

Diagnostic Trouble Code (DTC) Charts and Pinpoint Tests - 6.2L V8

Diagnostic Trouble Code (DTC) Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

Diagnostic Trouble Code Chart

Module	DTC	Description	Action <i>New: hover over Pinpoint Test links to show title</i>
PCM	P0218:00	Transmission Fluid Temperature Sensor "A" Over Temperature Condition: No Sub Type Information	GO to Pinpoint Test B
PCM	P0657:00	Actuator Supply Voltage "A" Circuit/Open: No Sub Type Information	GO to Pinpoint Test A
PCM	P0701:00	Transmission Control System Range/Performance: No Sub Type Information	GO to Pinpoint Test E
PCM	P0702:00	Transmission Control System Electrical: No Sub Type Information	GO to Pinpoint Test F
PCM	P0705:00	Transmission Range Sensor "A" Circuit (PRNDL Input): No Sub Type Information	GO to Pinpoint Test C
PCM	P0706:00	Transmission Range Sensor "A" Circuit Range/Performance: No Sub Type Information	GO to Pinpoint Test C
PCM	P0707:00	Transmission Range Sensor "A" Circuit Low: No Sub Type Information	GO to Pinpoint Test C
PCM	P0708:00	Transmission Range Sensor "A" Circuit High: No Sub Type Information	GO to Pinpoint Test C
PCM	P0709:00	Transmission Range Sensor "A" Circuit Intermittent: No Sub Type Information	GO to Pinpoint Test C
PCM	P0710:00	Transmission Fluid Temperature Sensor "A" Circuit: No Sub Type Information	GO to Pinpoint Test B
PCM	P0711:00	Transmission Fluid Temperature Sensor "A" Circuit Range/Performance: No Sub Type Information	GO to Pinpoint Test B
PCM	P0712:00	Transmission Fluid Temperature Sensor "A" Circuit Low: No Sub Type Information	GO to Pinpoint Test B
PCM	P0713:00	Transmission Fluid Temperature Sensor "A" Circuit High: No Sub Type Information	GO to Pinpoint Test B
PCM	P0715:00	Input/Turbine Shaft Speed Sensor "A" Circuit: No Sub Type Information	GO to Pinpoint Test D
PCM	P0717:00	Input/Turbine Shaft Speed Sensor "A" Circuit No Signal: No Sub Type Information	GO to Pinpoint Test D
PCM	P0718:00	Input/Turbine Shaft Speed Sensor "A" Circuit Intermittent: No Sub Type Information	GO to Pinpoint Test D
PCM	P0720:00	Output Shaft Speed Sensor Circuit: No Sub Type Information	GO to Pinpoint Test D
PCM	P0721:00	Output Shaft Speed Sensor Circuit Range/Performance: No Sub Type Information	GO to Pinpoint Test D
PCM	P0722:00	Output Shaft Speed Sensor Circuit No Signal: No Sub Type Information	GO to Pinpoint Test D
PCM	P0729:00	Gear 6 Incorrect Ratio: No Sub Type Information	GO to Pinpoint Test G
PCM	P0731:00	Gear 1 Incorrect Ratio: No Sub Type Information	GO to Pinpoint Test H
PCM	P0732:00	Gear 2 Incorrect Ratio: No Sub Type Information	GO to Pinpoint Test I

Module	DTC	Description	Action <i>New: hover over Pinpoint Test links to show title</i>
PCM	P0733:00	Gear 3 Incorrect Ratio: No Sub Type Information	GO to Pinpoint Test J
PCM	P0734:00	Gear 4 Incorrect Ratio: No Sub Type Information	GO to Pinpoint Test K
PCM	P0735:00	Gear 5 Incorrect Ratio: No Sub Type Information	GO to Pinpoint Test L
PCM	P0740:00	Torque Converter Clutch Solenoid Circuit/Open: No Sub Type Information	GO to Pinpoint Test A
PCM	P0741:00	Torque Converter Clutch Solenoid Circuit Performance Stuck Off: No Sub Type Information	GO to Pinpoint Test M
PCM	P0742:00	Torque Converter Clutch Solenoid Circuit Stuck On: No Sub Type Information	GO to Pinpoint Test A
PCM	P0743:00	Torque Converter Clutch Solenoid Circuit Electrical: No Sub Type Information	GO to Pinpoint Test A
PCM	P0744:00	Torque Converter Clutch Solenoid Circuit Intermittent: No Sub Type Information	GO to Pinpoint Test A
PCM	P0748:00	Pressure Control Solenoid "A" Electrical: No Sub Type Information	GO to Pinpoint Test A
PCM	P0750:00	Shift Solenoid "A": No Sub Type Information	GO to Pinpoint Test A
PCM	P0751:00	Shift Solenoid "A" Performance/Stuck Off: No Sub Type Information	GO to Pinpoint Test N
PCM	P0752:00	Shift Solenoid "A" Stuck On: No Sub Type Information	GO to Pinpoint Test O
PCM	P0753:00	Shift Solenoid "A" Electrical: No Sub Type Information	GO to Pinpoint Test A
PCM	P0754:00	Shift Solenoid "A" Intermittent: No Sub Type Information	GO to Pinpoint Test A
PCM	P0755:00	Shift Solenoid "B": No Sub Type Information	GO to Pinpoint Test A
PCM	P0756:00	Shift Solenoid "B" Performance/Stuck Off: No Sub Type Information	GO to Pinpoint Test N
PCM	P0757:00	Shift Solenoid "B" Stuck On: No Sub Type Information	GO to Pinpoint Test O
PCM	P0758:00	Shift Solenoid "B" Electrical: No Sub Type Information	GO to Pinpoint Test A
PCM	P0759:00	Shift Solenoid "B" Intermittent: No Sub Type Information	GO to Pinpoint Test A
PCM	P0760:00	Shift Solenoid "C": No Sub Type Information	GO to Pinpoint Test A
PCM	P0761:00	Shift Solenoid "C" Performance/Stuck Off: No Sub Type Information	GO to Pinpoint Test N
PCM	P0762:00	Shift Solenoid "C" Stuck On: No Sub Type Information	GO to Pinpoint Test O
PCM	P0763:00	Shift Solenoid "C" Electrical: No Sub Type Information	GO to Pinpoint Test A
PCM	P0764:00	Shift Solenoid "C" Intermittent: No Sub Type Information	GO to Pinpoint Test A
PCM	P0765:00	Shift Solenoid "D": No Sub Type Information	GO to Pinpoint Test A
PCM	P0766:00	Shift Solenoid "D" Performance/Stuck Off: No Sub Type Information	GO to Pinpoint Test N
PCM	P0767:00	Shift Solenoid "D" Stuck On: No Sub Type Information	GO to Pinpoint Test O
PCM	P0768:00	Shift Solenoid "D" Electrical: No Sub Type Information	GO to Pinpoint Test A
PCM	P0769:00	Shift Solenoid "D" Intermittent: No Sub Type Information	GO to Pinpoint Test A
PCM	P0770:00	Shift Solenoid "E": No Sub Type Information	GO to Pinpoint Test A
PCM	P0771:00	Shift Solenoid "E" Performance/Stuck Off: No Sub Type Information	GO to Pinpoint Test N
PCM	P0772:00	Shift Solenoid "E" Stuck On: No Sub Type Information	GO to Pinpoint Test O
PCM	P0773:00	Shift Solenoid "E" Electrical: No Sub Type Information	GO to Pinpoint Test A
PCM	P0774:00	Shift Solenoid "E" Intermittent: No Sub Type Information	GO to Pinpoint Test A
PCM	P07A8:00	Transmission Friction Element "D" Performance/Stuck Off: No Sub Type Information	GO to Pinpoint Test N
PCM	P07A9:00	Transmission Friction Element "D" Stuck On: No Sub Type Information	GO to Pinpoint Test O
PCM	P07AA:00	Transmission Friction Element "E" Performance/Stuck Off: No Sub Type Information	GO to Pinpoint Test N
PCM	P0882:00	TCM Power Input Signal Low: No Sub Type Information	GO to Pinpoint Test F
PCM	P0883:00	TCM Power Input Signal High: No Sub Type Information	GO to Pinpoint Test F
PCM	P0960:00	Pressure Control Solenoid "A" Control Circuit/Open: No Sub Type Information	GO to Pinpoint Test A

Module	DTC	Description	Action <i>New: hover over Pinpoint Test links to show title</i>
PCM	P0961:00	Pressure Control Solenoid "A" Control Circuit Range/Performance: No Sub Type Information	GO to Pinpoint Test A
PCM	P0962:00	Pressure Control Solenoid "A" Control Circuit Low: No Sub Type Information	GO to Pinpoint Test A
PCM	P0963:00	Pressure Control Solenoid "A" Control Circuit High: No Sub Type Information	GO to Pinpoint Test A
PCM	P0973:00	Shift Solenoid "A" Control Circuit Low: No Sub Type Information	GO to Pinpoint Test A
PCM	P0974:00	Shift Solenoid "A" Control Circuit High: No Sub Type Information	GO to Pinpoint Test A
PCM	P0976:00	Shift Solenoid "B" Control Circuit Low: No Sub Type Information	GO to Pinpoint Test A
PCM	P0977:00	Shift Solenoid "B" Control Circuit High: No Sub Type Information	GO to Pinpoint Test A
PCM	P0979:00	Shift Solenoid "C" Control Circuit Low: No Sub Type Information	GO to Pinpoint Test A
PCM	P0980:00	Shift Solenoid "C" Control Circuit High: No Sub Type Information	GO to Pinpoint Test A
PCM	P0982:00	Shift Solenoid "D" Control Circuit Low: No Sub Type Information	GO to Pinpoint Test A
PCM	P0983:00	Shift Solenoid "D" Control Circuit High: No Sub Type Information	GO to Pinpoint Test A
PCM	P0984:00	Shift Solenoid "E" Control Circuit Range/Performance: No Sub Type Information	GO to Pinpoint Test A
PCM	P0985:00	Shift Solenoid "E" Control Circuit Low: No Sub Type Information	GO to Pinpoint Test A
PCM	P0986:00	Shift Solenoid "E" Control Circuit High: No Sub Type Information	GO to Pinpoint Test A
PCM	P1001:00	KOER Not Able to Complete, KOER Aborted: No Sub Type Information	GO to Pinpoint Test P
PCM	P1397:00	System Voltage Out Of Self Test Range: No Sub Type Information	GO to Pinpoint Test F
PCM	P1636:00	Inductive Signature Chip Communication Error: No Sub Type Information	GO to Pinpoint Test Q
PCM	P163E:00	Transmission Control Module Programming Error: No Sub Type Information	GO to Pinpoint Test R
PCM	P163F:00	Transmission ID Block Corrupted, Not Programmed: No Sub Type Information	GO to Pinpoint Test R
PCM	P1700:00	Transmission Indeterminate Failure (Failed to Neutral): No Sub Type Information	GO to Pinpoint Test S
PCM	P1702:00	Transmission Range Sensor Circuit Intermittent: No Sub Type Information	GO to Pinpoint Test C
PCM	P1705:00	Transmission Range Circuit Not Indicating Park/Neutral During Self Test: No Sub Type Information	GO to Pinpoint Test C
PCM	P1711:00	Transmission Fluid Temperature Sensor Out Of Self Test Range: No Sub Type Information	GO to Pinpoint Test T
PCM	P1744:00	Torque Converter Clutch Solenoid Circuit Performance: No Sub Type Information	GO to Pinpoint Test U
PCM	P177F:00	Unable To Fully Engage Neutral: No Sub Type Information	GO to Pinpoint Test O
PCM	P1783:00	Transmission Overtemperature Condition: No Sub Type Information	GO to Pinpoint Test V
PCM	P1921:00	Transmission Range Signal: No Sub Type Information	GO to Pinpoint Test C
PCM	P2700:00	Transmission Friction Element "A" Apply Time Range Performance: No Sub Type Information	GO to Pinpoint Test E
PCM	P2701:00	Transmission Friction Element "B" Apply Time Range Performance: No Sub Type Information	GO to Pinpoint Test E
PCM	P2702:00	Transmission Friction Element "C" Apply Time Range Performance: No Sub Type Information	GO to Pinpoint Test E
PCM	P2703:00	Transmission Friction Element "D" Apply Time Range Performance: No Sub Type Information	GO to Pinpoint Test E
PCM	P2704:00	Transmission Friction Element "E" Apply Time Range Performance: No Sub Type Information	GO to Pinpoint Test E
PCM	P2705:00	Transmission Friction Element "F" Apply Time Range Performance: No Sub Type Information	GO to Pinpoint Test E
PCM	P2758:00	Torque Converter Clutch Pressure Control Solenoid Stuck On: No Sub Type Information	GO to Pinpoint Test O

Module	DTC	Description	Action <i>New: hover over Pinpoint Test links to show title</i>
PCM	P2760:00	Torque Converter Clutch Pressure Control Solenoid Intermittent: No Sub Type Information	GO to Pinpoint Test A

Principles of Operation

Symptom Chart: Automatic Transmission

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

In most circumstances the PCM/ TCM sets a DTC to help guide with diagnostics. Refer to the DTC Chart before using the Symptom Chart. The Symptom column lists the vehicle condition. The Action column refers to a pinpoint test. Each pinpoint test lists the components that can cause the symptom and the individual components in that system. The components are listed in order of disassembly. Use the list of components and the required action to focus on disassembly inspections for the root cause of the concern.

