

1998 AUTOMATIC TRANSMISSIONS

Chrysler 42RE, 44RE, 46RE & 47RE Electronic Controls

IDENTIFICATION

MODEL IDENTIFICATION

Vehicle body codes are used throughout self-diagnostic tests. See **BODY CODE DESIGNATION** table for model identification.

BODY CODE DESIGNATION

Model	Body Code
Dodge	
Dakota	AN
Durango	DN
Pickup	BR
Ram Van/Wagon	AB
Jeep	
Grand Cherokee	ZJ

INTRODUCTION

The first step in diagnosing any driveability problem is verifying the customer's complaint with a test drive under the conditions the problem reportedly occurred. Before entering self-diagnostics, perform a careful and complete visual inspection. Most transmission control problems result from mechanical breakdowns or poor electrical connections.

DESCRIPTION

Governor pressure is monitored electronically and is used to control transmission shifting. Electronic control system consists of Powertrain Control Module (PCM), governor pressure solenoid, governor pressure sensor, transmission fluid temperature sensor, OD (Overdrive) OFF switch, Throttle Position (TP) sensor and output shaft speed sensor.

NOTE: Governor pressure sensor may also be referred to as governor pressure transducer. Transmission fluid temperature sensor may also be referred to as transmission fluid temperature thermistor. Output shaft speed sensor may also be referred to as transmission shaft speed sensor or shaft speed sensor.

Transmission shifting is controlled by throttle pressure and governor pressure. Governor pressure is generated by electronic components through control of line pressure. Transmission will not upshift into 4th gear under the following conditions:

- 3rd gear upshift is not complete.
- OD OFF switch is in OFF position.
- Throttle is at 3/4 to WOT position.

- ⌚ Vehicle speed is too low for 3-4 upshift.
- ⌚ Transmission fluid temperature is less than 50°F (10°C) or greater than 250°F (121°C).
- ⌚ Battery temperature is less than 5°F (-15°C).

OPERATION

POWERTRAIN CONTROL MODULE (PCM)

The PCM controls Torque Converter Clutch (TCC) operation, overdrive clutch operation and the governor pressure solenoid. The PCM determines shift points and TCC operation based on input signals received from transmission fluid temperature sensor, output shaft speed sensor, Crankshaft Position (CKP) sensor, Vehicle Speed Sensor (VSS), Throttle Position (TP) sensor and battery temperature sensor.

There are 4 governor pressure curves programmed into the PCM. Governor pressure curves allow the PCM to adjust governor pressure for varying conditions. One governor pressure curve is used for operation when transmission fluid temperature is at or less than 30°F (1°C). The second governor pressure curve is used for operation when transmission fluid temperature is at or greater than 30°F (1°C) during normal city operation or highway driving. The third governor pressure curve is used for operation during wide open throttle (WOT). The fourth governor pressure curve is used for operation when transfer case is in low range.

The PCM controls TCC operation by operating the lock-up solenoid located on the valve body. Lock-up solenoid may be referred to as TCC solenoid. If OD switch is in the ON position, the TCC will lock-up once transmission is in 4th gear with vehicle speed greater than 45 MPH. If OD switch is in the OFF position, the TCC will lock-up once transmission is in 3rd gear with vehicle speed greater than 35 MPH at light throttle application. When OD switch is in the OFF position, the OD light on instrument panel will be illuminated.

The PCM prevents TCC operation and overdrive operation when transmission fluid temperature is less than 50°F (10°C). If transmission fluid temperature exceeds 260°F (126°C), the PCM will cause a 4-3 downshift and engage the TCC. The OD light will be illuminated when the downshift occurs. Transmission will not upshift until transmission fluid temperature decreases to approximately 230°F (110°F).

The PCM contains a self-diagnostic system used for determining an electronic component failure. The PCM self-diagnostic system will store a Diagnostic Trouble Code (DTC) in PCM memory if certain electronic problems are present.

DTCs can be retrieved using appropriate scan tool. See **SELF-DIAGNOSTIC SYSTEM**. After repairing an electronic system problem, stored DTC must be cleared from PCM memory. For PCM location, see **PCM LOCATION** table.

PCM LOCATION

Application	Location
AB Body	On Firewall, Near Wiper Motor
AN & DN Bodies	Right Front Fender, Near Air Cleaner
BR Body	Right Front Fender, Near Firewall
ZJ Body	On Firewall, Near Speed Control Servo

GOVERNOR PRESSURE SENSOR

NOTE: Governor pressure sensor may also be referred to as governor pressure transducer.

Governor pressure sensor delivers an output signal to the PCM indicating the output pressure of governor pressure solenoid. The PCM uses this signal to control governor pressure. Governor pressure solenoid is located on valve body. See **Fig. 1**.

GOVERNOR PRESSURE SOLENOID

Governor pressure solenoid generates governor pressure required for transmission upshifts and downshifts. Governor pressure solenoid is located on valve body. See **Fig. 1**. Inlet side of governor pressure solenoid is exposed to normal transmission line pressure and outlet side provides a passage to governor circuit in the valve body. Governor pressure solenoid regulates transmission line pressure to the governor circuit. Electrical supply voltage is supplied to governor pressure solenoid by PCM. The PCM controls the ground circuit to governor pressure solenoid to provide solenoid operation.

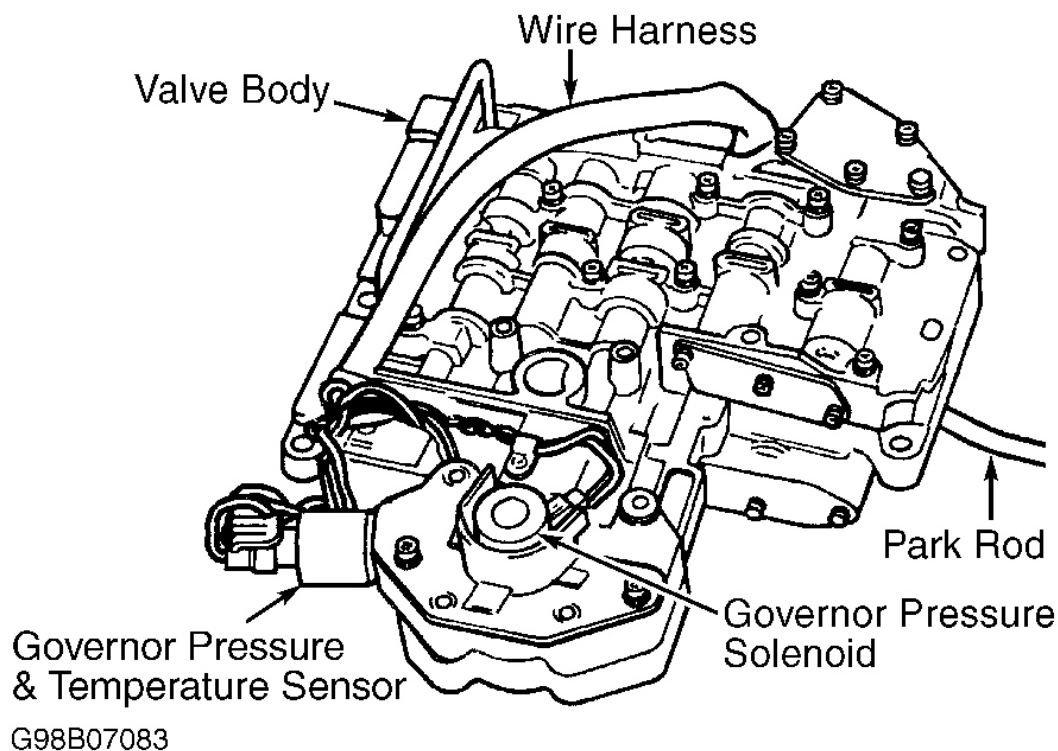


Fig. 1: Identifying Governor Pressure Solenoid, Governor Pressure Sensor & Transmission Fluid Temperature Sensor

Courtesy of CHRYSLER CORP.

OD (OVERDRIVE) OFF SWITCH

The OD (Overdrive) OFF switch is located on instrument panel, to the right of steering column. The OD OFF switch controls overdrive operation by delivering an input signal to PCM. The PCM uses this signal for controlling operation of overdrive solenoid on the valve body.

When overdrive switch is in the OFF position, OD light on instrument panel will be illuminated and transmission will not upshift into 4th gear for overdrive operation. When OD switch is in the ON position, OD light on instrument panel will not be illuminated and transmission will upshift into 4th gear for overdrive operation.

If OD switch is in the ON position, the TCC will lock-up once transmission is in 4th gear with vehicle speed greater than 45 MPH. If overdrive switch is in the OFF position, the TCC will lock-up once transmission is in 3rd gear with vehicle speed greater than 35 MPH at light throttle application.

THROTTLE POSITION (TP) SENSOR

The TP sensor delivers an input signal to the PCM to indicate throttle position. The PCM uses this input signal for controlling TCC operation, governor pressure and upshift into 4th gear for overdrive operation.

TRANSMISSION FLUID TEMPERATURE SENSOR

NOTE: **Transmission fluid temperature sensor may also be referred to as transmission fluid temperature thermistor or transmission fluid temperature sender.**

Transmission fluid temperature sensor delivers an input signal to the PCM to indicate transmission fluid temperature. The PCM uses this input signal for controlling the TCC, overdrive operation and governor pressure. Transmission fluid temperature sensor is located on the valve body and is integral with governor pressure sensor. See **Fig. 1**.

OUTPUT SHAFT SPEED SENSOR

NOTE: **Output shaft speed sensor may also be referred to as transmission shaft speed sensor or shaft speed sensor.**

Output shaft speed sensor is located on overdrive unit attached to rear of transmission. Output shaft speed sensor is mounted above the lugs on park gear in the overdrive unit. Speed sensor input signals are generated when lugs on park gear rotate past face of sensor. Input signals are delivered to PCM. The PCM uses this input signal for controlling transmission operation. The Vehicle Speed Sensor (VSS) also serves as a back-up to the output shaft speed sensor. The VSS signal is also shared with the PCM.

SYMPTOM TROUBLE SHOOTING

NOTE: **See appropriate AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article.**

PRELIMINARY INSPECTION

VISUAL INSPECTION

Visually inspect all electrical wiring, looking for chafed, stretched, cut or pinched wiring. Ensure electrical connectors fit tightly and are not corroded. Check PCM, sensors and switches for physical damage. Check engine coolant level. Check transmission fluid level and condition.

INACTIVE DTC CONDITION

This procedure applies if you have been sent here from a diagnostic test and/or have just attempted to simulate the condition that initially set the DTC. The following additional checks may assist in identifying a possible intermittent problem:

- ⌚ Visually inspect related wiring harness connectors for broken, bent, pushed out or corroded terminals.
- ⌚ Visually inspect related wiring harnesses for chafed, pierced or partially broken wires.
- ⌚ Check for Technical Service Bulletins (TSBs) relating to the problem.

SELF-DIAGNOSTIC SYSTEM

NOTE: Only transaxle-related trouble codes are listed. For engine-related DTC definitions, diagnosis see appropriate TESTS W/CODES article in ENGINE PERFORMANCE.

These DTCs pertain to engine performance and must be repaired first, as engine performance and related component signals will affect transaxle operation and diagnosis.

DIAGNOSTIC PROCEDURE

When performing vehicle diagnosis:

- ⌚ Ensure transmission fluid level is correct and fluid is neither contaminated nor aerated.
- ⌚ Ensure shift cable is properly adjusted. See appropriate TRANSMISSION SERVICING - A/T article in AUTOMATIC TRANSMISSIONS.
- ⌚ Ensure battery is fully charged.
- ⌚ Perform visual inspection, ensuring all electrical connections at transmission, PCM, TP sensor and output shaft speed sensor are clean and properly installed.
- ⌚ Retrieve DTCs. See **RETRIEVING DIAGNOSTIC TROUBLE CODES**.
- ⌚ Repair DTCs in order displayed.
- ⌚ Always perform test **VER-5A: VERIFICATION TEST** after any repair procedure is completed unless specified otherwise. See **DIAGNOSTIC TESTS**.

NOTE: Self-diagnostic tests are written specifically for Chrysler's Diagnostic Readout Box (DRB) scan tool. A generic scan tool may be used, but may not be capable of performing all necessary test functions.

TEST EQUIPMENT HOOK-UP

Generic Scan Tool & DVOM

Self-diagnostic tests are written specifically for Chrysler's Diagnostic Readout Box (DRB) scan tool. The DRB has a built-in DVOM function. A generic scan tool may be used, but may not be capable of performing all necessary test functions. If DRB test procedures require resistance or voltage to be measured using scan tool in ohmmeter or voltmeter mode, perform the following:

2. Connect DVOM ground lead to DLC connector terminal No. 4 and positive lead to terminal specified in test procedure.

DRB Scan Tool

Refer to DRB scan tool instructions to read and clear DTCs, and when performing other scan tool functions. DRB scan tool is grounded through DLC connector terminal No. 4. Only one volt/ohmmeter test lead is required to measure voltage or resistance. See **Fig. 2**.

RETRIEVING DIAGNOSTIC TROUBLE CODES

NOTE: Manufacturer recommends using Chrysler's Diagnostic Readout Box (DRB) scan tool with appropriate cartridge for system diagnosis. Other after-market scan tools may be used for system diagnosis. The following procedure is for DRB scan tool usage. Use scan tool manufacturer's instruction for operating scan tool.

NOTE: Ensure battery is fully charged before proceeding with test.

1. Ensure ignition is off. Connect DRB to Data Link Connector (DLC) located under driver's side of instrument panel. Using scan tool, display all Diagnostic Trouble Codes (DTCs). Identify DTCs once retrieved. See **IDENTIFYING DIAGNOSTIC TROUBLE CODES**.
2. If scan tool will not power up, check for loose cable connections or faulty cable. If cable connections and cable are okay, check voltage at DLC terminal No. 16. Voltage should be at least 11 volts. If voltage is not as specified, check wiring circuit and necessary fuses. See appropriate wiring diagram under **WIRING DIAGRAMS**.
3. If scan tool displays an error message, RAM TEST FAILURE, CARTRIDGE ERROR, KEY PAD TEST FAILURE, or LOW OR HIGH BATTERY, this indicates a scan tool failure.
4. If DTCs are displayed, perform appropriate test(s). See **IDENTIFYING DIAGNOSTIC TROUBLE CODES**. If no DTCs are displayed, see TROUBLE SHOOTING in appropriate AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article.

IDENTIFYING DIAGNOSTIC TROUBLE CODES

Trouble Code	Scan Tool Display	Perform Test
P0711	Trans Temp Sensor, No Temp Rise After Start	TC-164A
P0712	Trans Temp Sensor Voltage Too Low	TC-74A
P0713	Trans Temp Sensor Voltage Too High	TC-75A
P0740	Torq Conv Clu, No RPM Drop At Lockup	TC-148A
P0743	Torque Converter Clutch Solenoid/Trans Relay CKT	TC-12A
P0748	Govenor Pressure Solenoid/Trans Relay CKTS	TC-171A
P0751	O/D Switch Pressed (LO) More Than 5 Min	TC-188A
P0753	Trans 3-4 Solenoid/Trans Relay CKTS	TC-50A
P0783	3-4 Shift Sol, No RPM Drop @ 3-4 Shift	TC-165A
P1756	Gov Press Not Equal To Target@15-20 PSI	TC-141A

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P1757	Gov Pres Above 3 PSI In Gear With 0 MPH	TC-142A
P1762	Gov Pres Sen Offset Volts Too Low or High	TC-169A
P1763	Governor Pressure Sensor Volts Too HI	TC-168A
P1764	Governor Pressure Sensor Volts Too Low	TC-167A
P1765	Trans 12 Volt Supply Relay CNTRL Circuit	TC-173A
P1899	P/N Switch Stuck In Park Or In Gear	TC-114A

CLEARING DIAGNOSTIC TROUBLE CODES

After repairs have been performed, clear DTCs from PCM memory using scan tool, following scan tool manufacturer's instructions.

