Cruise Control

Special Tool(s)

	Fluke 77-IV Digital Multimeter FLU77-4 or equivalent
	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool
	Flex Probe Kit 300-NUD105-R025DE or equivalent

Principles of Operation

The cruise control system is controlled by the PCM. The cruise control system is designed to maintain a selected vehicle speed between 40 km/h (25 mph) and the maximum limited vehicle speed. The cruise control system is controlled by the steering wheel mounted switches (ON, OFF, SET+, SET- RES (without audio controls), and RESUME (with audio controls)), the stoplamp switch, the clutch pedal cruise control deactivator switch (manual transmission), stoplamp switch and the cruise control deactivator switch (integral to the stoplamp switch). The steering wheel mounted switches are hard-wired to the PCM through the clockspring.

The cruise control functions include:

- turning the cruise control system on.
- setting and maintaining the desired vehicle speed.
- accelerating the vehicle speed.
- decelerating the vehicle speed.
- turning the vehicle cruise control system off.
- cancelling the cruise control.

Pressing and releasing the ON switch turns the cruise control system on. Pressing and releasing the SET+ or SET- switch while the vehicle is traveling at the desired speed activates the cruise control system.

Tapping the SET+ or the SET- switch while in the set mode increases or decreases the maintained vehicle speed by 1.6 km/h (1 mph) per tap. If either switch is pressed and held, the vehicle speed continues to accelerate (SET+) or decelerate (SET-) until the switch is released.

Pressing and releasing the OFF switch, or switching the ignition switch to the OFF position, turns the cruise control system off. Applying the brake pedal puts the cruise control system into the standby mode. Pressing the RES (without audio controls) or RESUME (with audio controls) switch when the cruise control system is in the standby mode causes the vehicle to accelerate to the last set speed. The RESUME switch does not function if the OFF switch is pressed or if the current vehicle speed is below the minimum operational speed.

The clutch pedal cruise control deactivator switch is used on vehicles equipped with a manual transmission. When the clutch pedal is applied with the vehicle cruise control system engaged, the normally closed switch opens and signals the PCM to deactivate the cruise control.

The cruise control deactivator switch is provided as an additional safety feature. When the brake pedal is applied, an electrical signal from the stoplamp circuit to the PCM deactivates the system. Under increased brake pedal effort, the cruise control deactivator switch opens and removes the ground signal from the PCM, releasing the throttle.

Whenever the cruise control system is engaged and active, a cruise control icon on the Instrument Panel Cluster (IPC) is illuminated.

The inputs to the PCM are the:

- Output Shaft Speed (OSS) sensor
- Transmission Range (TR) sensor
- Accelerator Pedal Position (APP) sensor
- Cruise control switch
- Clutch pedal cruise control deactivator switch (manual transmission)
- Cruise control deactivator switch (integral to the stoplamp switch)
- Stoplamp switch

The outputs of the PCM are the:

- Cruise control indicator lamp
- Throttle command

The cruise control system throttle position is completely controlled by the PCM through the electronically-controlled throttle body. Cruise control electronics are contained entirely within the PCM.

When the cruise control system is active, the PCM corrects for deviations in the actual vehicle speed by proportionally moving the throttle plate. The PCM modulates the throttle to minimize error between actual and desired vehicle speed.

The PCM strategy uses the throttle control for smooth accelerations.

The PCM sends a message over the High Speed Controller Area Network (HS-CAN) to the IPC whenever the cruise control indicator should be turned on or off.

In the event of an OFF command or a deactivation request from any source, the cruise control system carries out a deactivation and immediately returns the throttle to the idle position.

The cruise control system provides self-diagnostics. The cruise control is disabled anytime an error is detected in the system. No IPC indicator or message center messages are displayed when faults occur. Fault codes are logged by the PCM.

An Electronic Throttle Control (ETC) system fault also causes the cruise control system to be disabled. In this case, an ETC system powertrain malfunction (wrench) warning indicator is displayed.

Additionally, the following conditions cause the cruise control system to deactivate:

- Transmission gear selector in a position other than D or OD (automatic transmission)
- Vehicle clutch pedal is applied (manual transmission)
- Cruise control set speed is over-ridden with the accelerator pedal for a period longer than 5 minutes
- Vehicle speed loss from set speed of greater than 16 km/h (10 mph) occurs
- Vehicle speed falls below the minimum allowable limit of 40 km/h (25 mph)
- Parking brake is applied
- Cruise control switch is pressed or stuck for longer than 2 minutes

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Throttle body	• Battery Junction Box (BJB) fuse 24 (10A) • Wiring, terminals or connectors • Clutch pedal cruise control deactivator switch (manual transmission) • Cruise control switch • Cruise control deactivator switch (integral to the stoplamp switch) • Stoplamp switch • PCM

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. Verify the speedometer operates correctly without cruise control by test driving the vehicle. If the speedometer does not operate correctly, refer to Section 413-01.
5. Verify the stoplamps operate correctly with the ignition switch in the ON position. If the stoplamps do not operate correctly, refer to Section 417-01.
6. **NOTE:** *Make sure to use the latest scan tool software release.*

If the cause is not visually evident, connect the scan tool to the Data Link Connector (DLC) .