Symptom	Possible Sources	Action
Engagement concerns	REFER to Pinpoint Test	GO to Pinpoint Test W
Shift concerns	REFER to Pinpoint Test	GO to Pinpoint Test X
Torque converter operation concerns	REFER to Pinpoint Test	GO to Pinpoint Test Y
Other concerns	REFER to Pinpoint Test	GO to Pinpoint Test Z

Pinpoint Tests

[PINPOINT TEST A : TRANSMISSION CONTROL SOLENOIDS](#)

Refer to Wiring Diagrams Cell [29](#) for schematic and connector information.

Normal Operation and Fault Conditions

The transmission solenoid power control relay inside the PCM provides power to shift solenoids A, B, C, D and E, as well as to the TCC and LPC solenoids. Each solenoid is controlled by a low-side driver inside the PCM. If the power circuit to the transmission solenoids or the transmission solenoid power control relay fails open, all solenoids are failed electrically off. Check for open, short to ground or the transmission connector disconnected. The transmission solenoid power control relay disables power to the transmission solenoids when certain transmission DTCs are set.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0657:00	Actuator Supply Voltage "A" Circuit/Open: No Sub Type Information	This DTC indicates an open circuit in the transmission solenoid power control (TSPC) circuit.
PCM P0740:00	Torque Converter Clutch Solenoid Circuit/Open: No Sub Type Information	This DTC indicates an open circuit in the TCC solenoid circuit. An open circuit causes the TCC solenoid to be failed to low current (minimum pressure since the TCC solenoid is directly proportional), so the TCC is failed off.
PCM P0742:00	Torque Converter Clutch Solenoid Circuit Stuck On: No Sub Type Information	This DTC indicates a short to ground in the TCC solenoid circuit. The TCC is failed on until the DTC is stored, then the failsafe logic opens the high side switch which disables all gears except park, reverse, neutral, and 5M.
PCM P0743:00	Torque Converter Clutch Solenoid Circuit Electrical: No Sub Type Information	This DTC illuminates the wrench light in conjunction with P0740, P0742 and/or P0744. Service the more specific DTC first.
PCM P0744:00	Torque Converter Clutch Solenoid Circuit Intermittent: No Sub Type Information	This DTC indicates a short to power in the TCC solenoid circuit. A short to power causes the TCC solenoid to be failed to low current (minimum pressure since the TCC solenoid is directly proportional), so the TCC is failed off.

PCM P0748:00	Pressure Control Solenoid "A" Electrical: No Sub Type Information	This DTC illuminates the wrench light in conjunction with P0960, P0962, P0963. Service the more specific DTCs first.
PCM P0750:00	Shift Solenoid "A": No Sub Type Information	This DTC indicates an open circuit in the SSA circuit. An open circuit causes SSA to be failed to low current (minimum pressure since SSA is directly proportional), so the forward clutch is failed off.
PCM P0753:00	Shift Solenoid "A" Electrical: No Sub Type Information	This DTC illuminates the wrench light in conjunction with P0750, P0973 and/or P0974. Service the more specific DTC first.
PCM P0754:00	Shift Solenoid "A" Intermittent: No Sub Type Information	The PCM detected a SSA fault, but the fault did not last long enough for the PCM to set a more specific SSA DTC . Inspect SSA wiring and connectors for damage.
PCM P0755:00	Shift Solenoid "B": No Sub Type Information	This DTC indicates an open circuit in the SSB circuit. An open circuit causes SSB to be failed to low current (minimum pressure since SSB is directly proportional), so the direct clutch is failed off.
PCM P0758:00	Shift Solenoid "B" Electrical: No Sub Type Information	This DTC illuminates the wrench light in conjunction with P0755, P0976 and/or P0977. Service the more specific DTC first.
PCM P0759:00	Shift Solenoid "B" Intermittent: No Sub Type Information	The PCM detected a SSB fault, but the fault did not last long enough for the PCM to set a more specific SSB DTC. Inspect SSB wiring and connectors for damage.
PCM P0760:00	Shift Solenoid "C": No Sub Type Information	This DTC indicates an open circuit in the SSC circuit. An open circuit causes SSC to be failed to low current (minimum pressure since SSC is directly proportional), so the intermediate clutch is failed off.
PCM P0763:00	Shift Solenoid "C" Electrical: No Sub Type Information	This DTC illuminates the wrench light in conjunction with P0760, P0979 and/or P0980. Service the more specific DTC first.
PCM P0764:00	Shift Solenoid "C" Intermittent: No Sub Type Information	The PCM detected a SSC fault, but the fault did not last long enough for the PCM to set a more specific SSC DTC . Inspect SSC wiring and connectors for damage.
PCM P0765:00	Shift Solenoid "D": No Sub Type Information	This DTC indicates an open circuit in the SSD circuit. An open circuit causes SSD to be failed to low current (maximum pressure since SSD is inversely proportional), so the low/reverse clutch is failed on.
PCM P0768:00	Shift Solenoid "D" Electrical: No Sub Type Information	This DTC illuminates the wrench light in conjunction with P0765, P0982 and/or P0983. Service the more specific DTC first.
PCM P0769:00	Shift Solenoid "D" Intermittent: No Sub Type Information	The PCM detected a SSD fault, but the fault did not last long enough for the PCM to set a more specific SSD DTC. Inspect SSD wiring and connectors for damage.
PCM P0770:00	Shift Solenoid "E": No Sub Type Information	This DTC indicates an open circuit in the SSE circuit. An open circuit causes SSE to be failed to low current (minimum pressure since SSE is normally closed), so the overdrive clutch is failed off.
PCM P0773:00	Shift Solenoid "E" Electrical: No Sub Type Information	This DTC illuminates the wrench light in conjunction with P0770, P0985 and/or P0986. Service the more specific DTC first.
PCM P0774:00	Shift Solenoid "E" Intermittent: No Sub Type Information	The PCM detected a SSE fault, but the fault did not last long enough for the PCM to set a more specific SSE DTC . Inspect SSE wiring and connectors for damage.
PCM P0960:00	Pressure Control Solenoid "A" Control Circuit/Open: No Sub Type Information	This DTC indicates an open circuit in the LPC solenoid circuit. An open circuit causes the LPC solenoid to be failed to low current, which results in maximum line pressure since the LPC solenoid is inversely proportional.
PCM P0961:00	Pressure Control Solenoid "A" Control Circuit Range/Performance: No Sub Type Information	The PCM detected a LPC solenoid fault resulting in a transmission neutral condition, but the fault did not last long enough for the PCM to set a more specific LPC solenoid DTC. Inspect LPC solenoid wiring and connectors for damage.
PCM P0962:00	Pressure Control Solenoid "A" Control Circuit Low: No Sub Type Information	The PCM detected a short to ground in the LPC solenoid electrical. Once the DTC is stored, the failsafe logic opens the high side switch which disables all gears except park, reverse, neutral, and 5M.
PCM P0963:00	Pressure Control Solenoid "A" Control Circuit High: No Sub Type Information	The PCM detected a short to power in the LPC solenoid electrical. A short to power causes the LPC solenoid to be failed to low current, which results in maximum line pressure since the LPC solenoid is inversely proportional.
PCM P0973:00	Shift Solenoid "A" Control Circuit Low: No Sub Type Information	This DTC indicates a short to ground in the SSA circuit. Once the DTC is stored, the failsafe logic opens the high side switch which disables all gears except park, reverse, neutral, and 5M.

PCM P0974:00	Shift Solenoid "A" Control Circuit High: No Sub Type Information	This DTC indicates a short to power in the SSA circuit. A short to power causes SSA to be failed to low current (minimum pressure since SSA is directly proportional), so the forward clutch is failed off.
PCM P0976:00	Shift Solenoid "B" Control Circuit Low: No Sub Type Information	This DTC indicates a short to ground in the SSB circuit. Once the DTC is stored, the failsafe logic opens the high side switch which disables all gears except park, reverse, neutral, and 5M.
PCM P0977:00	Shift Solenoid "B" Control Circuit High: No Sub Type Information	This DTC indicates a short to power in the SSB circuit. A short to power causes SSB to be failed to low current (maximum pressure since SSB is inversely proportional), so the direct clutch is failed on.
PCM P0979:00	Shift Solenoid "C" Control Circuit Low: No Sub Type Information	This DTC indicates a short to ground in the SSC circuit. Once the DTC is stored, the failsafe logic opens the high side switch which disables all gears except park, reverse, neutral, and 5M.
PCM P0980:00	Shift Solenoid "C" Control Circuit High: No Sub Type Information	This DTC indicates a short to power in the SSC circuit. A short to power causes SSC to be failed to low current (minimum pressure since SSC is directly proportional), so the intermediate clutch is failed off.
PCM P0982:00	Shift Solenoid "D" Control Circuit Low: No Sub Type Information	This DTC indicates a short to ground in the SSD circuit. Once the DTC is stored, the failsafe logic opens the high side switch which disables all gears except park, reverse, neutral, and 5M.
PCM P0983:00	Shift Solenoid "D" Control Circuit High: No Sub Type Information	This DTC indicates a short to power in the SSD circuit. A short to power causes SSD to be failed to low current (maximum pressure since SSD is inversely proportional), so the low/reverse clutch is failed on.
PCM P0984:00	Shift Solenoid "E" Control Circuit Range/Performance: No Sub Type Information	This DTC indicates the PCM detected a SSE fault, but the fault did not last long enough for the PCM to set a more specific SSE DTC . Inspect SSE wiring and connectors for damage.
PCM P0985:00	Shift Solenoid "E" Control Circuit Low: No Sub Type Information	This DTC indicates a short to ground in the SSE circuit. Once the DTC is stored, the failsafe logic opens the high side switch which disables all gears except park, reverse, neutral, and 5M.
PCM P0986:00	Shift Solenoid "E" Control Circuit High: No Sub Type Information	This DTC indicates a short to power in the SSE circuit. A short to power causes SSE to be failed to low current (minimum pressure since SSE is normally closed), so the overdrive clutch is failed off.
PCM P2760:00	Torque Converter Clutch Pressure Control Solenoid Intermittent: No Sub Type Information	The PCM detected a TCC solenoid fault, but the fault did not last long enough for the PCM to set a more specific TCC solenoid DTC . Inspect TCC solenoid wiring and connectors for damage.

Possible Sources

- Connectors damaged or pushed-out terminals, corrosion, loose wires or ground and missing or damaged seals
- Main control valve body molded leadframe
- Solenoid
- PCM

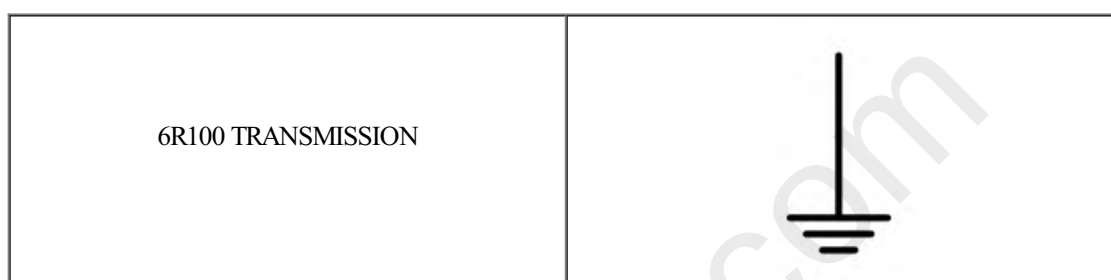
A1 CHECK THE SOLENOID POWER CIRCUIT FOR VOLTAGE

NOTE: This pinpoint test is written to address all transmission solenoid electrical faults. For each test step, only the circuits related to the DTC retrieved during the KOEO test need to be tested.

