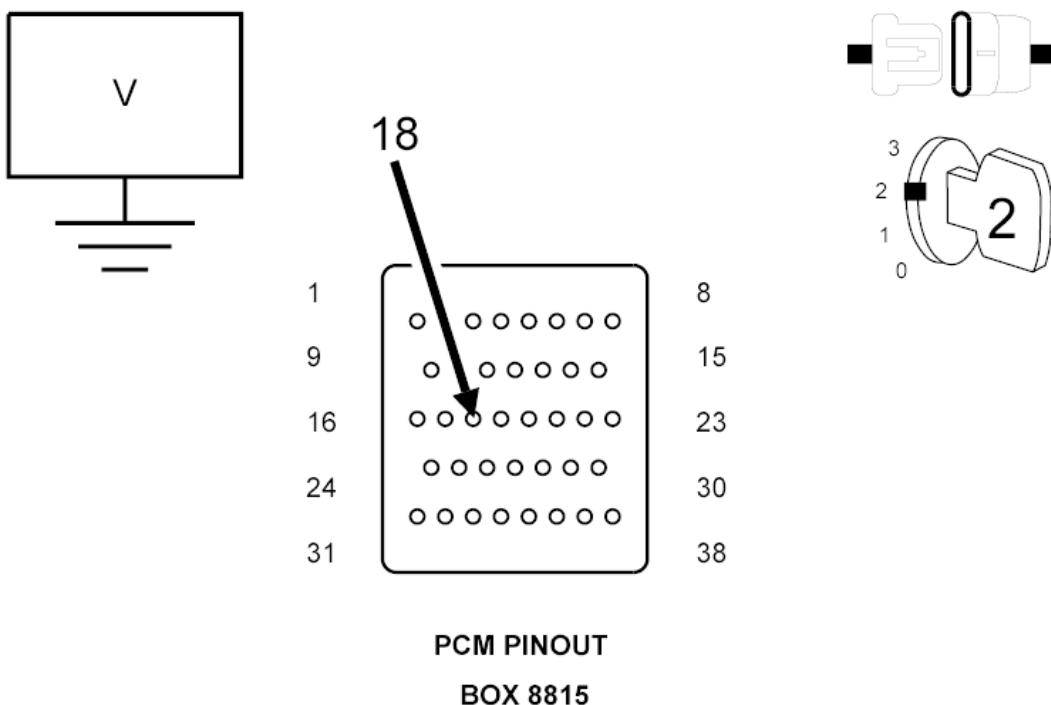


Fig. 77: Checking Transmission Control Circuit

Courtesy of CHRYSLER LLC

1. Measure the voltage of the (T15) Transmission Control circuit.

Is the voltage above 0.5 volts?

Yes

- Repair the (T15) Transmission Control circuit for a short to voltage.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

7. CHECK WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.

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2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Where there any problems found?

Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Test Complete.

P0884-POWER UP AT SPEED

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

If a vehicle loses power to the PCM, the vehicle will go to the 2nd gear mode since there is no power available to control the transmission solenoids. However if power is restored, the PCM will power-up and normal operation will be restored. This DTC identifies that power to the PCM was restored when the gear selector was in a "Drive" position while the vehicle was moving at speeds above 32 Km/h (20 mph). If a customer shifts to Neutral and cycles the ignition key and quickly shifts to "Drive" while moving before the PCM comes out of its START ROUTINE, the DTC can be set. Therefore it is critical that this DTC diagnosis repair procedure should only be used if the vehicle is experiencing intermittent 2nd gear operation and subsequently a return to normal operation during normal driving. The transmission will not be placed in Limp-in. This is an informational DTC to be used when attempting to diagnose an intermittent 2nd gear operation and subsequent return to normal transmission operation.

- **When Monitored:**

One time after each controller reset.

- **Set Condition:**

This DTC will set if the PCM powers up and senses the vehicle in a valid forward gear (no PRNDL DTCs) with an output speed above 800 RPM, approximately 32 Km/h or 20 mph.

Possible Causes
INTERMITTENT POWER AND GROUND CIRCUITS

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test**1. CHECK THE POWER AND GROUND CIRCUITS**

1. This DTC is set when the PCM is initialized while the vehicle is moving in a valid forward gear. This is usually caused by a momentary loss of power to the Transmission portion of the PCM.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install Miller Special Tool #8815 to perform diagnosis.

2. Check all of the Fused B(+), Fused Ignition Switch Output, and Ground circuits related to the PCM for an intermittent open or short to ground.
3. Perform a wiggle test on all wiring and connectors pertaining to the PCM while looking for shorted or open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Repair

- Repair wiring or connectors as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

P0890-SWITCHED BATTERY

2009 Dodge Journey R/T

2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

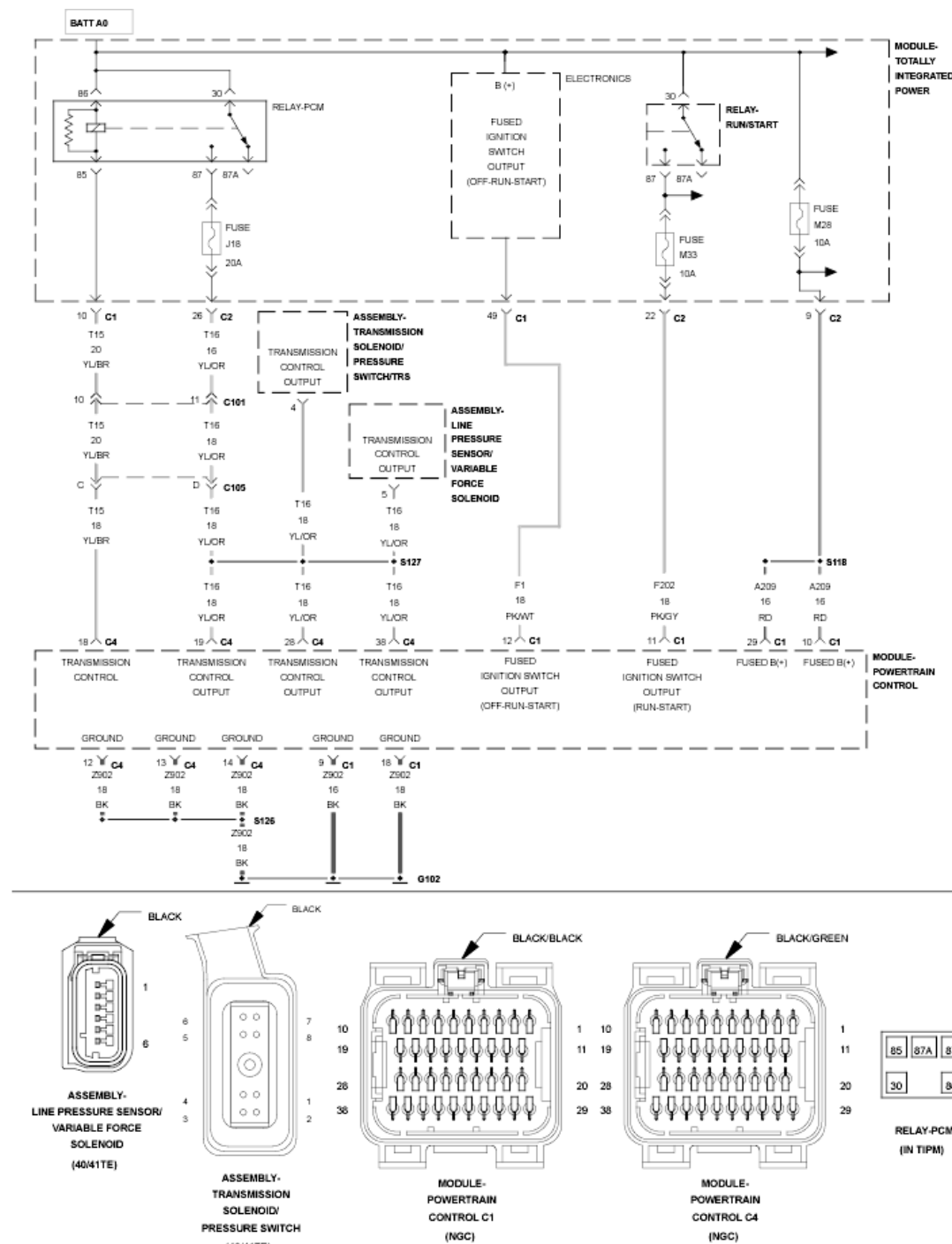


Fig. 78: Transmission Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

The transmission control output circuit is used to supply power to the Solenoid/Pressure Switch Assembly and the PCM when in normal operating mode and to turn off power to those components when a transmission "limp-in" mode is requested. The transmission control output circuit is also referred to as "switched battery". After a controller reset (ignition turned to the run position or after cranking the engine), the controller verifies proper control of the transmission control output circuit by monitoring the presence of voltage in each of the solenoid pressure switches and the Transmission Control Output circuits at the controller when in the disabled mode.

- **When Monitored:**

One time after a reset (ignition turned to the RUN position or after cranking engine).

- **Set Condition:**

A fault is set if a detected voltage is greater than 4.5 volts for 7 msec on any of the pressure switch circuits before a request for the Transmission Control output circuit is turned on. If detected the transmission will be placed in Limp-In and illumination of the MIL after 10 seconds of vehicle operation and problem identification.

Possible Causes
(T47) 2/4 PRESSURE SIGNAL CIRCUIT SHORT TO VOLTAGE
(T50) L/R PRESSURE SIGNAL CIRCUIT SHORT TO VOLTAGE
(T9) OD PRESSURE SIGNAL CIRCUIT SHORT TO VOLTAGE
POWERTRAIN CONTROL MODULE

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. CHECK IF DTC IS ACTIVE

1. With the scan tool, read DTCs.

Is the status Active for this DTC or is the Starts Since Set counter set at 0?

Yes

- Go to step 2

No

- Go to step 5

2. (T9) OD PRESSURE SIGNAL CIRCUIT SHORT TO VOLTAGE

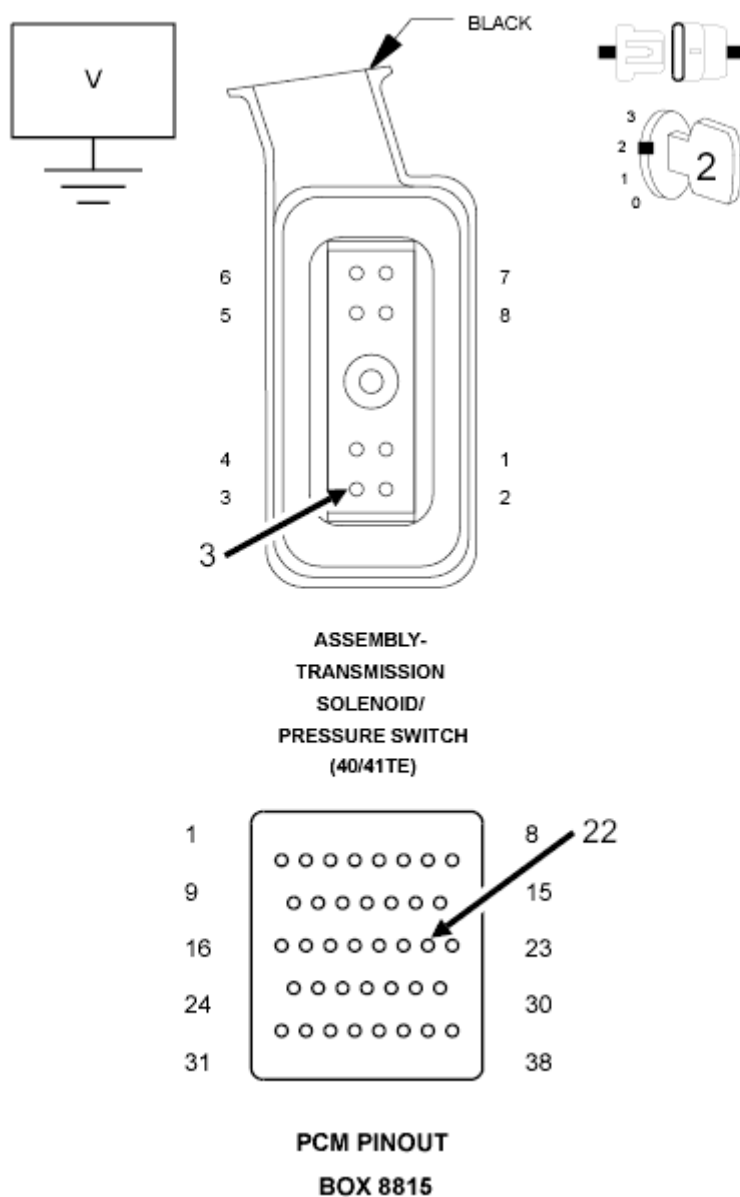


Fig. 79: Checking OD Pressure Signal Circuit For A Short To Voltage
 Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector.
3. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install PCM Pinout Box 8815 to perform diagnosis.

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4. Ignition on, engine not running.
5. With the scan tool under TIPM, actuate the Transmission.
6. Ignition on, engine not running.
7. Measure the voltage of the (T9) OD Pressure Signal circuit.

Is the voltage above 0.5 volt?

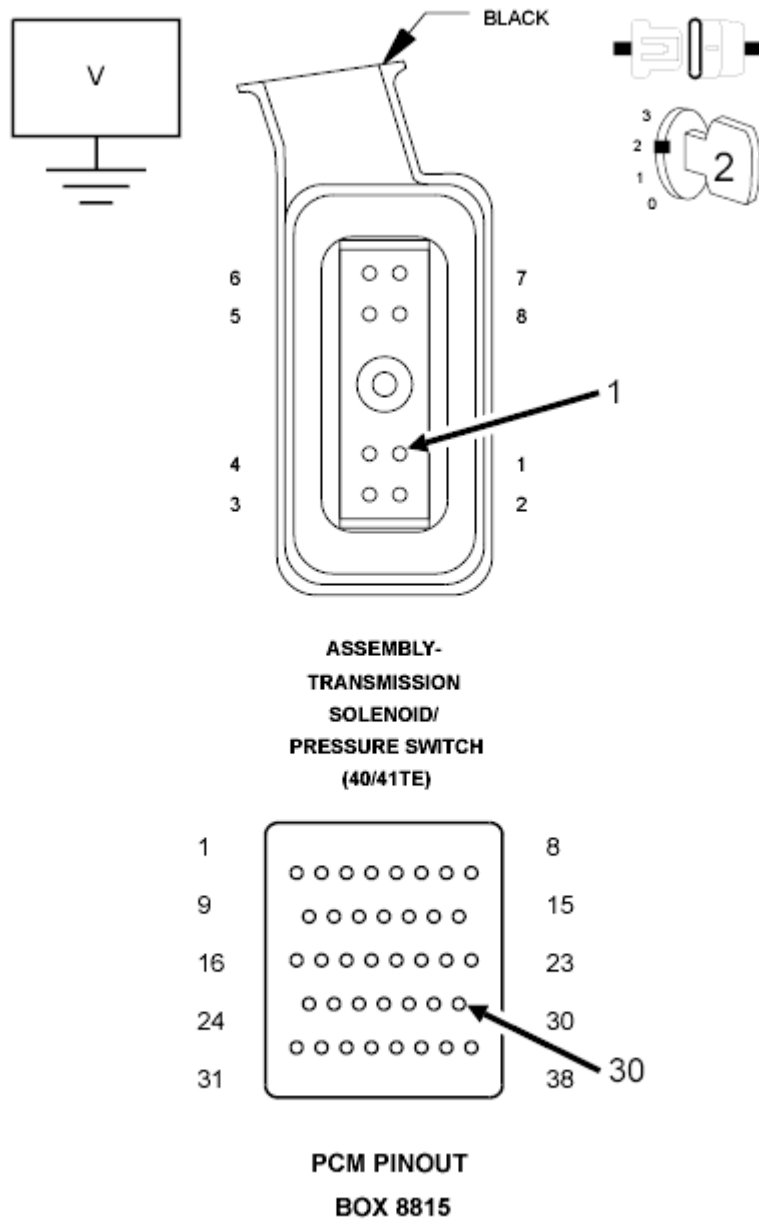
Yes

- Repair the (T9) OD Pressure Signal circuit for a short to voltage.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 3

3. (T47) 2/4 PRESSURE SIGNAL CIRCUIT SHORT TO VOLTAGE



77041

Fig. 80: Checking 2/4 Pressure Signal Circuit For A Short To Voltage
Courtesy of CHRYSLER LLC

NOTE: Continue actuating the Transmission.

1. Measure the voltage of the (T47) 2/4 Pressure Signal circuit.

Is the voltage above 0.5 volt?

