


2004 ACCESSORIES & EQUIPMENT

Cruise Control - Vue

SCHEMATIC AND ROUTING DIAGRAMS

CRUISE CONTROL SCHEMATIC ICONS

Cruise Control Schematic Icons

Icon	Icon Definition
	<p>CAUTION: When performing service on or near the SIR components or the SIR wiring, the SIR system must be disabled. Refer to SIR Disabling and Enabling Zones. Failure to observe the correct procedure could cause deployment of the SIR components, personal injury, or unnecessary SIR system repairs.</p>

CRUISE CONTROL SCHEMATICS (W/L61)

Refer to Cruise Control in System Wiring Diagrams .

CRUISE CONTROL SCHEMATICS (W/L66)

Refer to Cruise Control in System Wiring Diagrams .

COMPONENT LOCATOR

CRUISE CONTROL COMPONENT VIEWS

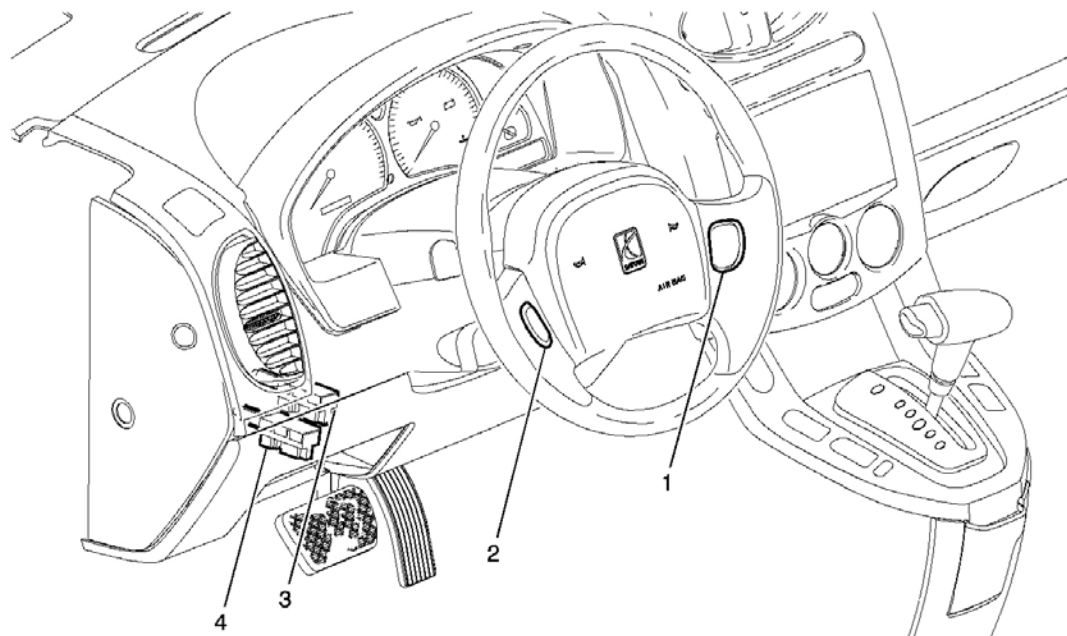


Fig. 1: Cruise Control Components View - 4 Cylinder Shown, V6 Similar
 Courtesy of GENERAL MOTORS CORP.

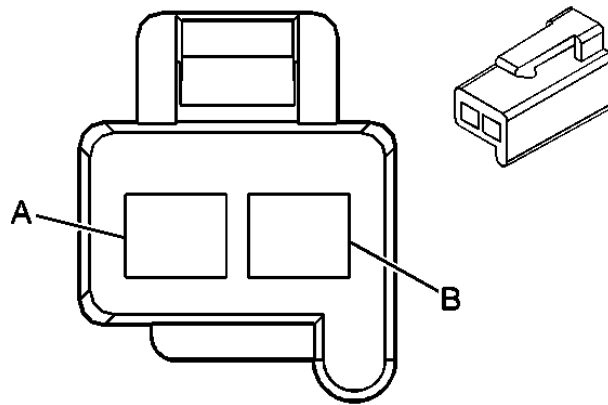
Callouts For Fig. 1

Callout	Component Name
1	Cruise Set/Resume Switch
2	Cruise On/Off Switch
3	Cruise/Brake Switch
4	Stop Lamp Switch

CRUISE CONTROL CONNECTOR END VIEWS

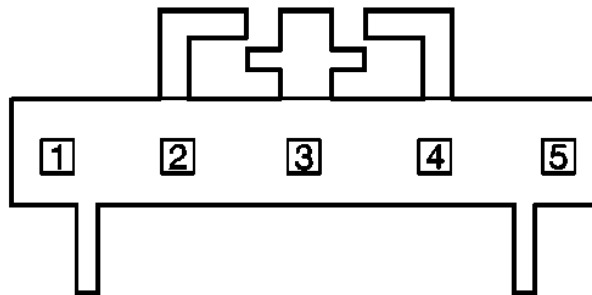
Cruise/Brake Switch Connector End View





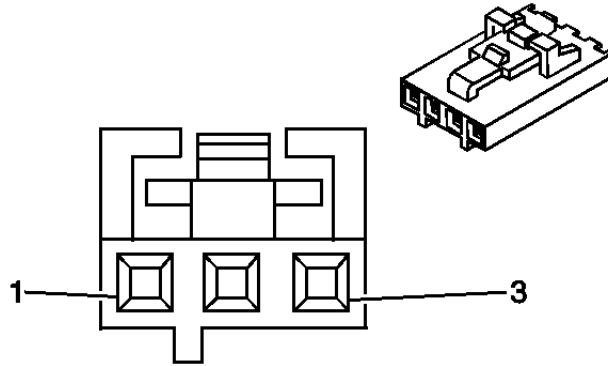
Connector Part Information		<ul style="list-style-type: none"> • 12041433 • 2-Way F Metri-Pack 280 Series (BK) 	
Pin	Wire Color	Circuit Number	Function
A	PK	1339	Ignition 1 Voltage
B	PU	420	Cruise Control Release Signal

Cruise Control Switch Connector End View (w/L66)



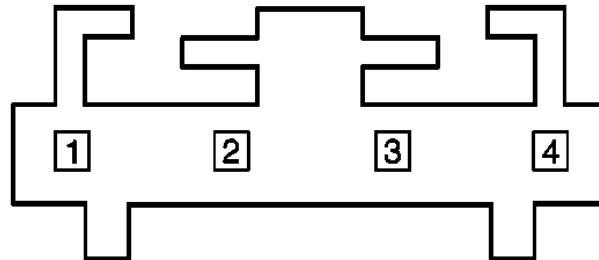
Connector Part Information		<ul style="list-style-type: none"> • 50-57-9405 • 5-Way F C Grid SL 70066G Series (BK) 	
Pin	Wire Color	Circuit Number	Function
1	PK	1339	Ignition 1 Voltage
2	BK	-	Ground
3	GY	397	Cruise On/Off Switch Signal
4	D-BU	84	Cruise Set/Coast Switch Signal
5	GY/BK	87	Cruise Resume/Accel Switch Signal

Cruise On/Off Switch Connector End View (w/L61)



Connector Part Information		<ul style="list-style-type: none"> • 21060913 • 3-Way F (BK) 	
Pin	Wire Color	Circuit Number	Function
1	GY	397	Cruise On/Off Switch Signal
2	BK	-	Ground
3	PK	1339	Ignition 1 Voltage

Cruise Set/Resume Switch Connector End View (w/L61)



Connector Part Information		<ul style="list-style-type: none"> • 12450192 • 4-Way F (BK) 	
Pin	Wire Color	Circuit Number	Function
1	GY	397	Cruise On/Off Switch Signal
2	GY/BK	87	Cruise Resume/Accel Switch Signal
3	D-BU	84	Cruise Set/Coast Switch Signal
4	-	-	Not Used

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC STARTING POINT - CRUISE CONTROL

Begin the system diagnosis with the **Diagnostic System Check - Cruise Control** . The Diagnostic System Check will provide the following information:

- The identification of the control modules which command the system
- The ability of the control modules to communicate through the serial data circuit
- The identification of any stored diagnostic trouble codes (DTCs) and their status

The use of the Diagnostic System Check will identify the correct procedure for diagnosing the system and where the procedure is located.

DIAGNOSTIC SYSTEM CHECK - CRUISE CONTROL

Description

The Cruise Control Diagnostic System Check is an organized approach to identifying a condition created by an electronic control system failure. The Diagnostic System Check directs the service technician to the next logical step in diagnosing the concern. Understanding the system, the table, and using it correctly reduces diagnostic time and prevents misdiagnosis. For a review of the cruise control system, refer to **Cruise Control Description and Operation** .

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: Lack of communication may be due to a malfunction in the class 2 serial data circuit. The specified procedure will determine the particular condition.

4: The presence of DTCs which begin with "U" indicates that some other module is not communicating. The specified procedure will compile all the available information before tests are performed.

Diagnostic System Check - Cruise Control

Step	Action	Yes	No
1	Install a scan tool. Does the scan tool power up?	Go to Step 2	Go to <u>Scan Tool Does Not Power Up</u> in Data Link Communications
2	1. Turn ON the ignition, with the engine OFF. 2. Attempt to establish communication with the following modules: <ul style="list-style-type: none">• Powertrain control module (PCM)/ engine		

	control module (ECM) <ul style="list-style-type: none"> • Electronic brake control module (EBCM) 		Go to Data Link References in Data Link Communications
	Does the scan tool communicate with the modules listed above?	Go to Step 3	
3	Select the DTCs function on the scan tool for the following modules: <ul style="list-style-type: none"> • Powertrain control module (PCM)/ engine control module (ECM) • Electronic brake control module (EBCM) 		
	Does the scan tool display any DTCs?	Go to Step 4	Go to Symptoms - Cruise Control
4	Does the scan tool display any DTCs which begin with a U?	Go to Diagnostic Trouble Code (DTC) List in Data Link Communications	Go to Step 5
5	Does the scan tool display DTC P0562, P0563, P621 or P0622?	Go to Diagnostic Trouble Code (DTC) List in Engine Electrical	Go to Diagnostic Trouble Code (DTC) List

SCAN TOOL DATA LIST

Powertrain Control Module (PCM) Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Ignition On/Engine Idling at normal operating temperature/Transmission in Park or Neutral/Cruise Control On/Off switch Off.			
Brake Switch	Idle/Speed Control General Info - Inputs	Applied/Released	Released
Cruise Brake Switch	Idle/Speed Control General Info - Inputs	Applied/Released	Released
Cruise Engaged	Idle/Speed Control General Info - Inputs	Yes/No	No
Cruise Resume/Accel	Idle/Speed Control General Info - Inputs	On/Off	Off
Cruise Set/Coast	Idle/Speed Control General Info - Inputs	On/Off	Off
Cruise Switch	Idle/Speed Control General Info - Inputs	On/Off	Off
Engine Speed	Idle/Speed Control	RPM	Varies

	General Info - Inputs		
Ignition 1	Idle/Speed Control General Info - Inputs	Volts	Varies
Vehicle Speed	Idle/Speed Control General Info - Inputs	km/h (mph)	0 km/h (0 mph)

SCAN TOOL DATA DEFINITIONS

The Scan Tool Data Definitions contains a brief description of all cruise control related parameters that are available on the scan tool. An engine control module (ECM) is used on a vehicle that is equipped with a 2.2 L (L61) engine and a powertrain control module (PCM) is used on a vehicle that is equipped with a 3.5 L (L66) engine.

Brake Switch

The scan tool displays Applied or Released. The ECM/PCM monitors the signal circuit of the stop lamp switch. An open switch is displayed as Released.