- Ignition OFF.
- Disconnect Transmission vehicle harness [C1575](#) .
- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- **NOTE:** The PCM removes power from the Transmission Solenoid Power Control (TSPC) circuit when certain electrical faults are present. Use a meter with a min/max feature and/or recording capabilities. Make sure all test connections are made at the transmission harness connector before the ignition is turned ON to obtain a reading before the PCM removes power.

Connect the meter leads to [C1575-7](#) and ground.

- Enable the min/max or recording feature on the meter.
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C1575-7		Ground

Is the maximum recorded voltage greater than 11 volts?

Yes	GO to A4
No	GO to A2

A2 CHECK THE SOLENOID POWER CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect PCM [C175T](#) .
- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- Measure:

POWERTRAIN CONTROL MODULE (PCM)	6R100 TRANSMISSION
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Positive Lead	Measurement / Action	Negative Lead
C175T-2	Ω	C1575-7

Is the resistance less than 3 ohms?

Yes	GO to A3
No	REPAIR the circuit.

A3 CHECK THE SOLENOID POWER CIRCUIT FOR A SHORT TO GROUND

- Measure:

POWERTRAIN CONTROL MODULE (PCM)	
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Positive Lead	Measurement / Action	Negative Lead
C175T-2	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	☐ Click here to access Guided Routine (PCM). After installing a new PCM, carry out the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, General Procedures).
No	REPAIR the circuit.

A4 CHECK THE SOLENOID CONTROL CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect PCM [C175T](#) .
- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- Measure:

POWERTRAIN CONTROL MODULE (PCM)	6R100 TRANSMISSION
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Positive Lead	Measurement / Action	Negative Lead
SSA C175T-19	Ω	C1575-9
SSB C175T-49	Ω	C1575-14
SSC C175T-34	Ω	C1575-13
SSD C175T-64	Ω	C1575-10
SSE C175T-3	Ω	C1575-8
LPC C175T-63	Ω	C1575-16
TCC C175T-79	Ω	C1575-3

Is the resistance less than 3 ohms on the suspect circuit?

Yes	GO to A5
No	REPAIR the circuit.

A5 CHECK THE SOLENOID CONTROL CIRCUITS FOR A SHORT TO GROUND

- Measure:

6R100 TRANSMISSION	
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Positive Lead	Measurement / Action	Negative Lead
SSA C1575-9	Ω	Ground
SSB C1575-14	Ω	Ground
SSC C1575-13	Ω	Ground
SSD C1575-10	Ω	Ground
SSE C1575-8	Ω	Ground
LPC C1575-16	Ω	Ground
TCC C1575-3	Ω	Ground

Is the resistance greater than 10,000 ohms on the suspect circuit?

Yes	GO to A6
No	REPAIR the circuit.

A6 CHECK THE SOLENOID CONTROL CIRCUITS FOR A SHORT TOGETHER WITH THE TRANSMISSION POWER CIRCUITS

- Measure:

6R100 TRANSMISSION

SSA

Positive Lead	Measurement / Action	Negative Lead
C1575-9	Ω	C1575-4

Positive Lead	Measurement / Action	Negative Lead
C1575-9	Ω	C1575-6
C1575-9	Ω	C1575-7
C1575-9	Ω	C1575-12

6R100 TRANSMISSION

SSB

Positive Lead	Measurement / Action	Negative Lead
C1575-14	Ω	C1575-4
C1575-14	Ω	C1575-6
C1575-14	Ω	C1575-7
C1575-14	Ω	C1575-12

6R100 TRANSMISSION

SSC

Positive Lead	Measurement / Action	Negative Lead
C1575-13	Ω	C1575-4
C1575-13	Ω	C1575-6
C1575-13	Ω	C1575-7
C1575-13	Ω	C1575-12

6R100 TRANSMISSION

SSD

Positive Lead	Measurement / Action	Negative Lead
C1575-10	Ω	C1575-4
C1575-10	Ω	C1575-6
C1575-10	Ω	C1575-7
C1575-10	Ω	C1575-12

6R100 TRANSMISSION

SSE

Positive Lead	Measurement / Action	Negative Lead
C1575-8	Ω	C1575-4
C1575-8	Ω	C1575-6
C1575-8	Ω	C1575-7
C1575-8	Ω	C1575-12

6R100 TRANSMISSION

LPC Solenoid

Positive Lead	Measurement / Action	Negative Lead
C1575-16	Ω	C1575-4
C1575-16	Ω	C1575-6
C1575-16	Ω	C1575-7
C1575-16	Ω	C1575-12

6R100 TRANSMISSION

TCC Solenoid

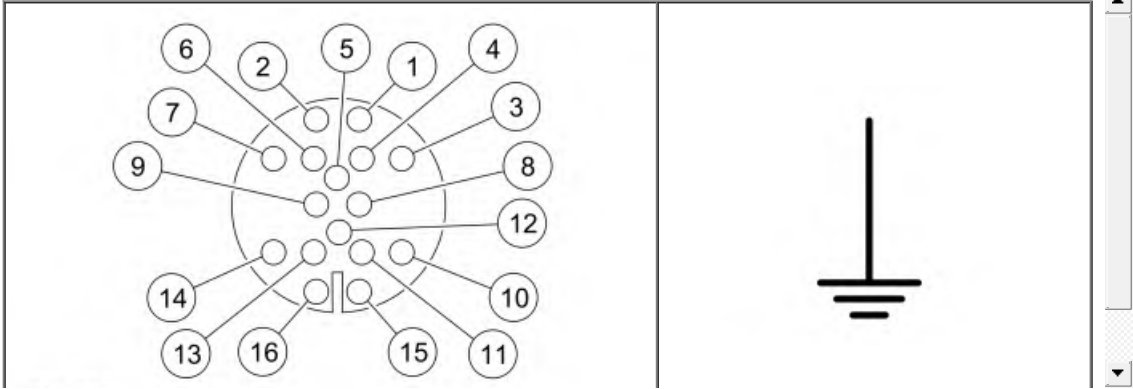
Positive Lead	Measurement / Action	Negative Lead
C1575-3	Ω	C1575-4
C1575-3	Ω	C1575-6
C1575-3	Ω	C1575-7
C1575-3	Ω	C1575-12

Are the resistances greater than 10,000 ohms on the suspect circuit?

Yes	GO to A7
No	REPAIR the circuit.

A7 CHECK THE INTERNAL TRANSMISSION SOLENOID CIRCUIT FOR A SHORT TO GROUND

- Measure:



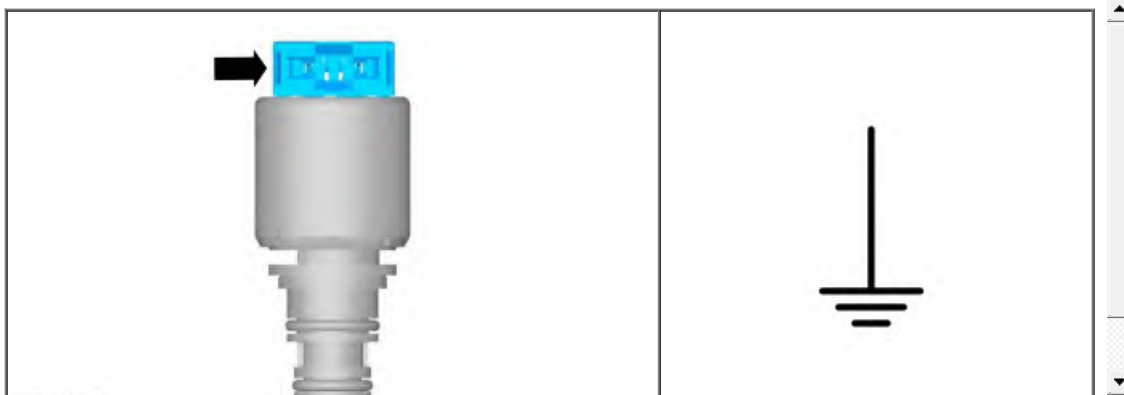
Positive Lead	Measurement / Action	Negative Lead
Transmission Harness Component Side Pin 7	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to A9
No	GO to A8

A8 CHECK THE SOLENOID FOR A SHORT TO GROUND

- REMOVE the transmission molded leadframe.
REFER to: Shift Solenoids (SS) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission – 6R100, Removal and Installation).
- Inspect for fine metallic contamination at the molded leadframe to solenoid connections. If any contamination is present, CLEAN the molded leadframe and solenoid terminals with clean transmission fluid.
- With the solenoid still installed in the main control valve body, measure:



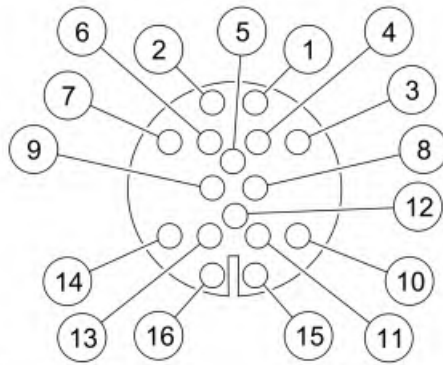
Positive Lead	Measurement / Action	Negative Lead
Solenoid pin A.	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	INSTALL a new molded leadframe. INSTALL new foam strip (Service Part Number FL3Z-14B167-A) between molded leadframe and the solenoids. REFER to: Shift Solenoids (SS) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission – 6R100, Removal and Installation).
No	INSTALL a new solenoid. REFER to: Shift Solenoids (SS) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission – 6R100, Removal and Installation).

A9 CHECK THE INTERNAL TRANSMISSION SOLENOID CIRCUIT RESISTANCE

- Measure and record the resistance of the suspect solenoid using the following chart:



Positive Lead	Measurement / Action	Negative Lead
Transmission Harness Component Side (see table below)	Ω	Transmission Harness Component Side (see table below)

Transmission Harness Component Side	Solenoid	Transmission Harness Component Side
Pin 9	SSA	Pin 7
Pin 14	SSB	Pin 7
Pin 13	SSC	Pin 7
Pin 10	SSD	Pin 7
Pin 8	SSE	Pin 7
Pin 16	LPC solenoid	Pin 7
Pin 3	TCC solenoid	Pin 7

- Compare the measured resistance of the suspect solenoid to the specification in the following chart:

Solenoid	Ohms
SSA	4.8 to 5.6
SSB	4.8 to 5.6
SSC	4.8 to 5.6
SSD	4.8 to 5.6
SSE	17.5 to 18.6
LPC solenoid	4.8 to 5.6
TCC solenoid	4.8 to 5.6

Is the resistance of the suspect solenoid within specification?

A10 CHECK SOLENOID RESISTANCE

Yes	☐ Click here to access Guided Routine (PCM). After installing a new PCM, carry out the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€” 6R100, General Procedures).
No	GO to A10

- Remove the suspect solenoid.
REFER to: Shift Solenoids (SS) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Removal and Installation).
- Measure and record the resistance of the suspect solenoid.
- Compare the measured resistance of the suspect solenoid to the following chart:

Solenoid	Ohms
SSA	4.8 to 5.6
SSB	4.8 to 5.6
SSC	4.8 to 5.6
SSD	4.8 to 5.6
SSE	17.5 to 18.6
LPC solenoid	4.8 to 5.6
TCC solenoid	4.8 to 5.6

Is the resistance of the suspect solenoid within specification?

Yes	INSTALL a new molded leadframe. INSTALL new foam strip (Service Part Number FL3Z-14B167-A) between the molded leadframe and the solenoids. REFER to: Shift Solenoids (SS) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Removal and Installation).
No	INSTALL a new solenoid for the solenoid that failed the resistance check. INSTALL new foam strip (Service Part Number FL3Z-14B167-A) between the molded leadframe and the solenoids. REFER to: Shift Solenoids (SS) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Removal and Installation).

PINPOINT TEST B : TRANSMISSION FLUID TEMPERATURE SENSOR

Refer to Wiring Diagrams Cell [29](#) for schematic and connector information.