Yes

- Repair the (T47) 2/4 Pressure Signal circuit for a short to voltage.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 4

4. (T50) L/R PRESSURE SIGNAL CIRCUIT SHORT TO VOLTAGE

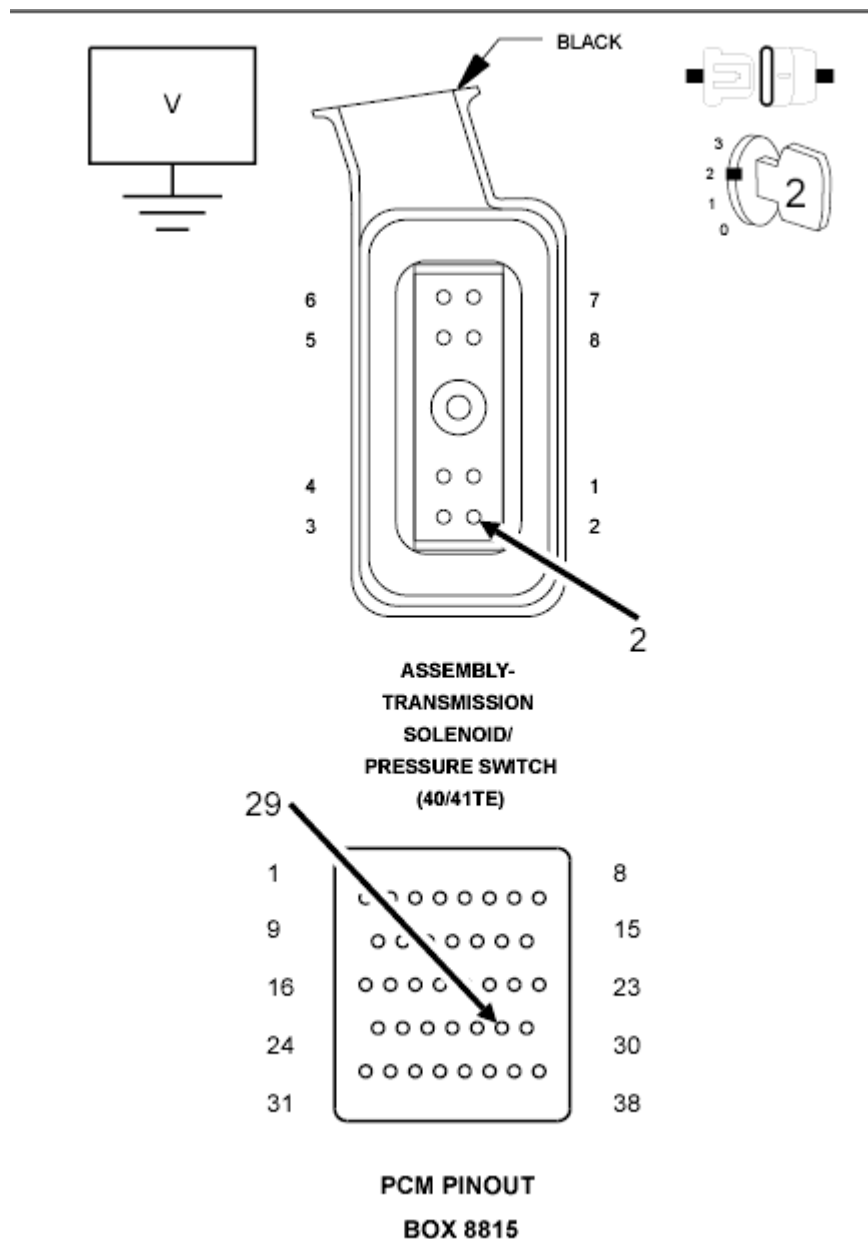


Fig. 81: Checking L/R Pressure Signal Circuit For A Short To Voltage
 Courtesy of CHRYSLER LLC

NOTE: **Continue actuating the Transmission.**

1. Measure the voltage of the (T50) L/R Pressure Signal circuit.

Is the voltage above 0.5 volts?

Yes

- Repair the (T50) L/R Pressure Signal circuit for a short to voltage.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

5. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wiring and connectors while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Test Complete.

P0897-TRANSMISSION FLUID DETERIORATED

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

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2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

To prevent a bump due to A/C clutch engagement, a temporary torque converter partial EMCC condition is established prior to A/C clutch engagement. A message is received over the bus indicating that A/C clutch engagement is imminent. Partial EMCC is then established and a reply message, "OK to engage A/C clutch" is sent via the bus. Partial EMCC will be held for 450 ms before returning to full EMCC. During the transition from full to partial EMCC, a turbine acceleration sum is calculated, if this value exceeds a threshold value for several transitions, degraded transmission fluid is indicated.

- **When Monitored:**

Each transition from full EMCC to partial EMCC for A/C bump prevention.

- **Set Condition:**

DTC set if 20 occurrences of a turbine acceleration sum. Fault Set Time: 20 transitions from full EMCC to partial EMCC. Transmission will not use partial EMCC. Established for A/C bump prevention.

Possible Causes
WORN OUT/ BURNT TRANSAXLE FLUID

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. WORN OUT/ BURNT TRANSMISSION FLUID

1. Turn the ignition off to the lock position.
2. Flush the Transmission Oil Cooler and lines, replace the Transmission Oil Filter, refill with new Transmission Fluid, start the engine, and adjust the fluid in accordance with the Service Information.

NOTE: **The Transmission Cooler must be flushed before proceeding.**

3. Allow the engine to idle for 10 minutes, in Park.
4. Turn the ignition off to the lock position.
5. Again, flush the Transmission Oil Cooler and lines, replace the Transmission Oil Filter, refill with new Transmission Fluid, start the engine, and adjust the fluid in accordance with the Service Information.
6. With the scan tool, perform a Battery Disconnect.

NOTE: **The Battery Disconnect must be done to re-enable EMCC during an A/C Clutch engagement.**

NOTE: **The vehicle may exhibit intermittent shudder during the first few hundred miles. The new Transmission Fluid will gradually penetrate**

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2009 AUTOMATIC TRANSMISSION Powertrain Control Module (PCM) - Electrical Diagnostics - 41TE - NGC - Journey

the Torque Converter Clutch friction material and the shudder should disappear.

7. Erase the DTC and return the vehicle to the customer.

Did the DTC reset and/or does the vehicle still shudder after a few hundred miles?

Yes

- Replace the Torque Converter in accordance with the Service Information.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Test Complete.

P0933-HYDRAULIC PRESSURE SENSOR RANGE/PERFORMANCE

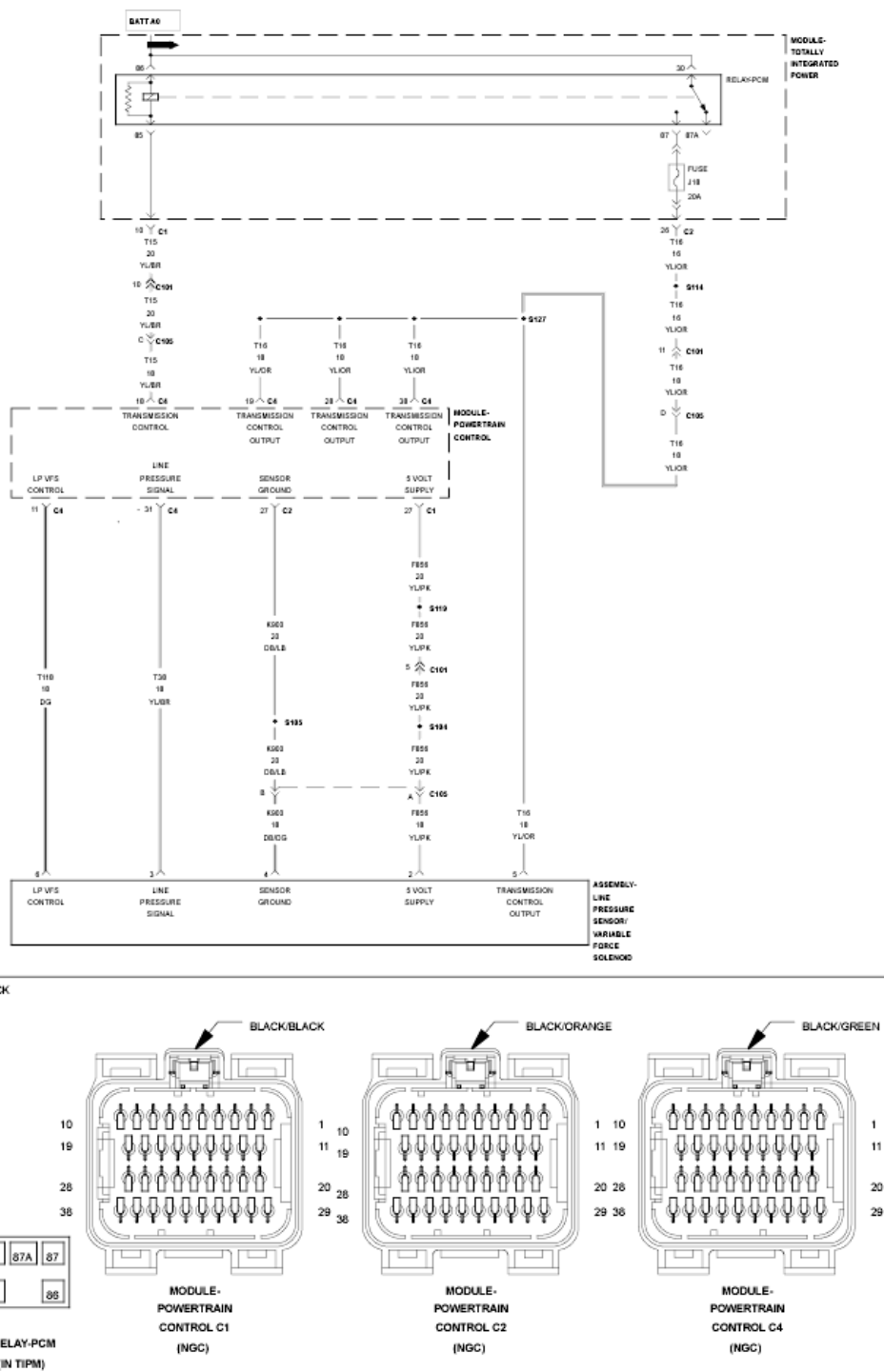


Fig. 82: Pressure Control Solenoid Control & 5-Volt Supply Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

Line pressure is electronically controlled by the Transmission Control System and is measured by the Line Pressure Sensor (LPS). The desired line pressure is continuously being compared to the actual line pressure and is regulated by electronically changing the duty cycle of the Pressure Control Solenoid (PCS). (5% duty cycle = solenoid off = max line pressure, 62% duty cycle = solenoid on = min line pressure).

The Transmission Control System calculates the desired line pressure based on inputs from the transmission and engine. A calculated torque input to the transmission is used as the primary input of the desired line pressure calculation and is called Torque Based Line Pressure. In addition, the line pressure is set to a preset level during shifts and in Park and Neutral to ensure consistent shift quality.

- **When Monitored:**

Continuously with the ignition on, engine running, with the transmission in gear.

- **Set Condition:**

The PCM continuously monitors Actual Line Pressure and compares it to Desired Line Pressure. If the Actual Line Pressure reading is more than 172.4 kPa (25 psi) higher than the Desired Line Pressure, but is less than the highest Line Pressure ever used in the current gear, the DTC sets.

Possible Causes
RELATED DTCS PRESENT
LINE PRESSURE CONNECTOR AND WIRING
LINE PRESSURE SENSOR
POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. DETERMINING IF RELATED DTCS ARE PRESENT

1. With the scan tool, check for other transmission DTCs.

Are there any other line pressure related DTCs present?

Yes

- See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** and perform the appropriate diagnostic procedure. Perform the test for **P0934-LINE PRESSURE SENSOR CIRCUIT LOW** and/or **P0935-LINE PRESSURE SENSOR CIRCUIT HIGH** first if present.

No

- Go to step 2

2. COMPARE ACTUAL LINE PRESSURE TO DESIRED LINE PRESSURE**CAUTION: Apply Parking Brake**

1. Start the engine.

CAUTION: Firmly apply the brakes.

2. With the scan tool, monitor the Line Pressure, Desired Line Pressure and the TPS degrees.
3. While firmly applying the brakes, place the shifter in reverse, then slowly press the accelerator pedal to a TPS degree of 15°.
4. Compare the Line Pressure reading to the Desired Line Pressure reading on the scan tool.

Does the Line Pressure stay within ± 34 kPa or 5 psi of the Desired Line Pressure?

No

- Go to step 3

Yes

- Go to step 5

3. CHECK LINE PRESSURE CONNECTOR AND WIRING

1. Ignition on, engine not running.
2. With the scan tool, monitor the Line Pressure Sensor voltage while wiggling the wiring harness and connectors pertaining to the Line Pressure Sensor/Variable Force Solenoid Assembly.

Did the voltage remain steady while wiggling the wiring harness and connectors?

Yes

- Go to step 4

No

- Disconnect and properly reconnect the Line Pressure Sensor/Variable Force Solenoid Assembly connector. Inspect terminals and repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

4. CHECK PCM AND WIRING

1. Turn the ignition off to the lock position.

2. Remove the Starter Relay.

CAUTION: Removal of the Starter Relay will prevent the vehicle from being started in gear.

WARNING: The Starter Relay must be removed. Failure to do so can result in possible serious or fatal injury.

3. Install the Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. With the Transmission Simulator select the "OFF" position on the "Input/Output Speed" switch.
5. Ignition on, engine not running.
6. With the scan tool, monitor the Line Pressure during the following step.
7. With the Transmission Simulator, turn the selector switch to each of the 3 Line Pressure positions.

NOTE: All three scan tool Line Pressure readings should be steady and ± 14 kPa or 2.0 psi (0.2 of a volt) of the reading specified on the Transmission Simulator.

Did the Line Pressure read within ± 14 kPa or 2.0 psi (0.2 of a volt) in all three positions?

Yes

- Remove the valve body per the Service information and inspect the main regulator valve for sticking in its bore. If no problems are found, replace the Line Pressure Sensor/Variable Force Solenoid Assembly.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

5. CHECK WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
5. Check for any Service Bulletins that may apply.

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Where there any problems found?

Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Test Complete.

P0934-LINE PRESSURE SENSOR CIRCUIT LOW

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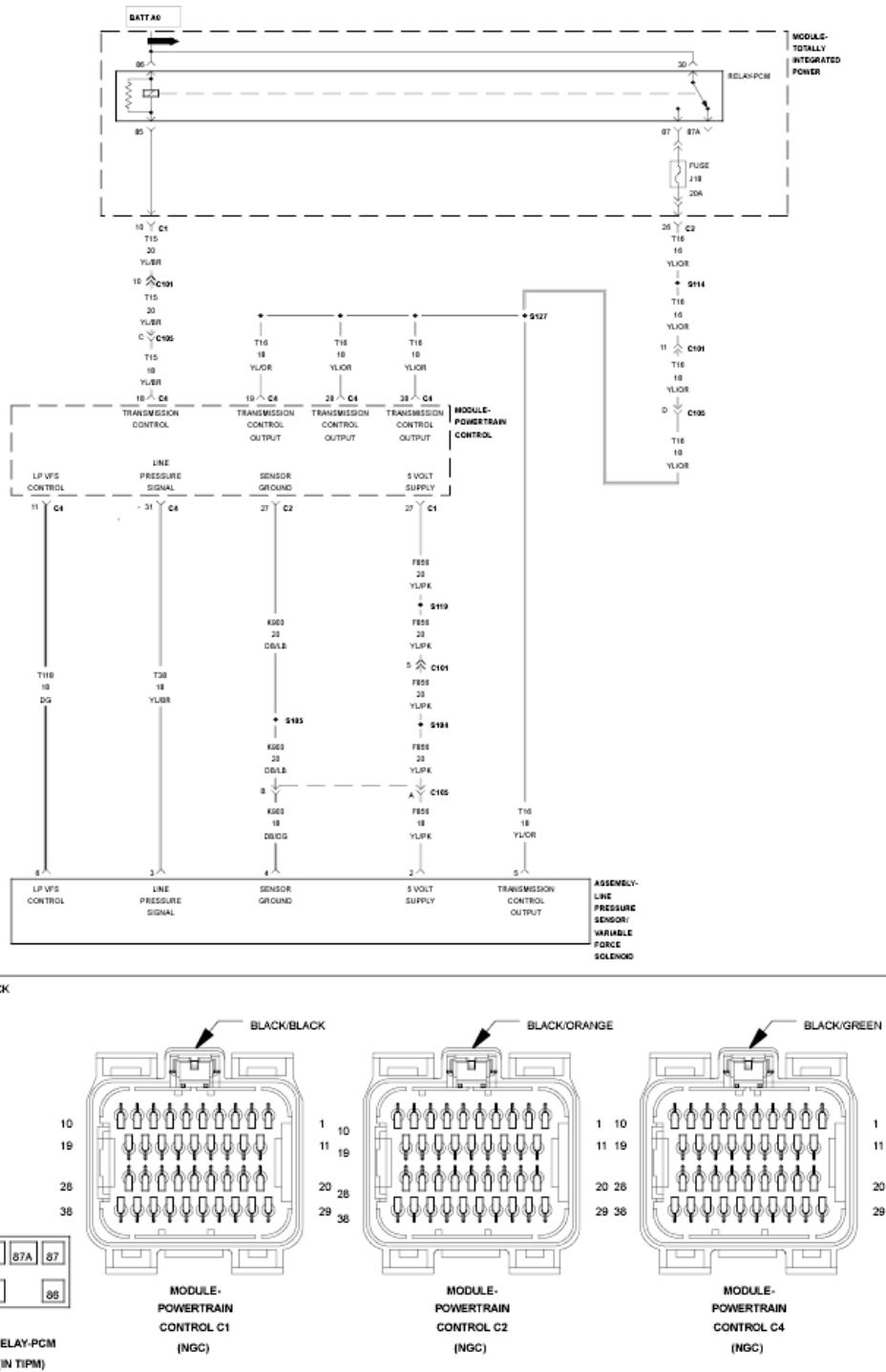


Fig. 83: Pressure Control Solenoid Control & 5-Volt Supply Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

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Line pressure is electronically controlled by the Transmission Control System and is measured by the Line Pressure Sensor (LPS). The desired line pressure is continuously being compared to the actual line pressure and is regulated by electronically changing the duty cycle of the Pressure Control Solenoid (PCS). (5% duty cycle = solenoid off = max line pressure, 62% duty cycle = solenoid on = min line pressure).

The Transmission Control System calculates the desired line pressure based on inputs from the transmission and engine. A calculated torque input to the transmission is used as the primary input of the desired line pressure calculation and is called Torque Based Line Pressure. In addition, the line pressure is set to a preset level during shifts and in Park and Neutral to ensure consistent shift quality.

The monitored Line Pressure Sensor voltage should always be between 0.35 and 4.75 volts. Any monitored voltages outside these parameters indicate an Line Pressure Sensor or wiring problem and will cause either DTC P0934 or P0935 to set.

- **When Monitored:**

Continuously with the ignition on and engine running.

- **Set Condition:**

This DTC will set when the monitored Line Pressure Sensor voltage is less than or equal to 0.35 of a volt for 0.18 of a second.

Possible Causes
(F856) 5-VOLT SUPPLY CIRCUIT OPEN
(F856) 5-VOLT SUPPLY CIRCUIT SHORTED TO GROUND
(T38) LINE PRESSURE SENSOR SIGNAL CIRCUIT SHORTED TO GROUND
LINE PRESSURE SENSOR
POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK IF DTC IS CURRENT

1. With the scan tool, check the Starts Since Set counter for P0934.

NOTE: This counter only applies to the last DTC set.

Is the Starts Since Set counter 2 or less?

Yes

- Go to step 2

No

- Go to step 6

2. **CHECK THE PCM AND WIRING**

1. Turn the ignition off to the lock position.
2. Remove the Starter Relay.

CAUTION: Removal of the Starter Relay will prevent the vehicle from being started in gear.

WARNING: The Starter Relay must be removed. Failure to do so can result in possible serious or fatal injury.