Cruise Engaged

The scan tool displays Yes or No. The ECM/PCM determines the current status of cruise control operation. An active cruise control system is displayed as Yes.

Cruise Switch

The scan tool displays On or Off. The ECM/PCM monitors the signal circuit of the On/Off switch of the cruise control system. A closed switch is displayed as On.

Cruise Brake Switch

The scan tool displays Applied or Released. The ECM/PCM monitors the signal circuit of the cruise/brake switch. An open switch is displayed as Applied.

Cruise Resume/Accel

The scan tool displays On or Off. The ECM/PCM monitors the signal circuit of the Resume/Accel. switch of the cruise control system. A closed switch is displayed as On. The cruise On/Off switch must be switched On in order to correctly view the Cruise Resume/Accel parameter.

Cruise Set/Coast

The scan tool displays On or Off. The ECM/PCM monitors the signal circuit of the Set/Coast switch of the cruise control system. A closed switch is displayed as On. The cruise On/Off switch must be switched On in order to correctly view the Cruise Set/Coast parameter.

Engine Speed

The scan tool displays 0 to 9,999 RPM. The ECM/PCM monitors the CKP signal circuit in order to determine the engine RPM.

Ignition 1

The scan tool displays 6 to 18 Volts. The ECM/PCM monitors the Ignition 1 signal circuit in order to determine the system voltage.

Vehicle Speed

The scan tool displays 0 to 255 km/h (158 mph). The ECM/PCM monitors the vehicle speed sensor signal circuit in order to calculate the vehicle speed.

DIAGNOSTIC TROUBLE CODE (DTC) LIST

Diagnostic Trouble Code (DTC) List

DTC	Diagnostic Procedure	Module(s)
CXXX	Diagnostic Trouble Code (DTC) List in Anti-lock Brake System	Electronic Brake control Module (EBCM)
P0567	<u>DTC P0567 (2.2L)</u> or <u>DTC P0567 (3.5L)</u>	Engine control module (ECM)/powertrain Control Module (PCM)
P0568	<u>DTC P0568 (2.2L)</u> or <u>DTC P0568 (3.5L)</u>	Engine control module (ECM)/powertrain Control Module (PCM)
P0571	<u>DTC P0571 (2.2L)</u> or <u>DTC P0571 (3.5L)</u>	Engine control module (ECM)/powertrain Control Module (PCM)
P0719	<u>DTC P0719</u> in Automatic Transmission - VT25-E	Engine control module (ECM)/powertrain Control Module (PCM)
P0724	<u>DTC P0724</u> in Automatic Transmission - VT25-E	Engine control module (ECM)/powertrain Control Module (PCM)
P1574	<u>DTC P1574 (2.2L)</u> or <u>DTC P1574 (3.5L)</u>	Engine control module (ECM)/powertrain Control Module (PCM)
PXXX	Diagnostic Trouble Code (DTC) List in Engine Controls-2.2 L Diagnostic Trouble Code (DTC) List in Engine Controls-3.5 L (L66)	Engine control module (ECM)/powertrain Control Module (PCM)

DTC P0567 (2.2L)

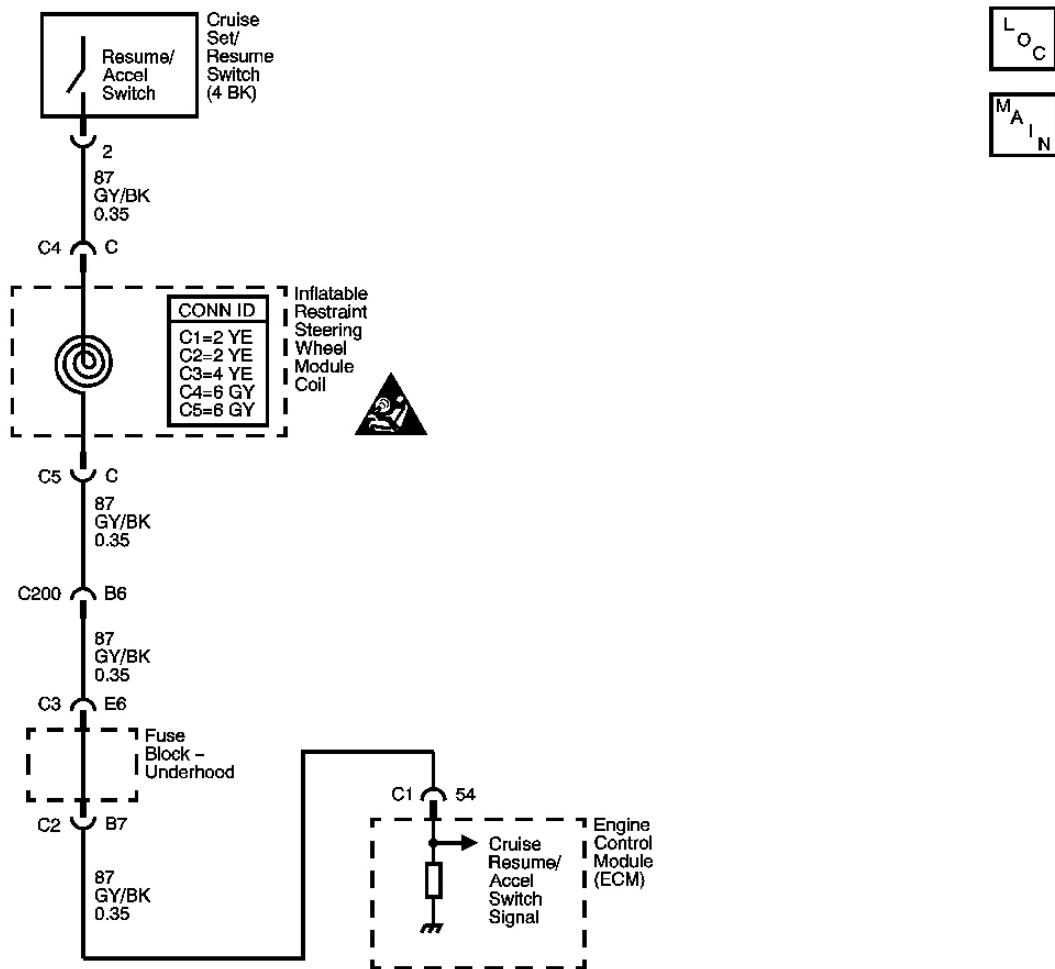


Fig. 2: DTC P0567 Circuit (2.2L)
 Courtesy of GENERAL MOTORS CORP.

Circuit Description

The cruise control resume/accel switch is an input to the engine control module (ECM). The ECM uses the cruise control resume/accel switch signal circuit in order to detect when the driver has requested to accelerate the set vehicle speed or to resume the cruise control system. The ECM detects a high signal voltage on the cruise control resume/accel switch signal circuit when the switch is applied.

Conditions for Running the DTC

The ignition is ON.

The cruise control On/Off switch is ON.

Conditions for Setting the DTC

The ECM detects a high signal voltage on the cruise control resume/accel switch signal circuit for longer than 60 seconds.

Action Taken When the DTC Sets

- The ECM stores the DTC information into memory when the diagnostic runs and fails.
- The malfunction indicator lamp (MIL) will not illuminate.
- The ECM records the operating conditions at the time the diagnostic fails. The ECM stores this information in the Failure Records.
- The cruise control system is disabled.

Conditions for Clearing the MIL/DTC

- A last test failed, or the current DTC, clears when the diagnostic runs and does not fail.
- A history DTC clears after 40 consecutive warm-up cycles, if failures are not reported by this or any other emission related diagnostic.
- Use a scan tool in order to clear the MIL/DTC.

Diagnostic Aids

Ensure that the resume/accel switch is not stuck or sticking in the engaged position.

For an intermittent condition, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: This step determines if condition is present.

3: This step determines if the switch is at fault.

DTC P0567 (2.2L)

Step	Action	Yes	No
Schematic Reference: <u>Cruise Control Schematics (w/L61)</u> or <u>Cruise Control Schematics (w/L66)</u> Connector End View Reference: <u>Cruise Control Connector End Views</u>			
1	Did you perform the Cruise Control Diagnostic System Check?	Go to Step 2	Go to Diagnostic System Check - Cruise Control
	<ol style="list-style-type: none">1. Install a scan tool.2. Turn the ignition ON, with the engine OFF.3. Turn the cruise control On/Off switch ON.		

2	<p>4. With the scan tool, observe the Cruise Resume/Accel parameter in the PCM General Info - Inputs data list.</p> <p>Does the Cruise Resume/Accel parameter display On?</p>	Go to Step 3	Go to Diagnostic Aids
3	<p>1. Turn the ignition OFF.</p> <p>2. Disconnect the cruise control switch.</p> <p>3. Turn the ignition ON, with the engine OFF.</p> <p>4. With the scan tool, observe the Cruise Resume/Accel parameter.</p> <p>Does the Cruise Resume/Accel parameter display On?</p>	Go to Step 4	Go to Step 5
4	<p>Test the cruise control resume/accel switch signal circuit for a short to voltage. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 6
5	<p>Inspect for poor connections at the harness connector of the cruise control switch. Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 7
6	<p>Inspect for poor connections at the harness connector of the engine control module (ECM). Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 8
7	<p>Replace the cruise control switch. Refer to Steering Wheel Control Switch Assembly Replacement in Steering Wheel and Column.</p> <p>Did you complete the replacement?</p>	Go to Step 9	-
8	<p>IMPORTANT: Program the replacement ECM.</p> <p>Replace the ECM. Refer to Engine Control Module (ECM) Replacement in Engine Controls-2.2 L (L61).Did you complete the replacement?</p>	Go to Step 9	-
9	<p>1. Use the scan tool in order to clear the DTCs.</p> <p>2. Operate the vehicle within the Conditions for Running the DTC.</p> <p>Does the DTC reset?</p>	Go to Step 2	System OK

DTC P0567 (3.5L)

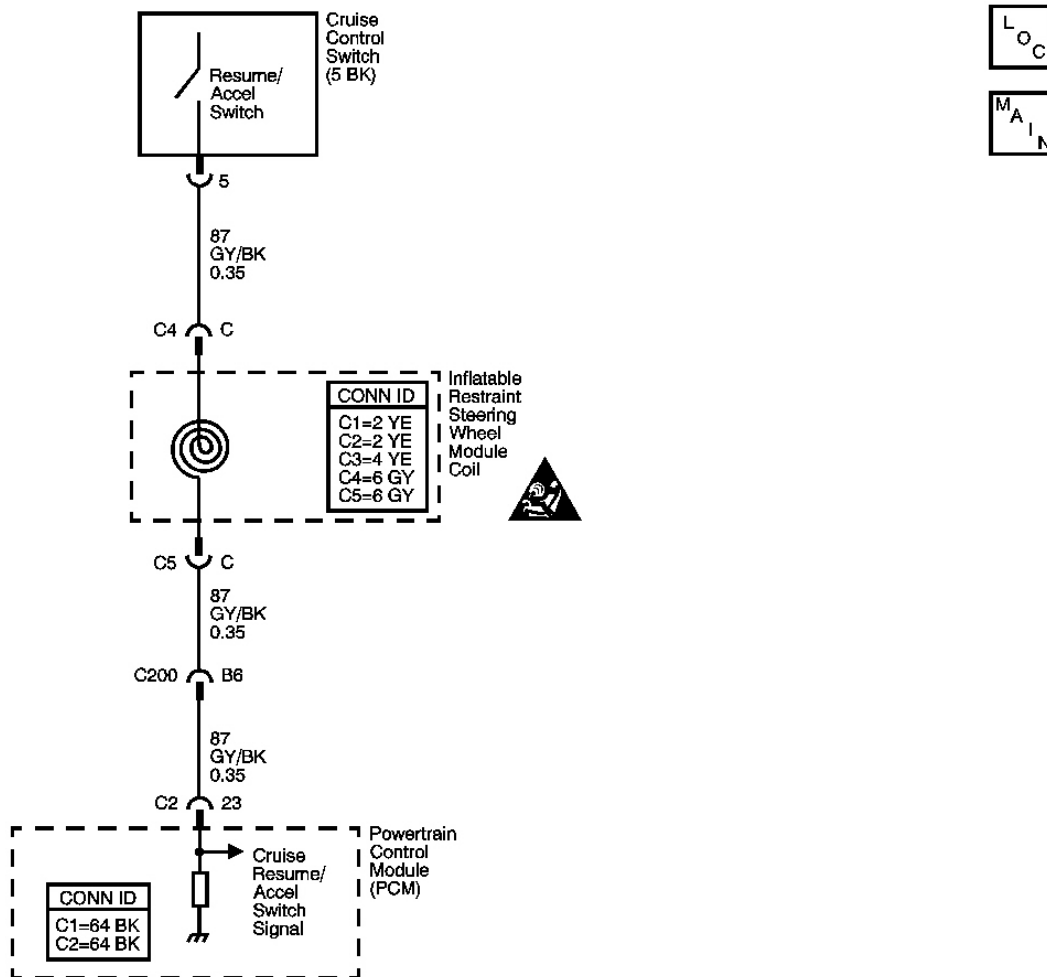


Fig. 3: DTC P0567 Circuit (3.5L)
 Courtesy of GENERAL MOTORS CORP.