7. **NOTE:** *The Vehicle Communication Module (VCM) LED prove-out confirms power and ground from the DLC are provided to the VCM .*

   If the scan tool does not communicate with the VCM :
   - Check the VCM connection to the vehicle.
   - Check the scan tool connection to the VCM .
   - Refer to Section 418-00, No Power To The Scan Tool, to diagnose no power to the scan tool.

8. If the scan tool does not communicate with the vehicle:
   - Verify the ignition key is in the ON position.
   - Verify the scan tool operation with a known good vehicle.
   - Refer to Section 418-00 to diagnose no response from the PCM.

9. Carry out the network test.
   - If the scan tool responds with no communication for one or more modules, refer to Section 418-00.
   - If the network test passes, retrieve and record the continuous memory DTCs.

10. Clear the continuous DTCs and carry out the self-test diagnostics for the PCM.

11. If the DTCs retrieved are related to the concern, go to DTC Charts. For all other DTCs, refer to the Diagnostic Trouble Code (DTC) Chart in Section 419-10.

12. If no DTCs related to the concern are retrieved, GO to Symptom Chart.

DTC Charts

PCM DTC Chart

DTCs	Description	Action
P0504	Brake Switch A / B Correlation	GO to Pinpoint Test B.
P0572	Brake Switch A Circuit Low	GO to Pinpoint Test B.
P0573	Brake Switch A Circuit High	GO to Pinpoint Test B.
P0579	Cruise Control Multifunction Input A Circuit Range/Performance	GO to Pinpoint Test C.
P0581	Cruise Control Multifunction Input A Circuit High	GO to Pinpoint Test C.
All other DTCs	—	REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.

Symptom Chart

Symptom Chart

Condition	Possible Causes	Action
• The cruise control is inoperative	• Wiring, terminals or connectors • Clutch pedal cruise control deactivator switch (manual transmission) • Cruise control switches • Cruise control deactivator switch (integral to the stoplamp switch) • Digital Transmission Range (TR) sensor system concern (automatic transmission) • Stoplamp switch • PCM	• GO to Pinpoint Test A.
• The cruise control indicator lamp is inoperative/always	• Instrument Panel Cluster (IPC)	• REFER to Section 413-01.

on	• PCM	
• The cruise control does not disengage when the clutch is applied	• Wiring, terminals or connectors • Clutch pedal cruise control deactivator switch • PCM	• GO to Pinpoint Test D.
• The cruise control switches do not operate correctly	• Wiring, terminals or connectors • Clockspring • Cruise control switches • PCM	• GO to Pinpoint Test C
• The cruise control cannot set speed above 130 km/h (80 mph)	• A MyKey™ is in use and MyKey™ speed limiter is turned on	• VERIFY if a MyKey™ is in use. REFER to Section 419-01B. With an administrator key, VERIFY if MyKey™ speed limiter is turned on. REFER to Owner's Literature section. If necessary, VERIFY cruise control normal operation with an administrator key.

Pinpoint Tests

Pinpoint Test A: The Cruise Control Is Inoperative

Refer to Wiring Diagrams Cell 31 , Cruise Control for schematic and connector information.

Normal Operation

The cruise control switches uses the PCM RUN/START voltage and the PCM ground. The cruise control functionality is controlled through the cruise control switches and is hard-wired to the PCM through a signal and return circuit.

There are 5 cruise control switches with each switch operating a specific function that uses different resistance values. The PCM sends out a reference voltage to the cruise control switches and monitors the voltage drop when a cruise control switch is pressed. The voltage drop varies depending upon the resistance of each switch, providing a specific indication to the PCM which switch is pressed, activating and controlling the cruise control system.

The stoplamp switch is a single plunger 2 stage switch with 2 inputs to the PCM. When the brake pedal is applied, the first stage, which is a normally open stoplamp switch, closes and sends a voltage signal to the PCM deactivating the cruise control, if engaged. The second stage is the normally closed cruise control deactivator switch (integral to the stoplamp switch) opens and removes the ground signal to the PCM when the brake pedal is firmly applied. This is a redundant signal to the PCM. There is less than one millimeter in plunger travel between the first and second stage which the PCM monitors.

Vehicles equipped with a manual transmission have an additional clutch pedal cruise control deactivator switch. The clutch pedal cruise control deactivator switch provides a ground signal to the PCM. When the clutch pedal is applied the normally closed clutch pedal cruise control deactivator switch opens and removes the ground signal to the PCM which deactivates the cruise control, if engaged.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals and connectors
- PCM not configured for cruise control
- Clutch pedal cruise control deactivator switch (manual transmission)
- Cruise control deactivator switch (integral to the stoplamp switch)
- Cruise control switches
- Digital Transmission Range (TR) sensor system concern (automatic transmission)
- Stoplamp switch
- PCM

PINPOINT TEST A : THE CRUISE CONTROL IS INOPERATIVE

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.
NOTE: *Failure to disconnect the battery when instructed will result in false resistance readings. Refer to Section 414-01.*
A1 CHECK FOR DTCS
• Review the recorded DTCs from the PCM self-test. **Are any PCM DTCs recorded?**

Yes	REFER to DTC Charts in this section.
No	GO to A2.