NOTE: If malfunction is no longer present after DTC is stored in PCM memory, the PCM will erase DTC after ignition has been cycled at least 50 times. DTC may be cleared by using scan tool. Follow scan tool manufacturer's instructions. DTCs may also be cleared by disconnecting negative battery cable for a period of time, but other vehicle control modules may also be affected.

DIAGNOSTIC TESTS

NOTE: For engine-related DTCs, see appropriate TESTS W/CODES article in ENGINE PERFORMANCE.

These DTCs pertain to engine performance and must be repaired first, as engine performance and related component signals will affect transmission operation and diagnosis.

All connector references in the following testing apply to harness connectors unless otherwise specified. For circuit, wire color and connector terminal identification, see CONNECTOR IDENTIFICATION and/or WIRING DIAGRAMS.

TC-12A: TORQUE CONVERTER CLUTCH (TCC) SOLENOID/TRANSMISSION RELAY CIRCUIT

1. Using scan tool, read DTCs. If DTC P1765 is also set, perform test **TC-173A**. If DTC P1765 is not set on AB body, go to next step. If DTC P1765 is not set on all other bodies, go to step 3).
2. If DTC SPECIFIC GOOD TRIPS counter is not displayed or displayed count is not "0", perform test TC-12F. If DTC SPECIFIC GOOD TRIPS counter is displayed and displayed count is "0", indicating DTC still exists, read and record all DTCs and go to next step.
3. Using scan tool, perform TCC SYSTEM TEST. If engine stalls on AB body, perform test TC-12F. On all other bodies, go to next step. If engine does not stall, go to step 7).
4. Condition required to set DTC P1765 is not present at this time. DTC P1765 sets if an open or shorted circuit exists in TCC solenoid circuit. Possible causes are: open or shorted wiring to TCC solenoid, open fused ignition switch output circuit, faulty connector terminals or faulty TCC solenoid. Go to next step.
5. Inspect all related wiring and connectors. Repair as necessary. If wiring is okay, go to next step.
6. Using scan tool, clear DTCs. Actuate TCC solenoid and check for DTCs. Wiggle wiring harness between TCC solenoid and PCM. Note if DTC P1765 resets. If DTC P1765 resets, repair wiring

harness as necessary. If DTC P1765 does not reset, see **INACTIVE DTC CONDITION** . Testing is complete.

7. Turn ignition off. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
8. Turn ignition on. Using scan tool, actuate transmission control relay. Measure voltage between ground and transmission control relay output circuit at transmission solenoid harness connector. If voltage does not cycle from zero to greater than 10 volts, perform test TC-12B. If voltage cycles from zero to greater than 10 volts, go to next step.
9. Turn ignition off. Disconnect White PCM harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
10. Turn ignition on. Measure voltage between ground and TCC solenoid control circuit at transmission solenoid harness connector. If voltage is greater than 10 volts, perform test **TC-12D** . If voltage is 10 volts or less, go to next step.
11. Turn ignition off. Measure resistance between ground and TCC solenoid control circuit at White PCM harness connector. If resistance is less than 5 ohms, repair TCC solenoid control circuit for short to ground. If resistance is 5 ohms or greater, go to next step.
12. Reconnect transmission solenoid harness connector. Measure resistance between ground and TCC solenoid control circuit at White PCM harness connector. If resistance is less than 5 ohms, replace transmission solenoid and harness assembly. If resistance is 5 ohms or greater, go to next step.
13. Remove transmission control relay. Inspect relay connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
14. Measure resistance between transmission control relay output circuit at transmission control relay connector and TCC solenoid control circuit at White PCM harness connector. If resistance is 26-40 ohms, replace PCM. If resistance is greater than 40 ohms, go to next step. If resistance is less than 26 ohms, perform test **TC-12C** .
15. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
16. Measure resistance of TCC solenoid control circuit between White PCM harness connector and transmission solenoid harness connector. If resistance is 5 ohms or greater, repair open TCC solenoid control circuit. If resistance is less than 5 ohms, replace transmission solenoid and harness assembly.

TC-12B: TORQUE CONVERTER CLUTCH (TCC) SOLENOID/TRANSMISSION RELAY CIRCUIT

NOTE: Perform test **TC-12A** before proceeding.

1. Remove transmission control relay. Inspect relay connector and terminals for damage. Repair connector and terminals as necessary. If connector and terminals are okay, go to next step.
2. Turn ignition off. Measure resistance between ground and transmission control relay output circuit at transmission control relay harness connector. If resistance is 5 ohms or greater, repair short to ground in transmission control relay output circuit. If resistance is less than 5 ohms, go to next step.
3. Measure resistance of transmission control relay output circuit between transmission control relay harness connector and transmission solenoid harness connector. If resistance is greater than 5 ohms, repair open transmission control relay output circuit. If resistance is 5 ohms or less, go to next step.
4. Turn ignition on. Measure voltage between ground and B+ circuit at transmission control relay harness connector. If voltage is 10 volts or less, repair open fused B+ circuit. If resistance is greater than 10 volts, replace transmission control relay.

TC-12C: TORQUE CONVERTER CLUTCH (TCC) SOLENOID/TRANSMISSION RELAY CIRCUIT**NOTE:** Perform test TC-12A before proceeding.

1. Turn ignition off. Disconnect transmission solenoid and PCM harness connectors. Inspect connectors and terminals for damage. Repair as necessary. If connectors and terminals are okay, go to next step.
2. Measure resistance between TCC solenoid control circuit and all other circuits in TCC solenoid harness connector. If resistance is less than 5 ohms between any 2 circuits, repair TCC solenoid control circuit for short to other circuit(s). Reconnect all connectors and go to step 4) . If resistance is 5 ohms or greater between all circuits, go to next step.
3. Replace transmission solenoid and harness assembly inside transmission. Reconnect all connectors. Go to next step.
4. Using scan tool, perform TCC SYSTEM TEST. If engine does not stall, replace PCM. If engine stalls, TCC system is operating properly. Testing is complete.

TC-12D: TORQUE CONVERTER CLUTCH (TCC) SOLENOID/TRANSMISSION RELAY CIRCUIT**NOTE:** Perform test TC-12A before proceeding.

1. Repair TCC solenoid control circuit for a short to voltage. Go to next step.
2. Reconnect all harness connectors. Using scan tool, perform TCC SYSTEM TEST. If engine does not stall, replace PCM. If engine stalls, TCC system is operating properly. Testing is complete.

TC-12F: TORQUE CONVERTER CLUTCH (TCC) SOLENOID/TRANSMISSION RELAY CIRCUIT (AB BODY)**NOTE:** This test applies to AB body only. Perform test TC-12A before proceeding.

1. Conditions required to set DTC P0743 are not present at this time. DTC P0743 sets if an open or shorted circuit exists in TCC solenoid circuit. Possible causes are: open or shorted wiring to TCC solenoid, open fused ignition switch output circuit, faulty connector terminals or faulty TCC solenoid. Go to next step.
2. Inspect all related wiring and connectors. Repair as necessary. If wiring is okay, go to next step.
3. Using scan tool, clear DTCs. Start engine and check for DTCs. Wiggle wiring harness between TCC solenoid and PCM. Note if DTC P0743 resets. If DTC P0743 resets, repair wiring harness as necessary. If DTC P0743 does not reset, see INACTIVE DTC CONDITION . Testing is complete.

TC-50A: TRANSMISSION 3-4 SOLENOID/TRANSMISSION RELAY CIRCUITS

1. If DTC P1765 is also set, perform test TC-173A . If DTC P1765 is not set on AB body, go to next step. On all other bodies, go to step 3) .
2. If DTC SPECIFIC GOOD TRIPS counter is not displayed or displayed count is not "0", perform test TC-50E. If DTC SPECIFIC GOOD TRIPS counter is displayed and displayed count is "0", go to next step.
3. Road test vehicle and reach a speed of 50 MPH. Depress Overdrive (OD) switch 4 times so that vehicle attempts to shift from fourth gear to third gear and back. If vehicle does not shift between third

and fourth gear, go to step 7) . If vehicle shifts between third and fourth gear on AB body, perform test **TC-50E** . On all other bodies, go to next step.

4. Conditions required to set DTC P0753 are not present at this time. DTC P0753 sets if voltage detected on 3-4 shift solenoid circuit at PCM is different than expected voltage. Possible causes are: faulty transmission relay, open or shorted wiring to 3-4 shift solenoid, open fused ignition switch output circuit, faulty connector terminals or faulty 3-4 shift solenoid. Go to next step.
5. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, go to next step.
6. Using scan tool, erase DTCs. Start engine. Using scan tool, read DTCs while wiggling wiring harness between 3-4 shift solenoid and PCM. If DTC P0753 resets, repair wiring harness as necessary. If DTC P0753 does not reset, see **INACTIVE DTC CONDITION** . Testing is complete.
7. Turn ignition off. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
8. Turn ignition on. Using scan tool, actuate transmission control relay. Measure voltage between ground and transmission relay output circuit at transmission solenoid harness connector. If voltage does not switch from zero to greater than 10 volts, perform test **TC-50B** . If voltage switches from zero to greater than 10 volts, go to next step.
9. Turn ignition off. Disconnect PCM harness connectors. Inspect connectors and terminals for damage. Repair as necessary. If connectors and terminals are okay, go to next step.
10. Turn ignition on. Measure voltage between ground and 3-4 shift solenoid control circuit at transmission solenoid harness connector. If voltage is greater than 10 volts, perform test **TC-50D** . If voltage is 10 volts or less, go to next step.
11. Turn ignition off. Measure resistance between ground and 3-4 shift solenoid control circuit at White PCM harness connector. If resistance is less than 5 ohms, repair short to ground in 3-4 shift solenoid control circuit. If resistance is 5 ohms or greater, go to next step.
12. Reconnect transmission solenoid harness connector. Measure resistance between ground and 3-4 shift solenoid control circuit at White PCM harness connector. If resistance is less than 5 ohms, repair short to ground in 3-4 shift solenoid control circuit. If resistance is 5 ohms or greater, go to next step.
13. Remove transmission control relay. Inspect transmission control relay connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
14. Using a DVOM in ohmmeter mode, connect one lead to transmission control relay output circuit at transmission control relay connector. Go to next step.
15. Connect other lead to 3-4 shift solenoid control circuit at White PCM harness connector. If resistance is 26-40 ohms, replace PCM. If resistance is less than 26 ohms, perform test TC-50C. If resistance is greater than 40 ohms, go to next step.
16. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
17. Measure resistance of 3-4 shift solenoid circuit between White PCM harness connector and transmission solenoid harness connector. If resistance is 5 ohms or greater, repair open 3-4 shift solenoid circuit. If resistance is less than 5 ohms, replace transmission solenoid and harness assembly.

TC-50B: TRANSMISSION 3-4 SOLENOID/TRANSMISSION RELAY CIRCUITS

NOTE: Perform test **TC-50A** before proceeding.

1. Turn ignition off. Remove transmission control relay. Inspect transmission control relay connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.

2. Measure resistance between ground and transmission control relay output circuit at transmission control relay connector. If resistance is less than 5 ohms, repair short to ground in transmission control relay output circuit. If resistance is 5 ohms or greater, go to next step.
3. Measure resistance of transmission control relay output circuit between transmission solenoid harness connector and transmission control relay connector. If resistance is greater than 5 ohms, repair open transmission control relay circuit. If resistance is 5 ohms or less, go to next step.
4. Turn ignition on. Measure voltage between ground and fused B+ circuit at transmission control relay connector. If voltage is 10 volts or less, repair open fused B+ circuit. If voltage is greater than 10 volts, replace transmission control relay.

TC-50C: TRANSMISSION 3-4 SOLENOID/TRANSMISSION RELAY CIRCUITS

NOTE: Perform test **TC-50A** before proceeding.

1. Turn ignition off. Disconnect transmission solenoid and PCM harness connectors. Inspect connectors and terminals for damage. Repair as necessary. If connectors and terminals are okay, go to next step.
2. Measure resistance between 3-4 shift solenoid control circuit and all other circuits in transmission solenoid harness connector. If resistance is less than 5 ohms between any 2 circuits, repair transmission control relay output circuit for a short to other circuit(s). Go to step 4). If resistance is 5 ohms or greater between all circuits, go to next step.
3. Replace transmission solenoid pack and wiring harness. Reconnect all disconnected harness connectors and go to next step.
4. Road test at 50 MPH. Depress Overdrive (OD) switch 4 times so that vehicle attempts to shift from fourth gear to third gear and back. If vehicle does not shift between third and fourth gear, replace PCM. If vehicle shifts between third and fourth gear, testing is complete.

TC-50D: TRANSMISSION 3-4 SOLENOID/TRANSMISSION RELAY CIRCUITS

NOTE: Perform test **TC-50A** before proceeding.

1. Repair 3-4 shift solenoid control circuit for short to voltage. Reconnect all disconnected harness connectors and go to next step.
2. Road test vehicle and reach a speed of 50 MPH. Depress Overdrive (OD) switch 4 times so that vehicle attempts to shift from fourth gear to third gear and back. If vehicle does not shift between third and fourth gear, replace PCM. If vehicle shifts between third and fourth gear, testing is complete.

TC-50E: TRANSMISSION 3-4 SOLENOID/TRANSMISSION RELAY CIRCUITS (AB BODY)

NOTE: This test applies to AB body only. Perform test **TC-50A** before proceeding.

1. Using scan tool, read and record FREEZE FRAME data. Erase DTCs. Attempt to duplicate conditions in FREEZE FRAME data. Using scan tool, read DTCs. If DTC P0753 resets, perform test **TC-50A**. If DTC P0753 does not reset, go to next step.
2. Conditions required to set DTC P0753 are not present at this time. DTC P0753 sets if voltage detected on 3-4 shift solenoid circuit at PCM is different than expected. Possible causes are: faulty transmission control relay, open or shorted wiring to 3-4 shift solenoid, open fused ignition switch output circuit, faulty connector terminals or faulty 3-4 shift solenoid. Go to next step.

3. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, go to next step.
4. Using scan tool, erase DTCs. Using scan tool, actuate 3-4 shift solenoid and read DTCs while wiggling wiring harness between 3-4 shift solenoid and PCM. Note if DTC P0753 resets. If DTC P0753 resets, repair wiring harness as necessary. If DTC P0753 does not reset, see **INACTIVE DTC CONDITION** . Testing is complete.

TC-74A: TRANSMISSION TEMP SENSOR VOLTAGE TOO LOW

1. On all bodies except AB body, go to next step. On AB body, use scan tool to read DTCs. If DTC SPECIFIC GOOD TRIPS counter is not displayed or displayed count is not "0", perform test **TC-74B** . If DTC SPECIFIC GOOD TRIPS counter is displayed and displayed count is "0", go to next step.
2. Turn ignition off. Disconnect PCM harness connectors. Inspect connectors and terminals for damage. Repair as necessary. If connectors and terminals are okay, go to next step.
3. Measure resistance between transmission temperature signal circuit at White PCM harness connector and ground circuit at Black PCM harness connector. If resistance is less than 550 ohms, go to step 8) . If resistance is 550-2300 ohms, go to next step. If resistance is greater than 2300 ohms, perform test **TC-75A** .
4. Measure resistance of transmission temperature signal circuit between ground and White PCM harness connector. If resistance is 5 ohms or less, go to step 8) . If resistance is greater than 5 ohms, go to next step.
5. Reconnect all harness connectors. Using scan tool, read TRANS TEMP voltage. If voltage is less than 1.5 volts, replace PCM. If voltage is 1.5 volts or greater on AB body, go to step 7) . On all other bodies, go to next step.
6. Conditions required to set DTC P0712 are not present at this time. DTC P0712 sets when transmission temperature sensor voltage at PCM is less than 1.55 volts for 2.2 seconds. Possible causes are: shorted transmission temperature sensor wiring, faulty connections, faulty transmission temperature sensor or faulty PCM. Go to next step.
7. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, see **INACTIVE DTC CONDITION** . Testing is complete.
8. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
9. Measure resistance between transmission temperature signal circuit at White PCM harness connector and sensor ground circuit at Black PCM harness connector. If resistance is less than 5 ohms, repair transmission temperature signal circuit for short to ground circuit. If resistance is 5 ohms or greater, go to next step.
10. Measure resistance between ground and transmission temperature signal circuit at White PCM harness connector. If resistance is less than 5 ohms, repair transmission temperature signal circuit for short to ground. If resistance is 5 ohms or greater, go to next step.
11. Reconnect transmission solenoid harness connector. Remove transmission oil pan. Disconnect transmission pressure/temperature sensor harness connector. Go to next step.
12. Measure resistance between transmission temperature signal circuit at White PCM harness connector and sensor ground circuit at Black PCM harness connector. If resistance is less than 5 ohms, replace transmission solenoid and harness assembly. If resistance is 5 ohms or greater, go to next step.
13. Measure resistance between ground and transmission temperature signal circuit at White PCM harness connector. If resistance is less than 5 ohms, replace transmission solenoid and harness assembly. If

resistance is 5 ohms or greater, replace transmission pressure/temperature sensor.