Circuit Description

The cruise control resume/accel switch is an input to the powertrain control module (PCM). The PCM uses the cruise control resume/accel switch signal circuit in order to detect when the driver has requested to accelerate the set vehicle speed or to resume the cruise control system. The PCM detects a high signal voltage on the cruise control resume/accel switch signal circuit when the switch is applied.

Conditions for Running the DTC

- The ignition is ON.
- The cruise control On/Off switch is ON.

Conditions for Setting the DTC

The PCM detects a high signal voltage on the cruise control resume/accel switch signal circuit for longer than 60 seconds.

Action Taken When the DTC Sets

- The PCM stores the DTC information into memory when the diagnostic runs and fails.
- The malfunction indicator lamp (MIL) will not illuminate.
- The PCM records the operating conditions at the time the diagnostic fails. The PCM stores this information in the Failure Records.
- The cruise control system is disabled.
- The Service Vehicle Soon (SVS) light may be illuminated.

Conditions for Clearing the MIL/DTC

- A last test failed, or the current DTC, clears when the diagnostic runs and does not fail.
- A history DTC clears after 40 consecutive warm-up cycles, if failures are not reported by this or any other emission related diagnostic.
- Use a scan tool in order to clear the MIL/DTC.

Diagnostic Aids

Ensure that the resume/accel switch is not stuck or sticking in the engaged position.

For an intermittent condition, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: This step determines if condition is present.

3: This step determines if the switch is at fault.

DTC P0567 (3.5L)

Step	Action	Yes	No
Schematic Reference: <u>Cruise Control Schematics (w/L61)</u> or <u>Cruise Control Schematics (w/L66)</u> Connector End View Reference: <u>Cruise Control Connector End Views</u>			
1	Did you perform the Cruise Control Diagnostic System Check?	Go to Step 2	Go to Diagnostic System Check - Cruise Control
	1. Install a scan tool. 2. Turn the ignition ON, with the engine OFF.		

2	<ol style="list-style-type: none"> 3. Turn the cruise control On/Off switch ON. 4. With the scan tool, observe the Cruise Resume/Accel parameter in the PCM General Info - Inputs data list. <p>Does the Cruise Resume/Accel parameter display On?</p>	Go to Step 3	Go to Diagnostic Aids
3	<ol style="list-style-type: none"> 1. Turn the ignition OFF. 2. Disconnect the cruise control switch. 3. Turn the ignition ON, with the engine OFF. 4. With the scan tool, observe the Cruise Resume/Accel parameter. <p>Does the Cruise Resume/Accel parameter display On?</p>	Go to Step 4	Go to Step 5
4	<p>Test the cruise control resume/accel switch signal circuit for a short to voltage. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 6
5	<p>Inspect for poor connections at the harness connector of the cruise control switch. Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 7
6	<p>Inspect for poor connections at the harness connector of the powertrain control module (PCM). Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 8
7	<p>Replace the cruise control switch. Refer to Steering Wheel Control Switch Assembly Replacement in Steering Wheel and Column.</p> <p>Did you complete the replacement?</p>	Go to Step 9	-
8	<p>IMPORTANT: Program the replacement PCM.</p> <p>Replace the PCM. Refer to Powertrain Control Module (PCM) Connector End Views in Engine Controls-3.5 L (L66).Did you complete the replacement?</p>	Go to Step 9	-
9	<ol style="list-style-type: none"> 1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC. <p>Does the DTC reset?</p>	Go to Step 2	System OK

DTC P0568 (2.2L)

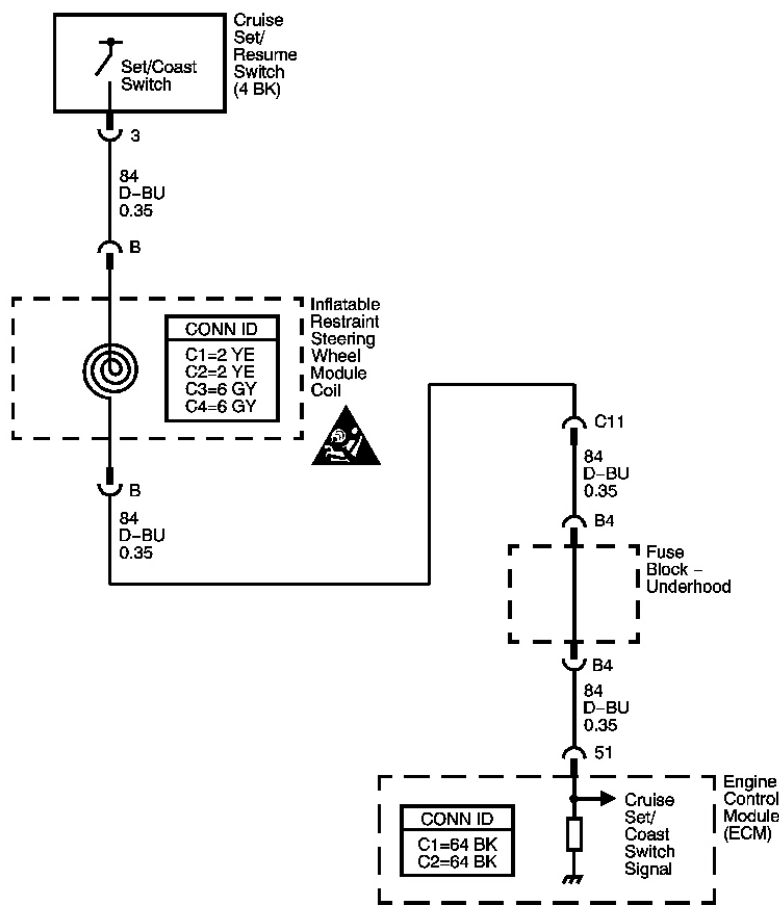


Fig. 4: DTC P0568 Circuit (2.2L)
 Courtesy of GENERAL MOTORS CORP.

Circuit Description

The cruise control set/coast switch is an input to the engine control module (ECM). The ECM uses the cruise control set/coast switch signal circuit in order to detect when the driver has requested to set the vehicle speed or to decelerate the vehicle speed. The ECM detects a high signal voltage on the cruise control set/coast switch signal circuit when the switch is applied.

Conditions for Running the DTC

- The ignition is ON.
- The cruise control On/Off switch is ON.

Conditions for Setting the DTC

The ECM detects a high signal voltage on the cruise control set/coast switch signal circuit for longer than 60 seconds.

Action Taken When the DTC Sets

- The ECM stores the DTC information into memory when the diagnostic runs and fails.
- The malfunction indicator lamp (MIL) will not illuminate.
- The ECM records the operating conditions at the time the diagnostic fails. The ECM stores this information in the Failure Records.
- The cruise control system is disabled.

Conditions for Clearing the MIL/DTC

- A last test failed, or the current DTC, clears when the diagnostic runs and does not fail.
- A history DTC clears after 40 consecutive warm-up cycles, if failures are not reported by this or any other emission related diagnostic.
- Use a scan tool in order to clear the MIL/DTC.

Diagnostic Aids

Ensure that the set/coast switch is not stuck in the engaged position.

For an intermittent condition, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

Test Description

The number below refers to the step number on the diagnostic table.

2: This step determines if condition is present.

DTC P0568 (2.2L)

Step	Action	Yes	No
Schematic Reference: <u>Cruise Control Schematics (w/L61)</u> or <u>Cruise Control Schematics (w/L66)</u> Connector End View Reference: <u>Cruise Control Connector End Views</u>			
1	Did you perform the Cruise Control Diagnostic System Check?	Go to Step 2	Go to Diagnostic System Check - Cruise Control
2	<ol style="list-style-type: none"> 1. Install a scan tool. 2. Turn the ignition ON, with the engine OFF. 3. Turn the cruise control On/Off switch ON. 4. Observe the cruise set/coast parameter in the PCM General Info - Inputs data list. 	Go to	Go to Diagnostic

	Does the cruise set/coast parameter display On?	Step 3	Aids
3	<ol style="list-style-type: none"> 1. Turn the ignition OFF. 2. Disconnect the cruise control switch. 3. Turn the ignition ON, with the engine OFF. 4. Observe the cruise set/coast parameter. 	Go to Step 4	Go to Step 5
4	<p>Does the cruise set/coast parameter display On?</p> <p>Test the cruise control set/coast switch signal circuit for a short to voltage. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 6
5	<p>Inspect for poor connections at the harness connector of the cruise control switch. Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 7
6	<p>Inspect for poor connections at the harness connector of the engine control module (ECM). Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 8
7	<p>Replace the cruise control switch. Refer to Steering Wheel Control Switch Assembly Replacement in Steering Wheel and Column.</p> <p>Did you complete the replacement?</p>	Go to Step 9	-
8	<p>IMPORTANT: Program the replacement ECM.</p> <p>Replace the ECM. Refer to Engine Control Module (ECM) Replacement in Engine Controls-2.2 L (L61).Did you complete the replacement?</p>	Go to Step 9	-
9	<ol style="list-style-type: none"> 1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC. <p>Does the DTC reset?</p>	Go to Step 2	System OK

DTC P0568 (3.5L)