A2 CHECK FOR ABS MODULE DTCS

- Review the recorded DTCs from the ABS module self-test.

Are any DTCs recorded?

Yes	REFER to Section 206-09. REPAIR all ABS module DTCs and RETEST the system.
No	GO to A3.

A3 CHECK THE STOPLAMP SWITCH (BOO1) AND CRUISE CONTROL DEACTIVATOR SWITCH (BOO2) PIDS

- Enter the following diagnostic mode on the scan tool: PCM DataLogger .
- Monitor the PCM PIDs BOO1 (stoplamp switch) and BOO2 (cruise control deactivator switch) while applying and releasing the brake pedal as follows:

Brake Pedal Position	BOO1 PID	BOO2 PID
Released	Off	Off
Applied lightly	On	Off
Applied firmly	On	On

Does the PID value agree with the brake pedal position?

Yes	GO to A4.
No	GO to Pinpoint Test B.

A4 CHECK THE CRUISE CONTROL SWITCH

- Enter the following diagnostic mode on the scan tool: PCM DataLogger .
- Press each cruise control switch button while monitoring the SCCS PID (cruise control switch).

Cruise Control Switch	SCCS PID Value
OFF	OFF
ON	ON
RESUME (with audio controls)/ RES (without audio controls)	RESUME
SET -	SET/-
SET +	SET/+

Does the PID value agree with the switch position?

Yes	If equipped with an automatic transmission, GO to A5. If equipped with a manual transmission, GO to A6.
No	If only one switch does not display the correct PID value, INSTALL a new cruise control switch. REFER to Cruise Control Switch in this section. TEST the system for normal operation. Otherwise, GO to Pinpoint Test C.

A5 CHECK THE DIGITAL TR SENSOR PID

- Enter the following diagnostic mode on the scan tool: PCM DataLogger .
- Monitor the PCM TR PID.
- Select DRIVE.

Does the PID value agree with the transmission range selector lever position?

Yes	GO to A9.
No	REFER to Section 307-01 to diagnose the TR input concern.

A6 CHECK THE CLUTCH PEDAL CRUISE CONTROL DEACTIVATOR SWITCH PID (CPP_TOP)

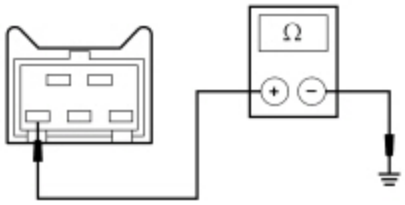
- Enter the following diagnostic mode on the scan tool: PCM DataLogger .
- Monitor the PCM CPP_TOP PID while pressing and releasing the clutch pedal.

Does the clutch pedal cruise control deactivator switch PID agree with the clutch pedal position?

Yes	GO to A9.
No	GO to A7.

A7 CHECK THE CLUTCH PEDAL CRUISE CONTROL DEACTIVATOR SWITCH GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: Negative Battery Cable .
- Disconnect: Clutch Pedal Cruise Control Deactivator Switch C277 .
- Measure the resistance between the clutch pedal cruise control deactivator switch C277 Pin 3, circuit GD129 (BK/YE), harness side and ground.



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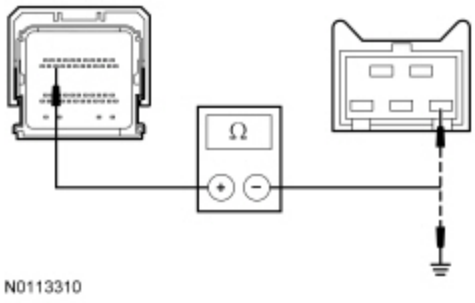
Is the resistance less than 5 ohms?

Yes	GO to A8.
No	REPAIR the circuit. TEST the system for normal operation.

A8 CHECK THE CLUTCH PEDAL CRUISE CONTROL DEACTIVATOR SWITCH SIGNAL CIRCUIT FOR AN OPEN OR SHORT TO GROUND

- Disconnect: PCM C175T .
- Measure the resistance between the PCM C175T Pin 21, circuit CE904 (GN/VT), harness side and the clutch pedal cruise control deactivator switch C277 Pin 1, circuit CE904 (GN/VT), harness side; and between the PCM C175T Pin 21, circuit CE904 (GN/VT), harness side and ground.



Is the resistance less than 5 ohms between the PCM and the clutch pedal cruise control deactivator switch, and greater than 10,000 ohms between the PCM and ground?

