

External Controls

Inspection and Verification

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).

1. Verify the customer concern by operating the transmission external controls.
2. Visually inspect for obvious signs of mechanical and electrical damage. Refer to the following chart:

Visual Inspection Chart

Mechanical	Electrical
Brake Shift Interlock Actuator (BSIA)	BCM fuse: 18 (7.5A)
Tow/Haul switch	PCM/ TCM
Select Shift switch	Wiring harness
Selector lever cable	Loose or damaged connections
Selector lever knob	Corroded or damaged terminals

3. Repair any mechanical and electrical damage that is found during the visual inspection.
4. Using a diagnostic scan tool, retrieve all diagnostic trouble codes (DTCs).
5. If diagnostic trouble codes (DTCs) related to the transmission external controls are present, use the DTC Chart for further diagnostics.
6. If the fault is not visually evident and no diagnostic trouble codes are present, determine the symptom and use the Symptom Chart for further diagnostics.

Diagnostic Trouble Code (DTC) Chart

Diagnostic Trouble Code Chart

Module	DTC	Description	Action <i>New: hover over Pinpoint Test links to show title</i>
BCM	B1319:11	Brake Shift Interlock Output Circuit: Short To Ground	GO to Pinpoint Test A
BCM	B1319:15	Brake Shift Interlock Output Circuit: Short To Battery or Open	GO to Pinpoint Test A

Symptom Chartâ€” External Controls

In most circumstances, the PCM, TCM and/or BCM set a DTC to help guide with diagnostics. Refer to the DTC Chart before using the symptom chart. The Condition column lists the vehicle condition. The Action column refers to a pinpoint test. Each pinpoint test lists the possible symptoms and the components that can cause each symptom. The components are listed in order of disassembly. Use the list of components and the required action to identify the root cause of the concern.

Symptom Chart

Symptom	Possible Sources	Action
• Brake shift interlock system does not release/lock correctly	• REFER to Pinpoint Test	• GO to Pinpoint Test A
• The PRNDL display does not correspond to the selected gear	• REFER to Pinpoint Test	• GO to Pinpoint Test D
• The PRNDL indicator is always on or never on	• REFER to Pinpoint Test	• GO to Pinpoint Test E

The tow/haul switch is not operating correctly	REFER to Pinpoint Test	GO to Pinpoint Test B
The SelectShift[®] switch is not operating correctly	REFER to Pinpoint Test	GO to Pinpoint Test C
Water enters inside the vehicle	REFER to Pinpoint Test	GO to Pinpoint Test F
Excessive selector lever effort	REFER to Pinpoint Test	GO to Pinpoint Test G
The transmission does not change ranges with the selector lever	REFER to Pinpoint Test	GO to Pinpoint Test H
Vibration at a high frequency (20-80 Hz) that is felt through the seat or selector lever. Changes with engine speed	REFER to Pinpoint Test	GO to Pinpoint Test I
Rattle, buzz or other noise	REFER to Pinpoint Test	GO to Pinpoint Test J
Exterior noise	REFER to Pinpoint Test	GO to Pinpoint Test K

Pinpoint Tests

PINPOINT TEST A : BRAKE SHIFT INTERLOCK

Refer to Wiring Diagrams Cell [37](#) for schematic and connector information.

Normal Operation and Fault Conditions

When the BCM receives a brake pedal applied input, it sends power to the Brake Shift Interlock Actuator (BSIA). When the actuator is energized, the plunger is pulled inward allowing the selector lever to move from the park position.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
BCM B1319:11	Shift Interlock (BSI) Output Circuit: Circuit Short To Ground	This DTC indicates a short to ground in the brake shift interlock actuator (BSIA) circuit.
BCM B1319:15	Shift Interlock (BSI) Output Circuit: Circuit Short To Battery Or Open	This DTC indicates an open circuit or a short to power in the brake shift interlock actuator (BSIA) circuit.