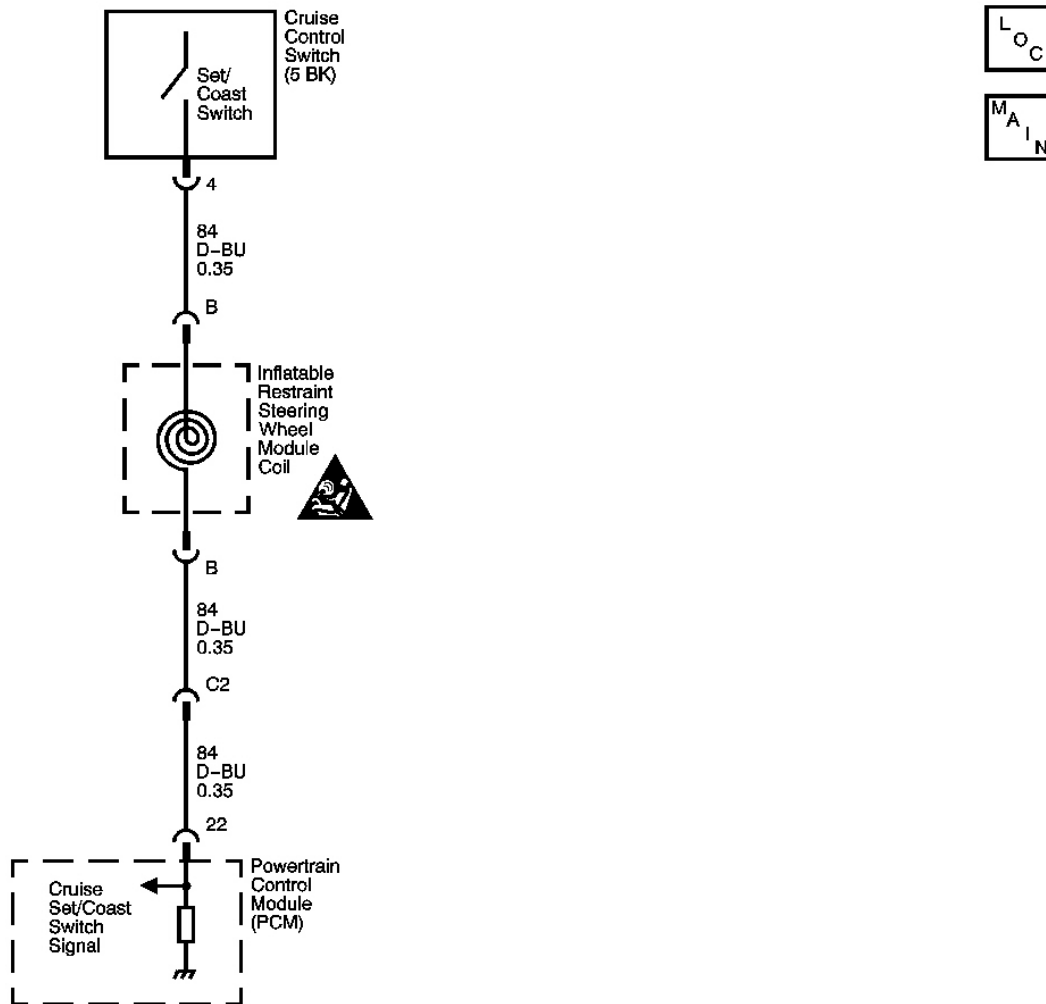


Fig. 5: DTC P0568 Circuit (3.5L)
 Courtesy of GENERAL MOTORS CORP.

Circuit Description

The cruise control set/coast switch is an input to the powertrain control module (PCM). The PCM uses the cruise control set/coast switch signal circuit in order to detect when the driver has requested to set the vehicle speed or to decelerate the vehicle speed. The PCM detects a high signal voltage on the cruise control set/coast switch signal circuit when the switch is applied.

Conditions for Running the DTC

- The ignition is ON.
- The cruise control On/Off switch is ON.

Conditions for Setting the DTC

The PCM detects a high signal voltage on the cruise control set/coast switch signal circuit for longer than 60 seconds.

Action Taken When the DTC Sets

- The PCM stores the DTC information into memory when the diagnostic runs and fails.
- The malfunction indicator lamp (MIL) will not illuminate.
- The PCM records the operating conditions at the time the diagnostic fails. The PCM stores this information in the Failure Records.
- The cruise control system is disabled.
- The Service Vehicle Soon (SVS) light may be illuminated.

Conditions for Clearing the MIL/DTC

- A last test failed, or the current DTC, clears when the diagnostic runs and does not fail.
- A history DTC clears after 40 consecutive warm-up cycles, if failures are not reported by this or any other emission related diagnostic.
- Use a scan tool in order to clear the MIL/DTC.

Diagnostic Aids

Ensure that the set/coast switch is not stuck in the engaged position.

For an intermittent condition, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

Test Description

The number below refers to the step number on the diagnostic table.

2: This step determines if condition is present.

DTC P0568 (3.5L)

Step	Action	Yes	No
Schematic Reference: <u>Cruise Control Schematics (w/L61)</u> or <u>Cruise Control Schematics (w/L66)</u> Connector End View Reference: <u>Cruise Control Connector End Views</u>			
1	Did you perform the Cruise Control Diagnostic System Check?	Go to Step 2	Go to <u>Diagnostic System Check - Cruise Control</u>
	<ol style="list-style-type: none">1. Install a scan tool.2. Turn the ignition ON, with the engine OFF.3. Turn the cruise control On/Off switch ON.		

2	<p>4. Observe the Cruise Set/Coast parameter in the PCM General Info - Inputs data list.</p> <p>Does the cruise set/coast parameter display On?</p>	Go to Step 3	Go to Diagnostic Aids
3	<p>1. Turn the ignition OFF.</p> <p>2. Disconnect the cruise control switch.</p> <p>3. Turn the ignition ON, with the engine OFF.</p> <p>4. Observe the cruise set/coast parameter.</p> <p>Does the cruise set/coast parameter display On?</p>	Go to Step 4	Go to Step 5
4	<p>Test the cruise control set/coast switch signal circuit for a short to voltage. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 6
5	<p>Inspect for poor connections at the harness connector of the cruise control switch. Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 7
6	<p>Inspect for poor connections at the harness connector of the powertrain control module (PCM). Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 8
7	<p>Replace the cruise control switch. Refer to Steering Wheel Control Switch Assembly Replacement in Steering Wheel and Column.</p> <p>Did you complete the replacement?</p>	Go to Step 9	-
8	<p>IMPORTANT: Program the replacement PCM.</p> <p>Replace the PCM. Refer to Powertrain Control Module (PCM) Replacement in Engine Controls - 3.5L (L66). Did you complete the replacement?</p>	Go to Step 9	-
9	<p>1. Use the scan tool in order to clear the DTCs.</p> <p>2. Operate the vehicle within the Conditions for Running the DTC.</p> <p>Does the DTC reset?</p>	Go to Step 2	System OK

DTC P0571 (2.2L)

- The ECM stores the DTC information into memory when the diagnostic runs and fails.
- The malfunction indicator lamp (MIL) will not illuminate.
- The ECM records the operating conditions at the time the diagnostic fails. The ECM stores this information in the Failure Records.

The cruise control system is disabled.

Conditions for Clearing the DTC

- A last test failed, or current DTC, clears when the diagnostic runs and does not fail.
- A history DTC will clear after 40 consecutive warm-up cycles, if no failures are reported by this or any other non-emission related diagnostic.
- Use a scan tool in order to clear the DTC.

Diagnostic Aids

In order to avoid a misdiagnosis, perform the following:

- Inspect for proper operation of the stop lamps. Refer to **Exterior Lighting Systems Description and Operation** in Lighting Systems.
- Inspect for proper adjustment of the stop lamps. Refer to **Stop Lamp Switch Adjustment** in Lighting Systems.
- Inspect for proper adjustment of the cruise control release switch. Refer to **Cruise Release Switch Adjustment**.
- For an intermittent condition, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

DTC P0571 (2.2L)

Step	Action	Yes	No
Schematic Reference: <u>Cruise Control Schematics (w/L61)</u> or <u>Cruise Control Schematics (w/L66)</u> Connector End View Reference: <u>Cruise Control Connector End Views</u> or <u>Lighting Systems Connector End Views</u> in Lighting Systems			
1	Did you perform the Cruise Control Diagnostic System Check?	Go to Step 2	Go to <u>Diagnostic System Check - Cruise Control</u>
2	<ol style="list-style-type: none"> 1. Turn the ignition OFF. 2. Install a scan tool. 3. Turn the ignition ON, with the engine OFF. 4. With the scan tool, observe the Cruise Brake Switch parameter in the Idle/Speed Control General Info Inputs data list. 		
	Does the Cruise Brake Switch parameter display Released?	Go to Step 3	Go to Step 4

3	<ol style="list-style-type: none"> 1. Press and hold the brake pedal. 2. With the scan tool, observe the Cruise Brake Switch parameter in the Idle/Speed Control General Info Inputs data list. <p>Does the Cruise Brake Switch parameter display Applied?</p>	Go To Diagnostic Aids	Go to Step 6
4	<ol style="list-style-type: none"> 1. Turn the ignition OFF. 2. Disconnect the cruise/brake switch. 3. Turn the ignition ON, with the engine OFF. 4. Connect a test lamp between the ignition 1 voltage circuit and a good ground. <p>Does the test lamp illuminate?</p>	Go to Step 5	Go to Step 11
5	<ol style="list-style-type: none"> 1. Turn the ignition OFF. 2. Connect a 3 ampere fused jumper between the ignition 1 voltage circuit and the cruise/brake switch signal circuit. 3. Turn the ignition ON, with the engine OFF. 4. With the scan tool, observe the Cruise Brake Switch parameter. <p>Does the Cruise Brake Switch parameter display Released?</p>	Go to Step 9	Go to Step 8
6	<ol style="list-style-type: none"> 1. Turn the ignition OFF. 2. Disconnect the cruise/brake switch. 3. Turn the ignition ON, with the engine OFF. 4. With the scan tool, observe the Cruise Brake Switch parameter. <p>Does the Cruise Brake Switch parameter display Applied?</p>	Go to Step 9	Go to Step 7
7	<p>Test the cruise/brake switch signal circuit for a short to voltage. Refer Circuit Testing and to Wiring Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 14	Go to Step 10
8	<p>Test the cruise/brake switch signal circuit for an open, for a short to ground, or for a high resistance. Refer Circuit Testing and to Wiring Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 14	Go to Step 10
9	<p>Inspect for poor connections at the harness connector of the cruise/brake switch. Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 14	Go to Step 12
	<p>Inspect for poor connections at the harness connector of the</p>		

10	powertrain control module (PCM). Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and to <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 14	Go to Step 13
11	Repair the open, the high resistance, or the short to ground in the ignition 1 voltage circuit. Refer <u>Circuit Testing</u> and to <u>Wiring Repairs</u> in Wiring Systems. Did you complete the repair?	Go to Step 14	-
12	Replace the cruise/brake switch. Refer to <u>Cruise Release Switch Replacement</u> . Did you complete the replacement?	Go to Step 14	-
13	IMPORTANT: Program the replacement ECM. Replace the ECM. Refer to <u>Engine Control Module (ECM) Replacement</u> in Engine Controls-2.2 L (L61)Did you complete the replacement?	Go to Step 14	-
14	1. Use a scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC. Does the DTC reset?	Go to Step 2	System OK

DTC P0571 (3.5L)

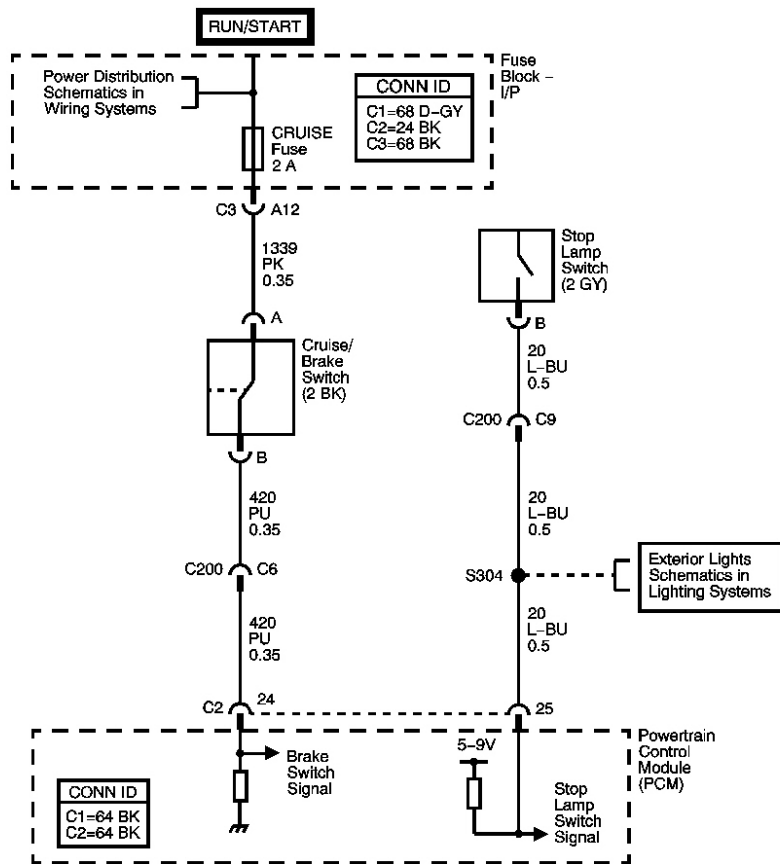


Fig. 7: DTC P0571 Circuit (3.5L)

Courtesy of GENERAL MOTORS CORP.