Yes	INSTALL a new clutch pedal cruise control deactivator switch. REFER to Cruise Control Deactivator Switch in this section. TEST the system for normal operation.
No	REPAIR the circuit. TEST the system for normal operation.

A9 CHECK FOR CORRECT PCM OPERATION

- Disconnect all the PCM connectors.
- Check for:
  - corrosion
  - damaged pins
  - pushed-out pins
- Connect all the PCM connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.

Is the concern still present?

Yes	INSTALL a new PCM. REFER to Section 303-14. TEST the system for normal operation.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test B: DTC P0504, P0572 Or P0573

Refer to Wiring Diagrams Cell 31 , Cruise Control for schematic and connector information.

Normal Operation

The stoplamp switch is a single plunger 2 stage switch with 2 inputs to the PCM. When the brake pedal is applied, the first stage, which is a normally open stoplamp switch, closes and sends a voltage signal to the PCM deactivating the cruise control, if engaged. The second stage is the normally closed cruise control deactivator switch (integral to the stoplamp switch) opens and removes the ground signal to the PCM when the brake pedal is firmly applied. This is a redundant signal to the PCM. There is less than one millimeter in plunger travel between the first and second stage which the PCM monitors.

- DTC P0504 (Brake Switch A / B Correlation) — sets when the PCM does not sense the correct sequence of the brake pedal input signal from both the cruise control deactivator and stoplamp switches when the brake pedal is pressed and released.
- DTC P0572 (Brake Switch A Circuit Low) — sets when the PCM detects an open in the stoplamp switch signal. The PCM monitors the vehicle speed, the engine speed, the engine torque and the stoplamp BOO input during start and stop driving cycles. If the BOO input to the PCM is always off during start and stop driving cycles this DTC sets in continuous memory.
- DTC P0573 (Brake Switch A Circuit High) — sets when the PCM detects an short to voltage on the stoplamp switch signal. The PCM monitors the vehicle speed, the engine speed, the engine torque and the stoplamp BOO input during start and stop driving cycles. If the BOO input to the PCM is always on during start and stop driving cycles this DTC sets in continuous memory.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Cruise control deactivator switch (integral to the stoplamp switch)

- Stoplamp switch
- PCM

PINPOINT TEST B : DTC P0504, P0572 OR P0573

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

NOTE: *Failure to disconnect the battery when instructed will result in false resistance readings. Refer to Section 414-01.*

B1 CHECK THE OPERATION OF THE STOPLAMPS

- Ignition ON.
- Operate the stoplamps.

Do the stoplamps operate correctly?

Yes	GO to B2.
No	REFER to Section 417-01 to continue diagnosis of the stoplamps.

B2 CHECK THE STOPLAMP SWITCH (BOO1) AND CRUISE CONTROL DEACTIVATOR SWITCH (BOO2) PIDS

- Enter the following diagnostic mode on the scan tool: PCM DataLogger.
- Monitor the PCM PIDs BOO1 (stoplamp switch) and BOO2 (cruise control deactivator switch) while applying and releasing the brake pedal as follows:

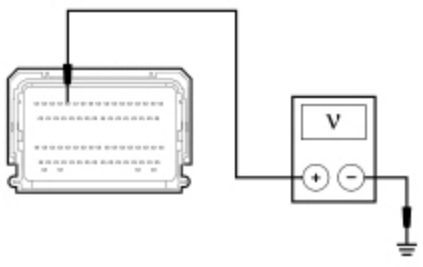
Brake Pedal Position	BOO1 PID	BOO2 PID
Released	Off	Off
Applied lightly	On	Off
Applied firmly	On	On

Do the PID values agree with the brake pedal position?

Yes	GO to B7.
No	For an incorrect BOO1 PID value, GO to B3. For an incorrect BOO2 PID value, GO to B4.

B3 CHECK THE STOPLAMP INPUT TO THE PCM

- Ignition OFF.
- Disconnect: PCM C175B .
- Ignition ON.
- While applying the brake pedal, measure the voltage between the PCM C175B Pin 13, circuit CCB08 (VT/WH), harness side and ground.



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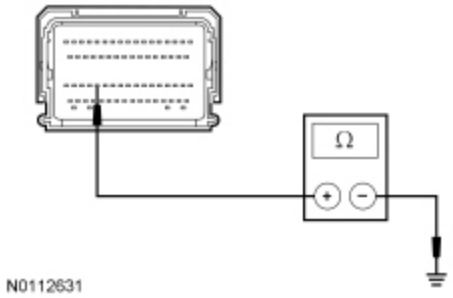
Is the voltage greater than 10 volts with the brake pedal applied?

Yes	GO to B7.
No	REPAIR the circuit for an open. CLEAR the DTCs. TEST the system for normal operation.

B4 CHECK THE CRUISE CONTROL DEACTIVATOR SWITCH FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect: PCM C175B .
- While firmly applying and releasing the brake pedal, measure the resistance between the PCM C175B Pin 46, circuit CE509 (YE/GN), harness side and ground.