TC-74B: TRANSMISSION TEMP SENSOR VOLTAGE TOO LOW (AB BODY)

NOTE: This test applies to AB body only. Perform test TC-74A before proceeding.

1. Conditions required to set DTC P0712 are not present at this time. DTC P0712 sets when transmission temperature sensor voltage at PCM is less than 1.55 volts for 2.2 seconds. Possible causes are: shorted transmission temperature sensor wiring, faulty connections, faulty transmission temperature sensor or faulty PCM. Go to next step.
2. Inspect all related wiring and connectors. Repair as necessary. If wiring is okay, go to next step.
3. Using scan tool, clear DTCs. Start engine and check for DTCs. Wiggle wiring harness between transmission temperature sensor and PCM. Note if DTC P0712 resets. If DTC P0712 resets, repair wiring harness as necessary. If DTC P0712 does not reset, see INACTIVE DTC CONDITION . Testing is complete.

TC-75A: TRANSMISSION TEMP SENSOR VOLTAGE TOO HIGH

1. On all bodies except AB body, go to next step. On AB body, use scan tool to read DTCs. If DTC SPECIFIC GOOD TRIPS counter is not displayed or displayed count is not "0", perform test TC-75C. If DTC SPECIFIC GOOD TRIPS counter is displayed and displayed count is "0", go to next step.
2. Turn ignition off. Disconnect PCM harness connectors. Inspect connectors and terminals for damage. Repair as necessary. If connectors and terminals are okay, go to next step.
3. Measure voltage between ground and transmission temperature signal circuit at White PCM harness connector. If voltage is greater than one volt, go to step 8). If voltage is one volt or less, go to next step.
4. Turn ignition off. Measure resistance between transmission temperature signal circuit at White PCM harness connector and ground circuit at Black PCM harness connector. If resistance is less than 550 ohms, perform test TC-74A . If resistance is 550-2300 ohms, go to next step. If resistance is greater than 2300 ohms, perform test TC-75B.
5. Reconnect all harness connectors. Using scan tool, read TRANS TEMP voltage. If voltage is greater than 3.76 volts, replace PCM. If voltage is 3.76 volts or less on AB body, perform test TC-75C. On all other bodies, go to next step.
6. Conditions required to set DTC P0713 are not present at this time. DTC P0713 sets when transmission temperature sensor voltage at PCM is greater than 3.76 volts for 2.2 seconds. Possible causes are: open transmission temperature sensor wiring, faulty connections, faulty transmission temperature sensor or faulty PCM. Go to next step.
7. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, see INACTIVE DTC CONDITION . Testing is complete.
8. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
9. Measure voltage between ground and transmission temperature signal circuit at transmission solenoid harness connector. If voltage is greater than one volt, repair transmission temperature signal circuit for short to ground. If voltage is one volt or less, go to next step.
10. Reconnect transmission solenoid harness connector. Remove transmission oil pan. Disconnect transmission pressure/temperature sensor harness connector. Go to next step.
11. Measure voltage between ground and transmission temperature signal circuit at transmission

pressure/temperature sensor harness connector. If voltage is greater than one volt, replace transmission solenoid and harness assembly. If voltage is one volt or less, replace transmission pressure/temperature sensor.

TC-114A: PNP SWITCH STUCK IN PARK OR IN GEAR

1. Using scan tool, read DTCs. If DTC SPECIFIC GOOD TRIPS counter displays "0", go to next step. If DTC SPECIFIC GOOD TRIPS counter does not display "0", perform test **TC-114B**.
2. Using scan tool, check and record FREEZE FRAME data. Use FREEZE FRAME data to determine conditions when DTC P1899 was set. Turn ignition off. Place gear selector in Park. Ensure "caused by DTC" HEX CODE matches DTC on scan tool display. Go to next step.
3. Turn ignition off. Disconnect PCM harness connectors. Measure resistance between ground and PNP switch sense circuit at Black PCM harness connector while moving gear selector from Park to Reverse and back to Park. If resistance changes from less than 10 ohms to greater than 10 ohms, replace PCM. If resistance does not change as specified, go to next step.
4. If resistance is less than 10 ohms at all times, go to next step. If resistance is not as specified, go to step 6).
5. Disconnect PNP switch harness connector. Measure resistance between ground and PNP switch sense circuit at PNP switch harness connector. If resistance is less than 5 ohms, repair PNP switch sense circuit for a short to ground. If resistance is not as specified, replace PNP switch.
6. Disconnect PNP switch harness connector. Measure resistance of PNP switch sense circuit between Black PCM harness connector and PNP switch harness connector. If resistance is less than 5 ohms, replace PNP switch. If resistance is not as specified, repair open in PNP switch sense circuit.

TC-114B: PNP SWITCH STUCK IN PARK OR IN GEAR (AB BODY)

NOTE: This test applies to 1998 AB body only. Perform test **TC-114A** before proceeding.

1. Conditions required to set DTC P1899 are not present at this time. DTC P1899 sets if PCM detects an incorrect PNP switch state for a given mode of vehicle operation. Possible causes are: faulty connections, faulty PNP switch, mechanical transmission problem or PCM failure. Go to next step.
2. Inspect all related wiring and connectors. Repair as necessary. If wiring is okay, go to next step.
3. Using scan tool, clear DTCs. Start engine and check for DTCs. Wiggle wiring harness between PNP switch and PCM. Note if DTC P1899 resets. If DTC P1899 resets, repair wiring harness as necessary. If DTC P1899 does not reset, see **INACTIVE DTC CONDITION**. Testing is complete.

TC-141A: GOVERNOR PRESSURE NOT EQUAL TO TARGET @ 15-20 PSI

1. Using scan tool, read DTCs. On all bodies, except AB body, go to next step. On AB body, if DTC SPECIFIC GOOD TRIPS counter is not displayed or displayed count is not "0", perform test **TC-141E**. If DTC SPECIFIC GOOD TRIPS counter is displayed and displayed count is "0", indicating DTC still exists, go to next step.
2. Repair any other transmission related DTCs before proceeding. If no other transmission related DTCs exist, go to next step.
3. Start engine. Allow engine to reach normal operating temperature. Set parking brake, depress brake pedal and place gear selector in Drive. Go to next step.
4. Using scan tool, read governor pressure sensor value. If value is greater than 3 psi (.2 kg/cm²),

perform test **TC-141B** . If value is 3 psi (.2 kg/cm²) or less, go to next step.

NOTE: **Removing transmission control relay in the following step may set other DTCs. Disregard these DTCs.**

5. Place gear selector in Neutral. With engine still running, remove transmission control relay. Depress brake pedal and place gear selector in Drive. Read governor pressure sensor value. If value is 40-55 psi (2.8-3.9 kg/cm²), go to next step. If value is not as specified, perform test **TC-141C** .
6. Turn engine off. Install transmission control relay. Drive vehicle at 25-30 MPH. Using scan tool, monitor governor actual pressure and target pressure. If pressures do not stay consistently within 5 psi (.4 kg/cm²) of each other, go to step 8). If pressures stay consistently within 5 psi (.4 kg/cm²) of each other, on AB body, perform test **TC-141E** . On all other bodies, go to next step.
7. Conditions required to set DTC P1756 are not present at this time. See **INACTIVE DTC CONDITION** . Testing is complete.
8. Replace governor pressure solenoid. Drive vehicle at 25-30 MPH. Using scan tool, monitor governor actual pressure and target pressure. If pressures do not stay consistently within 5 psi (.4 kg/cm²) of each other, repair internal transmission leakage problem. If pressures stay consistently within 5 psi (.4 kg/cm²) of each other, testing is complete.

TC-141B: GOVERNOR PRESSURE NOT EQUAL TO TARGET @ 15-20 PSI

NOTE: **Perform test TC-141A before proceeding.**

1. Turn ignition off. Install a pressure gauge at transmission governor pressure test port. See TESTING in appropriate AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article. Start engine. With gear selector in Drive, read gauge pressure. If pressure is less than 5 psi (.4 kg/cm²), perform test **TC-141D** . If pressure is 5 psi (.4 kg/cm²) or greater, go to next step.
2. Turn engine off. Drain transmission fluid and remove oil pan. Inspect oil pan for burnt oil and debris. Repair transmission as necessary. See appropriate AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article. If transmission is okay, go to next step.
3. Replace governor pressure solenoid. Start engine. Read gauge pressure. If pressure is less than 5 psi (.4 kg/cm²), testing is complete. If pressure is 5 psi (.4 kg/cm²) or greater, replace valve body.

TC-141C: GOVERNOR PRESSURE NOT EQUAL TO TARGET @ 15-20 PSI

NOTE: **Perform test TC-141A before proceeding.**

1. On all bodies except ZJ body, go to next step. On ZJ body, turn ignition on, engine off. Measure voltage (backprobe) between ground and 5-volt supply circuit at transmission solenoid harness connector. If voltage is 4.5 volts or less, repair 5-volt supply circuit for low voltage. If voltage is greater than 4.5 volts, go to next step.
2. Turn ignition off. Install transmission control relay. Install a pressure gauge at governor pressure test port. See TESTING in appropriate AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article. Start engine and go to next step.
3. Remove transmission control relay. Depress brake pedal and place gear selector in Drive. Read gauge

pressure. If pressure is 40-55 psi (2.8-3.9 kg/cm²), perform test **TC-141D**. If pressure is not as specified, go to next step.

4. Turn engine off. Install transmission control relay. Drain transmission fluid and remove oil pan. Inspect pan for burnt oil and debris. Repair transmission as necessary. See appropriate AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article. If transmission is okay, go to next step.
5. Replace governor pressure solenoid. Start engine. Remove transmission control relay. Depress brake pedal and place gear selector in Drive. Read gauge pressure. If pressure is 40-55 psi (2.8-3.9 kg/cm²), testing is complete. If pressure is not as specified, replace valve body.

TC-141D: GOVERNOR PRESSURE NOT EQUAL TO TARGET @15-20 PSI

NOTE: Perform test **TC-141A** before proceeding.

1. Turn ignition off. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
2. Turn ignition on. Measure voltage between ground and 5-volt supply circuit at transmission solenoid harness connector. If voltage is 4.5 volts or less, repair open 5-volt supply circuit. If voltage is greater than 4.5 volts, replace governor pressure sensor.

TC-141E: GOVERNOR PRESSURE NOT EQUAL TO TARGET @15-20 PSI

NOTE: Perform test **TC-141A** before proceeding.

1. Conditions required to set DTC P1756 are not present at this time. DTC P1756 sets when pressure sensor output is less than 15 psi (1.1 kg/cm²) or greater than 30 psi (2.1 kg/cm²) when requested pressure is 20-25 psi (1.4-1.8 kg/cm²) for 2.2 seconds. Possible causes are: faulty or disconnected connections, faulty governor pressure sensor, faulty governor pressure solenoid or faulty PCM. Go to next step.
2. Inspect all related wiring and connectors. Repair as necessary. If wiring is okay, go to next step.
3. Using scan tool, clear DTCs. Start engine and check for DTCs. Wiggle wiring harness between governor pressure sensor and PCM. Note if DTC P1756 resets. If DTC P1756 resets, repair wiring harness as necessary. If DTC P1756 does not reset, see **INACTIVE DTC CONDITION**. Testing is complete.

TC-142A: GOVERNOR PRESSURE ABOVE 3 PSI IN GEAR WITH 0 MPH

1. Using scan tool, read DTCs. On all bodies except AB body, go to next step. On AB body, if DTC SPECIFIC GOOD TRIPS counter is not displayed or displayed count is not "0", perform test **TC-142C**. If DTC SPECIFIC GOOD TRIPS counter is displayed and displayed count is "0", indicating DTC still exists, go to next step.
2. Repair any other transmission related DTCs before proceeding. If no other transmission related DTCs exist, go to next step.
3. Start engine. Allow engine to reach normal operating temperature. Set parking brake, depress brake pedal and place gear selector in Drive. Go to next step.
4. Using scan tool, read governor pressure sensor value. If value is greater than 3 psi (.2 kg/cm²), perform test TC-142B. If value is 3 psi (.2 kg/cm²) or less, go to next step.

5. Drive vehicle at 25-30 MPH. Using scan tool, monitor governor actual pressure and target pressure. If pressures do not stay consistently within 5 psi (.4 kg/cm²) of each other, go to step 7). If pressures stay consistently within 5 psi (.4 kg/cm²) of each other on AB body, perform test **TC-142C**. On all other bodies, go to next step.
6. Conditions required to set DTC P1757 are not present at this time. See **INACTIVE DTC CONDITION**. Testing is complete.
7. Replace governor pressure solenoid. Drive vehicle at 25-30 MPH. Using scan tool, monitor governor actual pressure and target pressure. If pressures do not stay consistently within 5 psi (.4 kg/cm²) of each other, repair internal transmission leakage problem. See appropriate AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article. If pressures stay consistently within 5 psi (.4 kg/cm²) of each other, testing is complete.

TC-142B: GOVERNOR PRESSURE ABOVE 3 PSI IN GEAR WITH 0 MPH

NOTE: Perform test **TC-142A** before proceeding.

1. Turn ignition off. Install a pressure gauge at governor pressure test port. See TESTING in AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article. Start engine. With gear selector in Drive, read gauge pressure. If pressure is less than 3 psi (.2 kg/cm²), go to step 4). If pressure is 3 psi (.2 kg/cm²) or greater, go to next step.
2. Turn engine off. Drain transmission fluid and remove oil pan. Inspect oil pan for burnt oil and debris. Repair transmission as necessary. See appropriate AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article. If transmission is okay, go to next step.
3. Replace governor pressure solenoid. Start engine. Read gauge pressure. If pressure is less than 3 psi (.2kg/cm²), testing is complete. If pressure is 3 psi (.2 kg/cm²) or greater, replace valve body.
4. Turn ignition off. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
5. Turn ignition on. Measure voltage between ground and 5-volt supply circuit at transmission solenoid harness connector. If voltage is 4.5 volts or less, repair open 5-volt supply circuit. If voltage is greater than 4.5 volts, replace governor pressure sensor.

TC-142C: GOVERNOR PRESSURE ABOVE 3 PSI IN GEAR WITH 0 MPH (AB BODY)

NOTE: This test applies to AB body only. Perform test **TC-142A** before proceeding.

1. Conditions required to set DTC P1757 are not present at this time. DTC P1757 sets when pressure sensor output is greater than 3 psi (.2 kg/cm²) when requested pressure is 0 psi with governor pressure solenoid at 95 percent duty cycle for 2.65 seconds. Possible causes are: faulty or disconnected connections, faulty governor pressure sensor, faulty governor pressure solenoid (high probability if problem occurs when cold) or faulty PCM. Go to next step.
2. Using scan tool, read and record FREEZE FRAME data. Using scan tool, clear DTCs. With an assistant, road test vehicle under conditions in FREEZE FRAME data. If DTC P1757 resets, repair wiring harness as necessary. If DTC P1757 does not reset, see **INACTIVE DTC CONDITION**. Testing is complete.