Normal Operation and Fault Conditions

The TFT sensor is a temperature dependent resistor that is in contact with transmission fluid in the transmission sump area. The PCM monitors the voltage across the TFT sensor, which changes as transmission fluid temperature varies. The PCM uses the TFT sensor signal as an input for its strategy for shifting and TCC operation. The PCM also uses the TFT sensor signal for transmission fault detection and diagnostics.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0218:00	Transmission Fluid Temperature Sensor "A" Over Temperature Condition: No Sub Type Information	This DTC indicates the PCM detected a transmission fluid over temperature condition. While this DTC is stored, the PCM limits engine torque to prevent further transmission overheating. Resolve any TFT sensor electrical diagnostic trouble codes (DTCs) first.
PCM P0710:00	Transmission Fluid Temperature Sensor "A" Circuit: No Sub Type Information	This DTC illuminates the wrench light in conjunction with P0712 and/or P0713. Resolve the more specific DTC first.
PCM P0711:00	Transmission Fluid Temperature Sensor "A" Circuit Range/Performance: No Sub Type Information	This DTC indicates the TFT sensor is reading within range, but the reading did not change when the vehicle was driven enough that the transmission fluid temperature should have changed.
PCM P0712:00	Transmission Fluid Temperature Sensor "A" Circuit Low: No Sub Type Information	This DTC indicates a short to ground in the TFT sensor circuit.
PCM P0713:00	Transmission Fluid Temperature Sensor "A" Circuit High: No Sub Type Information	This DTC indicates an open circuit in the TFT sensor circuit.

Possible Sources

- Connectors damaged or pushed-out terminals, corrosion, loose wires and missing or damaged seals
- Main control valve body molded leadframe
- PCM

B1 CHECK THE TFT (TRANSMISSION FLUID TEMPERATURE) SENSOR INPUT SIGNAL CIRCUIT

- Ignition OFF.
- Disconnect Transmission Vehicle Harness [C1575](#) .
- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- Connect the diagnostic tool.
- Ignition ON.
- Access the PCM and monitor the TFT (Deg C) PID
- Access the PCM and monitor the TFT_V (V) PID

Does the TFT PID display approximately -40Â°C (-40Â°F) and the TFTV PID display 4.96 to 5.10 volts?

Yes	GO to B2
No	GO to B3

B2 CHECK THE TFT (TRANSMISSION FLUID TEMPERATURE) SENSOR SIGNAL RETURN CIRCUIT

- Connect a fused jumper to the transmission vehicle harness:

6R100 TRANSMISSION

Positive Lead	Measurement / Action	Negative Lead
C1575-5		C1575-6

Does the TFT PID display approximately 195Â°C (383Â°F) and the TFTV PID display 0 volts?

Yes	GO to B9
No	GO to B3

B3 CHECK THE TFT (TRANSMISSION FLUID TEMPERATURE) SENSOR INPUT SIGNAL CIRCUIT FOR VOLTAGE

- Ignition ON.
- Measure:

6R100 TRANSMISSION	
--------------------	--

Positive Lead	Measurement / Action	Negative Lead
C1575-6		Ground

Is the voltage between 4.8 and 5.1 volts?

Yes	GO to B6
No	GO to B4

B4 CHECK THE TFT (TRANSMISSION FLUID TEMPERATURE) SENSOR INPUT SIGNAL CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect PCM [C175T](#) .
- Measure:

6R100 TRANSMISSION	POWERTRAIN CONTROL MODULE (PCM)
--------------------	---------------------------------

Positive Lead	Measurement / Action	Negative Lead
C1575-6	Ω	C175T-42

Is the resistance less than 3 ohms?

Yes	GO to B5
No	REPAIR the circuit.

B5 CHECK THE TFT (TRANSMISSION FLUID TEMPERATURE) SENSOR INPUT SIGNAL CIRCUIT FOR A SHORT TO GROUND

- Measure:

6R100 TRANSMISSION	
--------------------	--

Positive Lead	Measurement / Action	Negative Lead
C1575-6	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	☐ Click here to access Guided Routine (PCM). After installing a new PCM, carry out the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, General Procedures).
No	REPAIR the circuit.

B6 CHECK THE TFT (TRANSMISSION FLUID TEMPERATURE) SENSOR SIGNAL RETURN CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect PCM [C175T](#) .
- Measure:

6R100 TRANSMISSION	POWERTRAIN CONTROL MODULE (PCM)
--------------------	---------------------------------

Positive Lead	Measurement / Action	Negative Lead
C1575-5	Ω	C175T-57

Is the resistance less than 3 ohms?

Yes	GO to B7
No	REPAIR the circuit.

B7 CHECK THE TFT (TRANSMISSION FLUID TEMPERATURE) SENSOR SIGNAL RETURN CIRCUIT FOR A SHORT TO GROUND

- Measure:

6R100 TRANSMISSION	
--------------------	--

Positive Lead	Measurement / Action	Negative Lead
C1575-5	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to B8
No	REPAIR the circuit.

B8 CHECK THE TFT (TRANSMISSION FLUID TEMPERATURE) SENSOR SIGNAL RETURN CIRCUIT FOR A SHORT TOGETHER WITH THE POWER CIRCUITS

- Measure:

6R100 TRANSMISSION

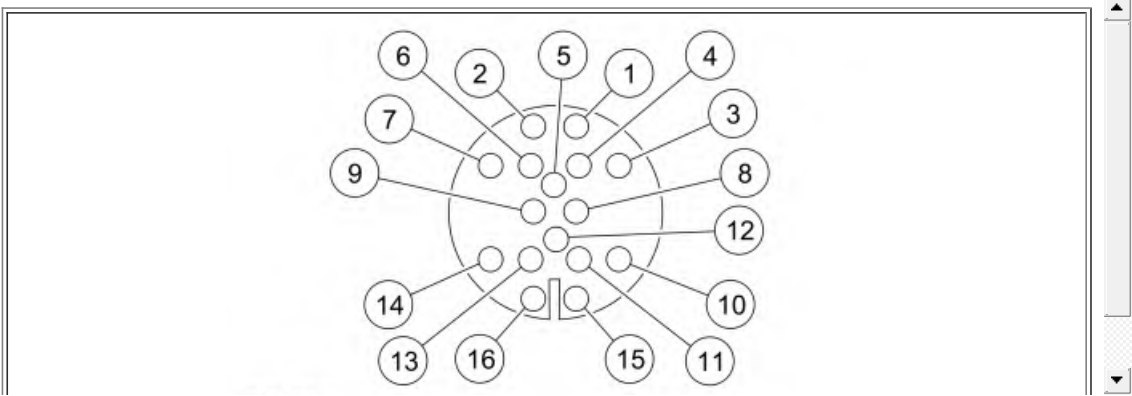
Positive Lead	Measurement / Action	Negative Lead
C1575-5	Ω	C1575-4
C1575-5	Ω	C1575-6
C1575-5	Ω	C1575-7
C1575-5	Ω	C1575-12

Are the resistances greater than 10,000 ohms?

Yes	☐ Click here to access Guided Routine (PCM). After installing a new PCM, carry out the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission “6R100, General Procedures).
No	REPAIR the circuit.

B9 CHECK TFT (TRANSMISSION FLUID TEMPERATURE) SENSOR RESISTANCE

- Measure: (Component side using the following temperature to resistance chart)



Positive Lead	Measurement / Action	Negative Lead
Component side, pin 5	Ω	Component side, pin 6

C1575-5	Ω	C1575-6
Â°C	Â°F	Resistance
-40 to -20	-40 to -4	967K-284K
-19 to -1	-3 to 31	284K-100K
0-20	32-68	100K-37K
21-40	69-104	37K-16K
41-70	105-158	16K-5K
71-90	159-194	5K-2.7K
91-110	195-230	2.7K-1.5K
111-130	231-266	1.5K-0.8K
131-150	267-302	0.8K-0.54K

Does the temperature to resistance specification match?

Yes	To diagnose an overheating concern. REFER to: Transmission Cooling (307-02A Transmission Cooling - 6-Speed Automatic Transmission & 6R100, Diagnosis and Testing).
No	INSTALL a new molded leadframe. REFER to: Shift Solenoids (SS) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission & 6R100, Removal and Installation).

PINPOINT TEST C : TRANSMISSION RANGE SENSOR

Refer to Wiring Diagrams Cell [29](#) for schematic and connector information.

Normal Operation and Fault Conditions

The TR sensor is located inside the transmission at the manual control lever and is integral to the molded leadframe. It contains a set of 4 switches that open and close according to the position of the manual valve. A micro processor within the TR sensor converts the status of the 4 switches into a 125 Hz pulse width modulated signal. The PCM uses the TR sensor signal for its shift strategy and TCC operation. The TR sensor signal is also used by the starting signal and reverse lights. DTCs P0705, P0706, P0707, P0708, P0709, P1702, P1705 and P1921 cannot be set by an incorrectly adjusted selector lever cable.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0705:00	Transmission Range Sensor "A" Circuit (PRNDL Input): No Sub Type Information	This DTC indicates the PCM detected a TR sensor circuit fault, but was unable to determine a specific cause. If a more specific DTC is set, resolve them first.
PCM P0706:00	Transmission Range Sensor "A" Circuit Range/Performance: No Sub Type Information	This DTC sets if the PCM detects the duty cycle for TR sensor A is within 8-92%, but the frequency is not 75-125 Hz. The failsafe logic disables all gears except park, revers, neutral, and 5M. If this DTC is set while the engine is off, the failsafe logic disables engine cranking.
PCM P0707:00	Transmission Range Sensor "A" Circuit Low: No Sub Type Information	This DTC sets if the PCM detects the duty cycle for TR sensor A is less than 8%, indicating an open circuit or a short to ground. The failsafe logic disables all gears except park, revers, neutral, and 5M. If this DTC is set while the engine is off, the failsafe logic disables engine cranking.
PCM P0708:00	Transmission Range Sensor "A" Circuit High: No Sub Type Information	This DTC sets if the PCM detects the duty cycle for TR sensor A is more than 92%, indicating a short to power. The failsafe logic disables all gears except park, revers, neutral, and 5M. If this DTC is set while the engine is off, the failsafe logic disables engine cranking.
PCM P0709:00	Transmission Range Sensor "A" Circuit Intermittent: No Sub Type Information	This DTC sets if the PCM detects the duty cycle for TR sensor A is not within 8-92%. Service the more specific DTC first.
PCM P1702:00	Transmission Range Sensor Circuit Intermittent: No Sub Type Information	This DTC illuminates the wrench light in conjunction with P0707, P0708 and/or P0709. Service the more specific DTC first.
PCM P1705:00	Transmission Range Circuit Not Indicating Park/Neutral During Self Test: No Sub Type Information	The TR sensor circuit did not indicate park or neutral during a KOEO or a KOER self test.
PCM P1921:00	Transmission Range Signal: No Sub Type Information	This DTC sets in conjunction with P0707 and/or P0708 and indicates the TR sensor failure was detected when the PCM was powered on but the engine was not running. When this DTC is stored, the engine will not start.

Possible Sources

- Connectors damaged or pushed-out terminals, corrosion, loose wires or ground and missing or damaged seals
- TR sensor
- PCM

C1 CHECK TR SENSOR OPERATION

- Ignition ON.
- Connect the diagnostic tool.
- Access the PCM and monitor the TR_A_DC (% Duty Cycle) PID
- Access the PCM and monitor the TR_A_FREQ (Hz) PID
- Move the selector lever into each range and stop.
- Observe parameter identifications (PIDs) TR_A_DC and TR_FREQ while wiggling the harness or driving the vehicle.
- Compare PID TR_A_DC to the selector lever position duty cycle, using the following chart.

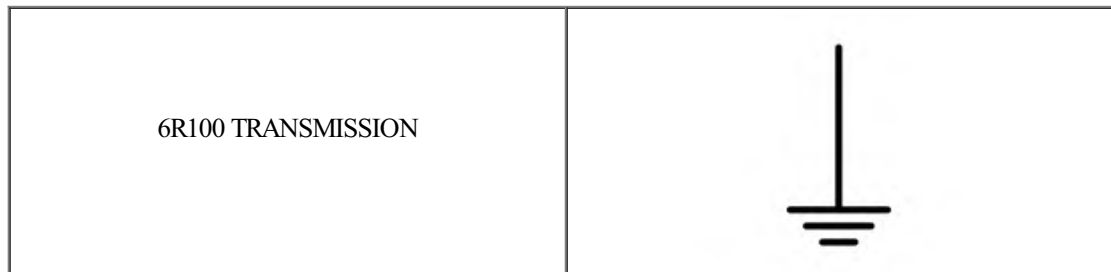
Selector Lever Position	Range (% Duty Cycle)
P	8.0 – 25.8
R	30.50 – 39.31
N	40.54 – 52.49
D	54.35 – 71.15

Is the TR_FREQ between 100 to 150 Hz, the TR_A_DC within range, and do both remain steady when the harness is wiggled or the vehicle is driven?