Circuit Description

The cruise/brake switch is a normally closed switch and the stop lamp switch is a normally open switch. When the brake pedal is released, the powertrain control module (PCM) detects a high voltage signal on the cruise/brake switch signal circuit and a low signal voltage signal on the stop lamp switch signal circuit. When the brake pedal is applied, the cruise /brake switch opens and the stoplamp switch closes. The PCM detects a low voltage signal on the cruise brake switch signal circuit and a high voltage signal on the stop lamp switch signal circuit.

Conditions for Running the DTC

- The ignition is ON.
- The traction control system or the anti-lock brake system have not failed.

Conditions for Setting the DTC

- The PCM detects a transition of the stop lamp switch without detecting a transition of the cruise/brake switch during a deceleration event.
- This diagnostic run continuously with the ignition ON.

Action Taken When the DTC Sets

- The PCM stores the DTC information into memory when the diagnostic runs and fails.
- The service vehicle soon indicator may illuminate.
- The malfunction indicator lamp (MIL) will not illuminate.
- The PCM records the operating conditions at the time the diagnostic fails. The PCM stores this information in the Failure Records.
- The cruise control system is disabled.
- The Service Vehicle Soon (SVS) light may be illuminated.

Conditions for Clearing the DTC

- A last test failed, or current DTC, clears when the diagnostic runs and does not fail.
- A history DTC will clear after 40 consecutive warm-up cycles, if no failures are reported by this or any other non-emission related diagnostic.
- Use a scan tool in order to clear the DTC.

Diagnostic Aids

In order to avoid a misdiagnosis, perform the following:

- Inspect for proper operation of the stop lamps. Refer to **Exterior Lighting Systems Description and Operation** in Lighting Systems.
- Inspect for proper adjustment of the stop lamps. Refer to **Stop Lamp Switch Adjustment** in Lighting Systems.
- Inspect for proper adjustment of the cruise control release switch. Refer to **Cruise Release Switch Adjustment** .
- For an intermittent condition, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

DTC P0571 (3.5L)

Step	Action	Yes	No
Schematic Reference: <u>Cruise Control Schematics (w/L61)</u> or <u>Cruise Control Schematics (w/L66)</u> Connector End View Reference: <u>Cruise Control Connector End Views</u> or <u>Lighting Systems Connector End Views</u> in Lighting Systems			
1	Did you perform the Cruise Control Diagnostic System Check?	Go to Step 2	Go to <u>Diagnostic System Check - Cruise Control</u>
	1. Turn OFF the ignition.		

2	<ol style="list-style-type: none"> 2. Install a scan tool. 3. Turn ON the ignition, with the engine OFF. 4. With the scan tool, observe the Cruise Brake Switch parameter in the Idle/Speed Control General Info Inputs data list. <p>Does the Cruise Brake Switch parameter display Released?</p>	Go to Step 3	Go to Step 4
3	<ol style="list-style-type: none"> 1. Press and hold the brake pedal. 2. With the scan tool, observe the Cruise Brake Switch parameter in the Idle/Speed Control General Info Inputs data list. <p>Does the Cruise Brake Switch parameter display Applied?</p>	Go To Diagnostic Aids	Go to Step 6
4	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Disconnect the cruise/brake switch. 3. Turn ON the ignition, with the engine OFF. 4. Connect a test lamp between the ignition 1 voltage circuit and a good ground. <p>Does the test lamp illuminate?</p>	Go to Step 5	Go to Step 11
5	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Connect a 3 ampere fused jumper between the ignition 1 voltage circuit and the cruise/brake switch signal circuit. 3. Turn ON the ignition, with the engine OFF. 4. With the scan tool, observe the Cruise Brake Switch parameter. <p>Does the Cruise Brake Switch parameter display Released?</p>	Go to Step 9	Go to Step 8
6	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Disconnect the cruise/brake switch. 3. Turn ON the ignition, with the engine OFF. 4. With the scan tool, observe the Cruise Brake Switch parameter. <p>Does the Cruise Brake Switch parameter display Applied?</p>	Go to Step 9	Go to Step 7
7	<p>Test the cruise/brake switch signal circuit for a short to voltage. Refer Circuit Testing and to Wiring Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 14	Go to Step 10
8	<p>Test the cruise/brake switch signal circuit for an open, for a short to ground, or for a high resistance. Refer Circuit Testing</p>		

	and to Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 14	Go to Step 10
9	Inspect for poor connections at the harness connector of the cruise/brake switch. Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 14	Go to Step 12
10	Inspect for poor connections at the harness connector of the powertrain control module (PCM). Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 14	Go to Step 13
11	Repair the open, the high resistance, or the short to ground in the ignition 1 voltage circuit. Refer Circuit Testing and to Wiring Repairs in Wiring Systems. Did you complete the repair?	Go to Step 14	-
12	Replace the cruise/brake switch. Refer to Cruise Release Switch Replacement in Lighting Systems. Did you complete the replacement?	Go to Step 14	-
13	IMPORTANT: Program the replacement PCM. Replace the PCM. Refer to Powertrain Control Module (PCM) Replacement in Engine Controls-3.5 L (L66)Did you complete the replacement?	Go to Step 14	-
14	1. Use a scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC. Does the DTC reset?	Go to Step 2	System OK

DTC P1574 (2.2L)

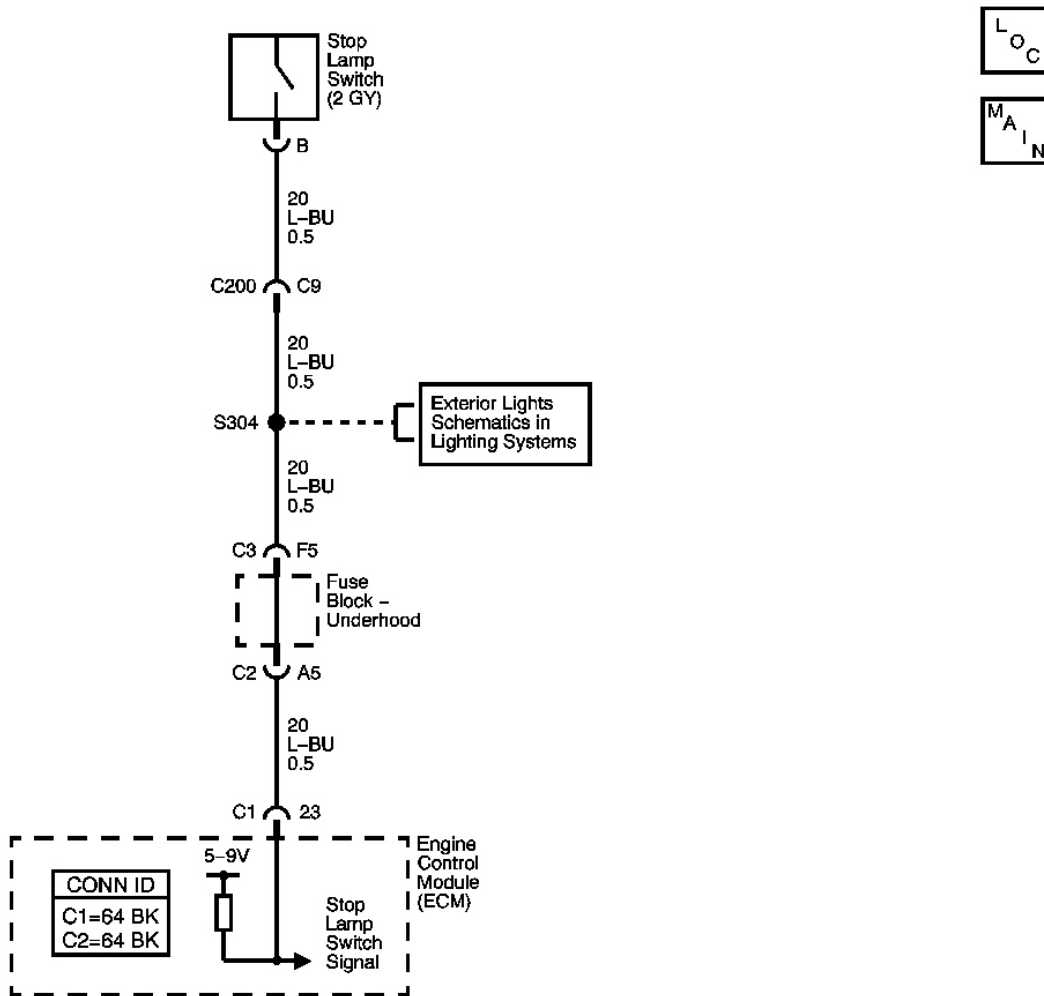


Fig. 8: DTC P1574 Circuit (2.2L)
 Courtesy of GENERAL MOTORS CORP.

Circuit Description

This diagnostic test functions on the assumption that a sudden decrease in vehicle speed is caused by a brake pedal application. When the ECM detects that there is a 4.2 km/h (2.6 mph) or greater decrease in vehicle speed within 0.25 seconds and a transition of the cruise/brake switch without a transition of the stop lamp switch, the ECM sets DTC P1574.

Conditions for Running the DTC

- DTCs P0502, P0503, P0719, and P0724 are not set.
- The engine speed is greater than 700 RPM.

- The traction control system or the anti-lock brake system are not active and have not failed.
- The vehicle speed is greater than 48 km/h (30 mph) in order to enable the diagnostic.

The diagnostic will disable when the wheel speed is less than 16 km/h (10 mph).

Conditions for Setting the DTC

- The vehicle speed decreases by at least 4.2 km/h (2.6 mph) within 0.25 seconds.
- The ECM detects a cruise/brake transition.
- The ECM does not detect a stop lamp switch transition.

Action Taken When the DTC Sets

- The ECM sets the stop lamp switch status to released.
- The ECM disables the operation of the cruise control system.

Conditions for Clearing the DTC

- A history DTC will clear after 40 malfunction free warm-up cycles.
- The ECM receives a clear code command from the scan tool.

Diagnostic Aids

In order to avoid a misdiagnosis, perform the following:

- Inspect for proper operation of the stop lamps. Refer to **Exterior Lighting Systems Description and Operation** in Lighting Systems.
- Inspect for proper adjustment of the stop lamps. Refer to **Stop Lamp Switch Adjustment** in Lighting Systems.
- Inspect for proper adjustment of the cruise control release switch. Refer to **Cruise Release Switch Adjustment** .
- For an intermittent condition, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

DTC P1574 (2.2L)

Step	Action	Yes	No
Schematic Reference :Cruise Control Schematics (w/L61) or Cruise Control Schematics (w/L66) Connector End View Reference:Cruise Control Connector End Views or Lighting Systems Connector End Views in Lighting Systems			
1	Did you perform the Cruise Control Diagnostic System Check?	Go to Step 2	Go to <u>Diagnostic System Check - Cruise Control</u>
	1. Install a scan tool.		