TC-148A: TORQUE CONVERTER CLUTCH, NO RPM DROP AT LOCKUP

1. Using scan tool, read DTCs. On all bodies except AB body, go to next step. On AB body, if DTC SPECIFIC GOOD TRIPS counter is not displayed or displayed count is not "0", perform **TC-148D** . If DTC SPECIFIC GOOD TRIPS counter is displayed and displayed count is "0", indicating DTC still exists, go to next step.
2. If any DTC listed in **TORQUE CONVERTOR CLUTCH (TCC) TESTS** table is present, perform appropriate test(s). If no DTCs are present, go to next step.

TORQUE CONVERTOR CLUTCH (TCC) TESTS

DTC Message	Test
THROTTLE POSITION SENSOR VOLTAGE TOO LOW	(1) TC-26A
THROTTLE POSITION SENSOR VOLTAGE TOO HIGH	(1) TC-27A
PCM FAILURE EEPROM WRITE DENIED	(1) TC-49A
TORQUE CONVERTOR CLUTCH SOLENOID	TC-12A
MISFIRE	(2)
NO CRANK REFERENCE SIGNAL AT PCM	(1) TC-40A
(1) See appropriate TESTS W/CODES article in ENGINE PERFORMANCE Section.	
(2) Perform appropriate misfire DTC test. See appropriate TESTS W/CODES article in ENGINE PERFORMANCE Section.	

3. Check transmission fluid for proper level and for any debris. Fill or repair transmission as necessary. If fluid level and condition are okay, go to next step.
4. Start engine. Using scan tool, perform TCC SYSTEM TEST. If vehicle does not stall, go to step 9) . If vehicle stalls, go to next step.
5. Using scan tool, perform GOV and 3-4 SHIFT VALVE SYSTEM TEST. Select 4th gear. If vehicle stalls, perform test **TC-148B** . If vehicle does not stall, go to next step.
6. Turn engine off. Drain transmission fluid and remove oil pan. Inspect oil pan for burnt oil and debris. Repair transmission as necessary. See appropriate AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article. If transmission is okay, go to next step.
7. Conditions required to set DTC P0740 are not present at this time. DTC P0740 sets if torque converter does not lock up properly when requested. Possible causes are: faulty TCC solenoid, sticking TCC valve, sticking TCC timing valve, internal transmission leakage, faulty torque converter or PCM failure. Go to next step.
8. Inspect all related wiring and connectors. Repair as necessary. If connectors and terminals are okay, testing is complete.
9. Turn ignition off. Connect a pressure gauge to transmission cooler OUT port. Start engine. Using scan tool, perform TCC SYSTEM TEST. If pressure increases when TCC is actuated, go to next step. If pressure does not increase, repair leaks or blockage in hydraulic circuit, or repair valve body as necessary.

10. Turn engine off. Drain transmission fluid and remove oil pan. Inspect pan for burnt oil and debris. Repair transmission as necessary and replace torque converter. See appropriate AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article. If transmission is okay, replace torque converter.

TC-148B: TORQUE CONVERTER CLUTCH, NO RPM DROP AT LOCKUP

NOTE: Perform test **TC-148A** before proceeding.

Replace TCC solenoid. Using scan tool, perform GOV and 3-4 SHIFT VALVE SYSTEM TEST. Select 4th gear. If vehicle stalls, repair internal transmission problem. See AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article. Check for blocked passage(s). If vehicle does not stall, testing is complete.

TC-148C: TORQUE CONVERTER CLUTCH, NO RPM DROP AT LOCKUP

NOTE: Perform test **TC-148A** before proceeding.

1. Road test vehicle while monitoring TCC state and engine RPM with scan tool. If engine RPM drops when TCC is ON, go to step 6). If RPM does not drop, go to next step.
2. Turn engine off. Drain transmission fluid and remove oil pan. Inspect oil pan for burnt oil and debris. Repair transmission as necessary. See appropriate AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article. If transmission is okay, go to next step.
3. Replace TCC solenoid. Using scan tool, erase DTCs. Road test vehicle while monitoring throttle angle with scan tool. Go to next step.
4. Accelerate vehicle to 60 MPH, maintaining a constant 20 degree throttle angle. Repeat procedure 4 times. Turn ignition off. Repeat procedure 2 times. go to next step.
5. Turn ignition on, engine off. Using scan tool, read DTCs. If DTC P0740 resets, replace torque converter. If DTC P0740 does not reset, testing is complete.
6. Turn engine off. Drain transmission fluid and remove oil pan. Inspect oil pan for burnt oil and debris. Repair transmission as necessary. See appropriate AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article. If transmission is okay, no problem is found at this time. If vehicle is an AB body, perform test **TC-148D**. On all other bodies, testing is complete.

TC-148D: TORQUE CONVERTER CLUTCH, NO RPM DROP AT LOCKUP (AB BODY)

NOTE: This test applies to AB body only. Perform test **TC-148A** before proceeding.

1. Conditions required to set DTC P0740 are not present at this time. DTC P0740 sets if torque converter does not lock up properly when requested. Possible causes are: faulty TCC solenoid, sticking TCC valve, sticking TCC timing valve, internal transmission leakage, faulty torque converter or PCM failure. Go to next step.
2. Inspect all related wiring and connectors. Repair as necessary. If connectors and terminals are okay, go to next step.
3. Using scan tool, erase DTCs. Road test vehicle while monitoring throttle angle with scan tool. Go to next step.

4. Accelerate vehicle to 60 MPH, maintaining a constant 20 degree throttle angle. Repeat procedure 4 times. Turn ignition off. Repeat procedure 2 times. go to next step.
5. Using scan tool, read DTCs. If DTC P0740 resets, see **INACTIVE DTC CONDITION** . If DTC P0740 does not reset, testing is complete.

TC-164A: TRANSMISSION TEMPERATURE SENSOR, NO RISE AFTER START

NOTE: To test transmission temperature sensor, engine and transmission temperature must be less than 85°F (29°C). Perform test **VER-2A: VERIFICATION TEST** after any repair procedure is completed.

1. Using scan tool, read DTCs. If DTCs P0712 or P0713 are present, repair these DTCs before proceeding. If neither of these DTCs are present, go to next step.
2. Using scan tool, read and record Engine Coolant Temperature (ECT) sensor temperature, and transmission temperature sensor temperature. If transmission temperature is within 9°F (-13°C) of ECT temperature, go to step 5) . If transmission temperature is not within 9°F (-13°C) of ECT temperature, go to next step.
3. Start engine and let it idle in gear, with brake on. Monitor transmission temperature sensor. If transmission temperature does not increase steadily 15°F (-9°C) over a 10 minute period, go to step 5). If transmission temperature increases steadily 15°F (-9°C) over a 10 minute period on AB body, perform test **TC-164B** . On all other bodies, transmission temperature sensor is functioning properly at this time. Go to next step.
4. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, see **INACTIVE DTC CONDITION** . Testing is complete.
5. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, replace transmission governor pressure/temperature sensor.

TC-164B: TRANSMISSION TEMPERATURE SENSOR, NO RISE AFTER START (AB BODY)

NOTE: This test applies to AB body only. Perform test TC-164A before proceeding. Perform test **VER-2A: VERIFICATION TEST** after any repair procedure is completed.

NOTE: To test transmission temperature sensor, engine and transmission temperature must be less than 85°F (29°C).

1. Conditions required to set DTC P0711 are not present at this time. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, go to next step.
2. Using scan tool, erase DTCs. Start engine. While engine is warming up, read DTCs while wiggling wiring harness between transmission temperature sensor and PCM. If DTC P0711 resets, repair wiring harness as necessary. If DTC P0711 does not reset, see **INACTIVE DTC CONDITION** . Testing is complete.

TC-165A: 3-4 SHIFT SOLENOID, NO RPM DROP @ 3-4 SHIFT

1. Using scan tool, read DTCs. On all bodies except AB body, go to next step. On AB body, if DTC SPECIFIC GOOD TRIPS counter is not displayed or displayed count is not "0", perform test **TC-**

165B . If DTC SPECIFIC GOOD TRIPS counter is displayed and displayed count is "0", indicating DTC still exists, go to next step.

2. If any DTC listed in **3-4 SHIFT SOLENOID TESTS** table is present, perform appropriate test(s). If no DTCs are present, go to next step.

3-4 SHIFT SOLENOID TESTS

DTC Message	Test
NO CAM SIGNAL AT PCM	(1) TC-1A
P/N SWITCH STUCK IN PARK OR IN GEAR	TC-114A
TPS VOLTAGE TOO LOW	(1) TC-26A
TPS VOLTAGE TOO HIGH	(1) TC-27A
TORQUE CONVERTOR CLUTCH SOLENOID	TC-12A
TPS VOLTAGE DOES NOT AGREE WITH MAP	(1) TC-132A
TRANS 12-VOLT SUPPLY RELAY CNTRL CIRCUIT	TC-173A
3-4 SHIFT SOLENOID/TRANS RELAY CIRCUIT	TC-50A
(1) See appropriate TESTS W/CODES article in ENGINE PERFORMANCE.	

3. Check transmission fluid for proper level and for any debris. Fill or repair transmission as necessary. If fluid level and condition are okay, go to next step.
4. Connect a 0-300 psi (0-21 kg/cm²) pressure gauge to transmission Overdrive (O/D) clutch pressure test port. Connect a second 0-300 psi (0-21 kg/cm²) pressure gauge to transmission governor pressure test port. See appropriate AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article. Go to next step.
5. Ensure engine and transmission are at normal operating temperature. With an assistant, test drive vehicle. Using scan tool, select GOV and 3-4 SHIFT VALVE SYSTEM TEST. Select 4th gear while monitoring pressure gauge. Go to next step.
6. Governor pressure should rise to greater than 20 psi (1.4 kg/cm²) and O/D pressure should rise to greater than 40 psi (2.8 kg/cm²). If pressures are as specified, go to step 9). If pressures are not as specified, go to next step.
7. Leave gauges connected. Replace 3-4 shift solenoid. Start engine and allow engine and transmission to reach normal operating temperature. Go to next step.
8. Using scan tool, select GOV and 3-4 SHIFT VALVE SYSTEM TEST. Select 4th gear while monitoring pressure gauges. Governor pressure should rise to greater than 20 psi (1.4 kg/cm²) and O/D pressure should rise to greater than 40 psi (2.8 kg/cm²). If pressures are as specified, no problem is found at this time. Testing is complete. If pressures are not as specified, see AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article paying attention to seals and clutches related to O/D clutch. See appropriate AUTO TRANS OVERHAUL article.
9. Turn engine off. Drain transmission fluid and remove oil pan. Inspect oil pan for burnt oil and debris.

Repair transmission as necessary. See appropriate AUTO TRANS OVERHAUL article. If transmission is okay, no problem is found at this time. If vehicle is an AB body, perform test TC-165B. On all other bodies, testing is complete.

TC-165B: 3-4 SHIFT SOLENOID, NO RPM DROP 3-4 SHIFT (AB BODY)

NOTE: This test applies to AB body only. Perform test TC-165A before proceeding.

1. Conditions required to set DTC P0783 are not present at this time. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, go to next step.
2. Using scan tool, erase DTCs. Start engine. Using scan tool, select GOV and 3-4 SHIFT VALVE SYSTEM TEST. Select 4th gear while wiggling wiring harness between 3-4 shift solenoid and PCM. If DTC P0783 resets, repair wiring harness as necessary. If DTC P0783 does not reset, see **INACTIVE DTC CONDITION**. Testing is complete.

TEST TC-166A - LOW OUTPUT SPEED SENSOR RPM ABOVE 15 MPH

NOTE: Perform test VER-2A: VERIFICATION TEST after any repair procedure is completed.

1. Using scan tool, read DTCs. If P/N SWITCH STUCK IN PARK OR IN GEAR DTC is present, repair this DTC before proceeding. If DTC is not present, go to next step.

WARNING: Keep hands and feet clear of rotating wheels.

2. Raise and support vehicle so drive wheels are free to rotate. Start engine. Using scan tool, read Output Speed Sensor (OSS) signal. Place transmission in any forward gear. If scan tool displays 60 MPH or less, go to step 7. If scan tool displays more than 60 MPH, go to next step.
3. While monitoring OSS signal, wiggle connectors and wiring harness from OSS to Powertrain Control Module (PCM). If reading drops toward zero MPH while wiggling connectors and harness, repair connector or harness that caused drop. If reading does not change, go to next step.
4. Using scan tool, erase DTCs. Road test vehicle. Using scan tool, read DTCs. If LOW OUTPUT SPEED SENSOR DTC does not return, go to step 6. If DTC returns, go to next step.
5. Replace OSS. Using scan tool, erase DTCs. Road test vehicle. Using scan tool, read DTCs. If LOW OUTPUT SPEED SENSOR DTC does not return, go to next step. If DTC returns, replace PCM.
6. Condition required to set DTC is not present at this time. LOW OUTPUT SPEED SENSOR RPM DTC sets if no OSS signal (23 pulses per output shaft revolution) is received at PCM. Possible causes are: defective OSS, defective connections, no pulses, defective wiring, or defective PCM. Test is complete.
7. Turn ignition off. Disconnect Powertrain Control Module (PCM) connectors. Inspect connectors and terminals for damage. Repair connectors and terminals as necessary. If connectors and terminals are okay, go to next step.
8. Using an external ohmmeter, check resistance between ground and PCM White connector, OSS signal circuit (Light Green/White wire). If resistance is less than 5 ohms, repair OSS signal circuit for short to ground. If resistance is 5 ohms or more, go to next step.
9. Check resistance between ground and PCM White connector, ground circuit (Dark Green/Black wire).

If resistance is 5 ohms or less, repair ground circuit for short to ground. If resistance is more than 5 ohms, go to next step.

10. Check resistance between PCM White connector, OSS signal circuit (Light Green/White wire) and ground circuit (Dark Green/Black wire). If resistance is 300-1200 ohms, replace PCM. If resistance is not as specified, go to next step.
11. Disconnect OSS connector. Inspect connector and terminals for damage. Repair connector and terminals as necessary. If connector and terminals are okay, go to next step.
12. Check resistance across OSS connector. If resistance is not 300-1200 ohms, replace OSS. If resistance is as specified, go to next step.
13. Check resistance of OSS signal circuit (Light Green/White wire) between PCM white connector and OSS connector. If resistance is more than 5 ohms, repair open OSS signal circuit. If resistance is 5 ohms or less, repair open OSS ground circuit.

TC-167A: GOVERNOR PRESSURE SENSOR VOLTAGE TOO LOW

1. On all bodies except AB body, go to next step. On AB body, use scan tool to read DTCs. If DTC SPECIFIC GOOD TRIPS counter is not displayed or displayed count is not "0", perform test **TC-167B**. If DTC SPECIFIC GOOD TRIPS counter is displayed and displayed count is "0", indicating DTC still exists, go to next step.
2. Turn ignition off. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
3. Turn ignition on. Measure voltage between ground and 5-volt supply circuit at transmission solenoid harness connector. If voltage is 4.5-5.5 volts, go to next step. If voltage is not as specified, repair open 5-volt supply circuit.
4. Reconnect transmission solenoid harness connector. Using scan tool, read governor pressure sensor voltage. If voltage is greater than 4.65 volts, perform test **TC-168A**. If voltage is less than 0.12 volt, go to step 7). If voltage is not 0.12-0.80 volt, perform test **TC-168B**. If voltage is not as specified, go to next step.
5. On AB body, go to step 7). On all other bodies, wiggle wiring harness between PCM and governor pressure sensor while monitoring GOV PRESSURE voltage on scan tool. If voltage changes while wiggling wiring harness, repair wiring harness as necessary. If voltage does not change, go next step.
6. Conditions required to set DTC P1764 are not present at this time. DTC P1764 sets if governor pressure sensor input is less than 0.1 volt for 8.36 seconds. Possible causes are: PCM internally shorted or open, incorrectly wired, dirty or corroded connectors or open or shorted wiring. See **INACTIVE DTC CONDITION**. Testing is complete.
7. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
8. Turn ignition off. Disconnect PCM harness connectors. Inspect connectors and terminals for damage. Repair as necessary. If connectors and terminals are okay, go to next step.
9. Measure resistance between sensor ground circuit at Black PCM harness connector and governor pressure sensor signal circuit at White PCM harness connector. If resistance is less than 5 ohms, repair governor pressure sensor signal circuit for short to ground circuit. If resistance is 5 ohms or greater, go to next step.
10. Measure resistance between ground and governor pressure sensor signal circuit at White PCM harness connector. If resistance is less than 5 ohms, repair governor pressure sensor signal circuit for short to ground. If resistance is 5 ohms or greater, go to next step.
11. Drain transmission fluid and remove oil pan. Disconnect governor pressure sensor harness connector.

Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.

12. Reconnect transmission solenoid harness connector. Measure resistance between ground circuit and governor pressure sensor signal circuit at governor pressure sensor harness connector. If resistance is less than 5 ohms, replace transmission solenoid and harness assembly. If resistance is 5 ohms or greater, go to next step.
13. Measure resistance between ground and governor pressure sensor signal circuit at governor pressure sensor harness connector. If resistance is less than 5 ohms, replace transmission solenoid and harness assembly. If resistance is 5 ohms or greater, go to next step.
14. Reconnect all harness connectors except governor pressure sensor harness connector. Turn ignition on. Using scan tool, read governor pressure sensor voltage. If voltage is 4.8 volts or less, replace PCM. If voltage is greater than 4.8 volts, replace governor pressure sensor.

TC-167B: GOVERNOR PRESSURE SENSOR VOLTAGE TOO LOW (AB BODY)

NOTE: This test applies to AB body only. Perform test **TC-167A** before proceeding.

1. Conditions required to set DTC P1764 are not present at this time. DTC P1764 sets if governor pressure sensor input is less than 0.1 volt for 8.5 seconds. Possible causes are: PCM internally shorted or open, incorrectly wired, dirty or corroded connectors or open or shorted wiring. Go to next step.
2. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, go to next step.
3. Using scan tool, erase DTCs. Using scan tool, read DTCs while wiggling wiring harness between governor pressure sensor and PCM. If DTC P1764 resets, repair wiring harness as necessary. If DTC P1764 does not reset, see **INACTIVE DTC CONDITION**. Testing is complete.

TC-168A: GOVERNOR PRESSURE SENSOR VOLTAGE TOO HIGH

1. On all bodies except AB body, go to next step. On AB body, use scan tool to read DTCs. If DTC SPECIFIC GOOD TRIPS counter is not displayed or displayed count is not "0", perform test TC-168C. If DTC SPECIFIC GOOD TRIPS counter is displayed and displayed count is "0", indicating DTC still exists, go to next step.
2. Turn ignition off. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
3. Turn ignition on. Measure voltage between ground and 5-volt supply circuit at transmission solenoid harness connector. If voltage is 4.5-5.5 volts, go to next step. If voltage is not as specified, repair open 5-volt supply circuit.
4. Reconnect transmission solenoid harness connector. Using scan tool, read governor pressure sensor voltage. If voltage is greater than 4.65 volts, go to step 7). If voltage is less than 0.12 volt, perform test **TC-167A**. If voltage is not 0.12-0.80 volts, perform test TC-168B. If voltage is 0.12-4.65 volts on AB body, perform test **TC-168C**. On all other bodies, go to next step.
5. Wiggle wiring harness between PCM and governor pressure sensor while monitoring GOV PRESSURE voltage on scan tool. If voltage changes while wiggling wiring harness, repair wiring harness as necessary. If voltage does not change, go next step.
6. Conditions required to set DTC P1763 are not present at this time. DTC P1763 sets if governor pressure sensor input is greater than 4.89 volts for 8.36 seconds. Possible causes are: PCM internally shorted or open, incorrectly wired, dirty or corroded connectors or open or shorted wiring. See **INACTIVE DTC CONDITION**. Testing is complete.

7. On AB body, read and record FREEZE FRAME data. On all bodies, turn ignition off. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
8. Turn ignition off. Disconnect PCM harness connectors. Inspect connectors and terminals for damage. Repair as necessary. If connectors and terminals are okay, go to next step.
9. Measure resistance of governor pressure sensor signal circuit between transmission solenoid harness connector and White PCM harness connector. If resistance is greater than 5 ohms, repair open governor pressure sensor signal circuit. If resistance is 5 ohms or less, go to next step.
10. Measure resistance of sensor ground circuit between Black PCM harness connector and transmission solenoid harness connector. If resistance is greater than 5 ohms, repair open ground circuit. If resistance is 5 ohms or less, go to next step.
11. Connect a fused jumper wire between fused B+ circuit and transmission control relay output circuit at transmission relay connector. Go to next step.
12. Turn ignition on. Measure voltage between ground and governor pressure signal circuit at White PCM harness connector. If voltage is greater than 10 volts, repair governor pressure signal circuit for short to voltage. If voltage is 10 volts or less, go to next step.
13. Turn ignition off. Drain transmission fluid and remove oil pan. Disconnect governor pressure sensor harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
14. Reconnect transmission solenoid harness connector. Turn ignition on. Measure voltage between ground and governor pressure signal circuit at governor pressure sensor harness connector. If voltage is greater than one volt, replace transmission solenoid and harness assembly. If voltage is one volt or less, go to next step.
15. Turn ignition off. Measure resistance of governor pressure sensor signal circuit between White PCM harness connector and governor pressure sensor harness connector. If resistance is greater than 5 ohms, replace transmission solenoid and harness assembly. If resistance is 5 ohms or less, go to next step.
16. Measure resistance of sensor ground circuit between Black PCM harness connector and governor pressure sensor harness connector. If resistance is greater than 5 ohms, replace transmission solenoid and harness assembly. If resistance is 5 ohms or less, go to next step.
17. Reconnect all harness connectors except governor pressure sensor harness connector. Carefully connect a fused jumper wire between ground circuit and governor pressure signal circuit at governor pressure sensor harness connector. Go to next step.
18. Turn ignition on. Using scan tool, read governor pressure sensor voltage. If voltage is one volt or less, replace governor pressure sensor. If resistance is greater than one volt, replace PCM.

TC-168B: GOVERNOR PRESSURE SENSOR VOLTAGE TOO HIGH

NOTE: Perform test **TC-168A** before proceeding.

1. Turn ignition off. Disconnect White PCM harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
2. Start engine. Using scan tool, read governor pressure sensor voltage. If voltage is 4.65 volts or less, replace PCM. If voltage is greater than 4.65 volts, go to next step.
3. Turn ignition off. Disconnect remaining PCM harness connectors. Inspect connectors and terminals for damage. Repair as necessary. If connectors and terminals are okay, go to next step.
4. Disconnect transmission solenoid harness connector. Measure resistance of governor pressure sensor

signal circuit between transmission solenoid harness connector and White PCM harness connector. If resistance is greater than 5 ohms, repair open governor pressure sensor signal circuit. If resistance is 5 ohms or less, go to next step.

5. Measure resistance of ground circuit between transmission solenoid harness connector and Black PCM harness connector. If resistance is greater than 5 ohms, repair open ground circuit. If resistance is 5 ohms or less, go to next step.
6. Turn ignition on. Measure voltage between ground and governor pressure sensor signal circuit at White PCM harness connector. If voltage is greater than one volt, repair governor pressure sensor signal circuit for short to voltage. If voltage is one volt or less, go to next step.
7. Turn ignition off. Drain transmission fluid and remove oil pan. Disconnect governor pressure sensor harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
8. Reconnect transmission solenoid harness connector. Turn ignition on. Measure voltage between ground and governor pressure sensor signal circuit at governor pressure sensor harness connector. If voltage is greater than one volt, replace transmission solenoid and harness assembly. If voltage is one volt or less, go to next step.
9. Turn ignition off. Measure resistance of governor pressure sensor signal circuit between White PCM harness connector and governor pressure sensor harness connector. If resistance is greater than 5 ohms, replace transmission solenoid and harness assembly. If resistance is 5 ohms or less, go to next step.
10. Measure resistance of sensor ground circuit between Black PCM harness connector and governor pressure sensor harness connector. If resistance is greater than 5 ohms, replace transmission solenoid and harness assembly. If resistance is 5 ohms or less, replace governor pressure sensor.

TC-168C: GOVERNOR PRESSURE SENSOR VOLTAGE TOO HIGH (AB BODY)

NOTE: This test applies to AB body only. Perform test TC-168A before proceeding.

1. Conditions required to set DTC P1763 are not present at this time. DTC P1763 sets if governor pressure sensor input is greater than 4.89 volts for 8.5 seconds. Possible causes are: faulty PCM, faulty governor pressure sensor, dirty or corroded connectors or open or shorted wiring. Go to next step.
2. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, go to next step.
3. Using scan tool, erase DTCs. Using scan tool, read DTCs while wiggling wiring harness between governor pressure sensor and PCM. If DTC P1763 resets, repair wiring harness as necessary. If DTC P1763 does not reset, see **INACTIVE DTC CONDITION**. Testing is complete.

TC-169A: GOVERNOR PRESSURE SENSOR OFFSET VOLTAGE TOO LOW OR TOO HIGH

1. On all bodies except AB body, go to next step. On AB body, use scan tool to read DTCs. If DTC SPECIFIC GOOD TRIPS counter is not displayed or displayed count is not "0", perform test TC-169B. If DTC SPECIFIC GOOD TRIPS counter is displayed and displayed count is "0", indicating DTC still exists, go to next step.
2. Start engine and allow it to reach normal temperature. Check transmission fluid level and condition. Correct transmission fluid level or condition as necessary. If transmission fluid level and condition are okay, go to next step.
3. Check Park/Neutral Position (PNP) switch operation. Repair PNP switch as necessary. If PNP switch

operation is okay, go to next step.

4. Place gear selector in Neutral. Using scan tool, read GOV PRESSURE voltage. If voltage is not .30-.76 volt, go to step 7). If voltage is as specified on AB body, perform test **TC-169B** . On all other bodies, go to next step.
5. While monitoring GOV PRESSURE sensor voltage, wiggle connectors and wiring harness between governor pressure sensor and PCM. If voltage changes while wiggling connectors and harness, repair connector or harness as necessary. If voltage does not change, go to next step.
6. Conditions required to set DTC P1762 are not present at this time. DTC P1762 sets if governor pressure sensor input is less than or greater than a predetermined PNP switch calibration for 1.3 seconds under predetermined conditions. Possible causes are: faulty governor pressure sensor, shorted or open 5-volt supply circuit or faulty PCM. Testing is complete.
7. On AB body, read and record FREEZE FRAME data. On all bodies, turn ignition off. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
8. Turn ignition on. Measure voltage between ground and 5-volt supply circuit at transmission solenoid harness connector. If voltage is less than 4.5 volts, repair open 5-volt supply circuit. If voltage is 4.5 volts or greater, go to next step.
9. Turn ignition off. Disconnect PCM harness connectors. Inspect connectors and terminals for damage. Repair as necessary. If connectors and terminals are okay, go to next step.
10. Measure resistance of ground circuit between transmission solenoid harness connector and Black PCM harness connector. If resistance is 5 ohms or greater, repair open ground circuit. If resistance is less than 5 ohms, go to next step.
11. Reconnect all harness connectors. Start engine. While still monitoring GOV PRESSURE sensor voltage, wiggle connectors and wiring harness between governor pressure sensor and PCM. If voltage changes while wiggling connectors and harness, repair connector or harness as necessary. If voltage does not change, go to next step.
12. On AB body, use scan tool to read and record FREEZE FRAME data. On all bodies, use scan tool to erase DTCs. Start engine and allow it to idle in Neutral or Park for 3 minutes. Read DTCs. If DTC P1762 does not reset on AB body, perform test TC-169B. On all other bodies, return to step 6) . If DTC P1762 resets, go to next step.
13. Drain transmission fluid and remove oil pan. Replace governor pressure sensor. Inspect oil pan for burnt oil and debris. Repair transmission as necessary. See appropriate AUTO TRANS OVERHAUL - 42RE & 44RE article or AUTO TRANS OVERHAUL - 46RE & 47RE article. If transmission is okay, no problem is found at this time. Testing is complete.

TC-169B: GOVERNOR PRESSURE SENSOR OFFSET VOLTAGE TOO LOW OR TOO HIGH (AB BODY)

NOTE: This test applies to AB body only. Perform test **TC-169A** before proceeding.

1. Conditions required to set DTC P1762 are not present at this time. DTC P1762 sets if governor pressure sensor input is out of range in Park or Neutral for 1.3 seconds. Possible causes are: PCM internally shorted or open, incorrectly wired, dirty or corroded connectors or open or shorted wiring. Go to next step.
2. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, go to next step.
3. Using scan tool, erase DTCs. Using scan tool, read DTCs while wiggling wiring harness between governor pressure sensor and PCM. If DTC P1762 resets, repair wiring harness as necessary. If DTC

P1762 does not reset, see **INACTIVE DTC CONDITION** . Testing is complete.

TC-171A: GOVERNOR PRESSURE SOLENOID/TRANSMISSION RELAY CIRCUITS

1. Using scan tool, read DTCs. On all bodies except AB body, go to next step. If DTC SPECIFIC GOOD TRIPS counter is not displayed or displayed count is not "0", perform test TC-171E. If DTC SPECIFIC GOOD TRIPS counter is displayed and displayed count is "0", indicating DTC still exists, go to next step.
2. If DTC P1765 is also set, perform test TC-173A. If DTC P1765 is not set, go to next step.
3. Using scan tool, perform GOV and 3-4 SHIFT VALVE SYSTEM TEST. Select 1st gear and read governor pressure voltage. If voltage is one volt or greater, go to step 7). If voltage is less than one volt on AB body, perform test TC-171E. On all other bodies, go to next step.
4. Conditions required to set DTC P0748 are not present at this time. DTC P0748 sets if current state of solenoid output is different from expected output. Possible causes are: faulty transmission control relay, incorrectly wired connector, open or shorted wiring, dirty or corroded connectors, faulty connector terminals or faulty PCM. Go to next step.
5. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, go to next step.
6. Using scan tool, erase DTCs. Start engine. Using scan tool, read DTCs while wiggling wiring harness between governor pressure solenoid and PCM. Note if DTC P0748 resets. If DTC P0748 resets, repair wiring harness as necessary. If DTC P0748 does not reset, see **INACTIVE DTC CONDITION** . Testing is complete.
7. On AB body, use scan tool to read and record FREEZE FRAME data to determine conditions present when DTC P0748 set. On all bodies, turn ignition off. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
8. Turn ignition on. Using scan tool, actuate transmission control relay. Measure voltage between ground and transmission relay output circuit at transmission solenoid harness connector. If voltage does not switch from zero to greater than 10 volts, perform test TC-171B. If voltage switches from zero to greater than 10 volts, go to next step.
9. Turn ignition off. Disconnect PCM harness connectors. Inspect connectors and terminals for damage. Repair as necessary. If connectors and terminals are okay, go to next step.
10. Turn ignition on. Measure voltage between ground and governor pressure solenoid control circuit at transmission solenoid harness connector. If voltage is greater than 10 volts, perform test TC-171D. If voltage is 10 volts or less, go to next step.
11. Turn ignition off. Reconnect transmission solenoid harness connector. Measure resistance between ground and governor pressure solenoid control circuit at White PCM harness connector. If resistance is 5 ohms or less, repair short to ground in governor pressure solenoid control circuit. If resistance is greater than 5 ohms, go to next step.
12. Remove transmission control relay. Inspect transmission control relay connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
13. Using a DVOM, connect one lead to transmission control relay output circuit at transmission control relay connector. Go to next step.
14. Connect other lead to governor pressure solenoid control circuit at White PCM harness connector. If resistance is 2.5-5.0 ohms, replace PCM. If resistance is 5 ohms or less, perform test **TC-171C** . If resistance is greater than 5 ohms, go to next step.
15. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage.

Repair as necessary. If connector and terminals are okay, go to next step.

16. Measure resistance of governor pressure solenoid control circuit between White PCM harness connector and transmission solenoid harness connector. If resistance is greater than 5 ohms, repair open governor pressure solenoid control. If resistance is 5 ohms or less, go to next step.
17. Drain transmission fluid and remove oil pan. Disconnect governor pressure solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
18. Measure resistance across governor pressure solenoid terminals. If resistance is 5 ohms or less, replace transmission solenoid and harness assembly. If resistance is greater than 5 ohms, replace governor pressure solenoid.