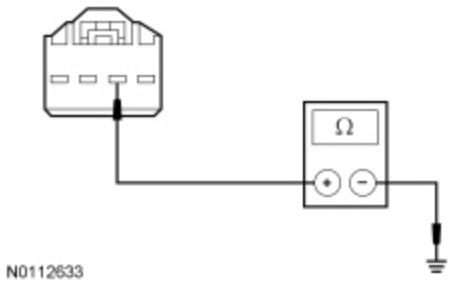


Is the resistance less than 5 ohms with the brake pedal released, and greater than 10,000 ohms with the brake pedal firmly applied?

Yes	GO to B7.
No	GO to B5.

B5 CHECK THE CRUISE CONTROL DEACTIVATOR SWITCH GROUND CIRCUIT FOR AN OPEN

- Disconnect: Stoplamp SwitchC278 .
- Disconnect: Negative Battery Cable.
- Measure the resistance between the stoplamp switch C278 Pin 2, circuit GD119 (BK), harness side and ground.

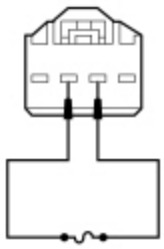


Is the resistance less than 5 ohms?

Yes	GO to B6.
No	REPAIR the circuit for an open. CLEAR the DTCs. TEST the system for normal operation.

B6 CHECK THE CRUISE CONTROL DEACTIVATOR SWITCH SIGNAL CIRCUIT FOR AN OPEN

- Connect a fused jumper wire between the stoplamp switch C278 Pin 3, circuit CE509 (YE/GN) , harness side and the stoplamp switch C278 Pin 2, circuit GD119 (BK), harness side.



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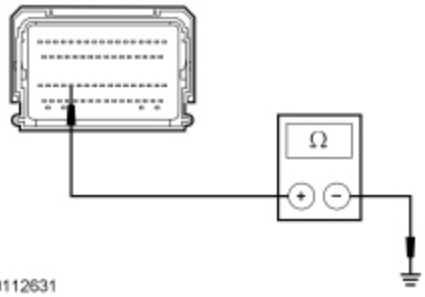
- Measure the resistance between the PCM C175B Pin 46, circuit CE509 (YE/GN), harness side and ground.



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Is the resistance less than 5 ohms?

Yes	INSTALL a new stoplamp switch. REFER to Section 417-01. CLEAR the DTCs. TEST the system for normal operation.
No	REPAIR circuit CE509 (YE/GN) for an open. CLEAR the DTCs. TEST the system for normal operation.

B7 CHECK FOR CORRECT PCM OPERATION

- Disconnect all the PCM connectors.
- Check for:
  - corrosion
  - damaged pins
  - pushed-out pins
- Connect all the PCM connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.

Is the concern still present?

Yes	INSTALL a new PCM. REFER to Section 303-14. TEST the system for normal operation.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

Pinpoint Test C: DTC P0579 Or DTC P0581

Refer to Wiring Diagrams Cell 31 , Cruise Control for schematic and connector information.

Normal Operation

The cruise control switches uses the PCM RUN/START voltage and the PCM ground. The cruise control functionality is controlled through the cruise control switches and is hard-wired to the PCM through a signal and return circuit.

There are 5 cruise control switches with each switch operating a specific function that uses different resistance values. The PCM sends out a reference voltage to the cruise control switches and monitors the voltage drop when a cruise control switch is pressed. The voltage drop varies depending upon the resistance of each switch, providing a specific indication to the PCM which switch is pressed, activating and controlling the cruise control system.

- DTC P0579 (Cruise Control Multifunction Input A Circuit Range/Performance) — sets when the cruise control switch circuits are open, shorted to voltage or ground.
- DTC P0581 (Cruise Control Multifunction Input A Circuit High) — sets when the cruise control switch circuits are shorted to voltage or open.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Clockspring
- Cruise control switches
- PCM

PINPOINT TEST C : DTC P0579 OR DTC P0581

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

C1 CHECK THE CRUISE CONTROL SWITCH

- Ignition ON.
- Enter the following diagnostic mode on the scan tool: PCM DataLogger .
- Press each cruise control switch button while monitoring the SCCS PID (cruise control switch).

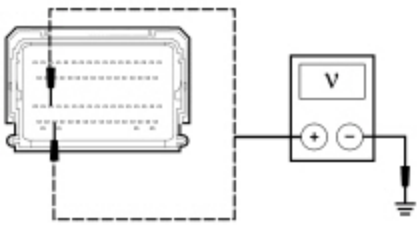
Cruise Control Switch	SCCS PID Value
OFF	OFF
ON	ON
RESUME (with audio controls) /RES (without audio controls)	RESUME
SET -	SET/-
SET +	SET/+

Does the PID value agree with the switch position?

Yes	GO to C12.
No	If only one switch does not display the correct PID value, INSTALL a new cruise control switch. REFER to Cruise Control Switch in this section. CLEAR the DTCs. TEST the system for normal operation. Otherwise, GO to C2.