3. Install the Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the scan tool, under Transmission Sensors, monitor the Line Pressure.
6. Using the Transmission Simulator, set the rotary switch to each of the three line pressure positions.

NOTE: All three scan tool Line Pressure readings should be steady and ± 14 kPa or 2.0 psi (0.2 of a volt) of the reading specified on the Transmission Simulator.

Did the Line Pressure read within ± 14 kPa or 2.0 psi (0.2 of a volt) in all three positions?

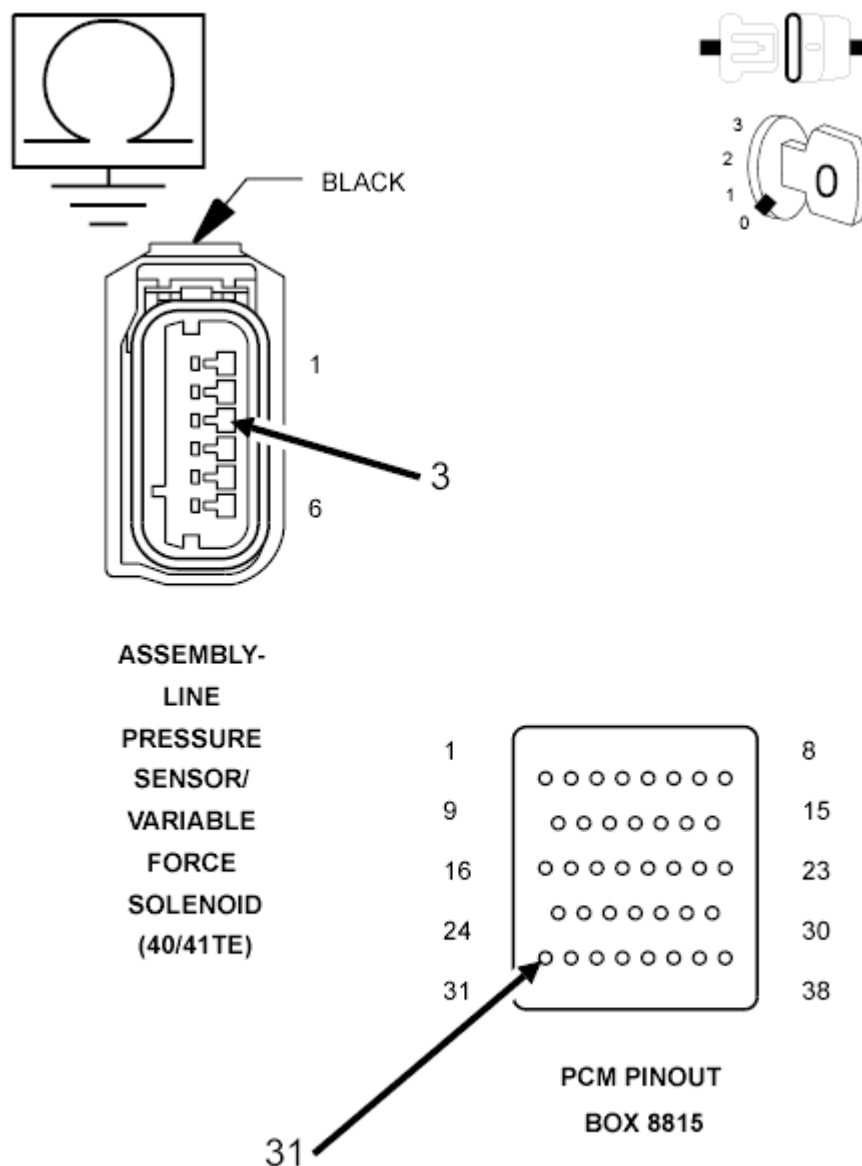
Yes

- Replace the Line Pressure Sensor in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 3

3. **CHECK THE (T38) LINE PRESSURE SENSOR SIGNAL CIRCUIT FOR A SHORT TO GROUND**



77151

Fig. 84: Checking Line Pressure Sensor Signal Circuit For A Short To Ground
 Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector and connect the PCM Pinout Box 8815.
3. Disconnect the Transmission Simulator 8333A and the Electronic Transmission Adapter kit.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in

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poor terminal to pin connection. Install the PCM Pinout Box 8815 to perform diagnosis.

4. Measure the resistance between ground and the (T38) Line Pressure Sensor Signal circuit.

Is the resistance below 5.0 Ohms?

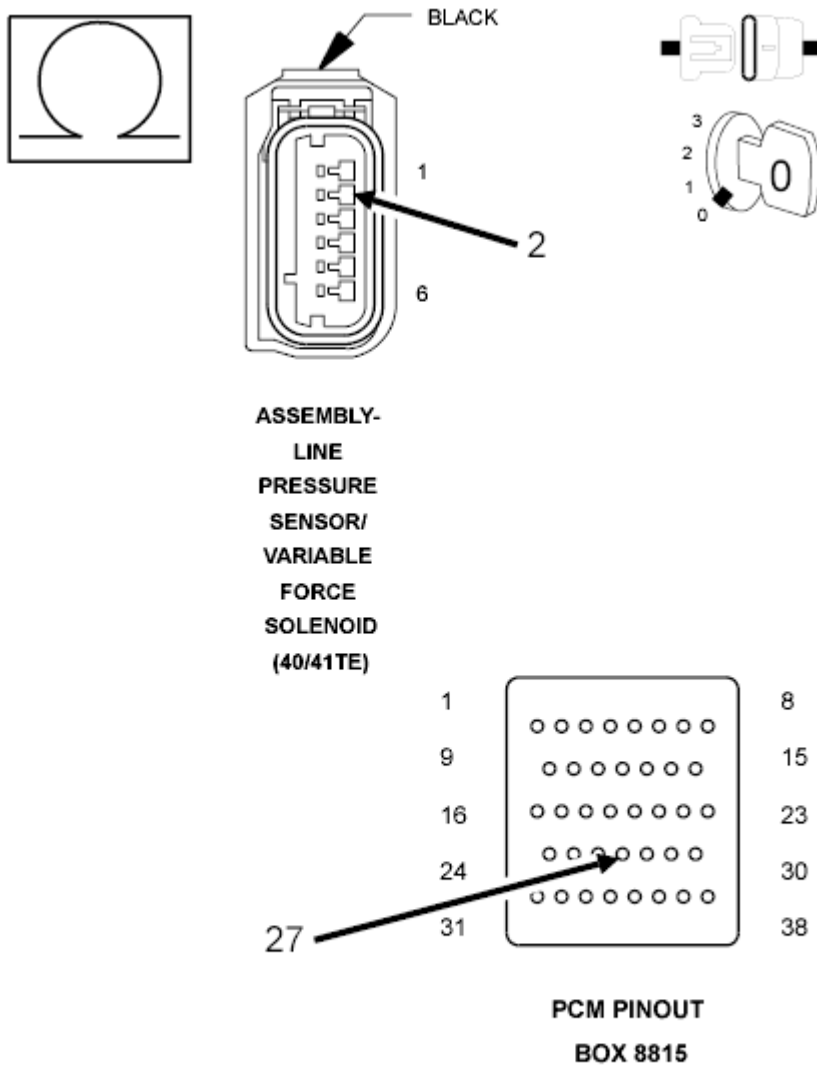
Yes

- Repair the (T38) Line Pressure Sensor Signal circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 4

4. **CHECK THE (F856) 5-VOLT SUPPLY CIRCUIT FOR AN OPEN**



77063

Fig. 85: Checking 5-Volt Supply Circuit For An Open
Courtesy of CHRYSLER LLC

1. Disconnect the PCM C1 harness connector and connect the PCM Pinout Box 8815.
2. Measure the resistance of the (F856) 5-volt Supply circuit between Line Pressure Sensor/Variable Force Solenoid Assembly harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance below 5.0 Ohms?

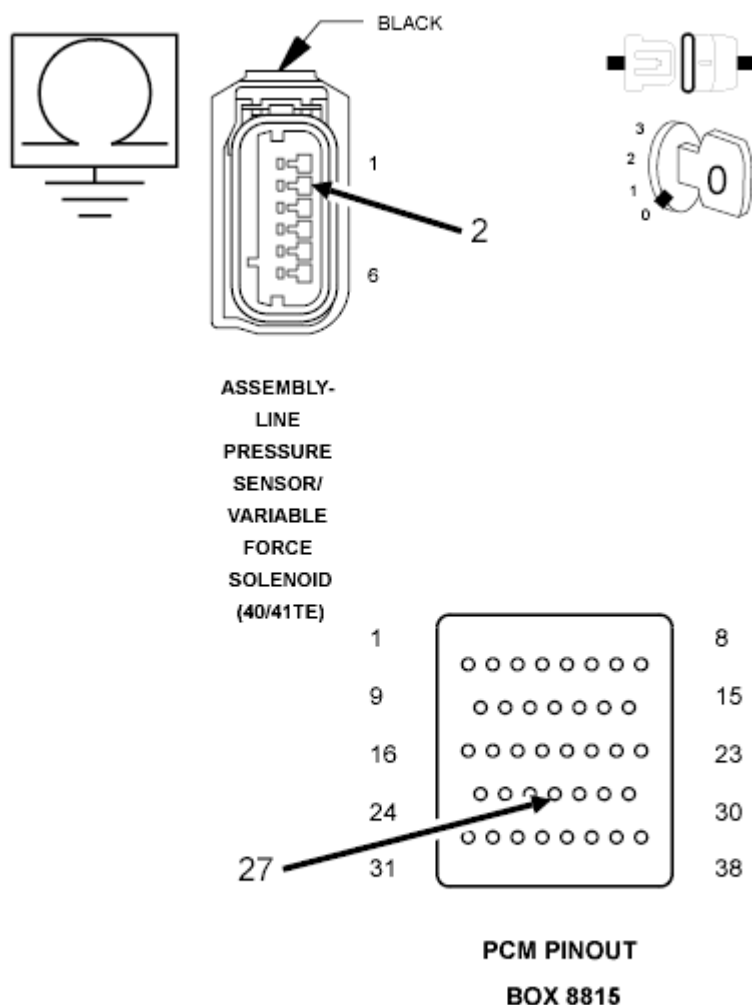
Yes

- Go to step 5

No

- Repair the (F856) 5-volt Supply circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

5. CHECK THE (F856) 5-VOLT SUPPLY CIRCUIT FOR A SHORT TO GROUND



77067

Fig. 86: Checking 5-Volt Supply Circuit For A Short To Ground
Courtesy of CHRYSLER LLC

1. Disconnect the PCM C1 harness connector and connect the PCM Pinout Box 8815.
2. Measure the resistance between ground and the (F856) 5-volt Supply circuit.

Is the resistance below 5.0 Ohms?

Yes

- Repair the (F856) 5-volt Supply circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for any Service Bulletins that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool perform the Quick Learn procedure.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

6. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
5. Check for any Service Bulletins that may apply.

Where there any problems found?

Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Test Complete.

P0935-LINE PRESSURE SENSOR CIRCUIT HIGH

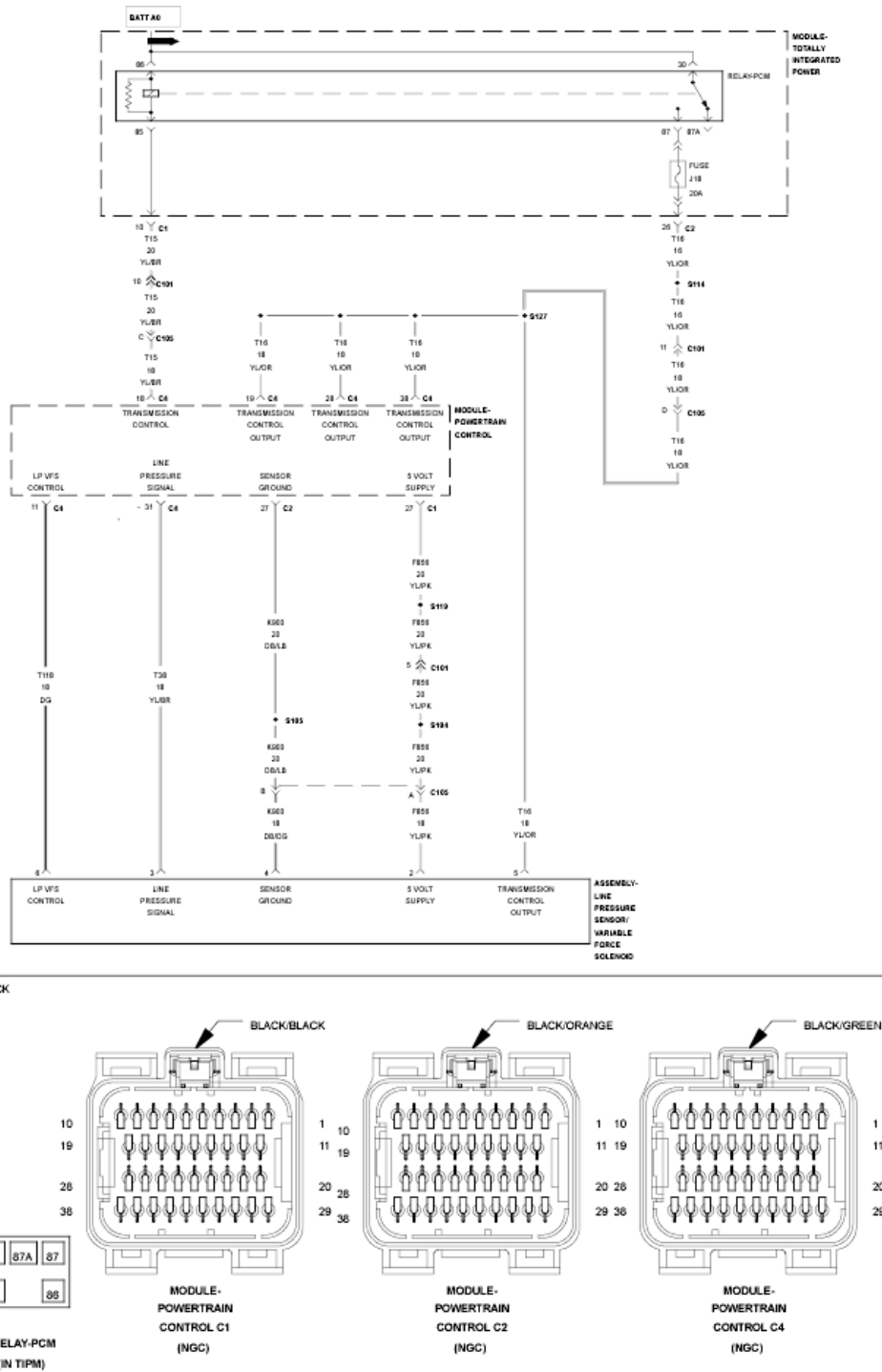


Fig. 87: Pressure Control Solenoid Control & 5-Volt Supply Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

Line pressure is electronically controlled by the Transmission Control System and is measured by the Line Pressure Sensor (LPS). The desired line pressure is continuously being compared to the actual line pressure and is regulated by electronically changing the duty cycle of the Pressure Control Solenoid (PCS). (5% duty cycle = solenoid off = max line pressure, 62% duty cycle = solenoid on = min line pressure).

The Transmission Control System calculates the desired line pressure based on inputs from the transmission and engine. A calculated torque input to the transmission is used as the primary input of the desired line pressure calculation and is called Torque Based Line Pressure. In addition, the line pressure is set to a preset level during shifts and in Park and Neutral to ensure consistent shift quality.

The monitored Line Pressure Sensor voltage should always be between 0.35 and 4.75 volts. Any monitored voltages outside these parameters indicate an Line Pressure Sensor or wiring problem and will cause either DTC P0934 or P0935 to set.

• **When Monitored:**

Continuously with ignition on and engine running.

• **Set Condition:**

This DTC will set if the monitored Line Pressure Sensor voltage is greater than or equal to 4.75 volts for the period of 0.18 of a second.

Possible Causes
(T38) LINE PRESSURE SENSOR SIGNAL CIRCUIT OPEN
(K900) SENSOR GROUND CIRCUIT OPEN
(T38) LINE PRESSURE SENSOR SIGNAL CIRCUIT SHORTED TO VOLTAGE
LINE PRESSURE SENSOR
POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK IF DTC IS CURRENT

1. With the scan tool, read DTCs.

Is the status Active or is the Starts Since Set counter 2 or less for this DTC?

Yes

- Go to step 2

No

- Go to step 6

2. CHECK THE PCM AND WIRING USING THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Relay.

CAUTION: Removal of the Starter Relay will prevent the vehicle from being started in gear.

WARNING: The Starter Relay must be removed. Failure to do so can result in possible serious or fatal injury.

3. Install the Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the scan tool, monitor the Line Pressure.
6. Using the Transmission Simulator, set the rotary switch to each of the three line pressure positions.

NOTE: All three scan tool Line Pressure readings should be steady and ± 14 kPa or 2.0 psi (0.2 of a volt) of the reading specified on the Transmission Simulator.

Did the Line Pressure read within ± 14 kPa or 2.0 psi (0.2 of a volt) in all three positions?