Possible Sources

- Connectors damaged or pushed-out terminals, corrosion, loose wires and missing or damaged seals
- Brake Shift Interlock Actuator (BSIA)
- BCM

A1 CHECK THE BRAKE PEDAL POSITION SWITCH

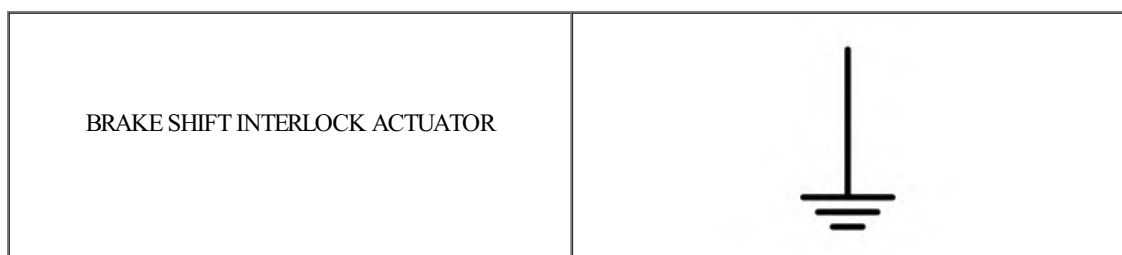
- Using a diagnostic scan tool, access the PCM and monitor Brake Pedal Position PID BOO1.
- Apply and release the brake pedal while observing PID BOO1.

Does the status of PID BOO1 match the position of the brake pedal as it is applied and released?

Yes	GO to A2
No	See concern all stoplamps are inoperative. REFER to: Stoplamps (417-01 Exterior Lighting, Diagnosis and Testing).

A2 CHECK THE BRAKE SHIFT INTERLOCK ACTUATOR POWER CIRCUIT FOR VOLTAGE

- Disconnect Brake Shift Interlock Actuator (BSIA) [C2008](#) .
- Ignition ON.
- Apply and release the brake pedal while measuring:



Positive Lead	Measurement / Action	Negative Lead
C2008-4		Ground

Is the voltage greater than 11 volts with the brake pedal applied and approximately 0 volts with the brake pedal released?

Yes	GO to A6
No	If voltage is always present, GO to A5 If voltage is less than 11 volts with the brake pedal applied, GO to A3

A3 CHECK THE BRAKE SHIFT INTERLOCK ACTUATOR POWER CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect BCM [C2280B](#) .
- Inspect for damaged or pushed-out terminals.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2008-4	Ω	C2280B-46

Is the resistance less than 3 ohms?

Yes	GO to A4
No	REPAIR the circuit.

A4 CHECK THE BRAKE SHIFT INTERLOCK ACTUATOR POWER CIRCUIT FOR A SHORT TO GROUND

- Measure:

BRAKE SHIFT INTERLOCK ACTUATOR	
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Positive Lead	Measurement / Action	Negative Lead
C2008-4	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to A7
No	REPAIR the circuit.

A5 CHECK THE BRAKE SHIFT INTERLOCK ACTUATOR POWER CIRCUIT FOR A SHORT TO VOLTAGE

- Disconnect BCM [C2280B](#) .
- Ignition ON.
- Measure:

BRAKE SHIFT INTERLOCK ACTUATOR	
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Positive Lead	Measurement / Action	Negative Lead
C2008-4		Ground

Is any voltage detected?

Yes	REPAIR the circuit.
No	GO to A7

A6 CHECK THE BRAKE SHIFT INTERLOCK ACTUATOR GROUND CIRCUIT FOR AN OPEN

- Measure:

BRAKE SHIFT INTERLOCK ACTUATOR	
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Positive Lead	Measurement / Action	Negative Lead
C2008-1	Ω	Ground

Is the resistance less than 3 ohms?

Yes	INSTALL a new brake shift interlock actuator. REFER to: Brake Shift Interlock Actuator (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€™ 10R140, Removal and Installation).
No	REPAIR the circuit.

A7 CHECK FOR CORRECT BCM OPERATION

- Ignition OFF.
- Disconnect and inspect all BCM connectors.
- Check for the following:
 - 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
- Connect all BCM connectors. Make sure they seat and latch correctly.
- Operate the system and verify the concern is still present.

Is the concern still present?