Yes	The fault is not present at this time and might be intermittent. INSPECT all wiring connections for damaged or pushed-out terminals, corrosion, loose wires and missing or damaged seals. REPAIR as necessary.
No	GO to C2

C2 CHECK THE TR SENSOR VBPWR CIRCUIT FOR POWER

- Ignition OFF.
- Disconnect Transmission Vehicle Harness [C1575](#) .
- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C1575-12		Ground

Is the voltage greater than 11 volts?

Yes	GO to C3
No	GO to C4

C3 CHECK THE TR SENSOR SIGNAL CIRCUIT FOR POWER

- Measure:

6R100 TRANSMISSION	
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Positive Lead	Measurement / Action	Negative Lead
C1575-4		Ground

Is the voltage greater than 4.8 volts?

Yes	GO to C6
No	GO to C4

C4 CHECK THE TR SENSOR VBPWR AND SIGNAL CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect PCM [C175T](#).
- Measure:

6R100 TRANSMISSION	POWERTRAIN CONTROL MODULE (PCM)
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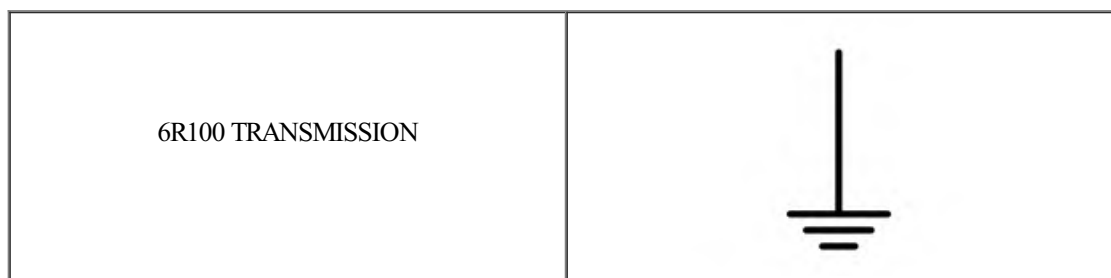
Positive Lead	Measurement / Action	Negative Lead
C1575-4	Ω	C175T-36
C1575-12	Ω	C175T-50

Are the resistances less than 3 ohms?

Yes	GO to C5
No	REPAIR the circuit.

C5 CHECK THE TR SENSOR VBPWR AND SIGNAL CIRCUITS FOR A SHORT TO GROUND

- Measure:



Positive Lead	Measurement / Action	Negative Lead
C1575-4	Ω	Ground
C1575-12	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	▫ Click here to access Guided Routine (PCM). After installing a new PCM, carry out the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€™6R100, General Procedures).
No	REPAIR the circuit.

C6 CHECK THE TR GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect PCM [C175T](#) .
- Measure:

6R100 TRANSMISSION	POWERTRAIN CONTROL MODULE (PCM)
--------------------	---------------------------------

Positive Lead	Measurement / Action	Negative Lead
C1575-11	Ω	C175T-7

Is the resistance less than 3 ohms?

Yes	GO to C7
No	REPAIR the circuit.

C7 CHECK THE TR GROUND CIRCUIT FOR A SHORT TO THE POWER CIRCUITS

- Measure:

6R100 TRANSMISSION

Positive Lead	Measurement / Action	Negative Lead
C1575-11	Ω	C1575-4
C1575-11	Ω	C1575-6
C1575-11	Ω	C1575-7
C1575-11	Ω	C1575-12

Are the resistances greater than 10,000 ohms?

Yes	GO to C8
No	REPAIR the circuit.

C8 CHECK TR SENSOR TO MANUAL VALVE

- Drain the transmission fluid and remove the transmission fluid pan.
REFER to: Transmission Fluid Pan, Gasket and Filter (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Removal and Installation).
- Check the connection between the TR sensor and the manual control valve.
REFER to: Shift Solenoids (SS) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Removal and Installation).

Is the TR sensor connected to the manual control valve shaft?

Yes	INSTALL a new molded leadframe. REFER to: Shift Solenoids (SS) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Removal and Installation).
No	CONNECT the TR sensor to the manual control valve, REFER to: Shift Solenoids (SS) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Removal and Installation). CLEAN any debris from the molded leadframe. RUN the KOEO self-test. If DTCs return, INSTALL a new molded leadframe.

PINPOINT TEST D : TURBINE SHAFT SPEED AND OUTPUT SHAFT SPEED SENSORS

Refer to Wiring Diagrams Cell [29](#) for schematic and connector information.

Normal Operation and Fault Conditions

The TSS and the OSS sensors are both Hall-effect type sensors that provide signals to the PCM that change in frequency as the rotating speeds of the components they monitor vary. The TSS sensor monitors the speed of the forward (1,2,3,4) clutch cylinder and the OSS sensor monitors the speed of the output shaft ring gear. The PCM compares the TSS sensor signal with the engine speed information to determine the amount of slip occurring in the torque converter. The PCM also compares the TSS sensor signal with the OSS sensor signal to determine the gear ratio provided by the rear planetary gearset. The PCM uses the TSS and OSS sensor signals as inputs for its strategies for shifting and TCC operation. The PCM also uses the TSS and OSS sensor signals for transmission fault detection and diagnostics.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0715:00	Input/Turbine Shaft Speed Sensor "A" Circuit: No Sub Type Information	This DTC indicates an open circuit or a short to ground in the TSS sensor circuit.
PCM P0717:00	Input/Turbine Shaft Speed Sensor "A" Circuit No Signal: No Sub Type Information	This DTC indicates the TSS sensor reads 0 speed when vehicle conditions (mainly the OSS sensor) indicate the turbine shaft should be rotating. This could be caused by an open circuit, a short to ground or a short to power in the TSS sensor circuit, or by a failed sensor.
PCM P0718:00	Input/Turbine Shaft Speed Sensor "A" Circuit Intermittent: No Sub Type Information	This DTC indicates an unrealistic change or an intermittent/noise signal from the TSS sensor. This could be caused by an intermittent open circuit, short to ground or short to power in the TSS sensor circuit, or by a failed sensor.
PCM P0720:00	Output Shaft Speed Sensor Circuit: No Sub Type Information	This DTC indicates the OSS sensor reads 0 speed when vehicle conditions (mainly the TSS sensor) indicate the output shaft should be rotating. This could be caused by an open circuit, a short to ground or a short to power in the OSS sensor circuit, or by a failed sensor.
PCM P0721:00	Output Shaft Speed Sensor Circuit Range/Performance: No Sub Type Information	This DTC indicates an unrealistic change or an intermittent/noise signal from the OSS sensor. This could be caused by an intermittent open circuit, short to ground or short to power in the OSS sensor circuit, or by a failed sensor.
PCM P0722:00	Output Shaft Speed Sensor Circuit No Signal: No Sub Type Information	This DTC illuminates the wrench light in conjunction with P0720. Resolve the more specific DTC first.

Possible Sources

- Connectors damaged or pushed-out terminals, corrosion, loose wires or ground and missing or damaged seals
- TSS
- OSS
- PCM

D1 DRIVE CYCLE TEST

NOTE: Read and record all DTCs.

NOTE: If DTCs P0705, P0706, P0707, P0708, P0709, P1702, P1705 and/or P1921 are set, diagnose those DTCs first.

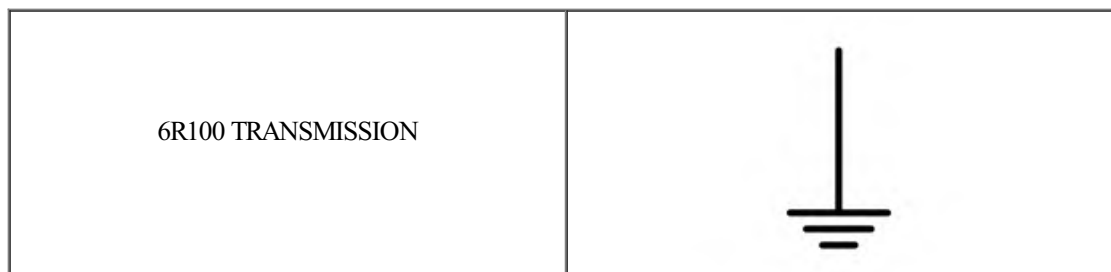
- Connect the diagnostic tool.
- Using the diagnostic scan tool, monitor PIDs TSS_SRC and OSS_SRC while road testing the vehicle. Drive the vehicle so the transmission upshifts and downshifts through all the gears.

Does TSS_SRC increase and decrease with engine rpm and OSS_SRC increase and decrease with vehicle speed?

Yes	The fault is not present at this time and might be intermittent. INSPECT all wiring connections for damaged or pushed-out terminals, corrosion, loose wires and missing or damaged seals. REPAIR as necessary.
No	GO to D2

D2 CHECK THE TSS (TURBINE SHAFT SPEED) , OSS (OUTPUT SHAFT SPEED) POWER CIRCUIT FOR POWER

- Ignition OFF.
- Disconnect Transmission Vehicle Harness [C1575](#) .
- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C1575-12		Ground

Is the voltage greater than 11 volts?

Yes	GO to D5
No	GO to D3

D3 CHECK THE TSS (TURBINE SHAFT SPEED) , OSS (OUTPUT SHAFT SPEED) POWER CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect PCM [C175T](#) .
- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- Measure:

6R100 TRANSMISSION	
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Positive Lead	Measurement / Action	Negative Lead
C1575-12	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to D4
No	REPAIR the circuit.

D4 CHECK THE TSS (TURBINE SHAFT SPEED) , OSS (OUTPUT SHAFT SPEED) POWER CIRCUIT FOR AN OPEN

- Measure:

6R100 TRANSMISSION	POWERTRAIN CONTROL MODULE (PCM)
--------------------	---------------------------------

Positive Lead	Measurement / Action	Negative Lead
C1575-12	Ω	C175T-50

Is the resistance less than 3 ohms?

Yes	☐ Click here to access Guided Routine (PCM). After installing a new PCM, carry out the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, General Procedures).
No	REPAIR the circuit.

D5 CHECK THE TSS (TURBINE SHAFT SPEED) , OSS (OUTPUT SHAFT SPEED) SENSOR GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect PCM [C175T](#) .
- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- Measure:

6R100 TRANSMISSION

Positive Lead	Measurement / Action	Negative Lead
C1575-11	Ω	C1575-7

Is the resistance less than 3 ohms?

Yes	GO to D7
No	REPAIR the circuit.

D6 CHECK THE TSS (TURBINE SHAFT SPEED) , OSS (OUTPUT SHAFT SPEED) SENSOR GROUND CIRCUIT FOR A SHORT TO THE POWER CIRCUITS

- Measure:

6R100 TRANSMISSION

Positive Lead	Measurement / Action	Negative Lead
C1575-11	Ω	C1575-4
C1575-11	Ω	C1575-6
C1575-11	Ω	C1575-7
C1575-11	Ω	C1575-12

Is the resistance less than 3 ohms?

Yes	GO to D7
No	REPAIR the circuit.

D7 CHECK THE TSS (TURBINE SHAFT SPEED) , OSS (OUTPUT SHAFT SPEED) SENSOR SIGNAL CIRCUIT FOR AN OPEN

- For the TSS sensor, measure:

6R100 TRANSMISSION	POWERTRAIN CONTROL MODULE (PCM)
--------------------	---------------------------------

Positive Lead	Measurement / Action	Negative Lead
C1575-1	Ω	C175T-38

- For the OSS sensor, measure:

6R100 TRANSMISSION	POWERTRAIN CONTROL MODULE (PCM)
--------------------	---------------------------------

Positive Lead	Measurement / Action	Negative Lead
C1575-15	Ω	C175T-51

Is the resistance less than 3 ohms on the suspect circuit?

Yes	GO to D8
No	REPAIR the circuit.

D8 CHECK THE TSS (TURBINE SHAFT SPEED) , OSS (OUTPUT SHAFT SPEED) SENSOR SIGNAL CIRCUIT FOR A SHORT TO GROUND

- For the TSS sensor, measure:

6R100 TRANSMISSION	
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Positive Lead	Measurement / Action	Negative Lead
C1575-1	Ω	Ground

- For the OSS sensor, measure:

6R100 TRANSMISSION	
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Positive Lead	Measurement / Action	Negative Lead
C1575-15	Ω	Ground

Is the resistance greater than 10,000 ohms on the suspect circuit?

Yes	GO to D9
No	REPAIR the circuit.