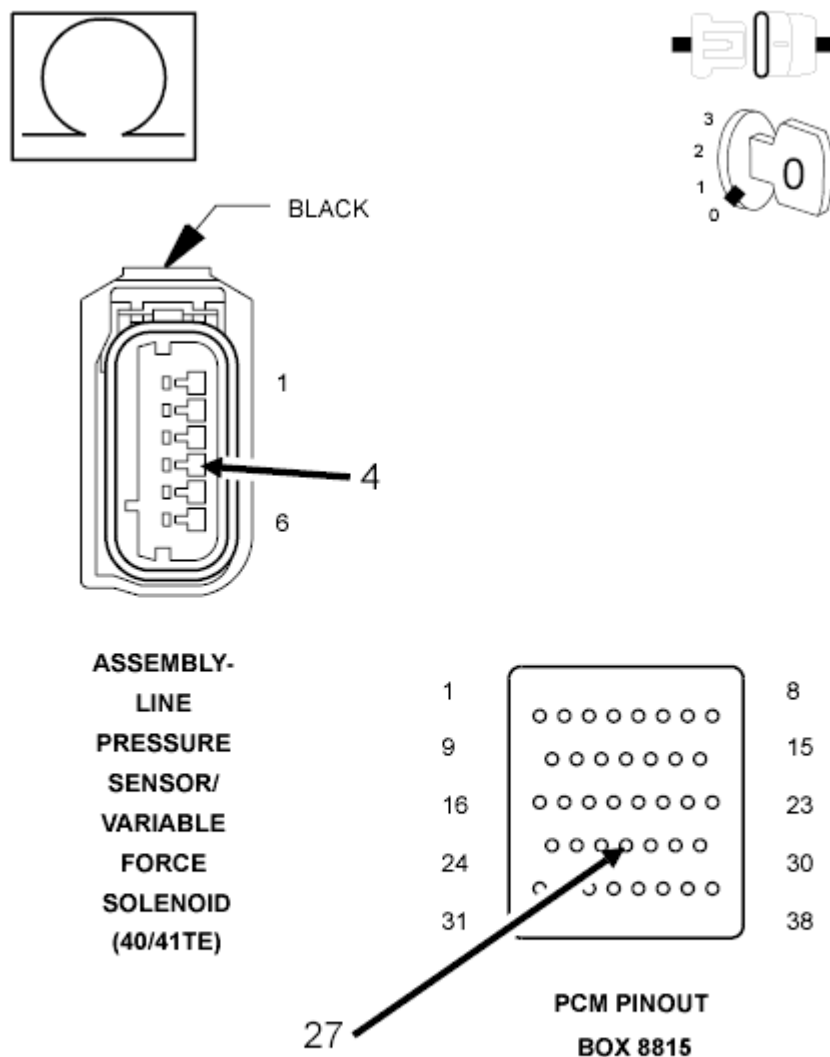
Yes

- Replace the Line Pressure Sensor in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 3

3. CHECK THE (K900) SENSOR GROUND CIRCUIT FOR AN OPEN



77161

Fig. 88: Checking Sensor Ground Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
3. Disconnect the PCM C2 harness connector and connect the PCM Pinout Box 8815.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install the PCM Pinout Box 8815 to perform diagnosis.

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4. Measure the resistance of the (K900) Sensor Ground circuit between the Line Pressure Sensor/Variable Force Solenoid Assembly harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

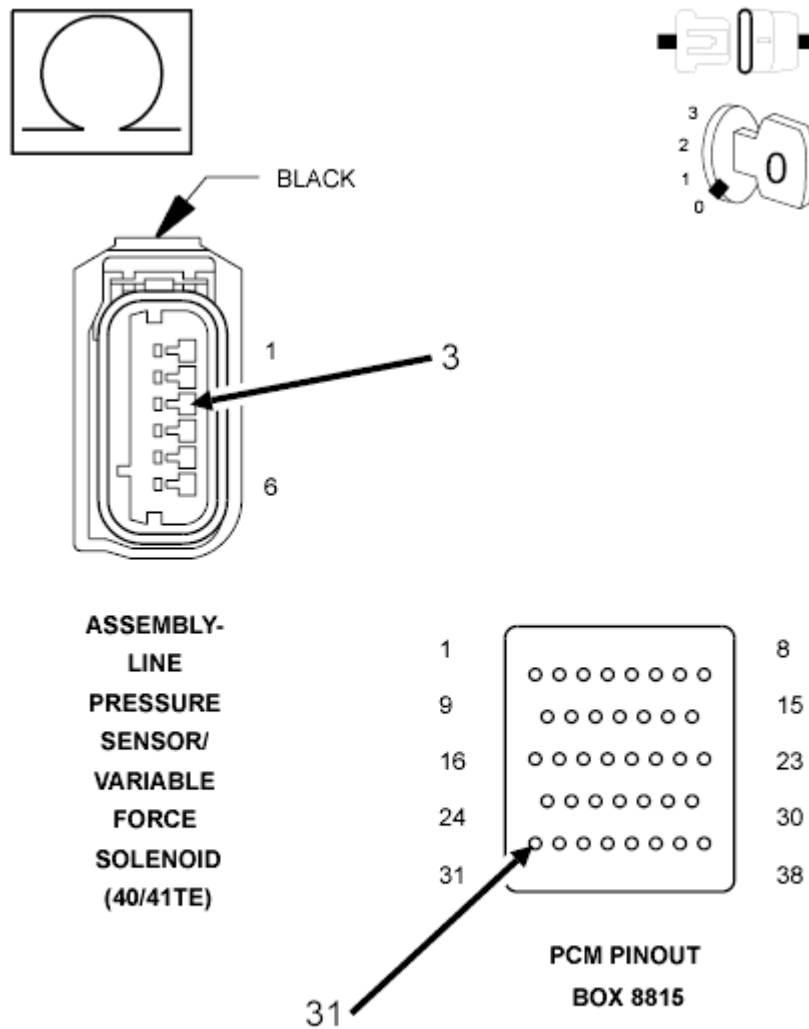
Yes

- Repair the (K900) Sensor Ground circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go to step 4

4. **CHECK THE (T38) LINE PRESSURE SENSOR SIGNAL CIRCUIT FOR AN OPEN**



77165

Fig. 89: Checking Line Pressure Sensor Signal Circuit For An Open
Courtesy of CHRYSLER LLC

1. Disconnect the PCM C4 harness connector and connect the PCM Pinout Box 8815.
2. Measure the resistance of the (T38) Line Pressure Sensor Signal circuit between the Line Pressure Sensor/Variable Force Solenoid Assembly harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

Yes

- Repair the (T38) Line Pressure Sensor Signal circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go to step 5

5. **CHECK THE (T38) LINE PRESSURE SENSOR SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE**

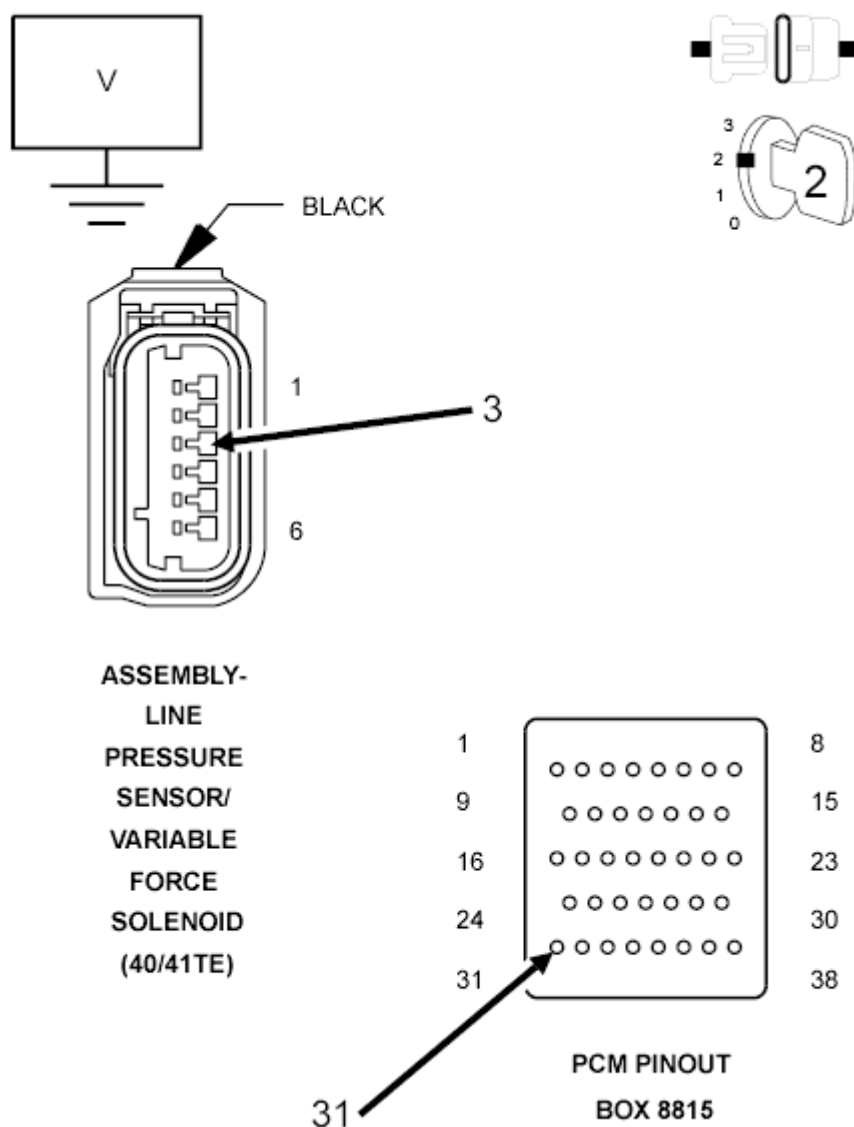


Fig. 90: Checking Line Pressure Sensor Signal Circuit For A Short To Voltage
 Courtesy of CHRYSLER LLC

1. Remove the Transmission Control Relay.
2. Connect a jumper wire between the Fused B(+) circuit and the Transmission Control Output circuit in the Transmission Control Relay connector.
3. Ignition on, engine not running.
4. Measure the voltage of the (T38) Line Pressure Sensor Signal circuit.

Is the voltage above 5.5 volts?

Yes

- Repair the (T38) Line Pressure Sensor Signal circuit for a short to voltage.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for any Service Bulletins that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool perform the Quick Learn procedure.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

6. CHECK WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
5. Perform any service bulletins that may apply.

Where there any problems found?

Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Test Complete.

P0944-LOSS OF HYDRAULIC PUMP PRIME

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The Loss of Prime Test is used to prevent transmission defaults and erroneous fault codes during temporary loss of pump prime that may occur with low transmission fluid under severe braking conditions, start-up, etc. and to point towards more subtle problems such as a plugged or ruptured oil filter. The Loss of Prime fault is set by a loss of hydraulic pressure in the transmission system. This condition, if sustained, will result in the vehicle being unable to move.

- **When Monitored:**

Every 350 msec

- **Set Condition:**

If the transmission begins to slip in any forward gear, and the pressure switch or switches that should be closed for a given gear are open, a loss of prime test begins. All available elements (in 1st gear LR, 2/4 and OD, in 2nd, 3rd, and 4th gear 2/4 and OD) are turned on by the Powertrain Control Module (PCM) to see if pump prime exists. The code is set if none of the pressure switches respond. The PCM will continue to run the loss of prime test until pump pressure returns. The vehicle will not move or the transmission will slip. Normal operation will continue if pump prime returns.

Possible Causes
LOW TRANSMISSION FLUID LEVEL
SHIFT LEVER POSITION
CRACKED, BROKEN, OR PLUGGED TRANSMISSION FILTER
STUCK REGULATOR VALVE
TRANSMISSION OIL PUMP

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK TO SEE IF DTC P0944 IS CURRENT

1. Place the gear selector in park.
2. Start the engine.
3. Check the fluid level and fill as required per the Service information.

NOTE: **The Transmission Temperature must be at least 43° C (110° F) before performing the following steps.**

4. The Transmission must be at operating temperature prior to checking pressure. Cold transmission fluid will result in higher pressure readings.

5. Place the Transmission in Drive.
6. With the scan tool, observe the Transmission Pressure Switch states.

Are any of the Pressure Switches closed?

Yes

- Go to step 2

No

- Go to step 3

2. INTERMITTENT OPERATION

1. The conditions necessary to set this DTC are not present at this time.
2. Test drive the vehicle. Allow the Transmission to shift through all gears and ranges.

Was a delayed engagement and/or a no drive condition present during the test drive?

Yes

- Go to step 3

No

- Go to step 5

3. SHIFT LEVER POSITION TEST

1. With the scan tool, perform a Shift Lever Position test. Follow the instructions on the screen.

Did the Shift Lever Position Test pass?

Yes

- Go to step 4

No

- See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** and perform the diagnostic procedure for **P0706-TRANSMISSION RANGE SENSOR RATIONALITY**.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

4. CHECK FOR PLUGGED TRANSMISSION FILTER

1. Remove the Transmission Pan and inspect the Transmission Fluid and Transmission Filter in accordance with the Service Information.

Does the Transmission Oil Pan contain excessive debris and/or is the Oil Filter cracked, broken, or plugged?

Yes

- Replace the Transmission Filter. If excessive debris is present, remove transmission, inspect all clutches, and repair as required. Refer to the appropriate Service Information for the proper repair procedure.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Remove the valve body per the Service information and inspect the main regulator valve for sticking in its bore. Clean or replace as required. If no problems are found, replace the Transmission Oil Pump in accordance with the Service Information.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

5. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wiring while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Test Complete.

P0957-AUTOSTICK CIRCUIT LOW

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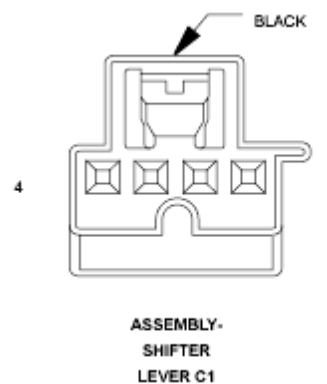
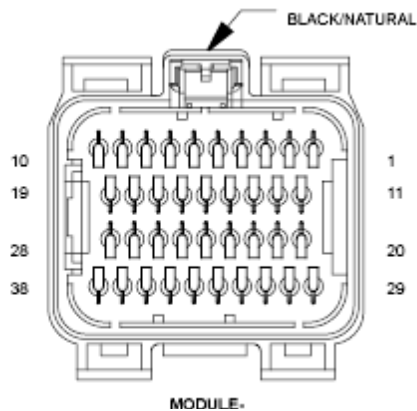
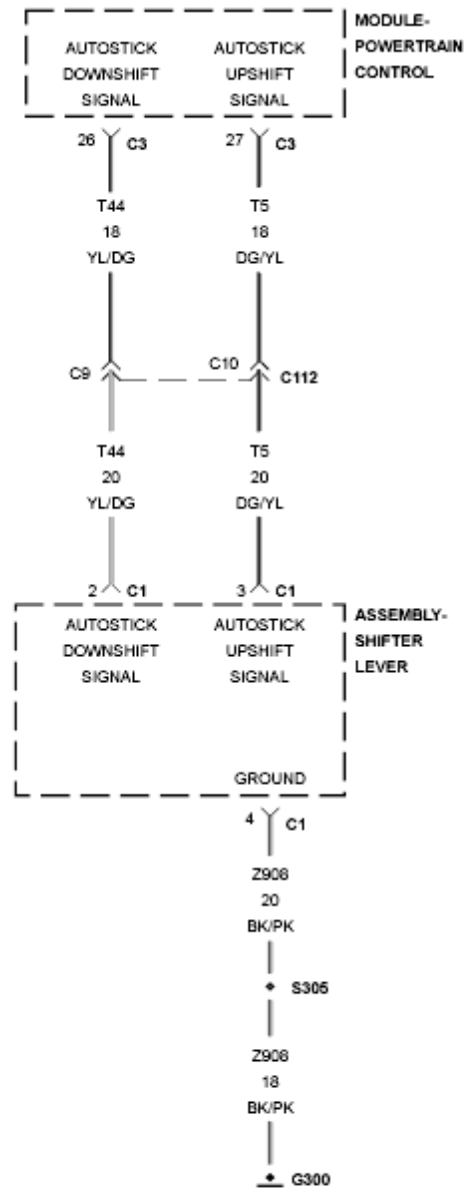


Fig. 91: Autostick® Downshift/Upshift Signal Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The AutoStick® switch contains two hall effect switches connected to ground. The Powertrain Control Module (PCM) has two separate inputs, upshift and downshift. When the PCM detects an input from the switch, upshift or downshift, it will shift the transmission to the desired gear. If the PCM detects both inputs at the same time, the DTC will set.

- **When Monitored:**

Whenever the engine is running.

- **Set Condition:**

The transmission is not in the AutoStick® position and the upshift or downshift is reporting closed - below 0.71 of a volt or if both switches are reported closed at the same time.

Possible Causes
AUTOSTICK® SWITCH (T44) AUTOSTICK® DOWNSHIFT SIGNAL CIRCUIT SHORTED TO GROUND (T5) AUTOSTICK® UPSHIFT SIGNAL CIRCUIT SHORTED TO GROUND POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK IF THE DTC IS CURRENT

1. With the scan tool, read DTCs.

Is the status Active or is the Starts Since Set counter 2 or less for this DTC?

Yes

- Go to step 2

No

- Go to step 5

2. CHECKING THE AUTOSTICK® SWITCH

1. Turn the ignition off to the lock position.
2. Disconnect the AutoStick® Switch harness connector.
3. Ignition on, engine not running.
4. Measure the voltage of both the AutoStick® Upshift and Downshift Signal circuits.

Is the voltage above 5.0 volts on both circuits?

Yes

- Replace the AutoStick® Switch in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go To step 3

3. CHECK THE (T44) AUTOSTICK® DOWNSHIFT SIGNAL CIRCUIT FOR A SHORT TO GROUND

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C3 harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install PCM Pinout Box 8815 to perform diagnosis.

3. Measure the resistance between ground and the (T44) AutoStick® Downshift Signal circuit.

Is the resistance below 5.0 Ohms?

Yes

- Repair the (T44) AutoStick® Downshift Signal circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 4

4. CHECK THE (T5) AUTOSTICK® UPSHIFT SIGNAL CIRCUIT FOR A SHORT TO GROUND

1. Measure the resistance between ground and the (T5) AutoStick® Upshift Signal circuit.

Is the resistance below 5.0 Ohms?

Yes

- Repair the (T5) AutoStick® Upshift Signal circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

5. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorts and open circuits.
4. With the scan tool, check the EVENT DATA to help identify the conditions in which the DTC was set.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Test Complete.

P0992-2/4/OD HYDRAULIC PRESSURE TEST

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

Pressure switches are normally off or open (no pressure applied) and read high (+12 volts). When an element is applied, the corresponding pressure switch closes to ground (0 volts) or turns on. The controller tests the OD and 2/4 pressure switches when they are off (when the corresponding friction element is not applied) by briefly applying the OD and 2/4 elements which will cause the corresponding pressure switch to close. The test verifies that the switches are operational and that the switch will close when the corresponding element is applied. If a

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switch fails to respond, it is retested. If the repeat test also fails, the MIL illuminates and the transmission system defaults to Limpin mode.

- **When Monitored:**

In any forward gear with engine speed above 1000 RPM, shortly after a shift and every minute thereafter.

- **Set Condition:**

After a shift into a forward gear, with engine speed greater than 1000 RPM, the Powertrain Control Module (PCM) momentarily turns on element pressure to the clutch circuits that do not have pressure to identify that the correct pressure switch closes. If the pressure switch does not close two times the DTC sets.