Yes	☐ Click here to access Guided Routine (BCM).
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

[PINPOINT TEST B : TOW/HAUL SWITCH INOPERATIVE](#)

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

Normal Operation and Fault Conditions

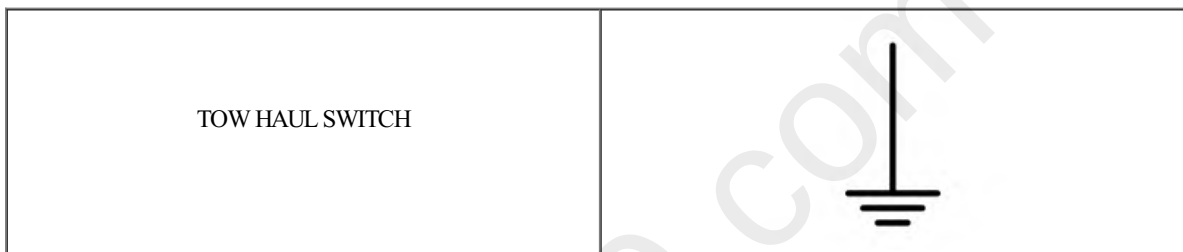
The Tow/Haul switch is a momentary contact switch located on the end of the selector lever. Pressing the Tow/Haul switch will engage or disengage the Tow/Haul function of the transmission. When Tow/Haul is engaged, the Tow/Haul icon illuminates on the IPC. Each time the ignition switch is cycled, the PCM/TCM disengages the Tow/Haul operation regardless of the switch position the last time the engine was running.

Possible Sources

- Connectors damaged or pushed-out terminals, corrosion, loose wires and missing or damaged seals
- BCM fuse 18 (7.5A)
- Tow/Haul switch
- PCM/TCM

B1 CHECK THE TOW/HAUL SWITCH POWER CIRCUIT FOR VOLTAGE

- Ignition OFF.
- Disconnect Tow/Haul Switch [C2399](#).
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2399-1		Ground

Is the voltage 11 volts or greater?

Yes	GO to B2
No	CHECK BCM fuse 18 (7.5A). If the fuse is OK, REFER to the Wiring Diagrams manual to identify and repair the open circuit. If the fuse is not OK, REFER to the Wiring Diagrams manual to identify and repair the short to ground.

B2 CHECK THE TOW/HAUL SWITCH SIGNAL CIRCUIT FOR AN OPEN

- Ignition OFF.
- For gasoline engine applications, disconnect PCM [C175B](#).
- Measure:

TOW HAUL SWITCH	POWERTRAIN CONTROL MODULE (PCM)
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Positive Lead	Measurement / Action	Negative Lead
C2399-2	Ω	C175B-38

- For diesel engine applications, disconnect TCM [C1750](#).
- Measure:

TOW HAUL SWITCH	TRANSMISSION CONTROL MODULE (TCM)
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Positive Lead	Measurement / Action	Negative Lead
C2399-2	Ω	C1750-19

Is the resistance less than 3 ohms?

Yes	GO to B3
No	REPAIR the circuit.

B3 CHECK THE TOW/HAUL SWITCH SIGNAL CIRCUIT FOR A SHORT TO GROUND

- Measure:

TOW HAUL SWITCH	
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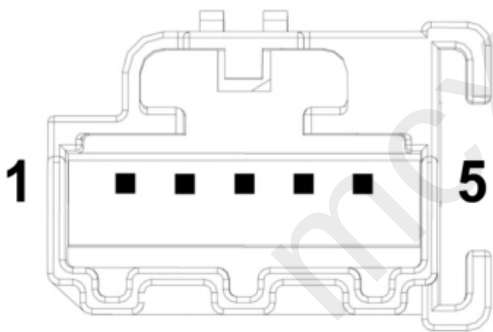
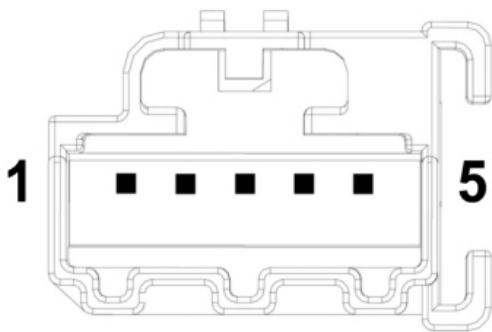
Positive Lead	Measurement / Action	Negative Lead
C2399-2	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to B4
No	REPAIR the circuit.