D9 CHECK THE TSS (TURBINE SHAFT SPEED) , OSS (OUTPUT SHAFT SPEED) SIGNAL CIRCUIT FOR AN OPEN

- Connect PCM [C175T](#).
- Ignition ON.
- Measure:

6R100 TRANSMISSION	
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Positive Lead	Measurement / Action	Negative Lead
C1575-1		Ground

Is the voltage approximately 3 volts?

Yes	If the voltage is equal to 3 volts, INSTALL a new molded leadframe, REFER to: Shift Solenoids (SS) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Removal and Installation). CLEAR the DTCs.
No	If the voltage is 0 volts, Click here to access Guided Routine (PCM) . After installing a new PCM, carry out the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, General Procedures). If the voltage is greater than 3 volts, REPAIR the short to power.

[PINPOINT TEST E : DTC P0701, P2700, P2701, P2702, P2703, P2704, P2705](#)

Normal Operation and Fault Conditions

The PCM monitors clutch applications. If a non-electrical clutch fault is detected, a DTC is set in memory.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0701:00	Transmission Control System Range/Performance: No Sub Type Information	This DTC indicates the PCM detected an intermittent clutch fault and may set with DTC P2700, P2701, P2702, P2703 and/or P2704. Resolve the more specific DTCs first.
PCM P2700:00	Transmission Friction Element "A" Apply Time Range/Performance: No Sub Type Information	This DTC indicates the PCM detected a non-electrical fault in the application of the forward clutch and may set with either DTC P0751 or P0752. If either of those DTCs are set, resolve them first.
PCM P2701:00	Transmission Friction Element "B" Apply Time Range/Performance: No Sub Type Information	This DTC indicates the PCM detected a non-electrical fault in the application of the direct clutch and may set with either P0761 or P0757. If either of those DTCs are set, resolve them first.
PCM P2702:00	Transmission Friction Element "C" Apply Time Range/Performance: No Sub Type Information	This DTC indicates the PCM detected a non-electrical fault in the application of the intermediate clutch and may set with either P0761 or P0762. If either of those DTCs are set, resolve them first.
PCM P2703:00	Transmission Friction Element "D" Apply Time Range/Performance: No Sub Type Information	This DTC indicates the PCM detected a non-electrical fault in the application of the low/reverse clutch and may set with either P0766 or P0767. If either of those DTCs are set, resolve them first.
PCM P2704:00	Transmission Friction Element "E" Apply Time Range/Performance: No Sub Type Information	This DTC indicates the PCM detected a non-electrical fault in the application of the overdrive clutch and may set with either P0771 or P0772. If either of those DTCs are set, resolve them first.
PCM P2705:00	Transmission Friction Element "F" Apply Time Range/Performance: No Sub Type Information	This DTC indicates the PCM detected a non-electrical fault in the application of the one-way clutch.

Possible Sources

- Clutch stuck on
- Clutch stuck off
- Clutch damaged

E1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Road test the vehicle.
- Using a diagnostic scan tool, carry out the PCM self-test.

Are DTCs P0701, P2700, P2701, P2702, P2703, P2704 and/or P2705 present in the PCM?

Yes	If DTC P0701 returns alone, REFER to: Diagnosis By Symptom (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For P2700, if either DTC P0751 or P0752 are set, resolve them first. Otherwise, REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For P2701, if either DTC P0756 or P0757 are set, resolve them first. Otherwise, REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For P2702, if either DTC P0761 or P0762 are set, resolve them first. Otherwise, REFER to: Intermediate Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For P2703, if either DTC P0766 or P0767 are set, resolve them first. Otherwise, REFER to: Low/Reverse Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For P2704, if either DTC P0771 or P0772 are set, resolve them first. Otherwise, REFER to: Overdrive Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For DTC P2705, REFER to: Low One-Way Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
No	The fault is not present at this time and may be intermittent.

PINPOINT TEST F : DTC P0702, P0882, P0883, P1397

Refer to Wiring Diagrams Cell [29](#) for schematic and connector information.

Normal Operation and Fault Conditions

The PCM monitors the supplied voltage and sets a DTC if the voltage rises above or falls below threshold.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0702:00	Transmission Control System Electrical: No Sub Type Information	This DTC indicates the PCM detected a supply voltage either above or below threshold.
PCM P0882:00	TCM Power Input Signal Low: No Sub Type Information	This DTC indicates the PCM detected a supply voltage of less than 9 volts.
PCM P0883:00	TCM Power Input Signal High: No Sub Type Information	This DTC indicates the PCM detected a supply voltage of greater than 21 volts.
PCM P1397:00	System Voltage Out Of Self Test Range: No Sub Type Information	This DTC indicates the PCM detected a voltage supply outside the allowed self-test range of 11 to 18 volts during a KOEO or a KOER self-test.

Possible Sources

- Charging system concern
- High resistance ground condition
- Low voltage to the PCM

F1 RECHECK FOR THE VOLTAGE FAULT DTC (DIAGNOSTIC TROUBLE CODE) IN THE PCM (POWERTRAIN CONTROL MODULE)

- Ignition OFF.
- Disconnect and inspect all PCM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Check the PCM power and ground circuits for opens or short to ground. Refer to the Wiring Diagrams to identify the cause of any circuit faults.
- Reconnect all PCM connectors.
- Ignition ON.
- Using a diagnostic scan tool, clear the DTC for the PCM.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the PCM self-test.

Are DTCs P0702, P0882, P0883 still present?

Yes	DIAGNOSE the vehicle charging concern.
No	If the PCM does not communicate with the scan tool, REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing). Otherwise, the system is operating properly at this time. The DTC may have been set previously during battery charging or while jump starting the vehicle.

Normal Operation and Fault Conditions

The PCM monitors clutch applications for all gears. It sets a DTC if it detects ratio errors but is unable to detect which clutch caused the issue. The transmission logic disables the gear in question. If multiple incorrect gear ratio DTCs are set, look for a common clutch involved in the operation of those gear applications. If no common clutch errors are found, look for line pressure or pump pressure issues.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0729:00	Gear 6 Incorrect Ratio: No Sub Type Information	The PCM detected a ratio error either in or while shifting to sixth gear. The ratio error did not last long enough for the PCM to isolate the fault to a specific clutch. The logic disabled sixth gear for the remainder of the key cycle during which the fault occurred.

Possible Sources

- Transmission fluid contamination
- Low line pressure
- Intermediate clutch stuck off or slipping
- Overdrive clutch slipping or damaged
- Direct clutch stuck on

G1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Road test the vehicle.
- Using a diagnostic scan tool, carry out the PCM self-test.

Is DTC P0729 present in the PCM?

Yes	Check the intermediate clutch for being stuck off or slipping. REFER to: Intermediate Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). Check the overdrive clutch for slipping. REFER to: Overdrive Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). Check the direct clutch for being stuck on. REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
No	The fault is not present at this time and may be intermittent.

☐ PINPOINT TEST H : DTC P0731

Normal Operation and Fault Conditions

The PCM monitors clutch applications for all gears. It sets a DTC if it detects ratio errors but is unable to detect which clutch caused the issue. The transmission logic disables the gear in question. If multiple incorrect gear ratio DTCs are set, look for a common clutch involved in the operation of those gear applications. If no common clutch errors are found, look for line pressure or pump pressure issues.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0731:00	Gear 1 Incorrect Ratio: No Sub Type Information	The PCM detected a ratio error either in or while shifting to first gear. The ratio error did not last long enough for the PCM to isolate the fault to a specific clutch. The logic disabled first gear for the remainder of the key cycle in which the fault occurred.

Possible Sources

- Transmission fluid contamination
- Low line pressure
- Forward clutch stuck off or slipping
- Low one-way clutch slipping or damaged
- Low/reverse clutch stuck off or slipping

H1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCs)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Road test the vehicle.
- Using a diagnostic scan tool, carry out the PCM self-test.

Is DTC P0731 present in the PCM?

Yes	Check the forward clutch for being stuck off or slipping. REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). Check the low/reverse clutch for being stuck off or slipping. REFER to: Low/Reverse Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). Check the low one-way clutch for slipping. REFER to: Low One-Way Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
No	The fault is not present at this time and may be intermittent.

[PINPOINT TEST I : DTC P0732](#)

Normal Operation and Fault Conditions

The PCM monitors clutch applications for all gears. It sets a DTC if it detects ratio errors but is unable to detect which clutch caused the issue. The transmission logic disables the gear in question. If multiple incorrect gear ratio DTCs are set, look for a common clutch involved in the operation of those gear applications. If no common clutch errors are found, look for line pressure or pump pressure issues.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0732:00	Gear 2 Incorrect Ratio: No Sub Type Information	The PCM detected a ratio error either in or while shifting to second gear. The ratio error did not last long enough for the PCM to isolate the fault to a specific clutch. The logic disabled second gear for the remainder of the key cycle in which the fault occurred.

Possible Sources

- Transmission fluid contamination
- Low line pressure
- Forward clutch slipping or damaged
- Intermediate clutch stuck off or slipping
- Low/reverse clutch stuck on
- Low one-way clutch stuck on

11 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Road test the vehicle.
- Using a diagnostic scan tool, carry out the PCM self-test.

Is DTC P0732 present in the PCM?

Yes	Check the forward clutch for slipping. REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). Check the intermediate clutch for being stuck off or slipping. REFER to: Intermediate Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). Check the low/reverse clutch for being stuck on. REFER to: Low/Reverse Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). Check the low one-way clutch for being seized. REFER to: Low One-Way Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
No	The fault is not present at this time and may be intermittent.

PINPOINT TEST J : DTC P0733

Normal Operation and Fault Conditions

The PCM monitors clutch applications for all gears. It sets a DTC if it detects ratio errors but is unable to detect which clutch caused the issue. The transmission logic disables the gear in question. If multiple incorrect gear ratio DTCs are set, look for a common clutch involved in the operation of those gear applications. If no common clutch errors are found, look for line pressure or pump pressure issues.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0733:00	Gear 3 Incorrect Ratio: No Sub Type Information	The PCM detected a ratio error either in or while shifting to third gear. The ratio error did not last long enough for the PCM to isolate the fault to a specific clutch. The logic disabled third gear for the remainder of the key cycle in which the fault occurred.

Possible Sources

- Transmission fluid contamination
- Low line pressure
- Forward clutch slipping or damaged
- Direct clutch stuck off or slipping
- Intermediate clutch stuck on

J1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCs)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Road test the vehicle.
- Using a diagnostic scan tool, carry out the PCM self-test.

Is DTC P0733 present in the PCM?

Yes	Check the forward clutch for slipping. REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). Check the direct clutch for being stuck off or slipping. REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). Check the intermediate clutch for being stuck on. REFER to: Intermediate Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
No	The fault is not present at this time and may be intermittent.

☐ PINPOINT TEST K : DTC P0734

Normal Operation and Fault Conditions

The PCM monitors clutch applications for all gears. It sets a DTC if it detects ratio errors but is unable to detect which clutch caused the issue. The transmission logic disables the gear in question. If multiple incorrect gear ratio DTCs are set, look for a common clutch involved in the operation of those gear applications. If no common clutch errors are found, look for line pressure or pump pressure issues.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0734:00	Gear 4 Incorrect Ratio: No Sub Type Information	The PCM detected a ratio error either in or while shifting to fourth gear. The ratio error did not last long enough for the PCM to isolate the fault to a specific clutch. The logic disabled fourth gear for the remainder of the key cycle in which the fault occurred.

Possible Sources

- Transmission fluid contamination
- Low line pressure
- Forward clutch slipping or damaged
- Overdrive clutch stuck off or slipping
- Direct clutch stuck on

K1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCs)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Road test the vehicle.
- Using a diagnostic scan tool, carry out the PCM self-test.

Is DTC P0734 present in the PCM?

Yes	Check the forward clutch for slipping. REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€” 6R100, Diagnosis and Testing). Check the overdrive clutch for being stuck off or slipping. REFER to: Overdrive Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€” 6R100, Diagnosis and Testing). Check the direct clutch for being stuck on. REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€” 6R100, Diagnosis and Testing).
No	The fault is not present at this time and may be intermittent.

☐ PINPOINT TEST L : DTC P0735

Normal Operation and Fault Conditions

The PCM monitors clutch applications for all gears. It sets a DTC if it detects ratio errors but is unable to detect which clutch caused the issue. The transmission logic disables the gear in question. If multiple incorrect gear ratio DTCs are set, look for a common clutch involved in the operation of those gear applications. If no common clutch errors are found, look for line pressure or pump pressure issues.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0735:00	Gear 5 Incorrect Ratio: No Sub Type Information	The PCM detected a ratio error either in or while shifting to fifth gear. The ratio error did not last long enough for the PCM to isolate the fault to a specific clutch. The logic disabled fifth gear for the remainder of the key cycle in which the fault occurred.