Possible Causes
CONDITION P0992 PRESENT

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK TO SEE IF DTC P0992 IS CURRENT

NOTE: The vehicle must be driven to set this DTC. The transmission must be at normal operating temperature with the Engine RPM above 1000 RPM.

1. This DTC is an indication of both the 2/4 and the O/D Hydraulic Pressure Switch DTCs are present.
2. Perform the diagnostic procedures for both P0845 and P0870.
3. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Repair

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the diagnostic procedures for P0845-2/4 HYDRAULIC PRESSURE TEST and P0870-OD HYDRAULIC PRESSURE TEST.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

P1684-BATTERY WAS DISCONNECTED

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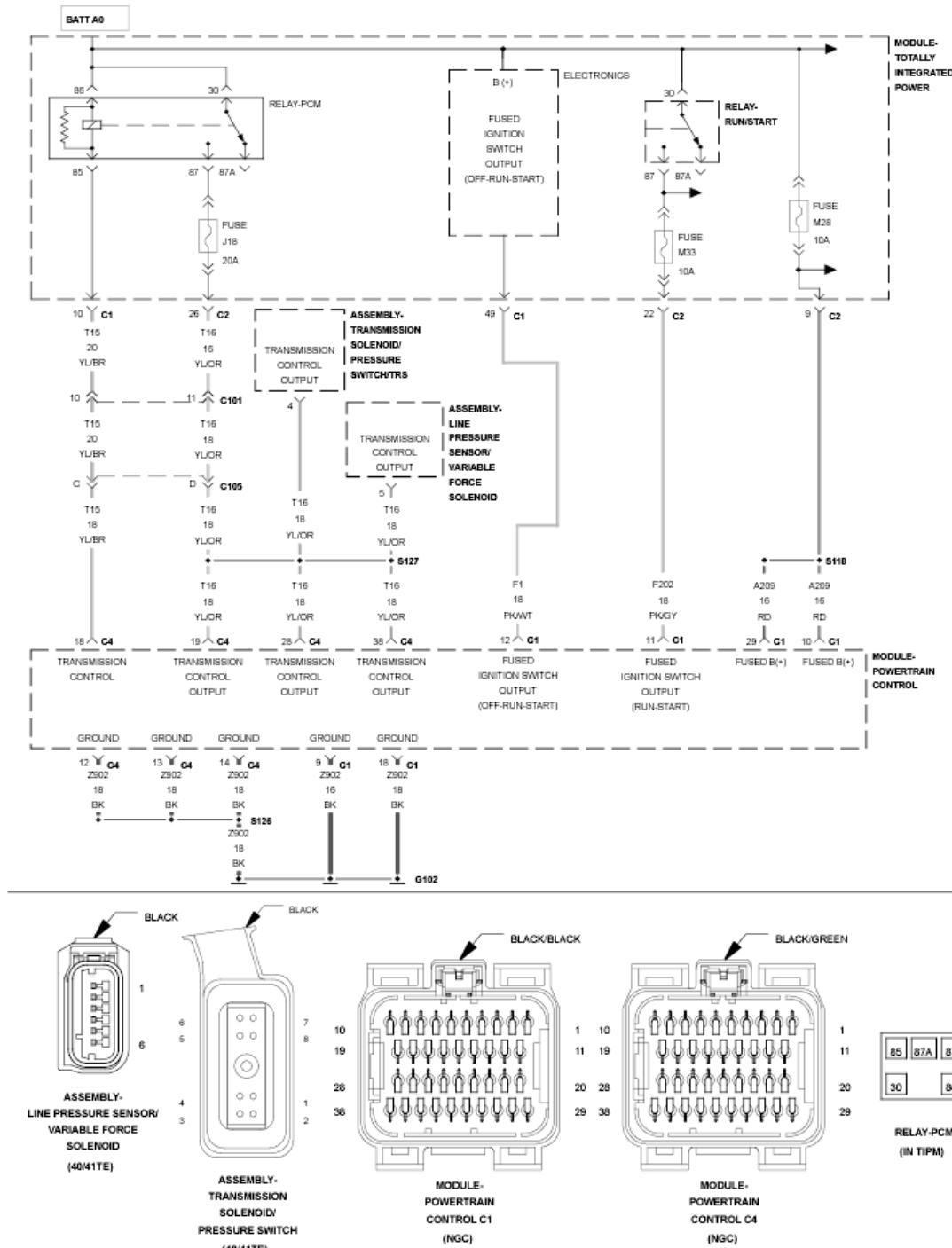


Fig. 92: Transmission Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

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This DTC exists to provide reference information only. A battery backed RAM is used to maintain various learned values. When the battery is disconnected, this memory is lost. When the battery is reconnected, a loss of learned values will be detected by the controller and the code will be set. The learned values will then be initialized to known constants and the learning process will continue. Setting the code has no effect except for re-initialization of learned values.

- **When Monitored:**

After a reset (ignition turned to the RUN position).

- **Set Condition:**

The checksum of the battery backed RAM does not match the stored checksum. Set Time: Less than 7 msec.

Possible Causes
BATTERY WAS DISCONNECTED PCM WAS REPLACED OR DISCONNECTED Quick Learn WAS PERFORMED (A209) FUSED B(+) CIRCUIT(S) TO PCM OPEN (Z901) GROUND CIRCUIT(S) TO PCM OPEN

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. BATTERY WAS DISCONNECTED

Has the battery been disconnected, lost it's charge, or been replaced recently?

Yes

- Disconnecting or replacing the battery will set this DTC. Erase the DTC.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 2

2. WAS Quick Learn PERFORMED

Has a Quick Learn procedure been performed?

Yes

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- Performing Quick Learn will set this DTC. Erase the DTC.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 3

3. **PCM REPLACED OR DISCONNECTED**

Has the PCM been replaced or disconnected?

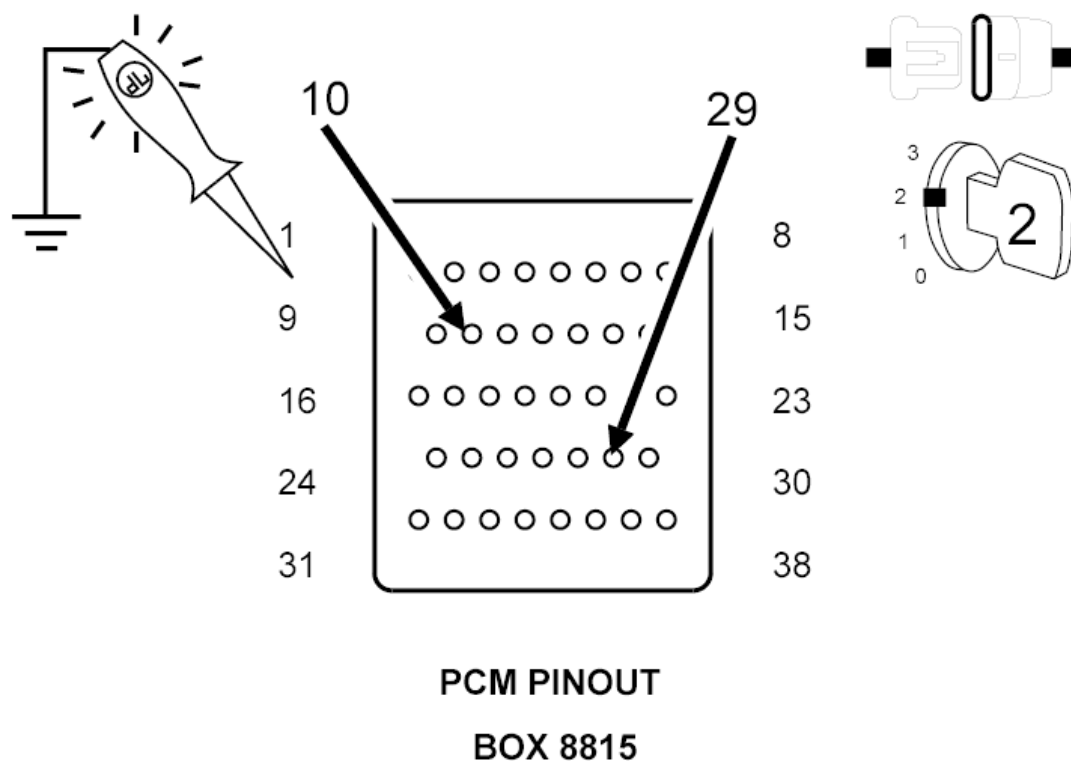
Yes

- Replacing or disconnecting the PCM will set this DTC. Erase the DTC.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to step 4

4. **(A209) FUSED B(+) CIRCUIT**



77181

Fig. 93: Checking Fused B(+) Circuit

Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C1 harness connector and connect Miller tool #8815.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install PCM Pinout Box 8815 to perform diagnosis.

3. Using a 12-volt test light connected to ground, check the (A209) Fused B(+) circuits.

NOTE: The test light must illuminate brightly. Compare the brightness to that of a direct connection to the battery.

Does the test light illuminate brightly?

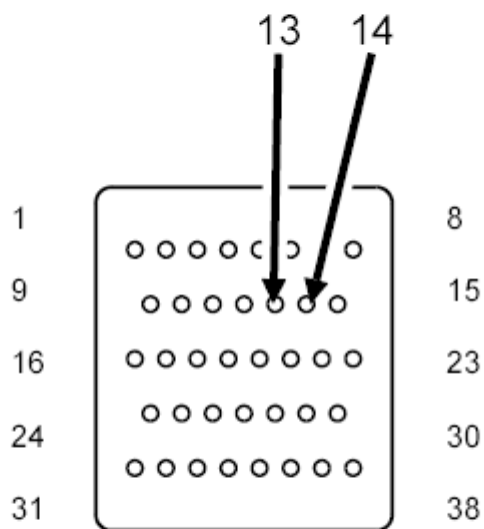
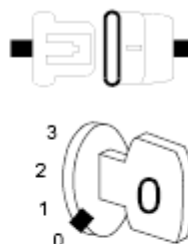
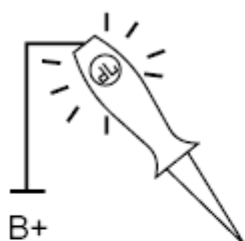
Yes

- Go to step 5

No

- Repair the (A209) Fused B(+) circuit(s) for an open. If the fuse is open make sure to check for a short to ground.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

5. CHECK THE C1 (Z901) GROUND CIRCUITS



PCM PINOUT
BOX 8815

77185

Fig. 94: Checking Ground Circuits
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector and connect Miller tool #8815.
3. Using a 12-volt test light connected to 12-volts, check the (Z901) Ground circuits in the appropriate terminals of Miller tool #8815.

NOTE: **The test light must illuminate brightly. Compare the brightness to that of a direct connection to the battery.**

Does the test light illuminate brightly for all of the ground circuits?

Yes

- Go to step 6

No

- Repair the (Z901) Ground circuit(s) for an open.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

6. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Test Complete.

P1713-RESTRICTED MANUAL VALVE IN T2 RANGE

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

- **When Monitored:**

Ignition on, engine running with the gear shift selector in a valid forward gear.

- **Set Condition:**

This DTC sets whenever Transmission control system detects the manual valve is in the T2 range when it should be in OD. This is mainly an informational DTC.

Possible Causes
RELATED TRANSMISSION DTCS PRESENT
CUSTOMER DRIVING HABITS
MIS-ADJUSTED SHIFTER CABLE

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test**1. DETERMINING IF RELATED DTCS ARE PRESENT**

1. With the scan tool, check for other transmission DTCS.

Are there any speed sensor or gear ratio DTCS present?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure.

No

- Go To step 2

2. CHECK THE GEAR SHIFT CABLE FOR PROPER ADJUSTMENT

1. Check the Gear shift cable adjustment in accordance with the Service Information.
2. Also check the cable for possible binding or improperly routed.

Is the Gear shift cable properly adjusted and not binding or improperly routed?

Yes

- Go To step 3

No

- Adjust the Shifter Cable in accordance with the Service Information.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

3. CHECK CUSTOMER DRIVING HABIT

1. This DTC can be set if the customer does not move the shift lever completely into the OD position (in between gears) causing the manual valve to be in the T2 position.
2. When this occurs, the feed port to the clutch is restricted, the transmission will declare neutral, and this DTC will set.
3. This DTC can also be set by simply bumping the shift lever toward neutral while accelerating.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Repair

- This DTC can be set by the shift lever in the wrong position or not completely in the OD position. Make sure the customer is properly informed.
- Perform the appropriate TRANSMISSION VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

P1745-TRANSMISSION LINE PRESSURE TOO HIGH FOR TOO LONG

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

This DTC is an informational DTC to inform the technician that transmission has been operating in an open-loop line pressure control for 3220 kilometers (2000 miles) or 1000 2-3 upshifts resulting from a Line Pressure DTC. The Transmission is not designed to operate in open-loop line pressure control for an extended period time. This DTC is intended to protect the transmission. If the DTC sets, the transmission controller will place the transmission into limp-in mode.

- **When Monitored:**

Continuously with ignition on.

- **Set Condition:**

If the transmission has been operating in an open-loop line pressure control for 3220 kilometers (2000 miles) or 1000 2-3 upshifts.

Possible Causes
LINE PRESSURE DTCS PRESENT

Always perform the 42RLE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test**1. CHECK FOR RELATED DTCS**

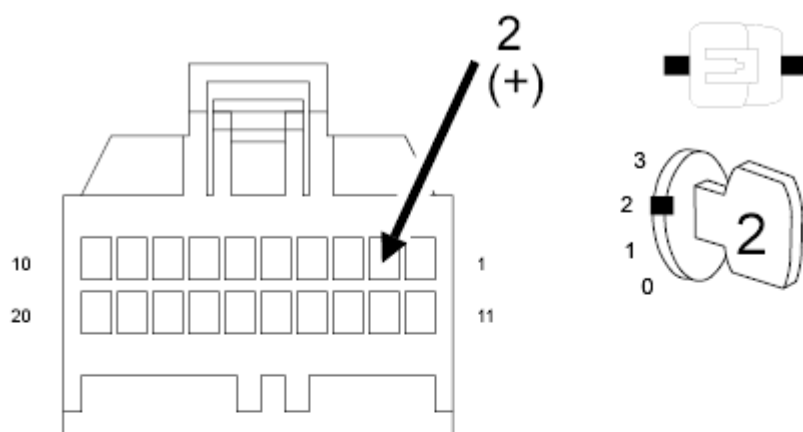
1. With the scan tool, check for Transmission Line Pressure DTCS.

NOTE: In order to erase this DTC you must reset (erase) the VLP Shift Counter and the Output tooth counter which is a single procedure under Miscellaneous functions in the scan tool called "Clear Variable Line Pressure (VLP) counters".

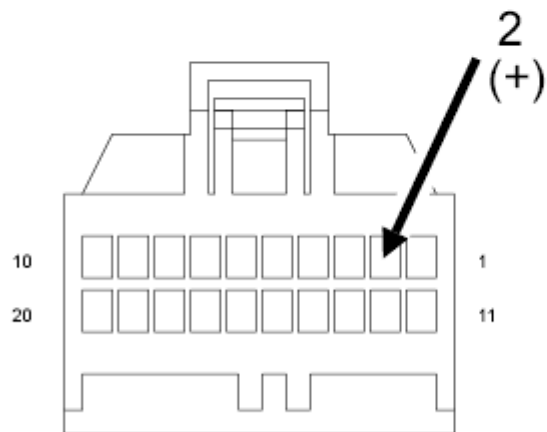
Repair

- Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** and perform the appropriate diagnostic procedure.

P1775-SOLENOID SWITCH VALVE LATCHED IN TCC POSITION



MODULE-
DOOR-
DRIVER C2



MODULE-
DOOR-
PASSENGER C2

123213

Fig. 95: L/R Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS**.

Theory of Operation

The Solenoid Switch Valve, an internal, hydraulically operated valve, controls the direction of the transmission fluid when the L/R solenoid is energized. When the solenoid switch valve is in the downshifts position and the L/R solenoid is energized, fluid is directed to the L/R element for 1st gear. When the solenoid switch valve is in the up shift position (2nd, 3rd, and 4th gear) and the L/R solenoid is energized, fluid is directed into the Lockup Switch Valve which controls the Torque Converter Clutch. When shifting into 1st gear, a special sequence is followed to insure solenoid switch valve movement into the downshifts position. The L/R pressure switch is monitored to confirm switch valve movement. If the solenoid switch valve movement is not confirmed (i.e. no L/R pressure switch response when the L/R solenoid is energized), 2nd gear is substituted for 1st. No 1st gear (2nd gear is substituted). The transmission Torque converter FEMCC operation is inhibited. MIL on after five minutes of substituted operation.

- **When Monitored:**

Prior to a shift into 1st gear.

- **Set Condition:**

Transmission temperature must be hot. DTC is set after six unsuccessful attempts to shift into 1st gear.

Possible Causes
RELATED DTCS PRESENT (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT OPEN (T50) L/R PRESSURE SIGNAL CIRCUIT OPEN (T50) L/R PRESSURE SIGNAL CIRCUIT SHORTED TO GROUND (T50) L/R PRESSURE SIGNAL CIRCUIT SHORTED TO VOLTAGE STUCK SOLENOID SWITCH VALVE OR PLUGS POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK IF RELATED DTCS ARE PRESENT

1. With the scan tool, check for other Transmission DTCS

Is the DTC P0841 present also?

Yes

- See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK IF DTC IS CURRENT

1. With the scan tool, view DTCs.

Is the status Active or is the Starts Since Set counter 2 or less for this DTC?

Yes

- Go to step 3

No

- Go to step 8

3. CHECK THE PCM AND WIRING

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator 8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the Transmission Simulator, turn the Pressure Switch selector switch to L/R.
6. With the scan tool, monitor the L/R Pressure Switch State while pressing the Pressure Switch Test button.

Did the Pressure Switch state change from open to closed when the test button was pressed?