B4 CHECK THE TOW/HAUL SWITCH

- Measure the resistance of the Tow/Haul Switch:

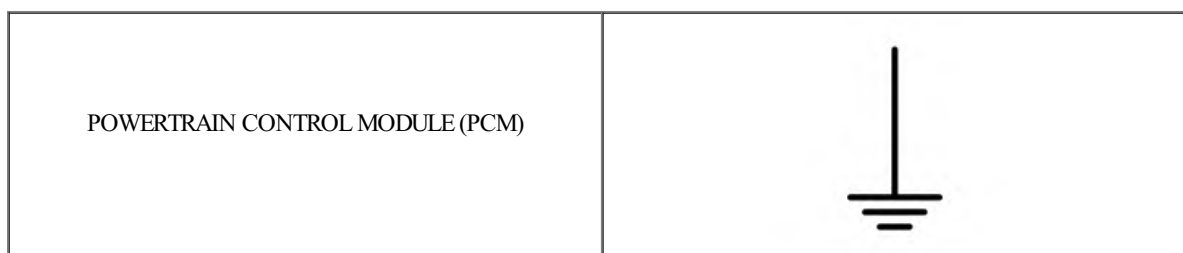
Positive Lead	Measurement / Action	Negative Lead
 E318033 Tow/Haul switch component side, pin 1	Ω	 E318033 Tow/Haul switch component side, pin 2

Is the resistance less than 3 ohms with the switch pressed, and greater than 10,000 ohms with the switch released?

Yes	GO to B5
No	INSTALL a new selector lever. REFER to: Selector Lever (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission & 10R140, Removal and Installation).

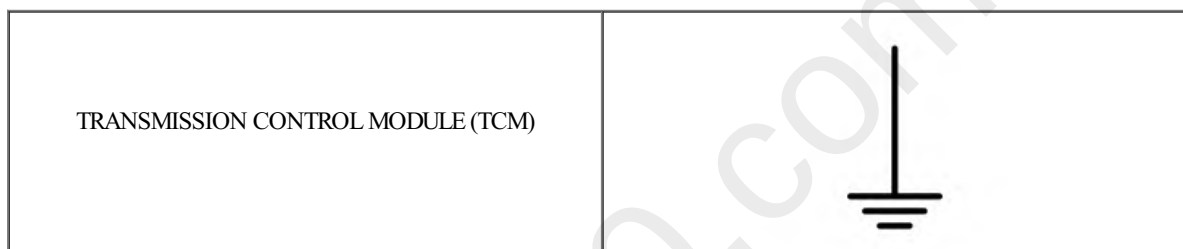
B5 CHECK THE TOW/HAUL SWITCH INPUT TO THE PCM/TCM

- Connect Tow/Haul Switch [C2399](#) .
- Ignition ON.
- For gasoline engine applications, measure:



Positive Lead	Measurement / Action	Negative Lead
C175B-38		Ground

- For diesel engine applications, measure:



Positive Lead	Measurement / Action	Negative Lead
C1750-19		Ground

Is the voltage greater than 11 volts with the switch pressed, and approximately 0 volts with the switch released?

Yes	For gasoline engine applications, 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). For diesel engine applications, INSTALL a new TCM. REFER to: Transmission Control Module (TCM) (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€” 10R140, Removal and Installation). After installing the new module, CARRY OUT the transmission strategy download. REFER to: Transmission Strategy Download (307-01 Automatic Transmission - 10-Speed Automatic Transmission â€” 10R140) .
No	INSTALL a new selector lever. REFER to: Selector Lever (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€” 10R140, Removal and Installation).