C2 CHECK THE CRUISE CONTROL SWITCH CIRCUITRY FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: PCM C175B .
- Ignition ON.
- Turn the parking lamps on.
- Measure the voltage between the PCM C175B Pin 64, circuit VES10 (WH), harness side and ground; and between the PCM C175B Pin 48, circuit RES08 (GN/BN), harness side and ground.



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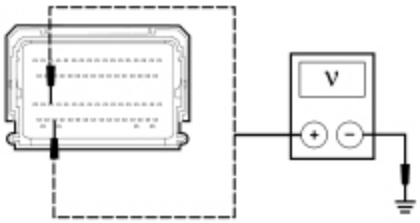
Is any voltage present?

Yes	TURN the parking lamps off. GO to C3.
No	TURN the parking lamps off. GO to C6.

C3 CHECK THE CRUISE CONTROL SWITCH CIRCUITRY FOR A SHORT TO VOLTAGE WITH THE CLOCKSPRING DISCONNECTED

- Ignition OFF.
- Disconnect: Clockspring C2274 .
- Ignition ON.
- Turn the parking lamps on.
- Measure the voltage between the PCM C175B Pin 64, circuit VES10 (WH), harness side and ground; and between the PCM C175B Pin 48, circuit RES08 (GN/BN), harness side and ground.



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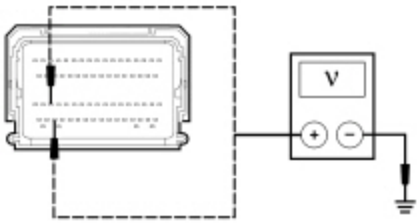
Is any voltage present?

Yes	REPAIR the circuit in question. CLEAR the DTCs. TEST the system for normal operation.
No	TURN the parking lamps off. GO to C4.

C4 CHECK THE CLOCKSPRING FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Connect: Clockspring C2274 .
- Remove the driver air bag module. Refer to Section 501-20B.
- Disconnect: Upper Clockspring .
- Connect the battery.
- Ignition ON.
- Turn the parking lamps on.
- Measure the voltage between the PCM C175B Pin 64, circuit VES10 (WH), harness side and ground; and between the PCM C175B Pin 48, circuit RES08 (GN/BN), harness side and ground.



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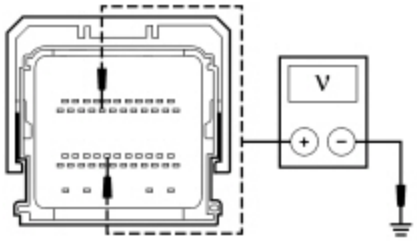
Is any voltage present?

Yes	INSTALL a new clockspring. INSTALL the driver air bag module. REFER to Section 501-20B. CLEAR the DTCs. TEST the system for normal operation.
No	GO to C5.

C5 CHECK THE STEERING WHEEL CRUISE CONTROL CIRCUITRY FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Connect: Upper Clockspring .
- Disconnect: Cruise Control Switch .
- Ignition ON.
- Turn the parking lamps on.
- Measure the voltage between the PCM C175B Pin 64, circuit VES10 (WH), harness side and ground; and between the PCM C175B Pin 48, circuit RES08 (GN/BN), harness side and ground.



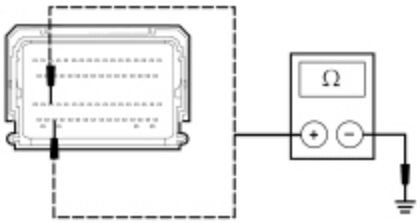
A0082239

Is any voltage present?

Yes	REPAIR the circuit in question in the steering wheel harness. CLEAR the DTCs. TEST the system for normal operation.
No	INSTALL a new cruise control switch. REFER to Cruise Control Switch in this section. INSTALL the driver air bag module. REFER to Section 501-20B. CLEAR the DTCs. TEST the system for normal operation.

C6 CHECK THE CRUISE CONTROL SWITCH CIRCUITRY FOR A SHORT TO GROUND

- Ignition OFF.
- Remove the driver air bag module. Refer to Section 501-20B.
- Disconnect: Upper Clockspring .
- Measure the resistance between the PCM C175B Pin 64, circuit VES10 (WH), harness side and ground; and between the PCM C175B Pin 48, circuit RES08 (GN/BN), harness side and ground.



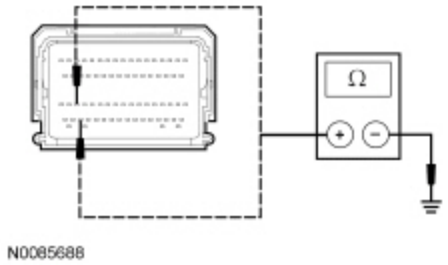
N0085688

Are the resistances greater than 10,000 ohms?

Yes	GO to C8.
No	GO to C7.