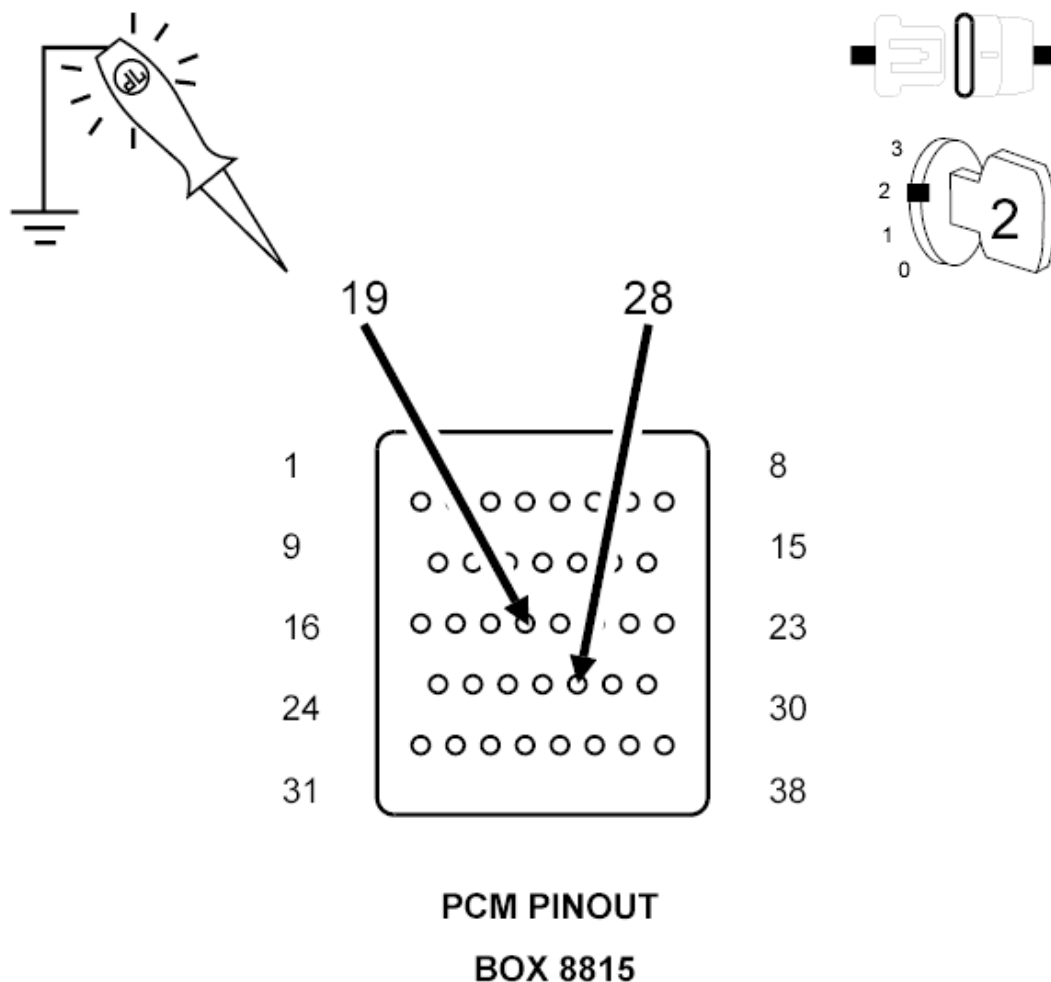
Yes

- Remove the valve body in accordance with the Service Information. Inspect the Solenoid Switch Valve in accordance with the Service Information and repair or replace as necessary. If no problems are found, replace the Transmission Solenoid/Pressure Switch Assembly.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 4

4. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT FOR AN OPEN



77043

Fig. 96: Checking Transmission Control Output Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.
3. Disconnect the PCM C4 harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install PCM Pinout Box 8815 to perform diagnosis.

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4. Ignition on, engine not running.
5. With the scan tool under TIPM, actuate the Transmission.
6. Using a 12-volt test light connected to ground, check all (T16) Transmission Control Output circuits in the appropriate terminals of the PCM Pinout Box 8815.

NOTE: **The test light must illuminate brightly. Compare the brightness to that of a direct connection to the battery.**

Does the test light illuminate brightly on all Transmission Control Output circuits?

Yes

- Go to step 5

No

- Repair the (T16) Transmission Control Output circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

5. CHECK THE (T50) L/R PRESSURE SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE

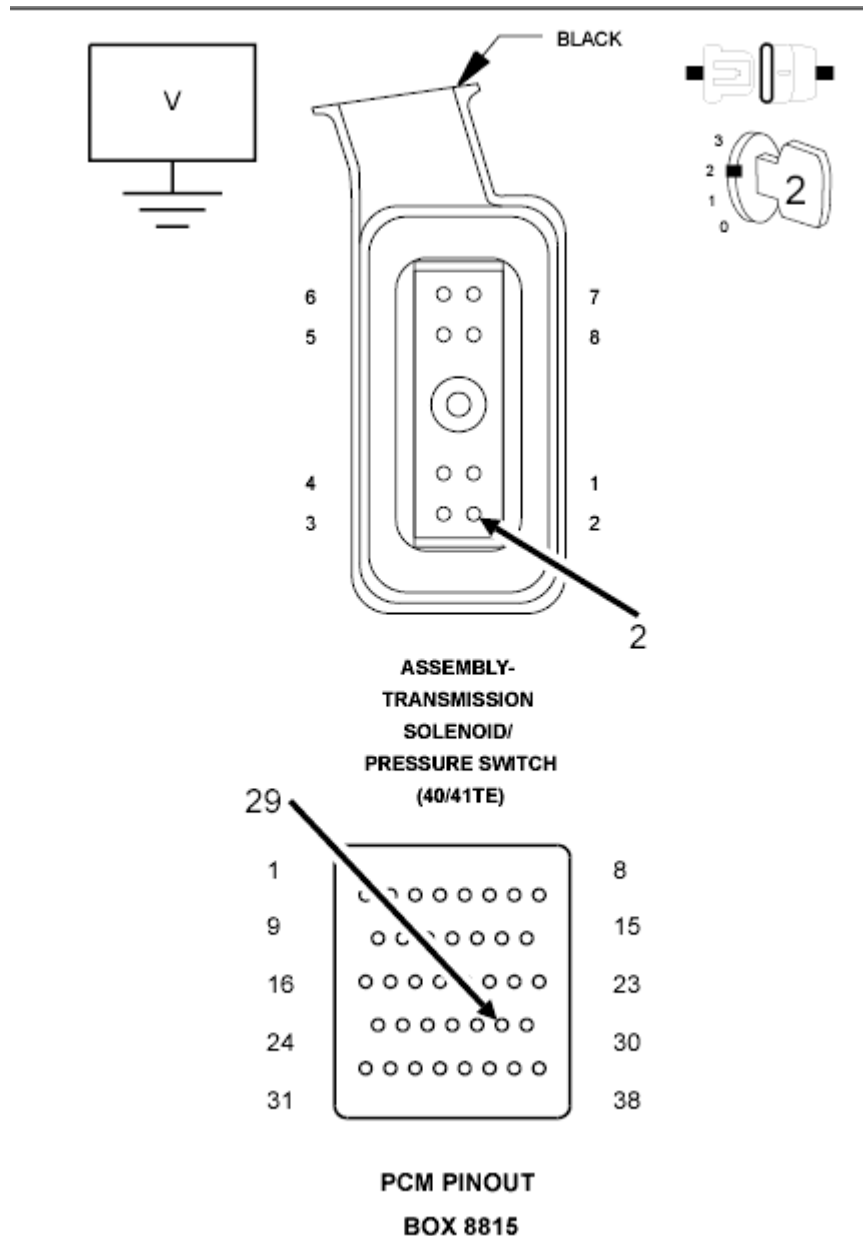


Fig. 97: Checking L/R Pressure Signal Circuit For A Short To Voltage
 Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.
2. While still actuating the TCM output in the TIPM with the scan tool, measure the voltage of the (T50) L/R Pressure Signal circuit.

Is the voltage above 0.5 volts?

Yes

- Repair the (T50) L/R Pressure Signal circuit for a short to voltage.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go to step 6

6. CHECK THE (T50) L/R PRESSURE SIGNAL CIRCUIT FOR AN OPEN

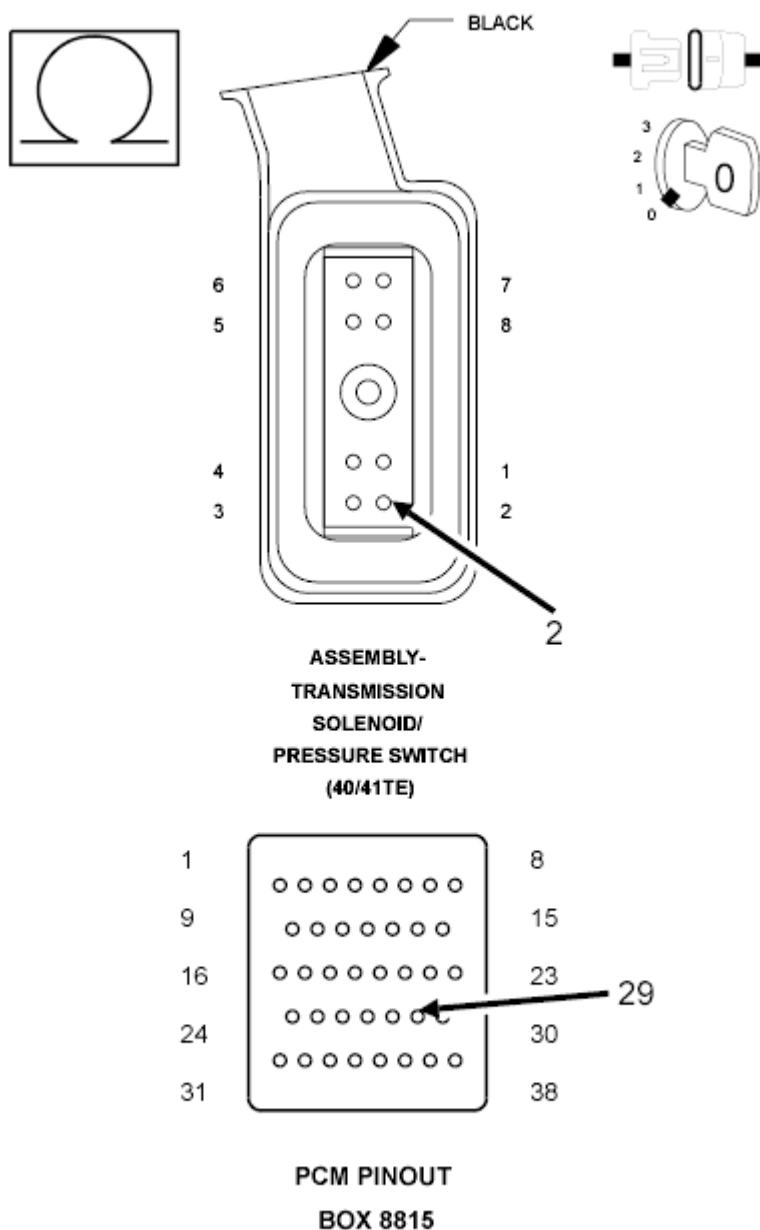


Fig. 98: Checking L/R Pressure Signal Circuit For An Open
Courtesy of CHRYSLER LLC

1. Stop the TCM output actuation and turn the ignition off to the lock position.
2. Measure the resistance of the (T50) L/R Pressure Signal circuit between the Transmission Solenoid/Pressure Switch Assembly harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

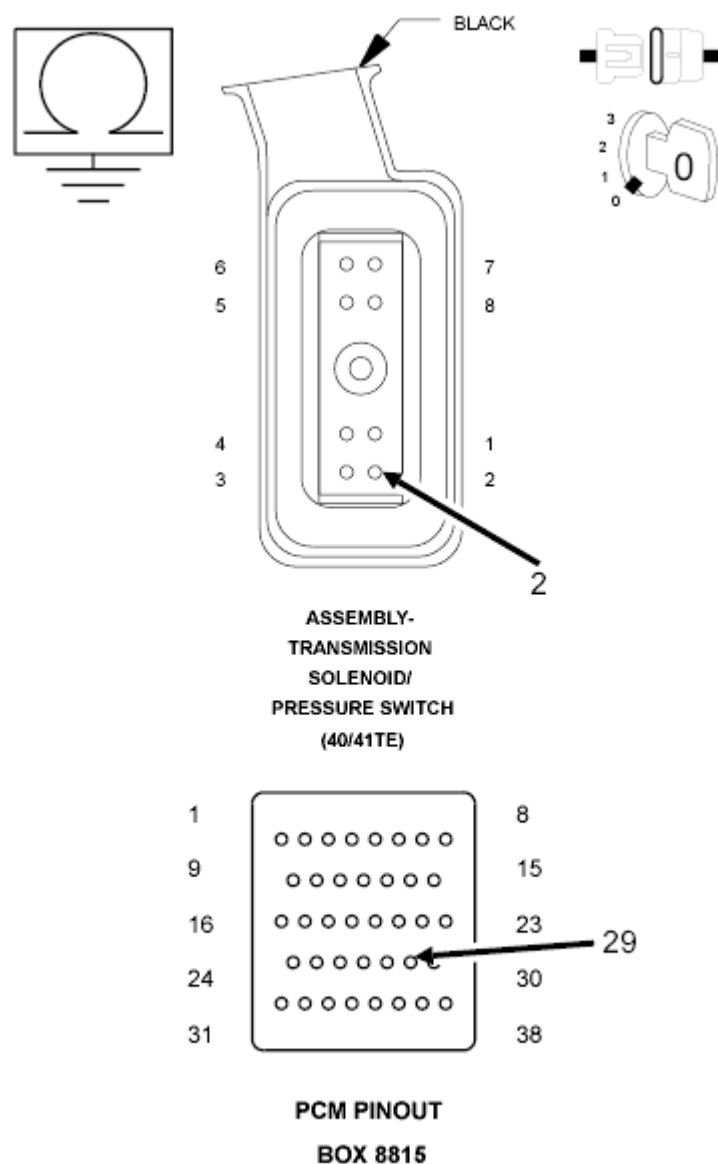
Yes

- Repair the (T50) L/R Pressure Signal circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 7

7. CHECK THE (T50) L/R PRESSURE SIGNAL CIRCUIT FOR A SHORT TO GROUND



77025

Fig. 99: Checking L/R Pressure Signal Circuit For A Short To Ground
 Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T50) L/R Pressure Signal circuit.

Is the resistance below 5.0 Ohms?

Yes

- Repair the (T50) L/R Pressure Signal circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

8. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Test drive and verify if the transmission is launching in 2nd gear and/or no TCC engagement.
3. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Are there 2nd gear launches and/or no TCC engagement?

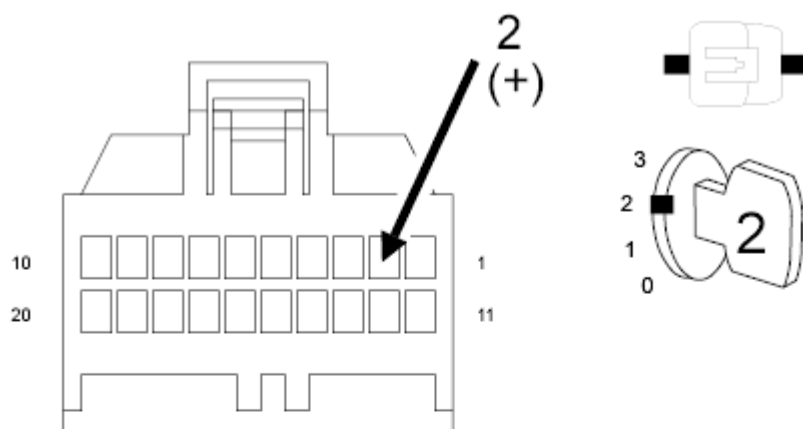
Yes

- Disassemble and inspect the Valve Body in accordance with the Service Information and repair or replace as necessary. If no problems are found in **BODY**, replace the Transmission Solenoid/Pressure Switch Assembly.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

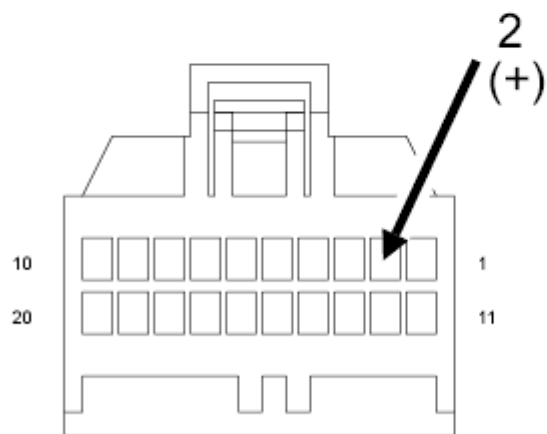
No

- Test Complete.

P1776-SOLENOID SWITCH VALVE LATCHED IN LR POSITION



MODULE-
DOOR-
DRIVER C2



MODULE-
DOOR-
PASSENGER C2

123213

Fig. 100: L/R Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The Solenoid Switch Valve, an internal, hydraulically operated valve, controls the direction of the transmission fluid when the L/R solenoid is energized. When the solenoid switch valve is in the downshifts position and the L/R solenoid is energized, fluid is directed to the L/R element for 1st gear. When the solenoid switch valve is in a up shifted position (2nd, 3rd, and 4th gear) and the L/R solenoid is energized, fluid is directed into the Lockup Switch Valve which controls the Torque Converter Clutch. When doing PEMCC or FEMCC, the L/R pressure switch should indicate no pressure if the solenoid switch valve is in the L/R position. If the L/R pressure switch indicates pressure for some time while in partial or full EMCC, the EMCC operation is aborted and

momentarily inhibited to avoid accidental application of the L/R clutch. EMCC is attempted again when there is no L/R pressure. The fourth detection of L/R pressure while in PEMCC or FEMCC will result in setting the DTC. Torque converter EMCC operation is inhibited after 5 min. of substituted operation.

- **When Monitored:**

Every 7 ms when doing PEMCC or FEMCC.

- **Set Condition:**

Must be in partial or full EMCC. The DTC is set if L/R pressure is detected high for the fourth time.

Possible Causes
RELATED DTCS PRESENT EVENT DATA SHOWS TRS CODE TR2 - SHIFT LEVER OR MANUAL CONTROL VALVE IN T2 TRANSITION ZONE SHIFTER CABLE OUT OF ADJUSTMENT SOLENOID SWITCH VALVE STICKING IN ITS BORE (T50) L/R PRESSURE SIGNAL CIRCUIT OPEN (T50) L/R PRESSURE SIGNAL CIRCUIT SHORTED TO GROUND (T50) L/R PRESSURE SIGNAL CIRCUIT SHORTED TO VOLTAGE VALVE BODY POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.

Diagnostic Test

1. CHECK FOR RELATED DTCS

1. With the scan tool, check for other Transmission DTCs.

Is the DTC P0841 present also?