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

Normal Operation and Fault Conditions

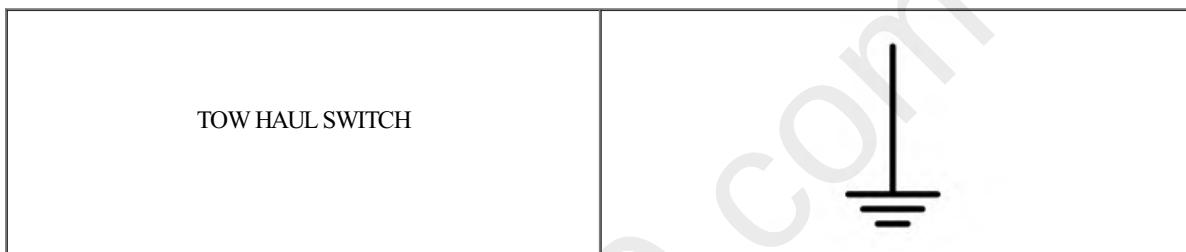
The SelectShift_Ⓢ switch is a toggle switch integral to the selector lever. When the selector lever is placed in the M position, the upshift/downshift feature becomes activated. If a new switch is required, install a new selector lever assembly.

Possible Sources

- Connectors damaged or pushed-out terminals, corrosion, loose wires and missing or damaged seals
- BCM fuse 18 (7.5A)
- SelectShift_Ⓢ switch
- PCM/ TCM

C1 CHECK THE UPSHIFT CIRCUIT FOR VOLTAGE

- Ignition OFF.
- Disconnect Tow/Haul Switch [C2399](#).
- Inspect for damaged or pushed-out terminals.
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2399-3		Ground

Is the voltage greater than 11 volts?

Yes	GO to C4
No	GO to C2

C2 CHECK THE UPSHIFT CIRCUIT FOR AN OPEN

- Ignition OFF.
- For gasoline engine applications, disconnect PCM [C175B](#).
- Measure:

TOW HAUL SWITCH	POWERTRAIN CONTROL MODULE (PCM)
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Positive Lead	Measurement / Action	Negative Lead
C2399-3	Ω	C175B-53

- For diesel engine applications, disconnect TCM [C1750](#).
- Measure:

TOW HAUL SWITCH	TRANSMISSION CONTROL MODULE (TCM)
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Positive Lead	Measurement / Action	Negative Lead
C2399-3	Ω	C1750-30

Is the resistance less than 3 ohms?

Yes	GO to C3
No	REPAIR the circuit.

C3 CHECK THE UPSHIFT CIRCUIT FOR A SHORT TO GROUND

- Measure.

TOW HAUL SWITCH	
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Positive Lead	Measurement / Action	Negative Lead
C2399-3	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	For gasoline engine applications, Click here to access Guided Routine (PCM). After installing a new PCM, CARRY OUT the transmission strategy download. REFER to: Transmission Strategy Download (307-01 Automatic Transmission - 10-Speed Automatic Transmission â€“ 10R140) . For diesel engine applications, INSTALL a new TCM. REFER to: Transmission Control Module (TCM) (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation). After installing the new module, CARRY OUT the transmission strategy download. REFER to: Transmission Strategy Download (307-01 Automatic Transmission - 10-Speed Automatic Transmission â€“ 10R140) .
No	REPAIR the circuit.

C4 CHECK THE DOWNSHIFT SIGNAL CIRCUIT FOR VOLTAGE

- Ignition ON.
- Measure:

TOW HAUL SWITCH	
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Positive Lead	Measurement / Action	Negative Lead
C2399-5		Ground

Is the voltage greater than 11 volts?

Yes	GO to C7
No	GO to C5

C5 CHECK THE DOWNSHIFT CIRCUIT FOR AN OPEN

- Ignition OFF.
- For gasoline engine applications, disconnect PCM [C175B](#).
- Measure:

TOW HAUL SWITCH	POWERTRAIN CONTROL MODULE (PCM)
-----------------	---------------------------------

Positive Lead	Measurement / Action	Negative Lead
C2399-5	Ω	C175B-65

- For diesel engine applications, disconnect TCM [C1750](#).
- Measure:

TOW HAUL SWITCH	TRANSMISSION CONTROL MODULE (TCM)
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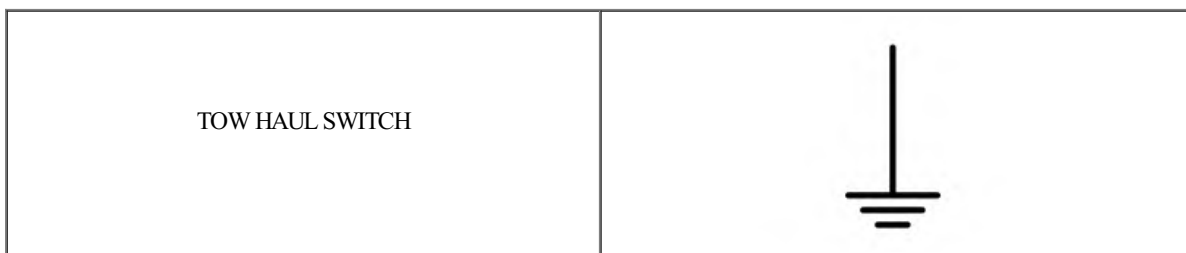
Positive Lead	Measurement / Action	Negative Lead
C2399-5	Ω	C1750-33

Is the resistance less than 3 ohms?

Yes	GO to C6
No	REPAIR the circuit.

C6 CHECK THE DOWNSHIFT SIGNAL CIRCUIT FOR SHORT TO GROUND

- Measure.



Positive Lead	Measurement / Action	Negative Lead
C2399-5	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	For gasoline engine applications, Click here to access Guided Routine (PCM). After installing a new PCM, CARRY OUT the transmission strategy download. REFER to: Transmission Strategy Download (307-01 Automatic Transmission - 10-Speed Automatic Transmission â€“ 10R140) . For diesel engine applications, INSTALL a new TCM. REFER to: Transmission Control Module (TCM) (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation). After installing the new module, CARRY OUT the transmission strategy download. REFER to: Transmission Strategy Download (307-01 Automatic Transmission - 10-Speed Automatic Transmission â€“ 10R140) .
No	REPAIR the circuit.

C7 CHECK THE SIGNAL RETURN CIRCUIT

- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2399-5		C2399-4

Is the voltage greater than 11 volts?

Yes	GO to C9
No	GO to C8

C8 CHECK THE SIGNAL RETURN CIRCUIT FOR AN OPEN

- Ignition OFF.
- For gasoline engine applications, disconnect PCM [C175B](#).
- Measure:

TOW HAUL SWITCH	POWERTRAIN CONTROL MODULE (PCM)
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Positive Lead	Measurement / Action	Negative Lead
C2399-4	Ω	C175B-73

- For diesel engine applications, disconnect TCM [C1750](#).
- Measure:

TOW HAUL SWITCH	TRANSMISSION CONTROL MODULE (TCM)
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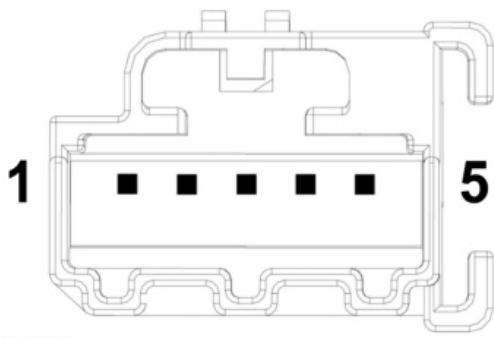
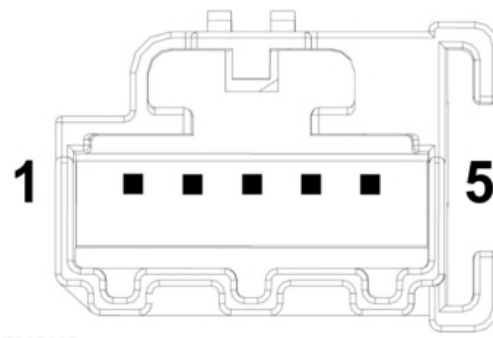
Positive Lead	Measurement / Action	Negative Lead
C2399-4	Ω	C1750-12

Is the resistance less than 3 ohms?