TC-171B: GOVERNOR PRESSURE SOLENOID/TRANSMISSION RELAY CIRCUITS

NOTE: Perform test TC-171A before proceeding.

1. Turn ignition off. Remove transmission control relay. Inspect transmission control relay connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
2. Turn ignition off. Measure resistance between ground and transmission control relay output circuit at transmission control relay connector. If resistance is less than 5 ohms, repair short to ground in transmission control relay output circuit. If resistance is 5 ohms or greater, go to next step.
3. Measure resistance of transmission control relay output circuit between transmission solenoid harness connector and transmission relay connector. If resistance is greater than 5 ohms, repair open transmission control relay circuit. If resistance is 5 ohms or less, go to next step.
4. Turn ignition on. Measure voltage between ground and fused B+ circuit at transmission control relay connector. If voltage is 10 volts or less, repair open fused B+ circuit. If voltage is greater than 10 volts, replace transmission control relay.

TC-171C: GOVERNOR PRESSURE SOLENOID/TRANSMISSION RELAY CIRCUITS

NOTE: Perform test TC-171A before proceeding.

1. Turn ignition off. Disconnect transmission solenoid harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
2. Measure resistance between governor pressure solenoid control circuit and all other circuits at transmission solenoid harness connector. If resistance is less than 2.5 ohms between any 2 circuits, repair governor pressure solenoid control circuit for a short to other circuit(s) and go to step 4) . If resistance is 2.5 ohms or greater between all circuits, go to next step.
3. Drain transmission fluid and remove oil pan. Disconnect governor pressure solenoid harness connector. Measure resistance of governor pressure solenoid. If resistance is less than 2.5 ohms, replace governor pressure solenoid and go to next step. If resistance is 2.5 ohms or greater, replace transmission solenoid and harness assembly and go to next step.
4. Using scan tool, perform GOV and 3-4 SHIFT VALVE SYSTEM TEST. Select 1st gear and read governor pressure voltage. If voltage is one volt or greater, replace PCM. If voltage is less than one volt, testing is complete.

TC-171D: GOVERNOR PRESSURE SOLENOID/TRANSMISSION RELAY CIRCUITS

NOTE: Perform test **TC-171A** before proceeding.

1. Repair governor pressure solenoid control circuit for short to voltage. Reconnect all disconnected harness connectors and go to next step.
2. Using scan tool, perform GOV and 3-4 SHIFT VALVE SYSTEM TEST. Select 1st gear and read governor pressure voltage. If voltage is one volt or greater, replace PCM. If voltage is less than one volt, testing is complete.

TC-171E: GOVERNOR PRESSURE SOLENOID/TRANSMISSION RELAY CIRCUITS (AB BODY)

NOTE: This test applies to AB body only. Perform test **TC-171A** before proceeding.

1. Conditions required to set DTC P0748 are not present at this time. DTC P0748 sets if current state of solenoid output is different from expected output. Possible causes are: faulty transmission control relay, incorrectly wired connector, open or shorted wiring, dirty or corroded connectors, faulty connector terminals or faulty PCM. Go to next step.
2. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, go to next step.
3. Using scan tool, erase DTCs. Using scan tool, read DTCs while wiggling wiring harness between governor pressure sensor and PCM. If DTC P0748 resets, repair wiring harness as necessary. If DTC P0748 does not reset, see **INACTIVE DTC CONDITION** . Testing is complete.

TC-173A: TRANSMISSION 12-VOLT SUPPLY RELAY CONTROL CIRCUIT

1. Using scan tool, read DTCs. On all bodies except AB body, go to next step. If DTC SPECIFIC GOOD TRIPS counter is not displayed or displayed count is not "0", perform test **TC-173B** . If DTC SPECIFIC GOOD TRIPS counter is displayed and displayed count is "0", indicating DTC still exists, go to next step.
2. Using scan tool, actuate transmission control relay. If transmission control relay does not click, go to step 6). If transmission control relay clicks, on AB body, perform test **TC-173B** . On all other bodies, go to next step.
3. Conditions required to set DTC P1765 are not present at this time. DTC P1765 sets if transmission control relay is not in a state requested by PCM for greater than 3 seconds. Possible causes are: faulty relay, open or shorted control circuit, faulty PCM or faulty connector terminals. Go to next step.
4. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, go to next step.
5. Wiggle wiring harness between transmission control relay and PCM. Ensure scan tool is still actuating transmission control relay. If transmission control relay stops clicking, repair wiring harness as necessary. If transmission control relay continues clicking, see **INACTIVE DTC CONDITION** . Testing is complete.
6. Remove transmission control relay. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
7. Turn ignition on. Measure voltage between ground and generator source circuit at transmission control relay harness connector. If voltage is 10 volts or less, repair open generator source circuit. If voltage is greater than 10 volts, go to next step.
8. Measure resistance between transmission control relay terminals No. 85 and 86. If resistance is 100 ohms or greater, replace transmission control relay. If resistance is less than 100 ohms, go to next

step.

9. Turn ignition off. Disconnect White PCM harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
10. Measure resistance between ground and transmission relay control circuit at White PCM harness connector. If resistance is less than 5 ohms, repair short to ground in transmission relay control circuit. If resistance is 5 ohms or greater, go to next step.
11. Measure resistance of transmission relay control circuit between transmission control relay connector and White PCM harness connector. If resistance is 5 ohms or greater, repair open transmission relay control circuit. If resistance is less than 5 ohms, replace PCM.

TC-173B: TRANSMISSION 12-VOLT SUPPLY RELAY CONTROL CIRCUIT (AB BODY)

NOTE: This test applies to AB body only. Perform test TC-173A before proceeding.

1. Conditions required to set DTC P1765 are not present at this time. DTC P1765 sets if transmission control relay is not in a state requested by PCM for greater than 3 seconds. Possible causes are: faulty relay, open or shorted control circuit, faulty PCM or faulty connector terminals. Go to next step.
2. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, go to next step.
3. Using scan tool, erase DTCs. Using scan tool, read DTCs while wiggling wiring harness between governor pressure sensor and PCM. If DTC P1765 resets, repair wiring harness as necessary. If DTC P1765 does not reset, see INACTIVE DTC CONDITION. Testing is complete.

TC-188A: O/D SWITCH PRESSED (LO) MORE THAN 5 MINUTES

1. Turn ignition off. Disconnect PCM harness connectors. Inspect connectors and terminals for damage. Repair as necessary. If connectors and terminals are okay, go to next step.
2. Measure resistance between ground and Overdrive (O/D) off switch sense circuit at Gray PCM harness connector. If resistance is less than 5 ohms, go to step 5). If resistance is 5 ohms or greater, on AB body, perform test TC-188B. On all other bodies, go to next step.
3. Conditions required to set DTC P0751 are not present at this time. DTC P0751 sets if PCM senses O/D off switch input is held low for 5 minutes or from time of closure or ignition on. Possible causes are: faulty O/D switch, shorted wire or faulty PCM.
4. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, see INACTIVE DTC CONDITION. Testing is complete.
5. Disconnect O/D switch harness connector. Inspect connector and terminals for damage. Repair as necessary. If connector and terminals are okay, go to next step.
6. Measure resistance between ground and O/D off switch sense circuit at O/D switch harness connector. If resistance is less than 5 ohms, repair short to ground in O/D switch sense circuit. If resistance is 5 ohms or greater, replace O/D off switch.

TC-188B: O/D SWITCH PRESSED (LO) MORE THAN 5 MINUTES (AB BODY)

NOTE: This test applies to AB body only. Perform test TC-188A before proceeding.

1. Conditions required to set DTC P0751 are not present at this time. DTC P0751 sets if PCM senses O/D off switch input is held low for 5 minutes or from time of closure or ignition on. Possible causes are: faulty O/D switch, shorted wire or faulty PCM.

2. Inspect all related wiring and connectors. Repair as necessary. If wiring and connectors are okay, see **INACTIVE DTC CONDITION** . Testing is complete.

VER-2A: VERIFICATION TEST

NOTE: If PCM was replaced, the correct vehicle mileage and Vehicle Identification Number (VIN) must be programmed into the PCM to prevent Diagnostic Trouble Codes (DTCs) from being set in the Anti-Lock Brake System (ABS) module and Supplemental Restraint System (SRS) module. To program PCM and clear DTCs from ABS and SRS modules, proceed to appropriate procedure listed below. On models equipped with a Smart Key Immobilizer Module (SKIM), if replacing Powertrain Control Module (PCM), the secret key data must also be updated to enable engine starting. To update secret key data, proceed to appropriate procedure listed below.

Procedure For Programming PCM & Clearing DTCs From ABS & SRS Modules

Connect scan tool to Data Link Connector (DLC). Using scan tool, enter correct VIN and mileage into PCM. Using scan tool manufacturer's instructions, clear DTCs from ABS and SRS modules. Go to **FINAL PROCEDURE** .

Procedure For Updating Secret Key Data

Connect scan tool to Data Link Connector (DLC). Go to ENGINE and then MISC menus on scan tool. Place the SKIM in SECURED ACCESS MODE by using the appropriate Personal Identification Number (PIN) for this vehicle. PIN may be obtained from the owner, vehicle's invoice, or from the manufacturer. Select UPDATE THE SECRET KEY DATA. The data will be transferred from Smart Key Immobilizer Module (SKIM) to the PCM. Go to FINAL PROCEDURE.

Final Procedure

1. Inspect vehicle to ensure all engine components are connected. Reassemble and reconnect components as necessary. Go to next step.
2. If any DTCs have not been diagnosed, go to appropriate test and finish diagnosing remaining DTCs as necessary. If all DTCs have been diagnosed and repaired, go to next step.
3. If PCM has not been changed, use scan tool to clear DTCs from PCM. Using scan tool, reset all values in adaptive memory. Disconnect scan tool. To ensure no other DTCs remain, go to next step.
4. Road test vehicle at a speed of at least 40 MPH. Stop vehicle. Turn engine off for at least 10 seconds. Start engine and continue road test. Ensure transaxle shifts through all gears. After road test, turn engine off. Go to next step.
5. Using scan tool, check for stored DTCs. If repaired DTC has reset, repair is not complete. Check for related Technical Service Bulletins (TSBs) and return to appropriate test if necessary. If another DTC exists, return to appropriate test and follow path specified by other DTC. If no other DTCs exist, repair is now complete.

VER-5A: VERIFICATION TEST

NOTE: If PCM was replaced, the correct vehicle mileage and Vehicle Identification Number (VIN) must be programmed into the PCM to prevent Diagnostic

Trouble Codes (DTCs) from being set in the Anti-Lock Brake System (ABS) module and Supplemental Restraint System (SRS) module. To program PCM and clear DTCs from ABS and SRS modules, proceed to appropriate procedure listed below. On models equipped with a Smart Key Immobilizer Module (SKIM), if replacing Powertrain Control Module (PCM), the secret key data must also be updated to enable engine starting. To update secret key data, proceed to appropriate procedure listed below.

Procedure For Prog. PCM & Clearing DTCs From ABS & SRS Modules

Connect scan tool to Data Link Connector (DLC). Using scan tool, enter correct Vehicle Identification Number (VIN) and mileage into PCM. Using scan tool manufacturer's instructions, clear DTCs from ABS and SRS modules. Go to [FINAL PROCEDURE](#).

Procedure For Updating Secret Key Data

Connect scan tool to Data Link Connector (DLC). Go to ENGINE and then MISC menus on scan tool. Place the SKIM in SECURED ACCESS MODE by using the appropriate Personal Identification Number (PIN) for this vehicle. PIN may be obtained from the owner, vehicle's invoice, or from the manufacturer. Select UPDATE THE SECRET KEY DATA. The data will be transferred from Smart Key Immobilizer Module (SKIM) to the PCM. Go to [FINAL PROCEDURE](#).

Final Procedure

1. Inspect vehicle to ensure all engine components are connected. Reassemble and reconnect components as necessary. If any DTCs have not been diagnosed, go to appropriate test and finish diagnosing remaining DTCs as necessary. If all DTCs have been diagnosed and repaired, go to next step.
2. Connect scan tool to Data Link Connector (DLC) if not previously done. Ensure fuel tank is at least 1/4 full. Ensure A/C is off.
3. Proper way to ensure DTC is properly repaired is to allow PCM to run the monitor. Monitor operation may be observed on the scan tool. All specified enabling conditions for specified DTC must be met before PCM will operate the monitor.
4. Using scan tool, monitor the pretest enabling conditions until all conditions have been met. Once all enabling conditions are met, observe appropriate monitor for DTC on the scan tool.
5. If repaired DTC has reset or was seen in the monitor while on road test, repair is not complete. Check for related Technical Service Bulletins (TSBs) and return to appropriate test if necessary.
6. If another DTC exists, return to appropriate test and follow path specified by other DTC. If no other DTCs exist, repair is now complete.

REMOVAL & INSTALLATION

GOVERNOR PRESSURE SENSOR, GOVERNOR PRESSURE SOLENOID & TRANSMISSION FLUID TEMPERATURE SENSOR

NOTE: Transmission fluid temperature sensor is integral with governor pressure sensor.

Removal

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1. Raise and support vehicle. Drain transmission fluid. Remove transmission oil pan and filter. Disconnect harness connectors from governor pressure solenoid and sensor.
2. Remove pressure solenoid retainer-to-governor body screws. Separate solenoid retainer from governor and pull solenoid from governor body.
3. Remove governor body-to-valve body bolts. Separate governor body from valve body. Remove governor body and gasket. Remove retainer clip holding pressure sensor to governor body and remove pressure sensor.

Installation

1. Clean all gasket surfaces. Lubricate NEW "O" ring with ATF and install on pressure sensor. Push pressure sensor into governor body and install retainer clip. Position governor body on valve body with NEW gasket and install governor body-to-valve body bolts.
2. Lubricate NEW "O" ring with ATF and install on pressure solenoid. Push solenoid into governor body. Install solenoid retainer. Reconnect harness connectors to pressure solenoid and sensor. To complete installation, reverse removal procedure.

OUTPUT SHAFT SPEED SENSOR

NOTE: Transmission output shaft speed sensor may also be referred to as transmission shaft speed sensor or shaft speed sensor.

Removal & Installation

1. Disconnect electrical connector from output shaft speed sensor, located on case of overdrive unit. Remove output shaft speed sensor with "O" ring.
2. To install, reverse removal procedure using NEW "O" ring. Tighten output shaft speed sensor to specification.