Yes

- See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK THE EVENT DATA FOR TRS CODE TR2

1. With the scan tool, check the Event Data for P1776.

Does the Event Data show a TRS Code of TR2?

Yes

- This indicates the shift lever and the manual control valve were in the T2 transition zone between Neutral and OD. Check the shifter cable for: proper adjustment, binding, friction, improper routing, or the shifter was moved in transit. Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Go To step 3

3. CHECK IF THE DTC IS CURRENT

1. With the scan tool, check the Starts Since Set counter for P1776.

NOTE: **This counter only applies to the last DTC set.**

Is the status Active or is the Starts Since Set counter 2 or less for this DTC?

Yes

- Go to step 4

No

- Go to step 9

4. CHECK THE PCM AND WIRING USING THE TRANSMISSION SIMULATOR

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator 8333A and the Electronic Transmission Adapter kit.

NOTE: **Check connectors - Clean/repair as necessary.**

4. Ignition on, engine not running.
5. With the Transmission Simulator, turn the Pressure Switch selector switch to L/R.

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6. With the scan tool, monitor the L/R Pressure Switch State while pressing the Pressure Switch Test button.

Did the Pressure Switch state change from open to closed when the test button was pressed?

Yes

- Go to step 8

No

- Go to step 5

5. **CHECK THE (T50) L/R PRESSURE SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE**

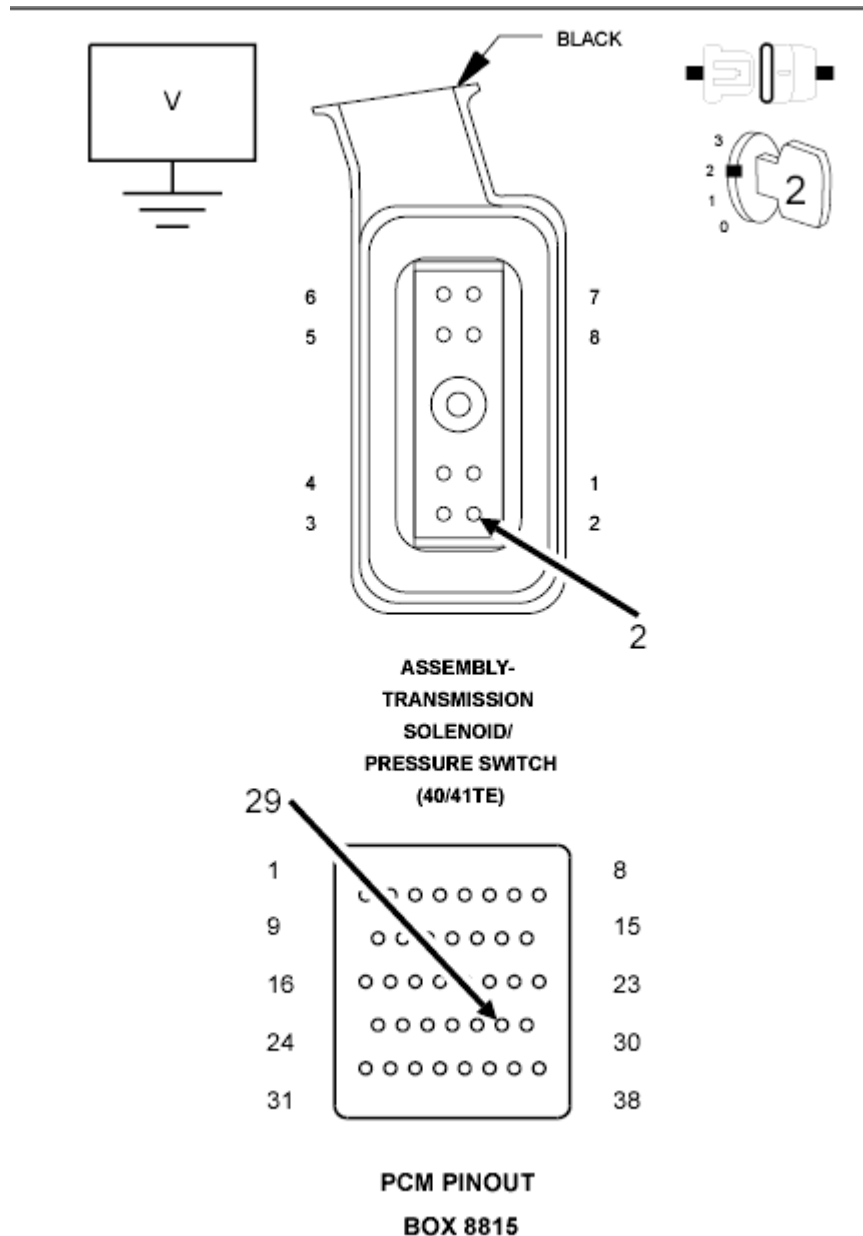


Fig. 101: Checking L/R Pressure Signal Circuit For A Short To Voltage
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the Transmission Simulator.
3. Disconnect the PCM C4 harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install the PCM Pinout Box 8815 to perform diagnosis.

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4. Ignition on, engine not running.
5. With the scan tool in under TIPM, actuate the TCM output.
6. Measure the voltage of the (T50) L/R Pressure Signal circuit.

Is the voltage above 0.5 of a volt?

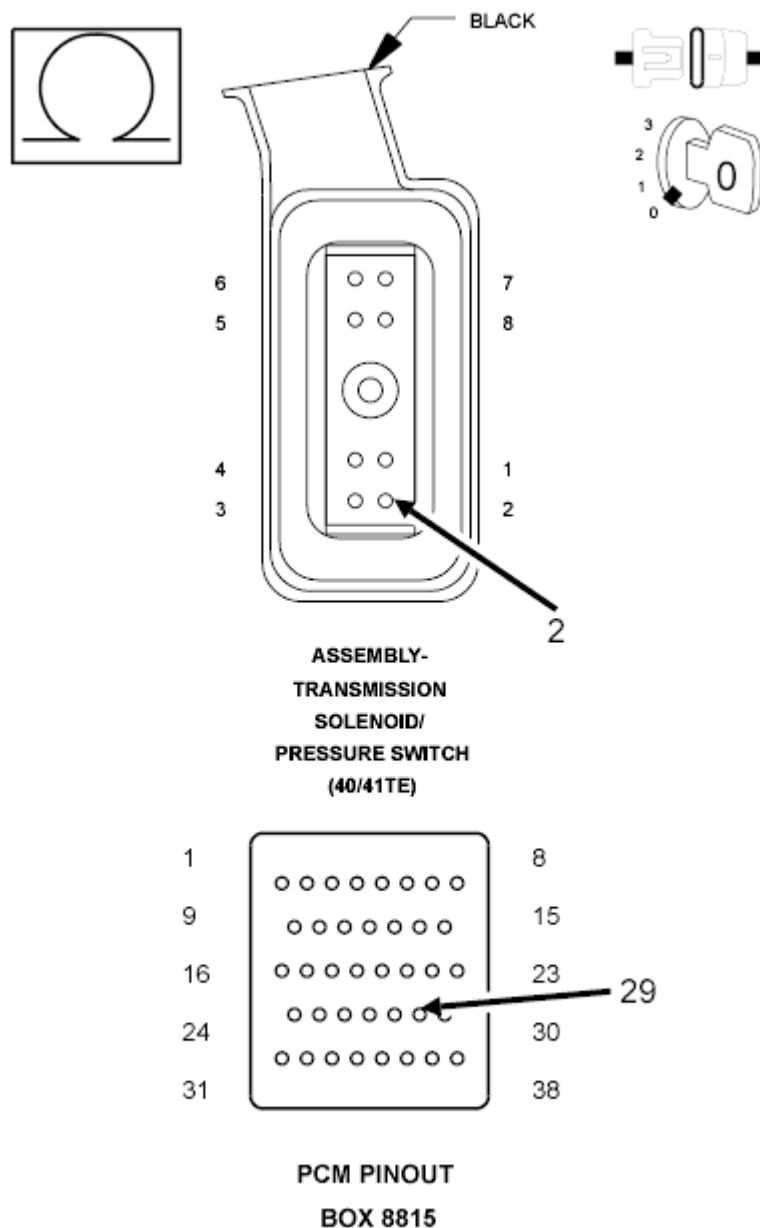
Yes

- Repair the (T50) L/R Pressure Signal circuit for a short to voltage.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 6

6. CHECK THE (T50) L/R PRESSURE SIGNAL CIRCUIT FOR AN OPEN



77021

Fig. 102: Checking L/R Pressure Signal Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Measure the resistance of the (T50) L/R Pressure Signal circuit between the Transmission Solenoid/Pressure Switch Assembly harness connector and the appropriate terminal of the PCM Pinout Box 8815.

Is the resistance above 5.0 Ohms?

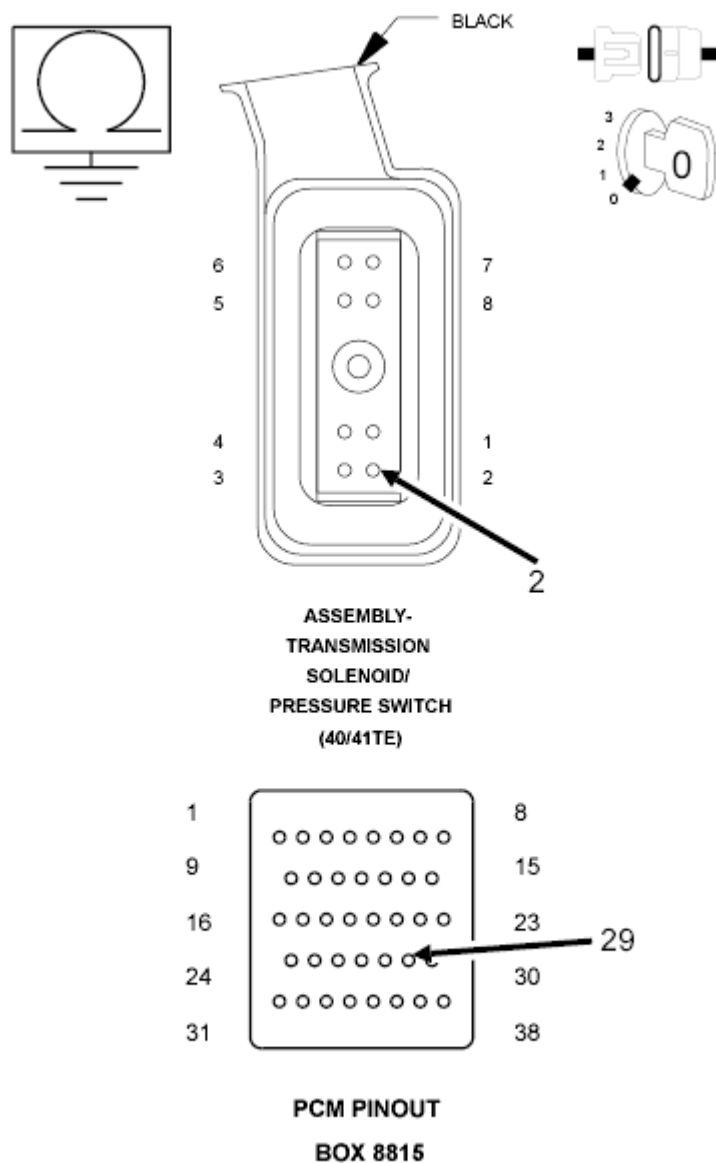
Yes

- Repair the (T50) L/R Pressure Signal circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Go to step 7

7. CHECK THE (T50) L/R PRESSURE SIGNAL CIRCUIT FOR A SHORT TO GROUND



77025

Fig. 103: Checking L/R Pressure Signal Circuit For A Short To Ground

Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T50) L/R Pressure Signal circuit.

Is the resistance below 5.0 Ohms?

Yes

- Repair the (T50) L/R Pressure Signal circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

8. CHECK THE SOLENOID SWITCH VALVE FOR STICKING

1. Remove the transmission oil pan and Valve body and inspect the Solenoid Switch Valve for sticking in its bore, repair or replace as necessary.

NOTE: **This DTC may be caused by debris lodged in the Transmission Solenoid Switch Valve bore. If debris is found, clean the valve body and reassemble the transmission in accordance with the Service Information.**

2. With the scan tool, record the Event Data for P1776 and erase DTCs.
3. Reassemble the transmission and test drive the vehicle. Try to duplicate the original set conditions using the Event Data recorded earlier.
4. With the scan tool, check Transmission DTCs.

Did the DTC P1776 reset?

Yes

- Replace the Transmission Solenoid/Pressure Switch Assembly in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure.**

No

- Test Complete
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

9. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Test Drive the vehicle and verify if the transmission is launching in 2nd gear and/or there is no TCC engagement.
3. With the scan tool, check the EVENT DATA to help identify the conditions in which the DTC was set.
4. Check for any Service Information Tune-ups or Service Bulletins for possible causes that may apply.

Are there 2nd gear launches and/or no TCC engagement?

Yes

- Disassemble and inspect the Valve Body in accordance with the Service Information Inspect the Solenoid Switch Valve for sticking in its bore and repair or replace as necessary.
- Perform the 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**.

No

- Test Complete.

P1790-FAULT IMMEDIATELY AFTER SHIFT

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

This DTC is not stored alone. It is stored if a Gear Ratio DTC is detected immediately after shift. The existence of DTC P1790 indicates a mechanical or hydraulic (not electrical) related problem. It should be noted, however, that all mechanical problems don't necessarily result in DTC P1790. When this DTC exists, diagnosing the system should be based on the associated DTC and only mechanical causes should be considered.

- **When Monitored:**

After a Gear Ratio Error code is stored.

- **Set Condition:**

After a Gear Ratio Error DTC has already been set. The DTC is set if the fault happened within 1.3 seconds of a shift. The DTC set time will vary from 1.214 seconds to 15 seconds.

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Possible Causes

FAULT AFTER SHIFT

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. FAULT AFTER SHIFT

1. This DTC is set along with a Gear Ratio DTC. Perform the appropriate test for the Gear Ratio DTC stored.

NOTE: Check pending DTCs or 1 trip failures if there are no Active or Stored Gear Ratio DTCs.

Repair

- Refer to DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure and perform the appropriate diagnostic procedure.

P1794-SPEED SENSOR GROUND ERROR

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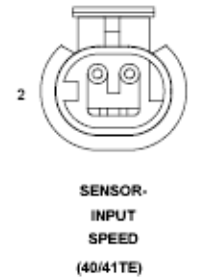
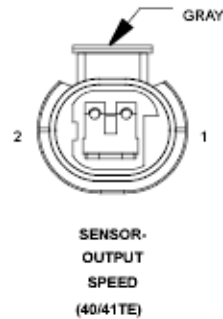
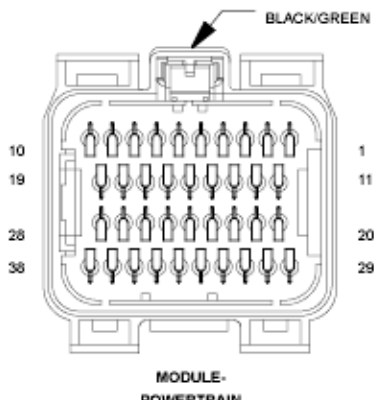
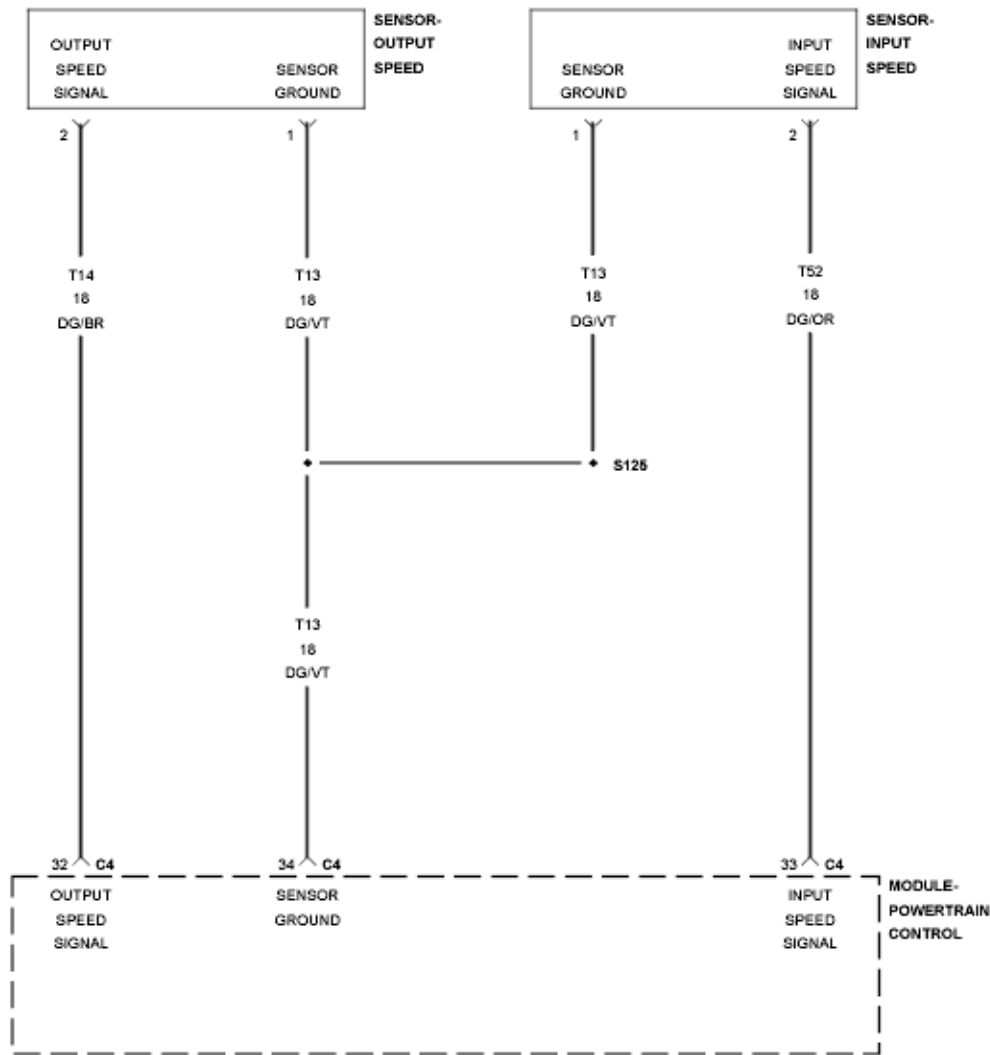


Fig. 104: Input Speed Signal Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The input and output speed sensors use a common ground circuit. The loss of this common ground results in the input signal being sensed for both. After a reset in neutral, and after observing a specific ratio, a Speed Check Fault Counter will increment. Because the speed sensors and the thermistor share the same ground circuit, this DTC may indicate a loss of the common ground. In some cases this fault will cause a Gear Ratio Error DTC to be set.