2	<ol style="list-style-type: none"> 2. Turn the ignition ON, with the engine OFF. 3. Press the brake pedal. 4. With the scan tool, observe the Brake Switch parameter in the PCM General Info - Inputs data list. <p>Does the Brake Pedal Switch parameter display Released?</p>	Go to Step 3	Go to Diagnostic Aids
3	<p>Do the stop lamps operate properly?</p>	Go to Step 4	Go to Stop Lamps Inoperative in Lighting Systems
4	<p>Test the stop lamp switch signal circuit for an open or for a high resistance. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems.</p> <p>Did you complete the repair?</p>	Go to Step 7	Go to Step 5
5	<p>Inspect for poor connections at the harness connector of the engine control module (ECM). Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 7	Go to Step 6
6	<p>IMPORTANT: Program the replacement ECM.</p> <p>Replace the ECM. Refer to Engine Control Module (ECM) Replacement in Engine Controls - 2.2L (L61). Did you complete the replacement?</p>	Go to Step 7	-
7	<ol style="list-style-type: none"> 1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the conditions for running the DTC. <p>Does the DTC reset?</p>	Go to Step 2	System OK

DTC P1574 (3.5L)

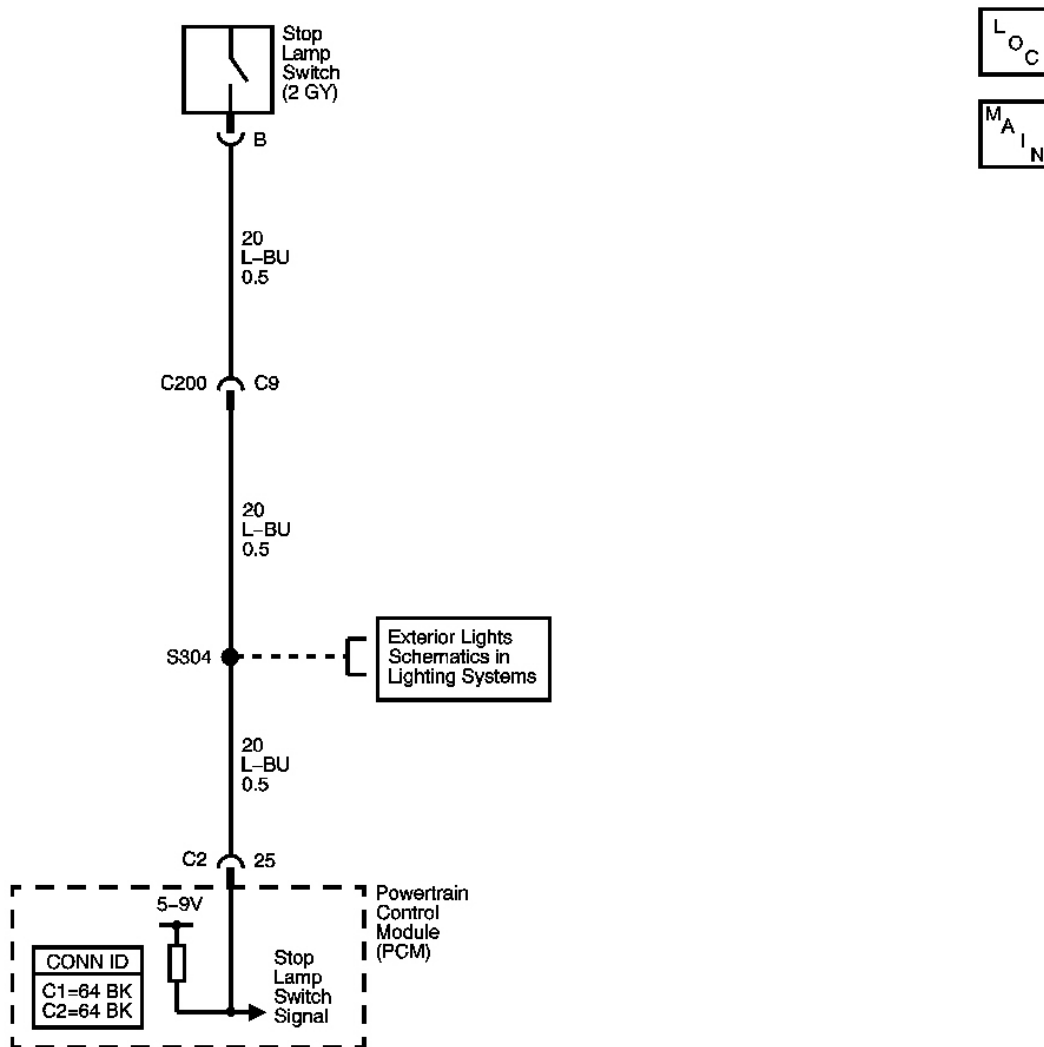


Fig. 9: DTC P1574 Circuit (3.5L)
 Courtesy of GENERAL MOTORS CORP.

Circuit Description

This diagnostic test functions on the assumption that a sudden decrease in vehicle speed is caused by a brake pedal application. When the powertrain control module (PCM) detects that there is a 4.2 km/h (2.6 mph) or greater decrease in vehicle speed within 0.25 seconds and a transition of the cruise/brake switch without a transition of the stop lamp switch, the PCM sets DTC P1574.

Conditions for Running the DTC

- DTCs P0502, P0503, P0719, and P0724 are not set.

- The engine speed is greater than 700 RPM.
- The traction control system or the anti-lock brake system are not active and have not failed.
- The vehicle speed is greater than 48 km/h (30 mph) in order to enable the diagnostic.

The diagnostic will disable when the wheel speed is less than 16 km/h (10 mph).

Conditions for Setting the DTC

- The vehicle speed decreases by at least 4.2 km/h (2.6 mph) within 0.25 seconds.
- The PCM detects a cruise/brake transition.
- The PCM does not detect a stop lamp switch transition.

Action Taken When the DTC Sets

- The PCM sets the stop lamp switch status to released.
- The PCM disables the operation of the cruise control system.
- The Service Vehicle Soon (SVS) light may be illuminated.

Conditions for Clearing the DTC

- A history DTC will clear after 40 malfunction free warm-up cycles.
- The PCM receives a clear code command from the scan tool.

Diagnostic Aids

In order to avoid a misdiagnosis, perform the following:

- Inspect for proper operation of the stop lamps. Refer to **Exterior Lighting Systems Description and Operation** in Lighting Systems.
- Inspect for proper adjustment of the stop lamps. Refer to **Stop Lamp Switch Adjustment** in Lighting Systems.
- Inspect for proper adjustment of the cruise control release switch. Refer to **Cruise Release Switch Adjustment** .
- For an intermittent condition, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

DTC P1574 (3.5L)

Step	Action	Yes	No
Schematic Reference: <u>Cruise Control Schematics (w/L61)</u> or <u>Cruise Control Schematics (w/L66)</u> Connector End View Reference: <u>Cruise Control Connector End Views</u> or <u>Lighting Systems Connector End Views</u> in Lighting Systems			
1	Did you perform the Cruise Control Diagnostic System Check?	Go to Step 2	Go to <u>Diagnostic System Check - Cruise Control</u>

2	<ol style="list-style-type: none"> 1. Install a scan tool. 2. Turn the ignition ON, with the engine OFF. 3. Press the brake pedal. 4. With the scan tool, observe the Brake Switch parameter in the PCM General Info - Inputs data list. <p>Does the Brake Pedal Switch parameter display Released?</p>	Go to Step 3	Go to Diagnostic Aids
3	Do the stop lamps operate properly?	Go to Step 4	Go to Stop Lamps Inoperative in Lighting Systems
4	Test the stop lamp switch signal circuit for an open or for a high resistance. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems. Did you complete the repair?	Go to Step 7	Go to Step 5
5	Inspect for poor connections at the harness connector of the powertrain control module (PCM). Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 7	Go to Step 6
6	IMPORTANT: Program the replacement PCM. Replace the PCM. Refer to Powertrain Control Module (PCM) Replacement in Engine Controls - 3.5L (L66) Did you complete the replacement?	Go to Step 7	-
7	<ol style="list-style-type: none"> 1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the conditions for running the DTC. <p>Does the DTC reset?</p>	Go to Step 2	System OK

SYMPTOMS - CRUISE CONTROL

IMPORTANT: Perform the **Diagnostic System Check - Cruise Control** before using the symptom diagnostic table in order to verify that all of the following are true:

- There are no DTCs set.
- The control modules can communicate via the serial data link.

Review the system description and operation in order to familiarize yourself with the system functions. Refer to **Cruise Control Description and Operation** .

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the Cruise Control System. Refer to **Checking Aftermarket Accessories** in Wiring Systems.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.

Intermittent

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

Symptom List

Refer to **Cruise Control Inoperative/Malfunctioning** in order to diagnose the symptom.

CRUISE CONTROL INOPERATIVE/MALFUNCTIONING

Diagnostic Aids

CAUTION: Refer to SIR Caution in Cautions and Notices.

Disable the inflatable restraint steering wheel module when performing this diagnostic table. Refer to **SIR Disabling and Enabling Zone 3** in SIR.

Perform the following in order to avoid misdiagnosis:

- Inspect for proper operation of the stop lamps. Refer to **Exterior Lighting Systems Description and Operation** in Lighting Systems.
- Inspect for proper operation of the clutch system, if equipped with manual transmission. Refer to **Clutch System Description and Operation** in Clutch.
- Observe the cruise set/coast and cruise resume/accel parameters in the scan tool PCM General Info Inputs data list while rotating the steering wheel to both stops and pressing and holding the steering wheel control switches. This will eliminate the possibility of a internally open or shorted inflatable restraint steering wheel module coil.

Rotate the steering wheel to both steering stops while separately activating each cruise control switch. With a scan tool, observe the associated cruise control switch parameter in the PCM General Info - Inputs data list. This will help eliminate the possibility of a internally open or shorted inflatable restraint steering wheel module coil.

EMI on the vehicle speed sensor signal circuit may cause erratic cruise control operation.

For an intermittent condition, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

Conditions for Enabling Cruise Control

- The vehicle speed is greater than 40 km/h (25 mph).
- The vehicle is not in PARK, REVERSE, NEUTRAL, or 1st gear.
- The system voltage is between 12 volts and 16 volts.