C7 CHECK THE CLOCKSPRING FOR A SHORT TO GROUND

- Disconnect: Clockspring C2274 .
- Measure the resistance between the PCM C175B Pin 64, circuit VES10 (WH), harness side and ground; and between the PCM C175B Pin 48, circuit RES08 (GN/BN), harness side and ground.

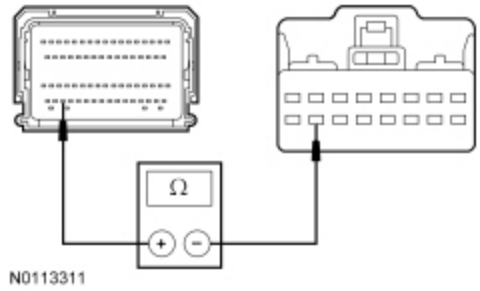


Are the resistances greater than 10,000 ohms?

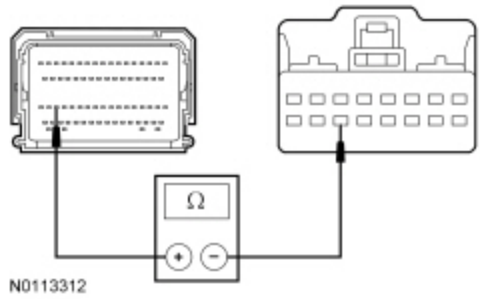
Yes	INSTALL a new clockspring. INSTALL the driver air bag module. REFER to Section 501-20B. CLEAR the DTCs. TEST the system for normal operation.
No	For uplevel cruise control switch, GO to C10. For base cruise control switch, GO to C11.

C8 CHECK THE CRUISE CONTROL SWITCH CIRCUITRY FOR AN OPEN

- Disconnect: Clockspring C2274 .
- Measure the resistance between the PCM C175B Pin 64, circuit VES10 (WH), harness side and the clockspring C2274 Pin 15, circuit VES10 (WH), harness side.



- Measure the resistance between the PCM C175B Pin 48, circuit RES08 (GN/BN), harness side and the clockspring C2274 Pin 14, circuit RES08 (GN/BN), harness side.

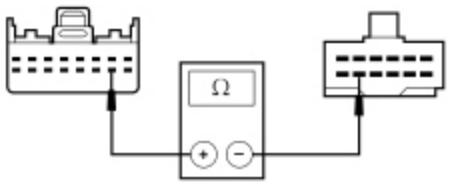


Are the resistances less than 5 ohms?

Yes	GO to C9.
No	REPAIR the circuit in question. CLEAR the DTCs. TEST the system for normal operation.

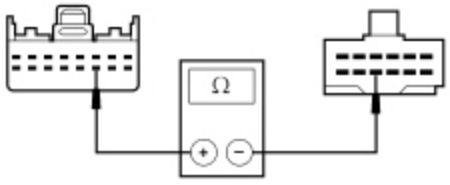
C9 CHECK THE CLOCKSPRING FOR AN OPEN

- Remove the driver air bag module. Refer to Section 501-20B.
- Disconnect: Upper Clockspring .
- Measure the resistance between the clockspring C2274 pin 15, component side and the upper clockspring connector pin 8, component side.



N0099830

- Measure the resistance between the clockspring C2274 pin 14, component side and the upper clockspring connector pin 9, component side.



N0099831

Are the resistances less than 5 ohms?

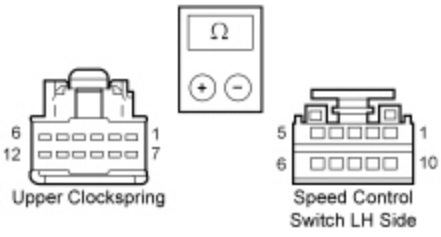
Yes	For uplevel cruise control switch, GO to C11. For base cruise control switch, GO to C10.
No	INSTALL a new clockspring. INSTALL the driver air bag module. REFER to Section 501-20B. CLEAR the DTCs. TEST the system for normal operation.

C10 CHECK THE CIRCUITS TO THE STEERING WHEEL CONTROLS CIRCUITRY FOR AN OPEN OR SHORT TO GROUND (BASE)

NOTE: *Circuit RES08 (GN/BN) does not need to be checked for a short to ground.*

- Ignition OFF.
- Measure the resistance between the upper clockspring, harness side and the cruise control switch, harness side; and between the upper clockspring, harness side and ground as follows:

Inoperative Switch	Connector/Pin	Connector/Pin	Circuit
Cruise control switch	Upper clockspring pin 8	Cruise control switch connector pin 7, then ground	VES10 (WH)
	Upper clockspring pin 9	Cruise control switch connector pin 2	RES08 (GN/BN)



N0099996

Is the resistance less than 5 ohms between the clockspring and the steering wheel controls, and greater than 10,000 ohms between the upper clockspring and ground?