- **When Monitored:**

Every 7ms after a controller reset with transmission in neutral.

- **Set Condition:**

After a PCM reset in neutral and the input to output sensor ratios equal 2.50 to 1.0 $\pm$ 50.0 RPM.

Possible Causes
SPEED SENSOR GROUND CIRCUIT OPEN POWERTRAIN CONTROL MODULE

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. PCM AND WIRING

1. Turn the ignition off to the lock position.
2. Remove the Starter Solenoid Relay from the TIPM.

CAUTION: Removal of the Starter Solenoid Relay from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Starter Solenoid Relay must be removed from the TIPM. Failure to do so can result in possible serious or fatal injury.

3. Install Transmission Simulator, Miller tool #8333A and the Electronic Transmission Adapter kit.
4. Ignition on, engine not running.
5. With the Transmission Simulator, set the "Input/Output Speed" switch to "ON" and the rotary switch to the "3000/1250" position.

6. With the scan tool, monitor the Input and Output Speed Sensor readings.

Does the Input to Output speed read 3000/1250 RPM (± 50 RPM)?

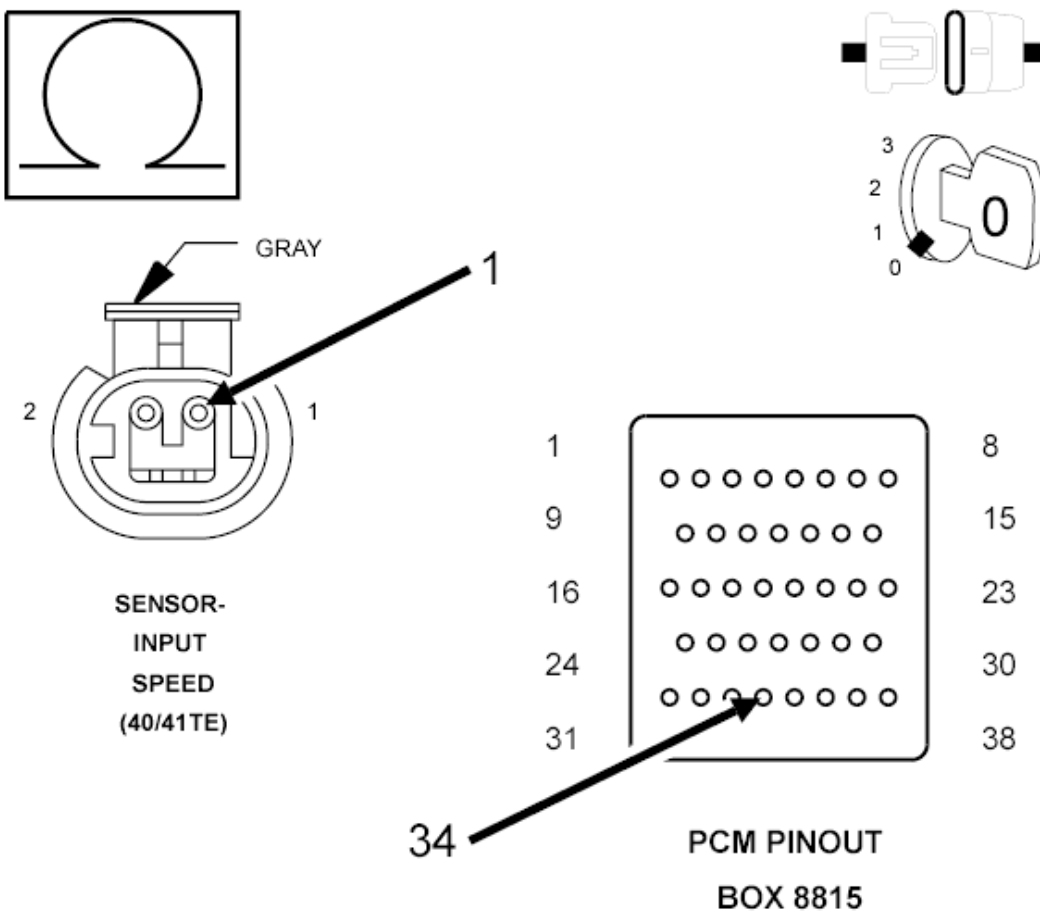
Yes

- Go to step 3

No

- Go to step 2

2. (T13) SPEED SENSOR GROUND CIRCUIT OPEN



76885

Fig. 105: Checking Sensor Ground Circuit For An Open
Courtesy of CHRYSLER LLC

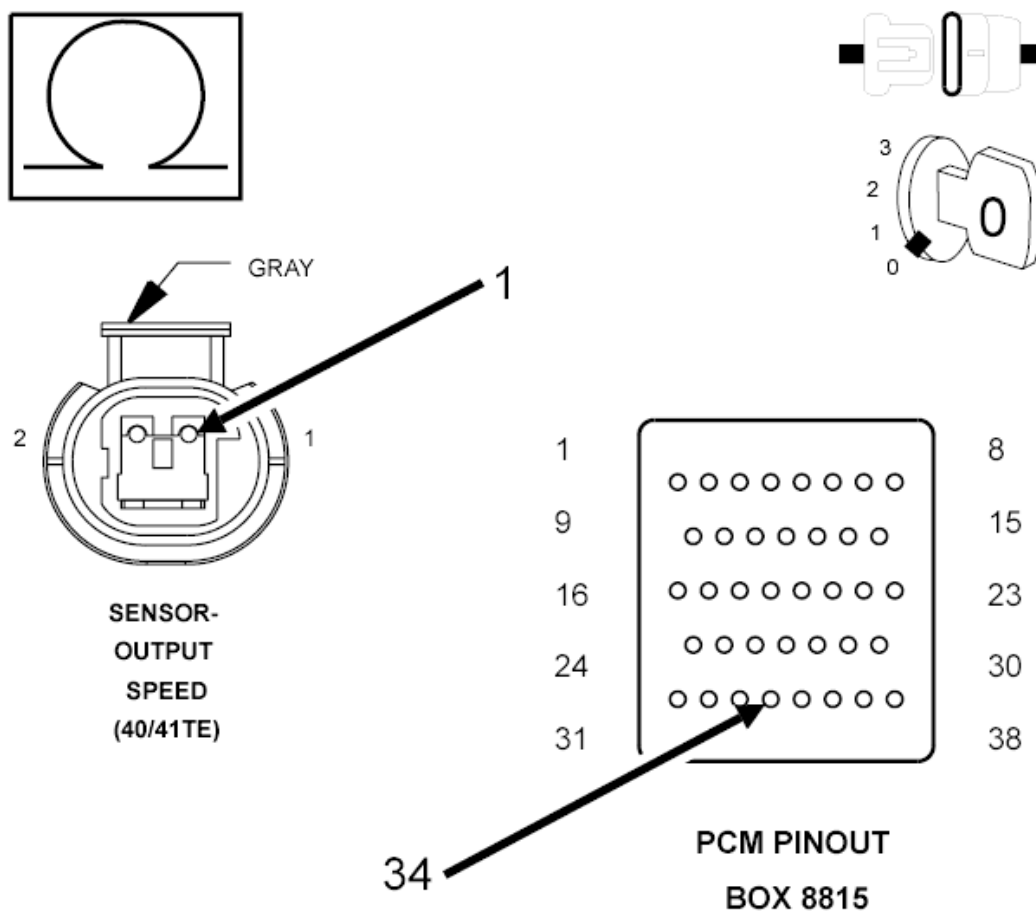


Fig. 106: Checking Sensor Ground Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C4 harness connector.
3. Disconnect the Input and Output Speed Sensor harness connectors.

NOTE: Check connectors - Clean/repair as necessary.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install PCM Pinout Box 8815 to perform diagnosis.

4. Measure the resistance of the Input and Output (T13) Speed Sensor Ground circuits between the Input and Output Speed Sensor harness connectors and the appropriate terminal of Miller tool #8815.

Is the resistance above 5.0 ohms on either circuit?

Yes

- Repair the (T13) Speed Sensor Ground circuit for an open.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. Check for any Service Information Tune-ups or Service Bulletins for any possible causes that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool, perform Quick Learn.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

3. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.

Were there any problems found?

Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Test Complete.

P1797-MANUAL SHIFT OVERHEAT

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The major cause of heat build up in the transmission is torque converter slip. With the transmission in the AutoStick® mode, the torque converter can slip during aggressive driving or heavy loading conditions such as trailer towing or driving up steep grades. In the non AutoStick® mode, internal controller logic prevents the transmission from overheating by managing the shift and EMCC schedule. In the AutoStick® mode, when the

transmission or engine temperature approaches an overheat condition, the manual shift overheat DTC sets and the AutoStick mode is temporarily suspended until the temperature returns to normal.

• **When Monitored:**

Continuously with engine running.

• **Set Condition:**

If the Engine Temperature exceeds 123° C (255° F) or the Transmission Temperature exceeds 135° C (275° F) while in AutoStick® mode. Note: Aggressive driving or driving in low for extended periods of time will set this DTC.

Possible Causes
MANUAL SHIFT OVERHEAT

Always perform the 40/41TE Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure

Diagnostic Test

1. MANUAL SHIFT OVERHEAT

1. This is an informational DTC only.
2. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
3. Check the engine and transmission cooling system for proper operation.
4. Check the Radiator Cooling Fan operation.
5. Check the Transmission Cooling operation.
6. Check the Transmission Fluid Level in accordance with the Service Information to verify that it is not overfilled.

NOTE: Aggressive driving or driving in low for extended periods of time will set this DTC.

Repair

- If the Transmission Fluid is low, repair any Transmission Fluid leak as necessary and adjust the Transmission Fluid Level in accordance with the Service Information. Refer to appropriate Service Information for the related symptoms and repair as necessary.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

U0002 CAN C BUS OFF PERFORMANCE

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The GPEC controller communicates over the CAN C Bus. The transmission controller continuously monitors Bus activity. The CAN C Bus is also used to communicate transmission MIL status to the Engine Controller. If the Engine Controller is unable to communicate with the Transmission Controller, a DTC will set and the Engine Controller will illuminate the MIL.

- **When Monitored:**

Every 7 msec with:

- 1) Engine speed greater than 500 RPM.
- 2) Battery voltage between 10 and 16 volts.

- **Set Condition:**

CAN C Bus messages are not received for 10 seconds.

Diagnose the U0002 CAN C BUS OFF PERFORMANCE as the U0001 CAN C BUS CIRCUIT. Refer to DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure and Non DTC Based Diagnostics for diagnostic procedures and other possible causes.

U0100 LOST COMMUNICATION WITH ECM/PCM

For complete wiring diagrams, refer to SYSTEM WIRING DIAGRAMS .

Theory of Operation

The GPEC controller communicates over the CAN C Bus. The transmission controller continuously monitors Bus activity. The CAN C Bus is also used to communicate transmission MIL status to the Engine Controller. If the Engine Controller is unable to communicate with the Transmission Controller, a DTC will set and the Engine Controller will illuminate the MIL.

- **When Monitored:**

Every 7 msec with:

- 1) Engine speed greater than 500 RPM.
- 2) Battery voltage between 10 and 16 volts.

- **Set Condition:**

CAN C Bus messages are not received for 10 seconds.

Refer to DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure and Non

DTC Based Diagnostics for diagnostic procedures and other possible causes.

U0121 LOST COMMUNICATION WITH ABS

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The GPEC controller communicates over the CAN C Bus. The transmission controller continuously monitors Bus activity. The CAN C Bus is also used to communicate transmission MIL status to the Engine Controller. If the Engine Controller is unable to communicate with the Transmission Controller, a DTC will set and the Engine Controller will illuminate the MIL.

- **When Monitored:**

Every 7 msec with:

- 1) Engine speed greater than 500 RPM.
- 2) Battery voltage between 10 and 16 volts.

- **Set Condition:**

CAN C Bus messages are not received for 10 seconds.

Refer to DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure and Non DTC Based Diagnostics for diagnostic procedures and other possible causes.

U0141 LOST COMMUNICATION WITH FCM

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

Theory of Operation

The GPEC controller communicates over the CAN C Bus. The transmission controller continuously monitors Bus activity. The CAN C Bus is also used to communicate transmission MIL status to the Engine Controller. If the Engine Controller is unable to communicate with the Transmission Controller, a DTC will set and the Engine Controller will illuminate the MIL.

- **When Monitored:**

Every 7 msec with:

- 1) Engine speed greater than 500 RPM.
- 2) Battery voltage between 10 and 16 volts.

- **Set Condition:**

CAN C Bus messages are not received for 10 seconds.

Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** and Non DTC Based Diagnostics for diagnostic procedures and other possible causes.

STANDARD PROCEDURE

40/41TE PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE

For complete wiring diagrams, refer to **SYSTEM WIRING DIAGRAMS** .

- Many transmission symptoms can be caused by a low fluid level. If the fluid level is low, locate and repair any leaks and fill the transmission to the proper fluid level. Refer to the appropriate Service Information for the proper repair and fluid fill procedures.
- Testing should only be performed with the battery fully charged to avoid false diagnosis.
- With the scan tool, read Engine (PCM) DTCs. If Engine DTCs are present, refer to appropriate Engine SERVICE INFORMATION article and perform to the appropriate diagnostic procedure(s) before proceeding.
- With the scan tool, read Transmission (TCM) DTCs. Record all Stored, Active, and Pending DTC information. Diagnose any Pending DTC as a matured DTC.
- With the scan tool, read and record any DTC EVENT DATA. Use this data to help identify the conditions in which the DTC was set.

NOTE: Event Data may exist even if no DTCs are stored. Clearing DTCs does NOT erase the Event Data. To erase Event Data information you must either with the scan tool perform a Quick Learn procedure, battery disconnect (if available), or manually disconnect the battery. Whatever method used can reset some learned transmission values to controller defaults. This may cause poor shift quality until those values are relearned. Most DTCs require two "bad trips" before they are stored and the MIL illuminates. The transmission may enter "limp-in" mode during the first bad trip. However, if the fault condition is not present in the next ignition cycle and a "good trip" has been completed, the one trip or "pending" DTC may be cleared. The pending DTC information will be stored in the Event Data even though the scan tool shows no DTCs present. If the customer reports a limp-in event and no DTCs are present, check the Event Data.

- With the scan tool, perform the Shift Lever Position Test. If the test does not pass, refer to **P0706-TRANSMISSION RANGE SENSOR RATIONALITY**.
- For Gear Ratio Error DTCs, use the scan tool to read and record the Clutch Volume Index (CVI) information.
- Refer to the When Monitored and Set Conditions for this DTC. DTCs can set at ignition on, at start up, driving under specific conditions. or after controller diagnostic monitors have run.

- Refer to applicable Technical Service Bulletins (TSBs) for controller software update information. Some conditions can be corrected by upgrading the Engine (PCM) or Transmission (TCM) controller software.
- Check for any Service Information Tune-ups or Service Bulletins for any possible causes that may apply.

Were there any repairs made that fixed the vehicle?

Yes

- Testing complete.
- Perform 40/41TE VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Refer to **TRANSMISSION CONTROL MODULE (TCM) - ELECTRICAL DIAGNOSTICS** and perform the appropriate diagnostic procedure(s).

40/41 TE TRANSMISSION VERIFICATION TEST

NOTE: After completion of the Transmission Verification Test, the Powertrain Verification Test must be performed. Refer to appropriate Engine SERVICE INFORMATION article.

1. Connect the scan tool to the Data Link Connector (DLC).
2. Reconnect any disconnected components.
3. With the scan tool, erase all Transmission and Engine Diagnostic Trouble Codes (DTCs).

NOTE: Erase DTC P0700 under engine to turn off the MIL light after completion of transmission repairs.

4. Perform *PRNDL FAULT CLEARING PROCEDURE after completion of repairs for **P0706-TRANSMISSION RANGE SENSOR RATIONALITY**.
5. If the Powertrain Control Module or the Transmission has been repaired or replaced, it is necessary to perform a Quick Learn procedure with the scan tool.
6. If the Torque converter has been replaced, with the scan tool perform TCC BREAK-IN.
7. If the Powertrain Control Module (PCM), Front Control Module (FCM) or Totally Integrated Control Module (TIPM) has been replaced you must reset the Pinion Factor in the Front Control Module.
8. With the scan tool, display Transmission Temperature. Start and run the engine until the Transmission Temperature is HOT, above 43° C (110° F).
9. Check the transmission fluid and adjust if necessary. Refer to the appropriate Service Information for the Fluid Fill procedure.
10. Road test the vehicle. With the scan tool, monitor the engine RPM. Make 15 to 20 1-2, 2-3, 3-4 upshifts. Perform these shifts from a standing start to 72 Km/h (45 mph) with a constant throttle opening of 20 to

25 degrees.

11. With speeds below 40 Km/h (25 mph), make 5 to 8 wide open throttle kickdowns to 1st gear. Allow at least 5 seconds each in 2nd and 3rd gear between each kickdown.
12. For a specific DTC, drive the vehicle to the symptoms When Monitored/Set condition(s) to verify the DTC is repaired.
13. If equipped with AutoStick®, upshift and downshift several times using the AutoStick® feature during the road test.

NOTE: Use the OBDII task manager to run a Good Trip in each gear, this will confirm the repair and ensure that the DTC has not re-matured.

14. Check for any DTCs during and after the road test.

NOTE: Most DTCs require two "bad trips" before they are stored and the MIL illuminates. The transmission may enter "limp-in" mode during the first bad trip. However, if the fault condition is not present in the next ignition cycle and a "good trip" has been completed, the one trip or "pending" DTC may be cleared. The pending DTC information will be stored in the Event Data even though the scan tool shows no DTCs present. If the customer reports a limp-in event and no DTCs are present, check the Event Data.

Did any DTCs set during the road test?

Yes

- Refer to **TRANSMISSION CONTROL MODULE (TCM) - ELECTRICAL DIAGNOSTICS** and perform the appropriate diagnostic procedure(s).

No

- Repair is complete.