Cruise Control Inoperative/Malfunctioning

Step	Action	Yes	No
Schematic Reference: <u>Cruise Control Schematics (w/L61)</u> or <u>Cruise Control Schematics (w/L66)</u> Connector End View Reference: <u>Cruise Control Connector End Views ,Engine Control Module (ECM) Connector End Views</u> in Engine Controls - 2.2L (L61) or to <u>Powertrain Control Module (PCM) Connector End Views</u> in Engine Controls - 3.5L (L66)			
1	Did you perform the Cruise Control Diagnostic System Check?	Go to Step 2	Go to Diagnostic System Check - Cruise Control
2	1. Install a scan tool. 2. Turn the ignition ON, with the engine OFF. 3. Turn the cruise control on/off switch OFF. 4. With the scan tool, observe the Cruise Switch parameter in the PCM General Info - Inputs data list. Does the Cruise Switch parameter display Off?	Go to Step 3	Go to Step 11
3	1. With the scan tool, observe the Cruise Switch parameter. 2. Turn the cruise on/off switch ON. Does the Cruise Switch parameter display On?	Go to Step 4	Go to Step 12
4	1. With the scan tool, observe the Cruise Set/Coast parameter. 2. Press and hold the set/coast switch. Does the Cruise Set/Coast parameter display On?	Go to Step 5	Go to Step 14
5	1. With the scan tool, observe the Cruise Resume/Accel parameter. 2. Press and hold the resume/accel switch. Does the Cruise Resume/Accel parameter display On?	Go to Step 6	Go to Step 15
6	With a scan tool, observe the Cruise Brake Switch parameter Does the Cruise Brake Switch parameter display Released?	Go to Step 7	Go to Step 9
7	1. With a scan tool, observe the Cruise Brake Switch parameter 2. Press and hold the brake pedal.	Go to Diagnostic	

	Does the Cruise Brake Switch parameter display Applied?	Aids	Go to Step 8
8	<ol style="list-style-type: none"> 1. Turn OFF the Ignition. 2. Disconnect the cruise brake switch. 3. Turn ON the ignition, with the engine OFF. 4. With a scan tool, observe the Cruise Brake Switch parameter 		
	Does the Cruise Brake Switch parameter display Applied?	Go to Step 23	Go to Step 18
9	<ol style="list-style-type: none"> 1. Turn OFF the Ignition. 2. Disconnect the cruise brake switch. 3. Turn ON the ignition, with the engine OFF. 4. Connect a test lamp between the ignition 1 voltage circuit and a good ground. 		
	Does the test lamp illuminate?	Go to Step 10	Go to Step 22
10	<ol style="list-style-type: none"> 1. Connect a 3-ampere fused jumper between the ignition 1 voltage circuit and the brake switch signal circuit. 2. With the scan tool, observe the Cruise Brake Switch parameter. 		
	Does the Cruise Brake Switch parameter display Released?	Go to Step 23	Go to Step 19
11	<ol style="list-style-type: none"> 1. Turn the ignition OFF. 2. Disconnect the cruise switch. 3. Turn the ignition ON, with the engine OFF. 4. Observe the Cruise Switch parameter. 		
	Does the Cruise Switch parameter display Off?	Go to Step 20	Go to Step 16
12	<ol style="list-style-type: none"> 1. Turn the ignition OFF. 2. Disconnect the cruise switch. 3. Turn the ignition ON, with the engine OFF. 4. Connect a test lamp between the ignition 1 voltage circuit and a good ground. 		
	Does the test lamp illuminate?	Go to Step 13	Go to Step 22
13	<ol style="list-style-type: none"> 1. Connect a 3-ampere fused jumper between the ignition 1 voltage circuit and the cruise control on switch signal circuit. 2. With the scan tool, observe the Cruise Switch parameter. 		
	Does the Cruise Switch parameter display On?	Go to Step 20	Go to Step 17

14	Test the cruise control set/coast switch signal circuit for a short to ground, for an open, or for a high resistance. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 20
15	Test the cruise control resume/accel switch signal circuit for a short to ground, for an open, or for a high resistance. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 20
16	Test the cruise control on switch signal circuit for a short to voltage. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 21
17	Test the cruise control on switch signal circuit for an open, for a short to ground, or for a high resistance. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 21
18	Test the cruise brake switch signal circuit for a short to voltage. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 21
19	Test the cruise brake switch signal circuit for an open, for a short to ground, or for a high resistance. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 21
20	Inspect for poor connections at the harness connector of the cruise control switch. Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 24
21	Inspect for poor connections at the harness connector of the ECM/PCM. Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 25
22	Repair the short to ground, the open, or the high resistance in the ignition 1 voltage circuit. Refer to Wiring Repairs Wiring Systems. Did you complete the repair?	Go to Step 26	-
23	Replace the cruise brake switch. Refer to Cruise Release Switch Replacement . Did you complete the replacement?	Go to Step 26	-
24	Replace the cruise control switch. Refer to Steering Wheel Control Switch Assembly Replacement in Steering Wheel and Column. Did you complete the replacement?	Go to Step 26	-

25	<p>IMPORTANT: Program the replacement ECM/PCM.</p> <p>Replace the ECM/PCM. Refer to:</p> <ul style="list-style-type: none"> • <u>Engine Control Module (ECM) Replacement</u> in Engine Controls - 2.2L (L61). • <u>Powertrain Control Module (PCM) Connector End Views</u> in Engine Controls - 3.5L (L66). <p>Did you complete the replacement?</p>	Go to Step 26	-
26	<ol style="list-style-type: none"> 1. Enable the inflatable restraint steering wheel module. Refer to <u>SIR Disabling and Enabling Zone 3</u> in SIR. 2. Operate the vehicle with in the conditions for cruise control operation. <p>Does the cruise control system operate properly?</p>	System OK	Go to Step 2

REPAIR INSTRUCTIONS

CRUISE RELEASE SWITCH ADJUSTMENT

NOTE: Improper cruise control release switch adjustment may cause brake damage such as brake drag, heat buildup and excessive brake lining wear.

1. Disconnect the cruise brake switch harness connector.

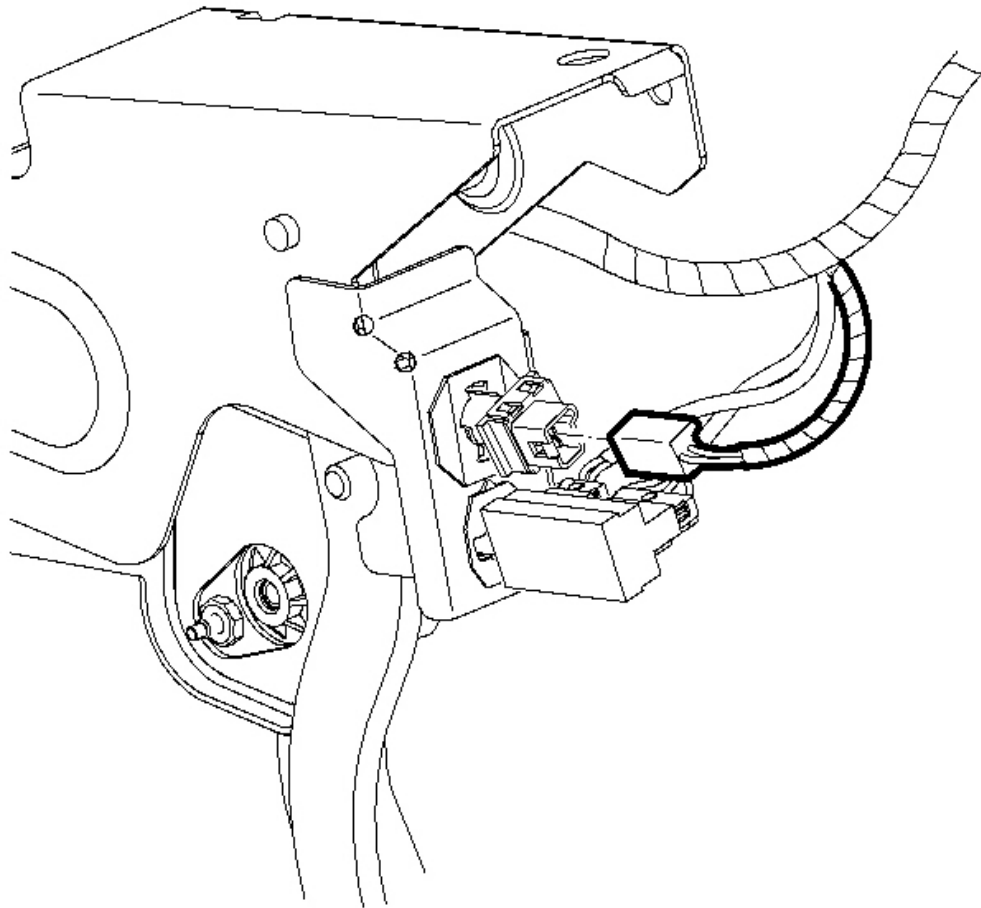


Fig. 10: View Of Cruise Brake Switch Harness Connector
Courtesy of GENERAL MOTORS CORP.

2. Rotate the cruise brake switch counterclockwise and remove the cruise brake switch from the switch retainer.

IMPORTANT: Do not depress the brake pedal assembly during the brake switch installation. Depressing the brake pedal will cause a brake drag condition.

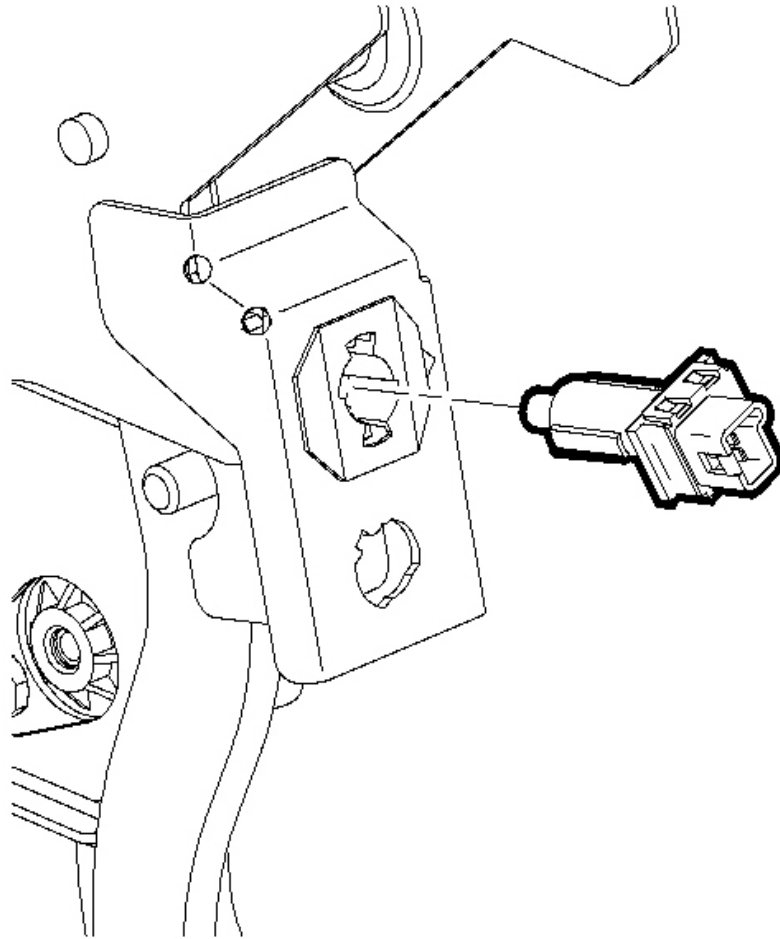


Fig. 11: View Of Cruise Brake Switch
Courtesy of GENERAL MOTORS CORP.

3. Install the cruise brake switch.
 - Position the switch into the retainer with the electrical connector index notch pointing to the 1 o'clock position.
 - Slide the switch in the retainer until the plunger is fully depressed into the barrel.
 - Rotate the switch clockwise until the travel stop has been reached, approximately 60 degrees.
 - Inspect the cruise brake switch to ensure the switch is properly locked into the switch retainer with the cruise brake switch electrical connector index notch pointing to the 3 o'clock position.
4. Connect the cruise brake switch harness connector.