Possible Sources

- Transmission fluid contamination
- Low line pressure
- Direct clutch stuck off or slipping
- Overdrive clutch slipping or damaged
- Forward clutch stuck on

L1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCs)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Road test the vehicle.
- Using a diagnostic scan tool, carry out the PCM self-test.

Is DTC P0735 present in the PCM?

Yes	Check the direct clutch for being stuck off or slipping. REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). Check the overdrive clutch for slipping. REFER to: Overdrive Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). Check the forward clutch for being stuck on. REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
No	The fault is not present at this time and may be intermittent.

[PINPOINT TEST M : DTC P0741](#)

Normal Operation and Fault Conditions

The PCM monitors clutch applications. It sets a DTC if it detects a non-electrical fault in the TCC.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0741:00	Torque Converter Clutch Solenoid Circuit Performance/Stuck Off No Sub Type Information	The PCM detected that the TCC failed to apply when it was commanded on, but did not detect an electrical fault in the TCC solenoid circuit. The logic disabled TCC lock for the remainder of the key cycle in which the fault occurred.

Possible Sources

- Non-electrical TCC solenoid stuck off
- TCC mechanical failure
- TCC regulator apply valve stuck in the TCC release position
- TCC control valve stuck in the TCC release position
- Hydraulic circuit leak causing a loss of pressure to the TCC

M1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Road test the vehicle.
- Using a diagnostic scan tool, carry out the PCM self-test.

Is DTC P0741 present in the PCM?

Yes	Check the TCC for a does not apply condition. REFER to: Torque Converter Clutch (TCC) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
No	The fault is not present at this time and may be intermittent.

☐ PINPOINT TEST N : DTC P0751, P0756, P0761, P0766, P0771, P07A8, P07AA

Normal Operation and Fault Conditions

The PCM monitors clutch applications. It sets a DTC if it detects a non-electrical fault in the shift solenoids or clutches.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0751:00	Shift Solenoid "A" Performance/Stuck Off: No Sub Type Information	This DTC indicates the PCM detected a non-electrical failure causing the forward clutch to fail to apply. When this DTC sets, the failsafe logic disables all gears that use the forward clutch, which allows only 5th and 6th gears.
PCM P0756:00	Shift Solenoid "B" Performance/Stuck Off: No Sub Type Information	This DTC indicates the PCM detected a non-electrical failure causing the direct clutch to fail to apply. When this DTC sets, the failsafe logic disables all gears that use the direct clutch, which allows only 1st, 2nd, 4th and 6th gears.
PCM P0761:00	Shift Solenoid "C" Performance/Stuck Off: No Sub Type Information	This DTC indicates the PCM detected a non-electrical failure causing the intermediate clutch to fail to apply. When this DTC sets, the failsafe logic disables all gears that use the intermediate clutch, which allows only reverse, 1st and 3rd through 5th gears.
PCM P0766:00	Shift Solenoid "D" Performance/Stuck Off: No Sub Type Information	This DTC indicates the PCM detected a non-electrical failure causing the low/reverse clutch to fail to apply. When this DTC sets, the failsafe logic disables all gears that use the low reverse clutch, which allows only 2nd through 6th gears.
PCM P0771:00	Shift Solenoid "E" Performance/Stuck Off: No Sub Type Information	This DTC indicates the PCM detected a non-electrical failure causing the overdrive clutch to fail to apply. When this DTC sets, the failsafe logic disables all gears that use the overdrive clutch, which allows only reverse and 1st through 3rd gears.
PCM P07A8:00	Transmission Friction Element "D" Performance/Stuck Off: No Sub Type Information	This DTC indicates the PCM detected a mechanical fault in the low/reverse clutch causing it to be stuck off. When this DTC sets, the failsafe logic disables all gears that use the low reverse clutch, which allows only 2nd through 6th gears.
PCM P07AA:00	Transmission Friction Element "E" Performance/Stuck Off: No Sub Type Information	This DTC indicates the PCM detected a mechanical fault in the overdrive clutch assembly causing it to be stuck off. When this DTC sets, the failsafe logic disables all gears that use the overdrive clutch, which allows only reverse and 1st through 3rd gears.

Possible Sources

- Shift solenoid stuck off
- Stuck control valve
- Contamination in the main control valve body
- Clutch damaged
- Hydraulic circuit leak

N1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Road test the vehicle.
- Using a diagnostic scan tool, carry out the PCM self-test.

Are diagnostic trouble codes (DTCs) P0751, P0756, P0761, P0766, P0771, P07A8, and/or P07AA present in the PCM?

Yes	For DTC P0751, forward clutch does not apply symptom, REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For DTC P0756, direct clutch does not apply symptom, REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For DTC P0761, intermediate clutch does not apply symptom, REFER to: Intermediate Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For DTC P0766 and/or P07A8, low/reverse clutch does not apply symptom, REFER to: Low/Reverse Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For DTC P0771 and/or P07AA, overdrive clutch does not apply symptom, REFER to: Overdrive Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
No	The fault is not present at this time and may be intermittent.

PINPOINT TEST O : DTC P0752, P0757, P0762, P0767, P0772, P07A9, P177F, P2758

Normal Operation and Fault Conditions

The PCM monitors clutch applications. It sets a DTC if it detects a non-electrical shift solenoid or clutch fault. The customer may experience erratic vehicle operation while these DTCs are set.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0752:00	Shift Solenoid "A" Stuck On: No Sub Type Information	This DTC indicates the PCM detected a non-electrical fault causing the forward clutch to stay applied when SSA was de-energized. When this DTC sets, the failsafe logic disables all gears that operate when the forward clutch is off, which allows only 1st through 4th gears.
PCM P0757:00	Shift Solenoid "B" Stuck On: No Sub Type Information	This DTC indicates the PCM detected a non-electrical fault causing the direct clutch to stay applied when SSB was energized. When this DTC sets, the failsafe logic disables all gears that operate when the direct clutch is off, which allows only reverse, 3rd and 5th gears.
PCM P0762:00	Shift Solenoid "C" Stuck On: No Sub Type Information	This DTC indicates the PCM detected a non-electrical fault causing the intermediate clutch to stay applied when SSC was de-energized. When this DTC sets, the failsafe logic disables all gears that operate when the intermediate clutch is off, which allows only 2nd and 6th gears.
PCM P0767:00	Shift Solenoid "D" Stuck On: No Sub Type Information	This DTC indicates the PCM detected a non-electrical fault causing the low/reverse clutch to stay applied when SSD was energized. When this DTC sets, the failsafe logic disables all gears that operate when the low/reverse clutch is off, which allows only reverse and 1st gear.
PCM P0772:00	Shift Solenoid "E" Stuck On: No Sub Type Information	This DTC indicates the PCM detected a non-electrical fault causing the overdrive clutch to stay applied when SSE was energized. When this DTC sets, the failsafe logic disables all gears that operate when the overdrive clutch is off, which allows only 4th through 6th gears.
PCM P07A9:00	Transmission Friction Element "D" Stuck On: No Sub Type Information	This DTC indicates the PCM detected a mechanical fault in the low/reverse clutch assembly causing it to be stuck on. When this DTC sets, the failsafe logic disables all gears that operate when the low/reverse clutch is off, which allows only reverse and 1st gear.
PCM P177F:00	Unable To Fully Engage Neutral: No Sub Type Information	This DTC indicates the PCM detected the forward clutch, direct clutch and/or low/reverse clutch is stuck on, causing a forward gear engagement when neutral is selected.
PCM P2758:00	Torque Converter Clutch Pressure Control Solenoid Stuck On: No Sub Type Information	This DTC indicates the PCM detected a non-electrical fault causing the TCC to stay applied when the TCC solenoid was de-energized. When this DTC sets the vehicle may experience engine stalling, lugging and poor shift quality.

Possible Sources

- Shift solenoid stuck on
- Stuck control valve
- Contamination in the main control valve body
- Clutch damaged

01 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCs)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Road test the vehicle.
- Using a diagnostic scan tool, carry out the PCM self-test.

Are DTCs P0752, P0757, P0762, P0767, P0772, P07A9, P177F and/or P2758 present in the PCM?

Yes	For DTC P177F, RESOLVE more specific clutch fault diagnostic trouble codes (DTCs) first. If no other diagnostic trouble codes are present, REFER to the symptom chart. For DTC P0752, forward clutch always applied symptom, REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For DTC P0757, direct clutch always applied symptom, REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For DTC P0762, intermediate clutch always applied symptom, REFER to: Intermediate Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For DTC P0767 and/or P07A9, low/reverse clutch always applied symptom, REFER to: Low/Reverse Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For DTC P0772, overdrive clutch always applied symptom, REFER to: Overdrive Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing). For DTC P2758, TCC always applied symptom, REFER to: Torque Converter Clutch (TCC) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
No	The fault is not present at this time and may be intermittent.

PINPOINT TEST P : DTC P1001

Normal Operation and Fault Conditions

The PCM only runs the KOER test when it detects the vehicle is in park or neutral and there is no vehicle speed indicated.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P1001:00	KOER Not Able to Complete, KOER Aborted: No Sub Type Information	This DTC indicates the PCM aborted the KOER self-test.

Possible Sources

- TR sensor or VSS related faults
- Incomplete or incorrect PMI of the PCM

P1 CHECK CORRECT GEAR STATE IS ACHIEVED

- Ignition ON.
- Using a diagnostic scan tool, monitor PID TR and PID VSS.
- Access the PCM and monitor the TR_CORRECTED PID
- Access the PCM and monitor the VSS (Kph) PID
- Select DRIVE.
- Select PARK.

Does PID TR_CORRECTED match the customer selected gear position and PID VSS show 0?

Yes	GO to P2
No	If diagnostic trouble codes (DTCs) related to the TR sensor are present, RESOLVE those first. REFER to the DTC chart. If diagnostic trouble codes (DTCs) related to the VSS are present, RESOLVE those first. REFER to: Anti-Lock Brake System (ABS) and Stability Control (206-09 Anti-Lock Brake System (ABS) and Stability Control, Diagnosis and Testing).

P2 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the PCM self-test.

Is DTC P1001 present in the PCM?

Yes	▫ Click here to access Guided Routine (PCM). After installing a new PCM, carry out the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission "6R100, General Procedures).
No	The fault is not present at this time and may be intermittent.

[PINPOINT TEST Q : DTC P1636](#)

Normal Operation and Fault Conditions

The PCM uses internal drivers that control the solenoid low sides to provide commanded current. These internal drivers communicate with the PCM internally.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P1636:00	Inductive Signature Chip Communication Error: No Sub Type Information	This DTC indicates an internal PCM loss of communication with the low side solenoid drivers. When communication is lost, the solenoid states become unknown, so the PCM opens the high side of the circuit. Only park, reverse, neutral and 5M are available.

Possible Sources

- Internal PCM component failure

Q1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Program the PCM with the latest calibration.
REFER to: Module Programming (418-01 Module Configuration, General Procedures).
- Carry out the transmission strategy download.
REFER to: Transmission Strategy Download (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, General Procedures).
- Road test the vehicle.
- Using a diagnostic scan tool, carry out the KOEO and KOER PCM self-tests.

Is DTC P1636 present in the PCM?

Yes	• Click here to access Guided Routine (PCM). After installing a new PCM, carry out the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, General Procedures).
No	The fault is not present at this time and may have been caused by a corrupted PCM calibration or an intermittent fault condition.

☐ PINPOINT TEST R : DTC P163E, P163F

Normal Operation and Fault Conditions

The PCM stores the transmission identification information in memory. The transmission identification information is located on the label on the side of the transmission.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P163E:00	Transmission Control Module Programming Error: No Sub Type Information	This DTC indicates the transmission identification does not match the version stored in the PCM calibration. Only gears park, reverse, neutral, 1A and 3M are available.
PCM P163F:00	Transmission ID Block Corrupted, Not Programmed: No Sub Type Information	This DTC indicates the transmission identification is not programmed in the PCM calibration. Only gears park, reverse, neutral, 1A and 3M are available.

Possible Sources

- Incorrect or corrupted PCM calibration.