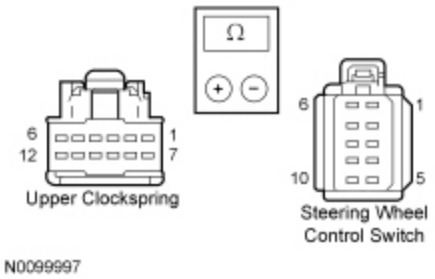
Yes	INSTALL a new cruise control switch. REFER to Cruise Control Switch in this section. INSTALL the driver air bag module. REFER to Section 501-20B. CLEAR the DTCs. TEST the system for normal operation.
No	INSTALL a new steering wheel. REFER to Section 211-04. CLEAR the DTCs. TEST the system for normal operation.

C11 CHECK THE CIRCUITS TO THE STEERING WHEEL CONTROLS CIRCUITRY FOR AN OPEN OR SHORT TO GROUND (UPLEVEL)

NOTE: *Circuit (BU) does not need to be checked for a short to ground.*

- Ignition OFF.
- Measure the resistance between the upper clockspring, harness side and the cruise control switch, LH side; and between the upper clockspring, harness side and ground as follows:

Inoperative Switch	Connector/Pin	Connector/Pin	Circuit
Cruise control switch	Upper clockspring pin 8	Cruise control switch LH side pin 4, then ground	(WH)
	Upper clockspring pin 9	Cruise control switch LH side pin 3	(BU)



Is the resistance less than 5 ohms between the clockspring and the steering wheel controls, and greater than 10,000 ohms between the upper clockspring and ground?

Yes	INSTALL a new cruise control switch. REFER to Cruise Control Switch in this section. INSTALL the driver air bag module. REFER to Section 501-20B. CLEAR the DTCs. TEST the system for normal operation.
No	INSTALL a new steering wheel. REFER to Section 211-04. CLEAR the DTCs. TEST the system for normal operation.

C12 CHECK FOR CORRECT PCM OPERATION

- Disconnect all the PCM connectors.
- Check for:
  - corrosion
  - damaged pins
  - pushed-out pins
- Connect all the PCM connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.

Is the concern still present?

Yes	INSTALL a new PCM. REFER to Section 303-14. INSTALL the driver air bag module. REFER to Section 501-20B. TEST the system for normal operation.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. INSTALL the driver air bag module. REFER to Section 501-20B. CLEAR the DTCs. REPEAT the self-test.

Pinpoint Test D: The Cruise Control Does Not Disengage When The Clutch Is Applied

Refer to Wiring Diagrams Cell 31 , Cruise Control for schematic and connector information.

Normal Operation

Vehicles equipped with a manual transaxle have an additional clutch pedal cruise control deactivator additional clutch pedal cruise control deactivator the normally closed clutch pedal cruise control deactivator switch. When the clutch pedal is applied, the clutch pedal cruise control deactivator switch opens and removes the ground signal to the PCM disengaging the cruise control.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Clutch pedal cruise control deactivator switch
- PCM

PINPOINT TEST D : THE CRUISE CONTROL DOES NOT DISENGAGE WHEN THE CLUTCH IS APPLIED

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

D1 CHECK THE CPP SWITCH (CPP TOP) PID

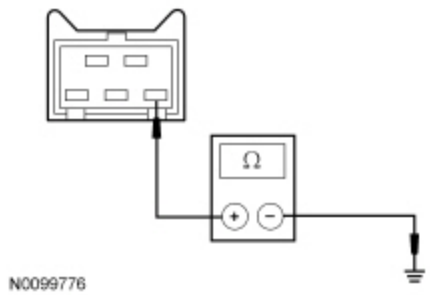
- Ignition OFF.
- Enter the following diagnostic mode on the scan tool: PCM DataLogger .
- While applying and releasing the clutch pedal monitor the PCM PID (CPP TOP).

Does the PID value read NO with the clutch pedal released and YES with the clutch pedal applied?

Yes	GO to D3.
No	GO to D2.

D2 CHECK THE CLUTCH PEDAL CRUISE CONTROL DEACTIVATOR SWITCH GROUND CIRCUIT FOR A SHORT TO GROUND

- Disconnect: Clutch Pedal Cruise Control Deactivator Switch C277 .
- Disconnect: PCM C175T .
- Measure the resistance between the clutch pedal cruise control deactivator switch C277 Pin 1, circuit CE904 (GN/VT), harness side and ground.



Is the resistance greater than 10,000 ohms?

Yes	INSTALL a new clutch pedal cruise control deactivator switch. REFER to Cruise Control Deactivator Switch in this section. TEST the system for normal operation.
No	REPAIR the circuit. TEST the system for normal operation.

D3 CHECK FOR CORRECT PCM OPERATION

- Disconnect all the PCM connectors.
- Check for:

    - corrosion
    - damaged pins
    - pushed-out pins
- Connect all the PCM connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.

Is the concern still present?

Yes	INSTALL a new PCM. REFER to Section 303-14. TEST the system for normal operation.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.