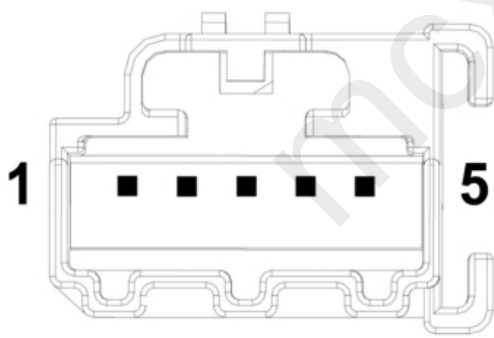
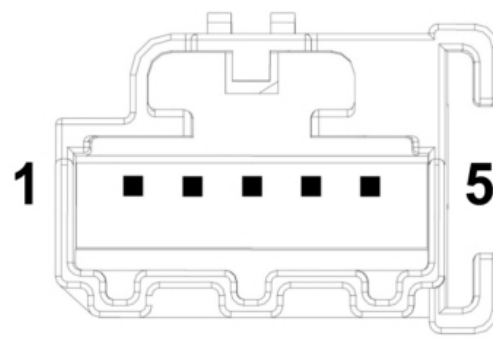
Yes	For gasoline engine applications, Click here to access Guided Routine (PCM). After installing a new PCM, CARRY OUT the transmission strategy download. REFER to: Transmission Strategy Download (307-01 Automatic Transmission - 10-Speed Automatic Transmission â€“ 10R140) . For diesel engine applications, INSTALL a new TCM. REFER to: Transmission Control Module (TCM) (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation). After installing the new module, CARRY OUT the transmission strategy download. REFER to: Transmission Strategy Download (307-01 Automatic Transmission - 10-Speed Automatic Transmission â€“ 10R140) .
No	REPAIR the circuit.

C9 CHECK THE SELECTSHIFT[®] SWITCHES

- For the upshift switch, measure:

Positive Lead	Measurement / Action	Negative Lead
 E318033 Tow/Haul switch component side, pin 3	Ω	 E318033 Tow haul switch component side, pin 4

- For the downshift switch, measure:

Positive Lead	Measurement / Action	Negative Lead
 E318033 Tow haul switch component side, pin 5	Ω	 E318033 Tow haul switch component side, pin 4

Is the resistance of each switch less than 1.5 ohms with the switch pressed and greater than 10,000 ohms when released?

Yes	The system is operating correctly at this time. Check for terminal fitment issues and wiring harness damage or chafing that could cause an intermittent concern.
No	INSTALL a new selector lever. REFER to: Selector Lever (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission & 10R140, Removal and Installation).

PINPOINT TEST D : THE PRNDL DISPLAY DOES NOT CORRESPOND TO THE SELECTED GEAR

Normal Operation and Fault Conditions

- Selector lever cable adjustment incorrect
 - Check the adjustment of the selector lever cable and adjust as necessary. REFER to: Selector Lever Cable Adjustment (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, General Procedures).
- Selector lever cable loose from the transmission bracket
 - Check the selector lever cable for being properly seated in the transmission bracket, the clip for being properly installed on the cable, and make sure the bolt is tight. Repair as necessary. REFER to: Selector Lever Cable (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation).
- Selector lever cable bracket
 - Check the selector lever cable bracket for damage and make sure the bolts are tight.
- TR sensor not reading correctly
 - See Pinpoint Test C: Transmission Range Sensor to verify the sensor is reading correctly. REFER to: Diagnostic Trouble Code (DTC) Charts and Pinpoint Tests - 6.2L V8 (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
REFER to: Diagnostic Trouble Code (DTC) Charts and Pinpoint Tests - 7.3L 2V DEVCT V8 (239kW/320PS) (J0) (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
REFER to: Diagnostic Trouble Code (DTC) Charts and Pinpoint Tests - 6.7L Power Stroke Diesel (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- IPC PRNDL display malfunction
 - Resolve IPC diagnostic trouble codes (DTCs) and symptoms.REFER to: Instrumentation, Message Center and Warning Chimes (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing).