CONNECTOR IDENTIFICATION

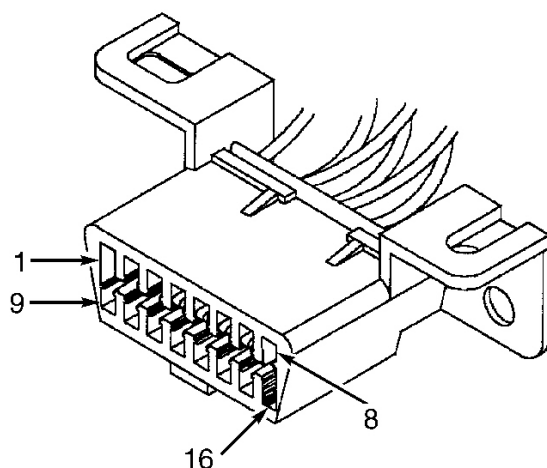
CONNECTOR IDENTIFICATION DIRECTORY

Connector	Figure
Data Link Connector (DLC)	See Fig. 2
Overdrive (O/D) Off Switch	
AN & DN Bodies	See Fig. 3
BR Body	See Fig. 3
ZJ Body	See Fig. 4
Park/Neutral Position (PNP) Switch	
AB, AN & BR Bodies	See Fig. 6
DN Body	See Fig. 6
ZJ Body	See Fig. 5
Powertrain Control Module (PCM)	See Fig. 7
Torque Converter Clutch (TCC) Solenoid	See Fig. 8
Transmission Control Relay	
AB Body	See Fig. 9
AN & BR Bodies	See Fig. 10

1998 Jeep Grand Cherokee Limited

1998 AUTOMATIC TRANSMISSIONS Chrysler 42RE, 44RE, 46RE & 47RE Electronic Controls

ZJ Body	See Fig. 11
Transmission Governor Pressure Sensor	See Fig. 12
Transmission Output Shaft Speed Sensor	See Fig. 13
Transmission Solenoid	See Fig. 14



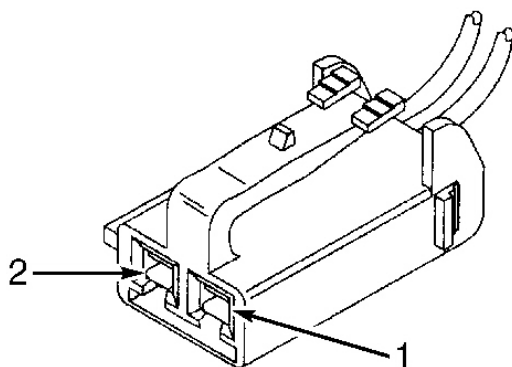
DATA LINK CONNECTOR (DLC) TERMINAL IDENTIFICATION

Terminal	Wire Color	Function
3	Violet/Brown	CCD Bus+
4	1	Ground
5	2	Ground
6	3	SCI Receive
7	4	SCI Transmit
9 ⁵	Red/Violet	6
11	White/Black	CCD Bus-
12 ⁷	8	9
15 ¹⁰	Orange	SCI Transmit (ABS)
16	11	Fused B+

- 1 - Black wire on DN and ZJ bodies; Black/Tan wire on all other bodies.
- 2 - Black/Violet wire on AB body; Black wire on AN and DN bodies; Black/Tan wire on BR body; Black/Orange wire on ZJ body.
- 3 - Light Green/White wire on 1997 AB body; Light Green wire on AN, BR and 1998 AB bodies; Violet/White wire on DN body; Black/White wire on ZJ body.
- 4 - Pink wire on AB, AN, DN and 1997 BR bodies; Pink/Dark Blue wire on 1998 BR body; Black/Pink wire on ZJ body.
- 5 - Used on 1997 AN and BR bodies only.
- 6 - RR Wheel Speed Sense on AN body; RWAL Test on BR body.
- 7 - Used on ZJ body and 1997 AB, AN and BR bodies.
- 8 - White/Violet wire on AB and BR bodies; Black/White wire on AN body; White wire on ZJ body.
- 9 - SCI Receive on AB and BR bodies; RWAL Diagnostic Enable on AN body; Chassis RX on ZJ body.
- 10 - Used on 1997 AB and BR bodies only.
- 11 - Violet wire on ZJ body and 1998 AB body; Pink wire on all others.

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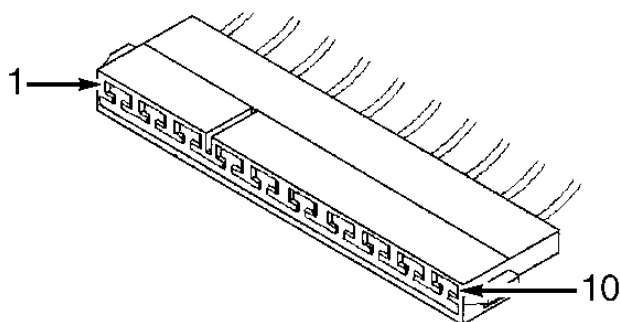
Fig. 2: Data Link Connector (DLC) Terminal ID
Courtesy of CHRYSLER CORP.

**OVERDRIVE (O/D) OFF SWITCH CONNECTOR TERMINAL IDENTIFICATION (AN & DN BODIES & 1998 BR BODY)**

Terminal	Wire Color	Function
1	Orange/White	O/D Off Switch Sense
2	Black	Ground

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Fig. 3: Overdrive (O/D) Off Switch Connector Terminal ID (AN, DN & BR Body)
Courtesy of CHRYSLER CORP.

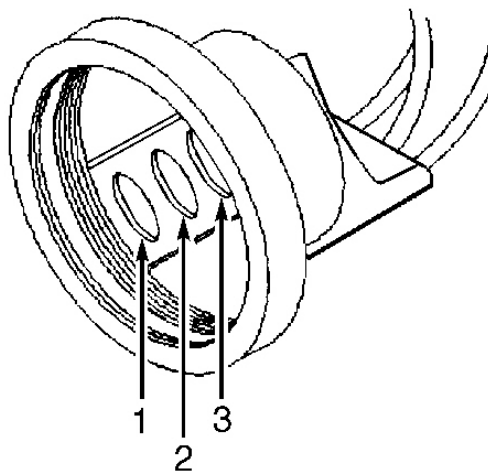


OVERDRIVE (O/D) OFF SWITCH CONNECTOR TERMINAL IDENTIFICATION (ZJ BODY)

Terminal	Wire Color	Function
2	Black	Ground
3	Orange	Dimmer Switch Signal
5	Pink/Dark Green	Ignition Feed
6	Orange/Black	O/D Off Switch Sense
7	Brown/Yellow	O/D Off Lamp Driver
9	Dark Blue/Yellow	Rear Defogger Relay
10	Light Blue/Yellow	Rear Defogger Lamp Driver

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Fig. 4: Overdrive (O/D) Off Switch Connector Terminal ID (ZJ Body)
 Courtesy of CHRYSLER CORP.

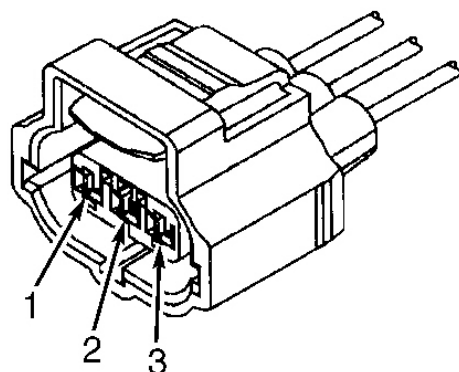


PARK/NEUTRAL POSITION (PNP) SWITCH CONNECTOR TERMINAL IDENTIFICATION (ZJ BODY & 1997 AB, AN & BR BODIES)

Terminal	Wire Color	Function
1	1	Fused Ignition Switch Output
2	2	PNP Switch Sense
3	3	Back-Up Lamp Feed
¹ – White wire on AB body; Brown/Light Green wire on all others. ² – Brown/Orange wire on AB body; Black/White wire on all others. ³ – Yellow/Dark Green wire on ZJ body; Violet/Black wire on all others.		

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Fig. 5: Park/Neutral Position (PNP) Switch Connector Terminal ID (ZJ Body)
 Courtesy of CHRYSLER CORP.

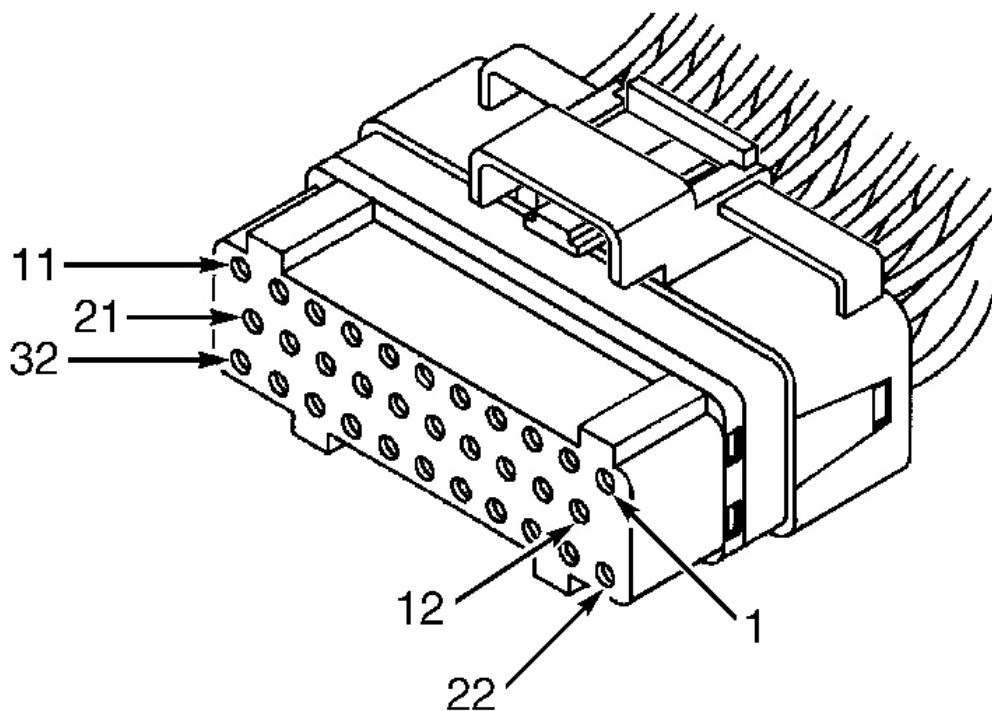


PARK/NEUTRAL POSITION (PNP) SWITCH CONNECTOR TERMINAL IDENTIFICATION (DN BODY & 1998 AB, AN & BR BODIES)

Terminal	Wire Color	Function
1	¹	Fused Ignition Switch Output
2	²	PNP Switch Sense
3	Violet/Black	Back-Up Lamp Feed
¹ - White wire on AB body; Brown/Light Green wire on all others.		
² - Brown/Yellow wire on AB body; Black/White wire on all others.		

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Fig. 6: Park/Neutral Position (PNP) Switch Connector Terminal ID (DN, AB, AN & BR Bodies)
 Courtesy of CHRYSLER CORP.

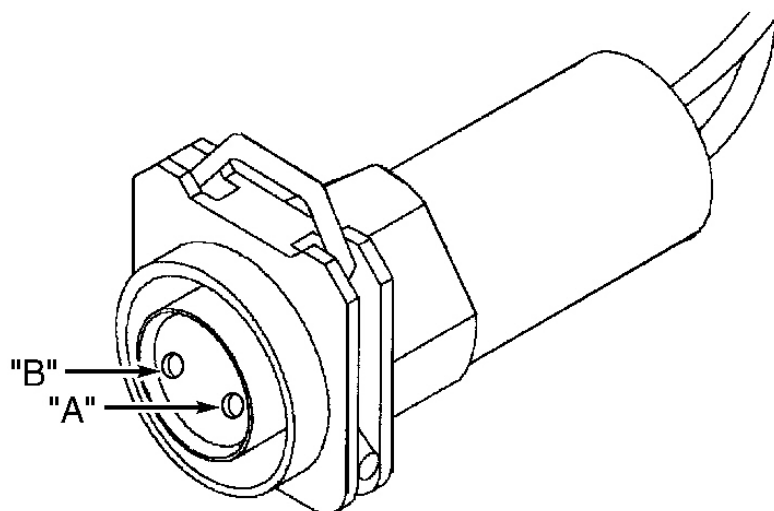


BLACK (A), GRAY (C), & WHITE (B) CONNECTOR

NOTE: Letter Identifies Connector In Wiring Diagrams.

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Fig. 7: Powertrain Control Module (PCM) Connector Terminal ID
Courtesy of CHRYSLER CORP.

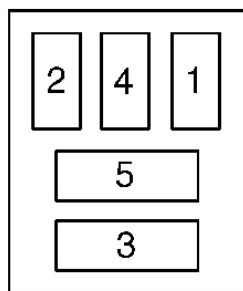


**TORQUE CONVERTER CLUTCH (TCC) SOLENOID CONNECTOR
TERMINAL IDENTIFICATION (LOCATED INTERNALLY ON VALVE BODY)**

Terminal	Wire Color	Function
"A"	1	Fused Ignition Switch Output
"B"	2	TCC Solenoid Control
1 – Red/Light Green wire on ZJ body; Light Green wire on all others.		
2 – Orange/Light Green wire on ZJ body; Orange/Black wire on all others.		

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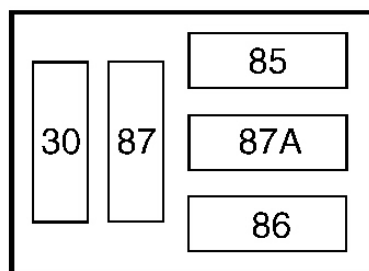
Fig. 8: Torque Converter Clutch (TCC) Solenoid Connector Terminal ID
Courtesy of CHRYSLER CORP.

**TRANSMISSION CONTROL RELAY CONNECTOR TERMINAL IDENTIFICATION (AB BODY)**

Terminal	Wire Color	Function
1	Orange/Dark Green	Generator Source
2	¹	Transmission Relay Control
3	Red/White	Fused B+
5	Light Blue	Trans. Control Relay Output
¹ – Violet/Black wire on 1997 models; Violet/Light Blue wire on 1998 models.		

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Fig. 9: Transmission Control Relay Connector Terminal ID (AB Body)
Courtesy of CHRYSLER CORP.



TRANSMISSION CONTROL RELAY CONNECTOR TERMINAL IDENTIFICATION (AN BODY)

Terminal	Wire Color	Function
30	Red/White	Generator Source
85	Pink/Black	Transmission Relay Control
86	Dark Green/Black	Fused B+
87	White/Brown	Trans. Control Relay Output

TRANSMISSION CONTROL RELAY CONNECTOR TERMINAL IDENTIFICATION (BR BODY)

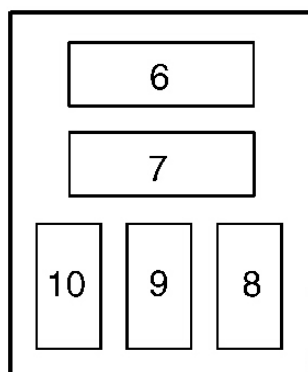
Terminal	Wire Color	Function
30	¹	Fused B+
85	²	Transmission Relay Control
86	White/Dark Blue	Generator Source
87	Red	Trans. Control Relay Output

¹ – Red/White wire on 1997 models; Yellow wire on 1998 models.

² – Pink wire on 1997 models; Pink/White wire on 1998 models.

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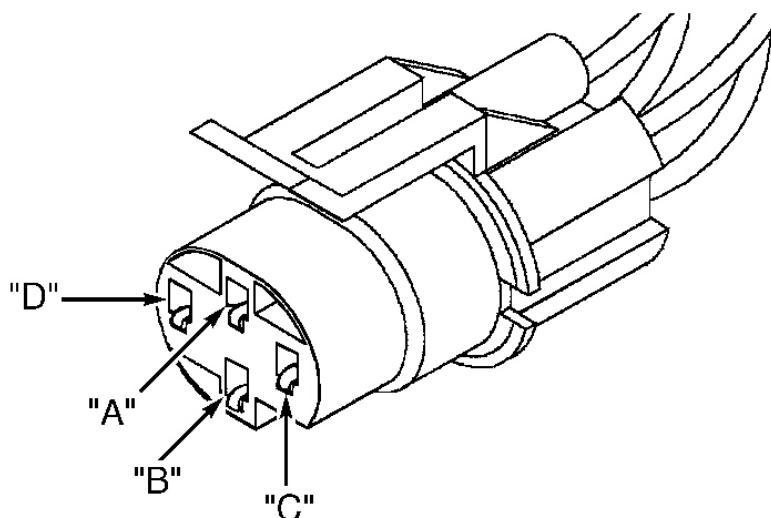
Fig. 10: Transmission Control Relay Connector Terminal ID (AN & BR Bodies)
Courtesy of CHRYSLER CORP.