R1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Program the PCM with the latest calibration.
REFER to: Module Programming (418-01 Module Configuration, General Procedures).
- Carry out the transmission strategy download.
REFER to: Transmission Strategy Download (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, General Procedures).
- Road test the vehicle.
- Using a diagnostic scan tool, carry out the KOEO and KOER PCM self-tests.

Is DTC P163E or P163F present in the PCM?

Yes	• Click here to access Guided Routine (PCM). After installing a new PCM, carry out the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, General Procedures).
No	The fault is not present at this time and may have been caused by a corrupted PCM calibration or an intermittent fault condition.

[PINPOINT TEST S : DTC P1700](#)

Normal Operation and Fault Conditions

The PCM monitors transmission performance and sets a DTC if it detects a mechanical fault.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P1700:00	Transmission Indeterminate Failure (Failed to Neutral): No Sub Type Information	This DTC indicates the PCM detected a failure to neutral.

Possible Sources

- Internal transmission components

S1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- If possible, road test the vehicle.
- Using a diagnostic scan tool, carry out the PCM self-test.

Are any more specific transmission diagnostic trouble codes (DTCS) present?

Yes	RESOLVE those first. REFER to the DTC chart.
No	REFER to the symptom chart.

[PINPOINT TEST T : DTC P1711](#)

Normal Operation and Fault Conditions

The PCM monitors transmission fluid temperature during KOEO and KOER self-tests, and assumes the self-tests will be run on a cold vehicle at room temperature.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P1711:00	Transmission Fluid Temperature Sensor Out Of Self Test Range: No Sub Type Information	This DTC indicates the PCM detected the TFT sensor out of self-test range during a KOEO or a KOER self-test. The PCM expects a transmission fluid temperature reading between 30Â°F (-1Â°C) and 220Â°F (104Â°C).

Possible Sources

- Transmission fluid temperature outside of self-test range
- Incorrect or corrupted PCM calibration.

T1 CHECK THE TRANSMISSION FLUID TEMPERATURE

- Ignition ON.
- Access the PCM and monitor the TFT (Deg C) PID

Does PID TFT show between -1Â°C (30Â°F) and 104Â°C (220Â°F)?

Yes	GO to T2
No	If the monitored temperature is plausible, either warm the transmission fluid temperature or let it cool into self-test range, then GO to T2 If the monitored temperature is not plausible, GO to Pinpoint Test B

T2 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the KOEO and KOER PCM self-tests.

Is DTC P1711 present in the PCM?

Yes	□ Click here to access Guided Routine (PCM). After installing a new PCM, carry out the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, General Procedures).
No	The fault is not present at this time and may have been caused by performing a self-test with the transmission fluid temperature out of the expected range.

☐ [PINPOINT TEST U : DTC P1744](#)

Normal Operation and Fault Conditions

The PCM monitors the TCC and sets a DTC if it falls outside of expected performance ranges.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P1744:00	Torque Converter Clutch Solenoid Circuit Performance: No Sub Type Information	This DTC illuminates the wrench light in conjunction with P0741 and/or P2758. Resolve the more specific DTC first.

Possible Sources

- Transmission may overheat if the TCC is continuously open
- TCC valve body control valve stuck off or on
- Seal faults causing loss of pressure
- TCC mechanical failure

U1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC from the PCM.
- Road test the vehicle, making sure TCC operation is attempted.
- Using a diagnostic scan tool, carry out the PCM self-test.

Did DTC P1744 return?

Yes	If diagnostic trouble codes (DTCs) P0741 and/or P2758 are also present, resolve those first. REFER to the DTC chart. If no other diagnostic trouble codes (DTCs) are present, REFER to the symptom chart.
No	The fault is not currently present and may be intermittent.

☐ [PINPOINT TEST V : DTC P1783](#)

Normal Operation and Fault Conditions

The PCM monitors the transmission fluid temperature and sets a DTC if it detects an over temperature condition

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P1783:00	Transmission Overtemperature Condition: No Sub Type Information	This DTC indicates the transmission fluid temperature was greater than 135Â°C (275Â°F) for more than 5 seconds. The failsafe logic will change to a more aggressive TCC lock strategy to reduce heat.

Possible Sources

- Transmission cooling system issue
- TCC stuck off
- TFT sensor electrical fault

V1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC for the PCM.
- Road test the vehicle, making sure TCC operation is attempted.
- Using a diagnostic scan tool, carry out the PCM self-test.

Did DTC P1783 return?

Yes	If any diagnostic trouble codes related to the TFT sensor or the TCC are present, RESOLVE those first. Otherwise, REFER to: Transmission Cooling (307-02A Transmission Cooling - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
No	The fault is not currently present and may have been caused by an extreme operating condition.

PINPOINT TEST W: ENGAGEMENT CONCERNS

Normal Operation and Fault Conditions

- No forward
 - Check the forward clutch for a does not apply condition.REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- No reverse, engine braking in M1 works correctly.
 - Check the direct clutch for a does not apply condition.REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- No reverse, no engine braking in M1.
 - Check the low/reverse clutch for a does not apply condition.REFER to: Low/Reverse Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Harsh reverse
 - Check the direct clutch for a harsh apply condition.REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Harsh forward
 - Check the forward clutch for a harsh apply condition.REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Delayed/soft reverse
 - Check the transmission fluid level. REFER to: Transmission Fluid Level Check (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, General Procedures).
 - Check the direct clutch for a delayed/soft/slipping apply condition. REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Delayed soft/forward
 - Check the transmission fluid level. REFER to: Transmission Fluid Level Check (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, General Procedures).
 - Check the forward clutch for a delayed/soft/slipping apply condition. REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- No forward and no reverse
 - Check the transmission fluid level. REFER to: Transmission Fluid Level Check (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, General Procedures).
 - Inspect the filter and filter to pump seal/gasket. REFER to: Transmission Fluid Pan, Gasket and Filter (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Removal and Installation).
 - Inspect the main pressure regulator valve for damage, scoring or sticking.REFER to: Main Control Valve Body (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Overhaul).
 - Verify front pump output. REFER to: Special Testing Procedures (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
 - Inspect the pump assembly. REFER to: Transmission (307-01A Automatic Transmission, Transfer Case and Power Transfer

Unit - 6-Speed Automatic Transmission â€“ 6R100, Overhaul).

- Inspect turbine shaft splines on transmission input shaft and in the torque converter turbine. Replace components as necessary. REFER to: Transmission (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Removal).
- Delayed/soft forward and reverse
 - Check the transmission fluid level. REFER to: Transmission Fluid Level Check (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, General Procedures).
 - Inspect the filter and filter to pump seal/gasket.REFER to: Transmission Fluid Pan, Gasket and Filter (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Removal and Installation).
 - Inspect the main pressure regulator valve for damage, scoring or sticking. REFER to: Main Control Valve Body (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Overhaul).
 - Verify front pump output. REFER to: Special Testing Procedures (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
 - Inspect the pump assembly. REFER to: Transmission (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Overhaul).
- Neutral after launch
 - Check the low one-way clutch for not holding.REFER to: Low One-Way Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).

Possible Sources

- Transmission fluid level
- Line Pressure
- Internal transmission components

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

PINPOINT TEST X : SHIFT CONCERNS

Normal Operation and Fault Conditions

- No 1-2 shift/harsh/soft/slipping
 - Check the intermediate clutch for a does not apply condition.REFER to: Intermediate Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
 - Check the forward clutch for a delayed/soft/slipping apply condition. REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
 - Check the one-way clutch for an always applied condition.REFER to: Low One-Way Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- No 2-3 shift/harsh/soft/slipping
 - Check the direct clutch for a does not apply condition.REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
 - Check the forward clutch for a delayed/soft/slipping apply condition. REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
 - Check the intermediate clutch for an always applied condition.REFER to: Intermediate Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- No 3-4 shift/harsh/soft/slipping
 - Check the overdrive clutch for a does not apply condition.REFER to: Overdrive Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
 - Check the forward clutch for a delayed/soft/slipping apply condition.REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
 - Check the direct clutch for an always applied condition.REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- No 4-5 shift/harsh/soft/slipping

- Check the direct clutch for a does not apply condition.REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Check the overdrive clutch for a delayed/soft/slipping apply condition. REFER to: Overdrive Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Check the forward clutch for an always applied condition.REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- No 5-6 shift/harsh/soft/slipping
 - Check the intermediate clutch for a does not apply condition.REFER to: Intermediate Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
 - Check the overdrive clutch for a delayed/soft/slipping apply condition. REFER to: Low/Reverse Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
 - Check the direct clutch for an always applied condition.REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Only gears 1,2,3,4 available
 - Check the forward clutch for an always applied condition.REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Only gears R, 5, 6 available
 - Check the forward clutch for a does not apply condition.REFER to: Forward Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Only gears R, 3, and 5 available
 - Check the direct clutch for an always applied condition. REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Only gears 1, 2,4, 6 available
 - Check the direct clutch for a does not apply condition.REFER to: Direct Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Only gears 2 and 6 available
 - Check the intermediate clutch for an always applied condition.REFER to: Intermediate Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Only gears R,1,3,4,5 available
 - Check the intermediate clutch for a does not apply condition.REFER to: Intermediate Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Only gears 1 and R available
 - Check the low/reverse clutch for an always applied condition.REFER to: Low/Reverse Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Only gears 2,3,4,5,6 available
 - Check the low/reverse clutch for a does not apply condition.REFER to: Low/Reverse Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- No engine braking in low
 - Check the low/reverse clutch for a does not apply condition.REFER to: Low/Reverse Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Only gears 4,5,6 available
 - Check the overdrive clutch for an always applied condition.REFER to: Overdrive Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).
- Only gears R, 1, 2, 3 available
 - Check the overdrive clutch for a does not apply condition.REFER to: Overdrive Clutch Assembly (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€“ 6R100, Diagnosis and Testing).

- Internal transmission components

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

PINPOINT TEST Y : TORQUE CONVERTER OPERATION CONCERNS

Normal Operation and Fault Conditions

- No apply
 - Check for diagnostic trouble codes (DTCs) related to the TCC.
 - Check for a TCC does not apply condition.REFER to: Torque Converter Clutch (TCC) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€” 6R100, Diagnosis and Testing).
- Always applied (engine stalls)
 - Check for diagnostic trouble codes (DTCs) related to the TCC.
 - Check for a TCC always applied condition.REFER to: Torque Converter Clutch (TCC) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€” 6R100, Diagnosis and Testing).
- Cycling/shutter/chatter
 - CHECK for diagnostic trouble codes (DTCs) related to the TCC.
 - Check the transmission fluid level. REFER to: Transmission Fluid Level Check (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€” 6R100, General Procedures).
 - Check for a TCC cycles, shudders or chatters condition.REFER to: Torque Converter Clutch (TCC) (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission â€” 6R100, Diagnosis and Testing).

Possible Sources

- Transmission fluid level
- Torque converter clutch or circuitry
- Internal transmission components

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

PINPOINT TEST Z : OTHER CONCERNS

Normal Operation and Fault Conditions

- Selector lever high effort
 - Check the selector lever cable for incorrect routing, binding or damage. REFER to: Selector Lever Cable - 6-Speed Automatic Transmission 6R100 (307-05A Automatic Transmission External Controls - 6-Speed Automatic Transmission 6R100, Removal and Installation).
- External leaks
 - Inspect for worn or damaged gaskets or seals. REFER to: Leakage Inspection (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission 6R100, Diagnosis and Testing).
- Noise
 - Check the engine drive accessories, suspension and CV joints. REFER to: Noise, Vibration and Harshness (NVH) (100-04 Noise, Vibration and Harshness, Diagnosis and Testing).
- Vibration
 - Check the engine drive accessories, suspension, CV joints and transmission fluid cooler tubes. REFER to: Noise, Vibration and Harshness (NVH) (100-04 Noise, Vibration and Harshness, Diagnosis and Testing).
- No park range
 - Check the selector lever cable for correct adjustment. REFER to: Selector Lever Cable Adjustment - 6-Speed Automatic Transmission 6R100 (307-05A Automatic Transmission External Controls - 6-Speed Automatic Transmission 6R100, General Procedures).
- - Inspect the manual control lever for damage, wear or correct installation. REFER to: Transmission (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission 6R100, Overhaul).
- - Inspect the park pawl, park pawl actuator, for damage or wear. REFER to: Transmission (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission 6R100, Overhaul).
- Overheating
 - Check the transmission fluid cooling system for damage. REFER to: Transmission (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 6-Speed Automatic Transmission 6R100, Overhaul).

Possible Sources

- Transmission seals
- Transmission cooling system
- Internal transmission components
- Drivetrain components

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).