Possible Sources

- Selector lever cable
- IPC concern

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

PINPOINT TEST E : THE PRNDL INDICATOR IS ALWAYS ON OR NEVER ON

Normal Operation and Fault Conditions

- TR sensor not reading correctly
 - See Pinpoint Test C: Transmission Range Sensor to verify the sensor is reading correctly. REFER to: Diagnostic Trouble Code (DTC) Charts and Pinpoint Tests - 6.2L V8 (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
REFER to: Diagnostic Trouble Code (DTC) Charts and Pinpoint Tests - 7.3L 2V DEVCT V8 (239kW/320PS) (J0) (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
REFER to: Diagnostic Trouble Code (DTC) Charts and Pinpoint Tests - 6.7L Power Stroke Diesel (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- IPC PRNDL display malfunction
 - Resolve IPC diagnostic trouble codes (DTCs) and symptoms.REFER to: Instrumentation, Message Center and Warning Chimes (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing).

Possible Sources

- IPC concern

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

PINPOINT TEST F : WATER ENTERS INSIDE THE VEHICLE

Normal Operation and Fault Conditions

- Selector lever cable grommet
 - Check the selector lever cable grommet for damage and for being properly seated in the floor pan. INSTALL new parts as necessary. REFER to: Selector Lever Cable (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation).
 - If the selector lever cable grommet is properly seated in the floor pan and free of damage, refer to the appropriate water leak condition. REFER to: Body System (501-00 Body System - General Information, Diagnosis and Testing).

Possible Sources

- Selector lever cable grommet

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

PINPOINT TEST G : EXCESSIVE SELECTOR LEVER EFFORT

Normal Operation and Fault Conditions

- Selector lever cable out of alignment
 - Check the selector lever cable bracket for damage. Make sure the bracket bolts are tight and the cable is properly secured in the bracket. REFER to: Selector Lever Cable (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation).
- Selector lever cable
 - Disconnect both ends of the selector lever cable. Check that the cable moves freely in the cable housing. If there is any binding, INSTALL a new selector lever cable. REFER to: Selector Lever Cable (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation).
- Selector lever mechanism
 - Disconnect the selector lever cable from the selector lever and operate the selector lever. If there is any binding, INSTALL a new selector lever mechanism. REFER to: Selector Lever Mechanism (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation).
- Internal transmission components
 - Disconnect the selector lever cable from the transmission manual lever and operate the transmission manual lever. If there is excessive resistance, check the transmission manual valve and park components for damage. REFER to: Transmission (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Removal).

Possible Sources

- Selector lever cable
- Selector lever mechanism
- 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 H : THE TRANSMISSION DOES NOT CHANGE RANGES WITH THE SELECTOR LEVER

Normal Operation and Fault Conditions

- Selector lever cable disconnected
 - REINSTALL the selector lever cable. REFER to: Selector Lever Cable (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation).
- Broken selector lever cable
 - Verify the selector lever cable is attached to the selector lever mechanism. Disconnect the selector lever cable from the transmission manual lever. Push and pull on the end of the cable. If the cable moves independently of the selector lever, INSTALL a new selector lever cable. REFER to: Selector Lever Cable (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation).

Possible Sources

- Selector lever cable

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

PINPOINT TEST I : VIBRATION - A HIGH FREQUENCY (20-80 HZ) THAT IS FELT THROUGH THE SEAT OR SELECTOR LEVER AND CHANGES WITH ENGINE SPEED

Normal Operation and Fault Conditions

- Selector lever cable incorrectly routed, grounded out or loose
 - Check the routing and mounting of the selector lever cable. REPAIR as necessary. REFER to: Selector Lever Cable (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation).

Possible Sources

- Selector lever cable

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

PINPOINT TEST J : RATTLE, BUZZ OR OTHER NOISE

Normal Operation and Fault Conditions

- Selector lever loose
 - Tighten the selector lever bolt.

Possible Sources

- Selector lever

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

PINPOINT TEST K : EXTERIOR NOISE

Normal Operation and Fault Conditions

- Selector lever cable assembly grommet
 - Check the selector lever cable grommet for damage or improper installation. If the grommet is damaged, INSTALL a new selector lever cable. REFER to: Selector Lever Cable (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation).

Possible Sources

- Selector lever cable grommet

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