TRANSMISSION CONTROL RELAY CONNECTOR TERMINAL IDENTIFICATION (ZJ BODY)

Terminal	Wire Color	Function
6	Light Green	Fused B+
7	Light Blue	Trans. Control Relay Output
8	Dark Green/Violet	Generator Source
10	Brown/Orange	Transmission Relay Control

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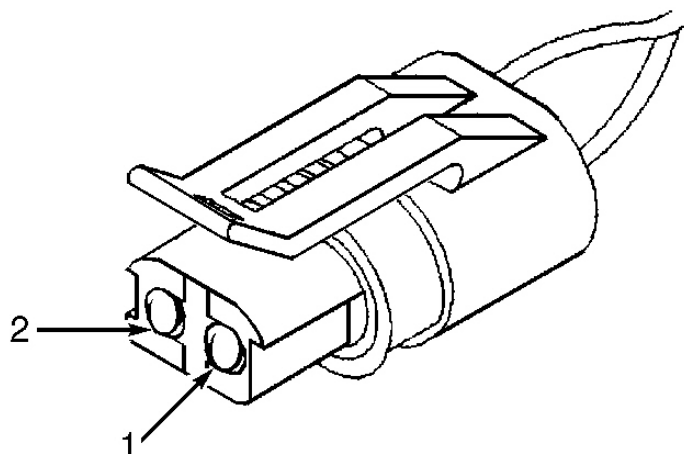
Fig. 11: Transmission Control Relay Connector Terminal ID (ZJ Body)
 Courtesy of CHRYSLER CORP.

**TRANSMISSION GOVERNOR PRESSURE SENSOR CONNECTOR
TERMINAL IDENTIFICATION**

Terminal	Wire Color	Function
"A"	Red	5-Volt Supply
"B"	White	Sensor Signal
"C"	Black	Trans. Fluid Temp. Signal
"D"	Black	Sensor Ground

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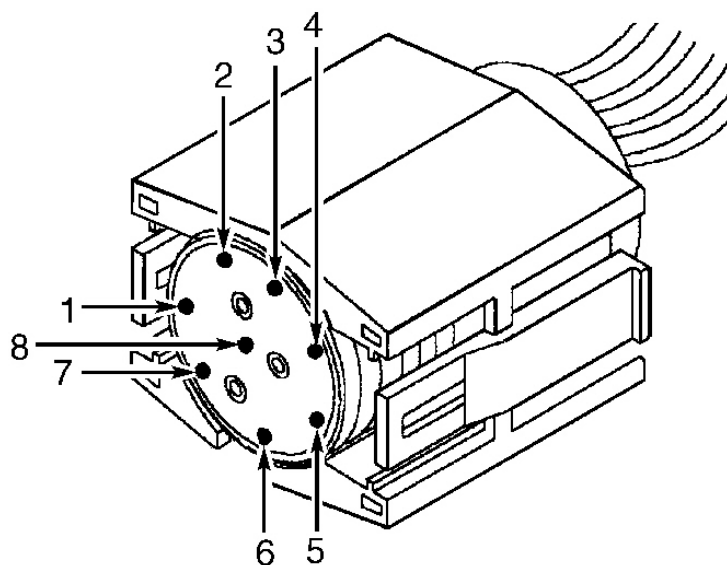
Fig. 12: Transmission Governor Pressure Sensor Connector Terminal ID
Courtesy of CHRYSLER CORP.

**TRANSMISSION OUTPUT SHAFT SPEED SENSOR CONNECTOR
TERMINAL IDENTIFICATION**

Terminal	Wire Color	Function
1	1	Sensor Signal
2	Dark Blue/Black	Sensor Ground
1 – Light Green/Black wire on BR body; Light Green/White wire on all others.		

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Fig. 13: Transmission Output Shaft Speed Sensor Connector Terminal ID
Courtesy of CHRYSLER CORP.



TRANSMISSION SOLENOID CONNECTOR TERMINAL IDENTIFICATION (1998 MODELS)

Terminal	Wire Color	Function
1	1	Transmission Relay Output
2	2	5-Volt Supply
3	3	Sensor Ground
4	4	Gov. Press. Sensor Signal
5	5	Gov. Press. Solenoid Control
6	6	3-4 Shift Solenoid Control
7	7	TCC Solenoid Control
8	8	Trans. Temp. Sensor Signal

1 – Light Blue wire on AB, AN and ZJ bodies; Red wire on BR and DN bodies.
 2 – Violet/White wire on AB and ZJ bodies; Red/Yellow wire on AN body; Orange wire on BR and DN bodies.
 3 – Tan/Orange wire on AN body; Black/Light Blue wire on all others.
 4 – Light Green/Red wire on AB, AN and DN bodies; Light Green/White wire on BR body; Light Green wire on ZJ body.
 5 – Pink wire on AB, AN and ZJ bodies; Violet/White wire on BR and DN bodies.
 6 – Orange/White wire on AB body, Brown wire on all others.
 7 – Dark Green/Light Blue wire on ZJ body; Orange/Black wire on all others.
 8 – Violet wire on AN, BR and ZJ bodies; Gray/Black wire on AB and DN bodies.

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Fig. 14: Transmission Solenoid Connector Terminal ID

Courtesy of CHRYSLER CORP.

WIRING DIAGRAMS

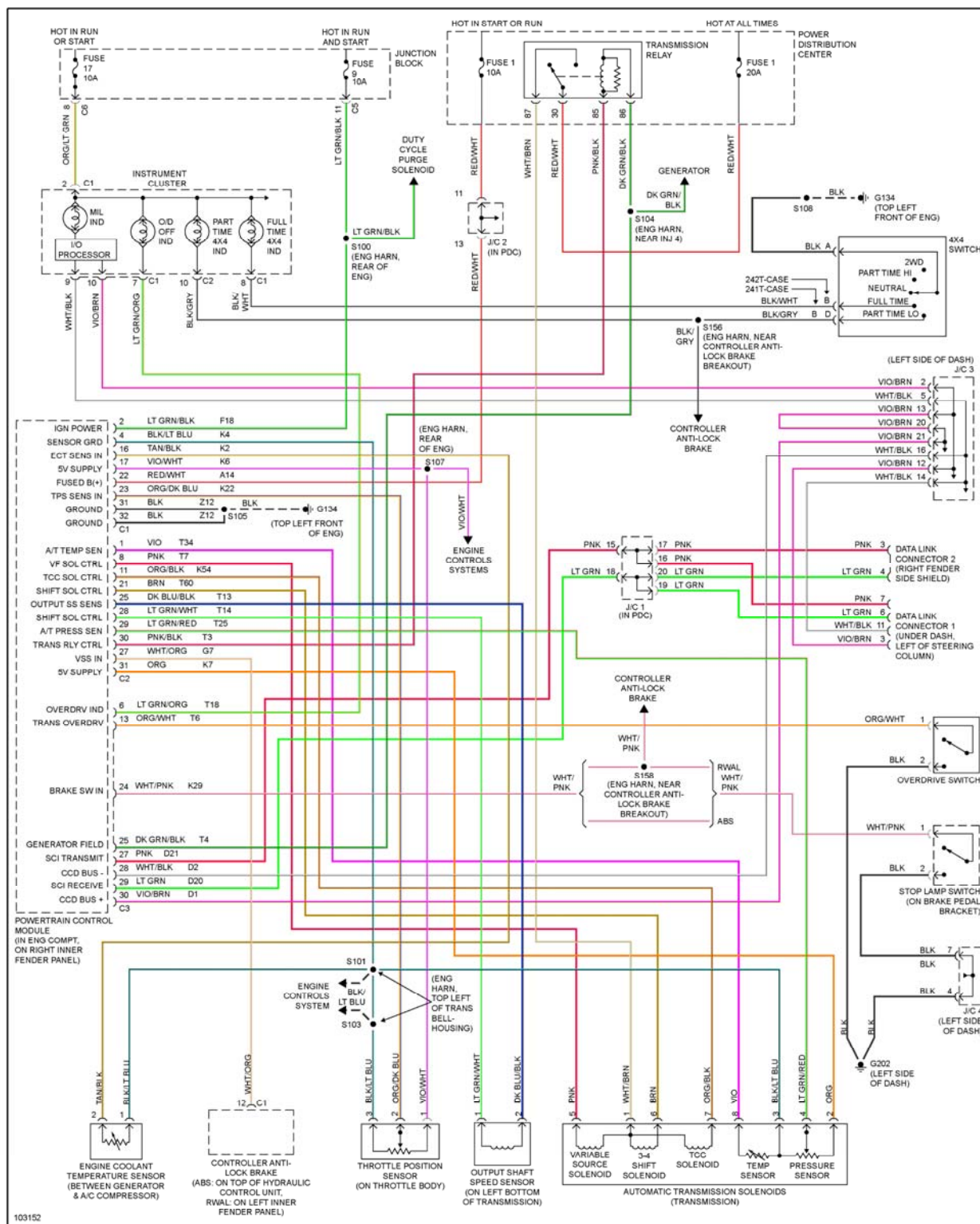


Fig. 15: Dakota Transmission

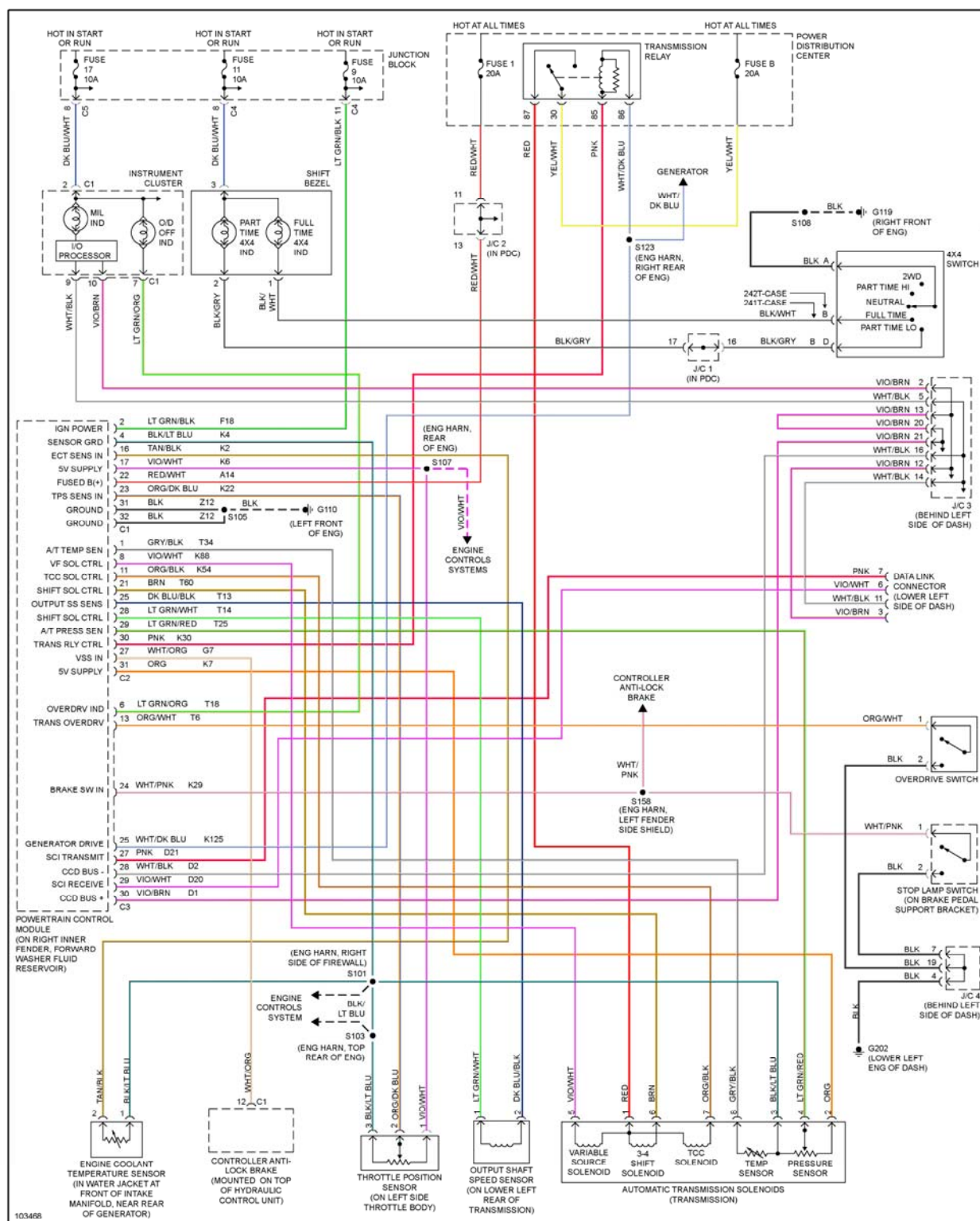


Fig. 16: Durango Transmission

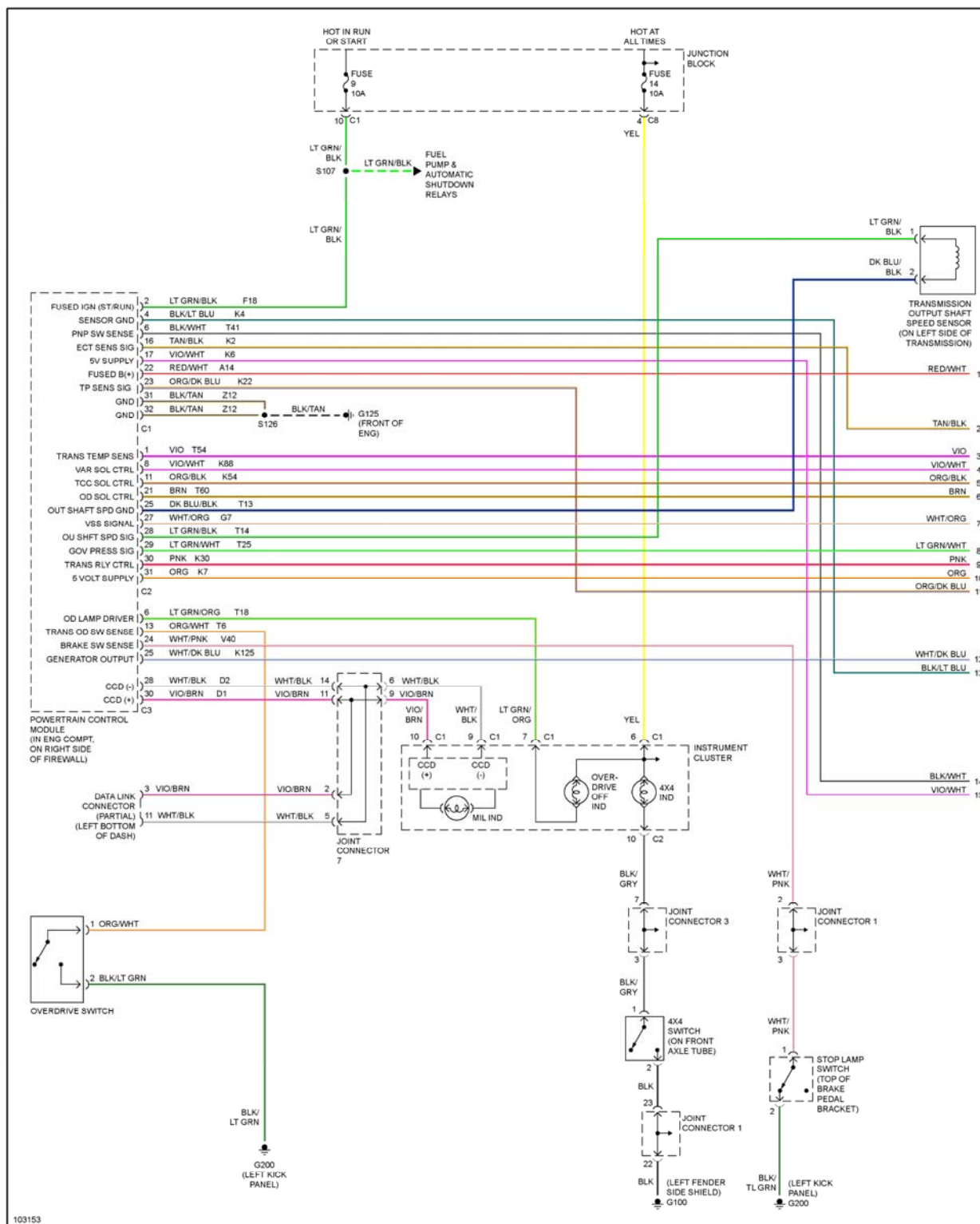


Fig. 17: Pickup (3.9L, 5.2L, 5.9L & 8.0L) Transmission (1 Of 2)