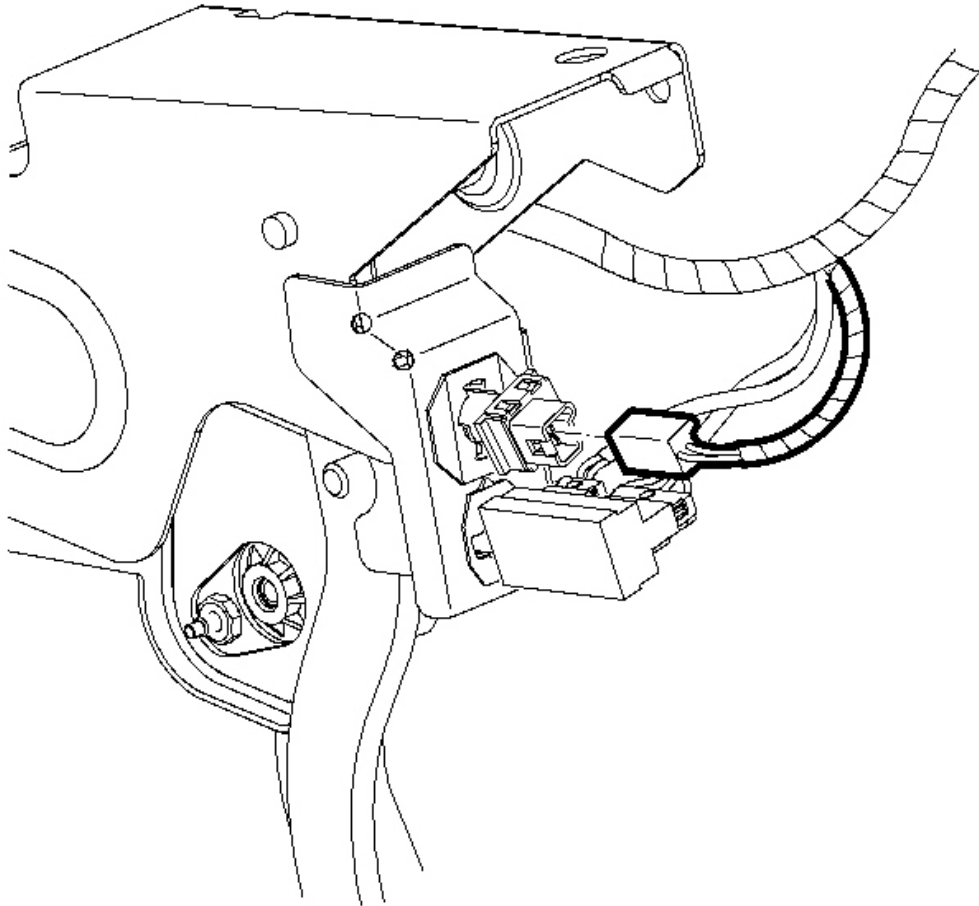


Fig. 12: View Of Cruise Brake Switch Harness Connector
Courtesy of GENERAL MOTORS CORP.

5. Use the scan tool to monitor CRUISE BRAKE SWITCH in the engine control module (ECM) General Information data table, while depressing and releasing the brake pedal. Verify the APPLIED and RELEASED states read correctly.

CRUISE RELEASE SWITCH REPLACEMENT

Removal Procedure

1. Disconnect the cruise brake switch connector.

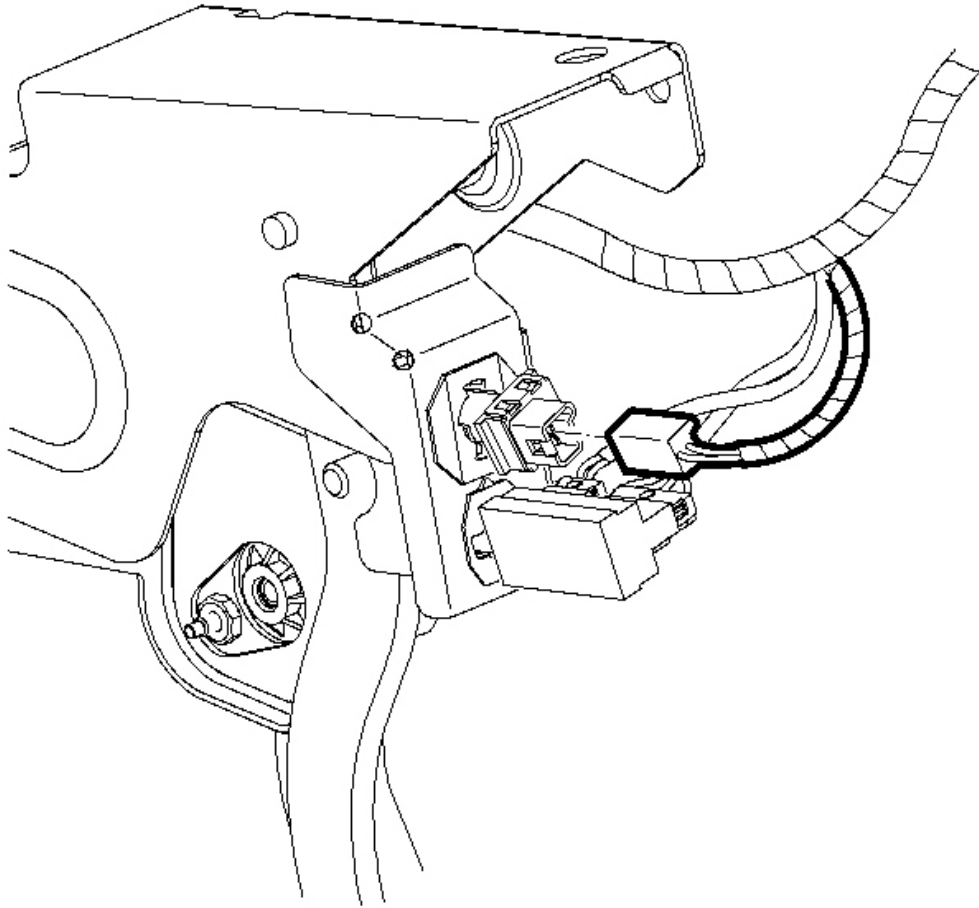


Fig. 13: View Of Cruise Brake Switch Harness Connector
Courtesy of GENERAL MOTORS CORP.

2. Rotate the cruise brake switch counterclockwise and remove the cruise brake switch from the switch retainer.

IMPORTANT: Depressing the brake pedal will allow easier access of the retainer locking tabs.

3. Gently compress the locking tabs on the cruise brake retainer and remove the switch retainer from the brake pedal assembly.

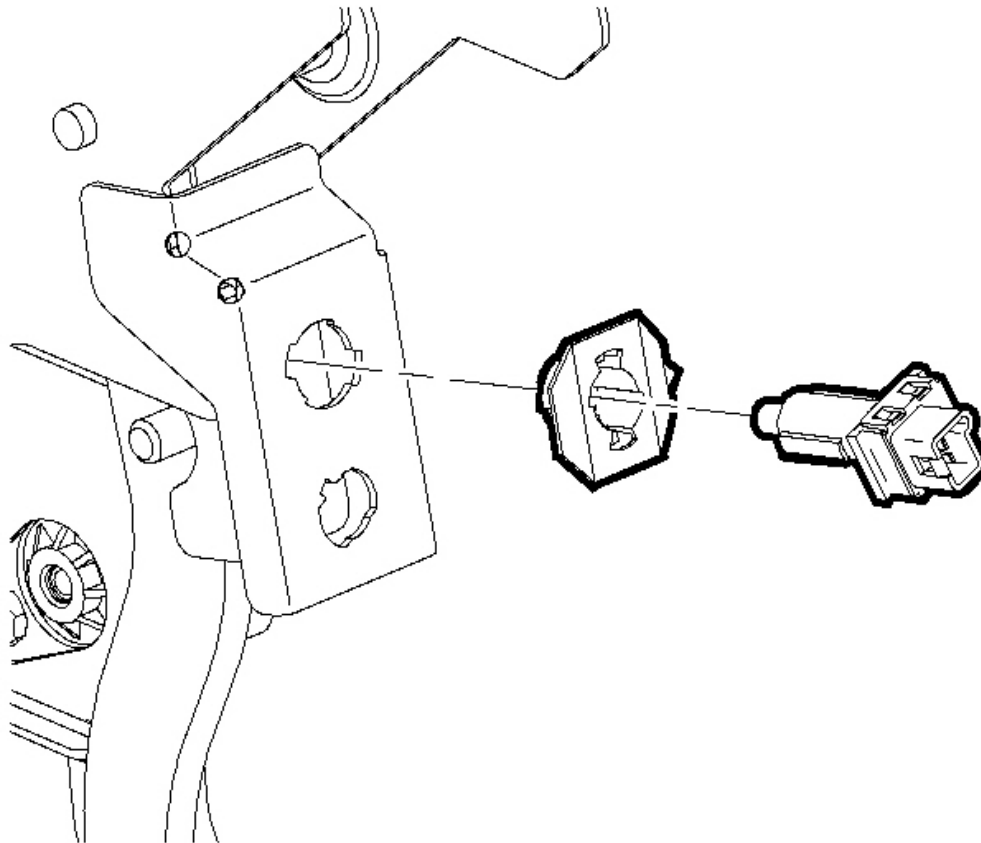


Fig. 14: View Of Cruise Brake Switch & Retainer
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

IMPORTANT: Inspect the retainer to ensure that the locking tabs locked into position and the retainer is in place.

1. Install the cruise brake switch retainer into the upper hole of the brake pedal assembly with the retainer arrow pointing in the 3 o'clock position.

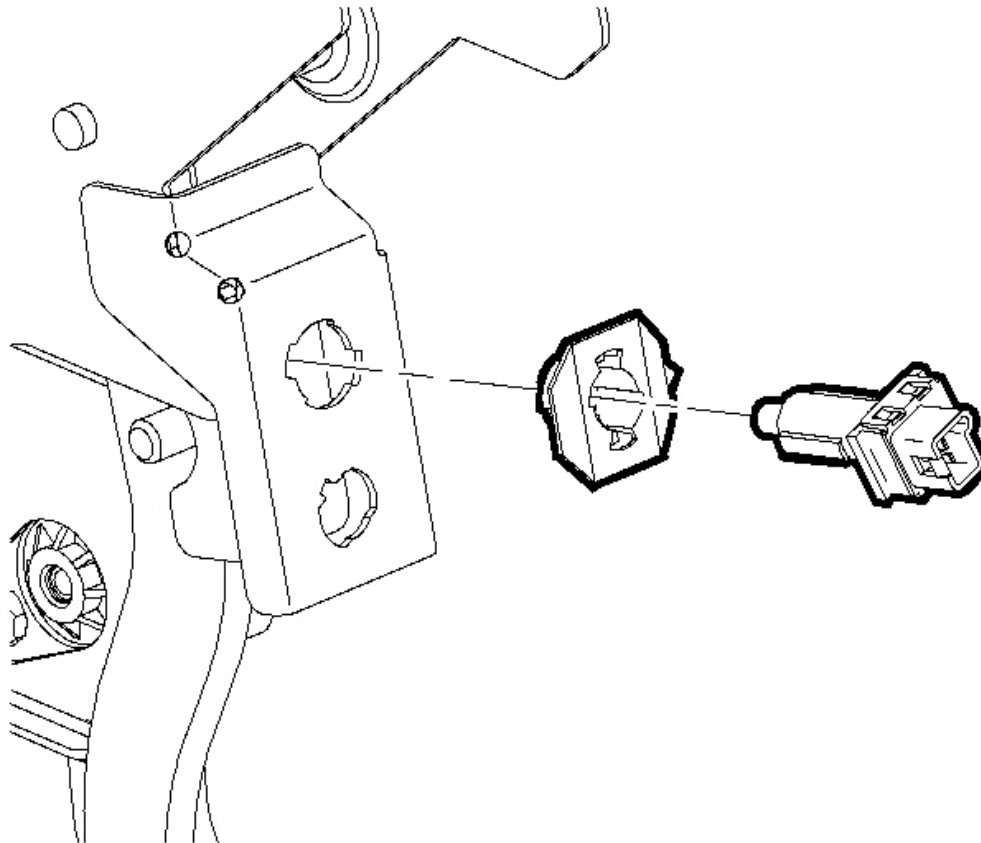


Fig. 15: View Of Cruise Brake Switch & Retainer
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not depress the brake pedal assembly during the cruise brake switch installation. Depressing the brake pedal during the cruise brake switch installation will cause a brake drag condition.

2. Install the cruise brake switch.
 - Position the switch into the retainer with the electrical connector index notch pointing to the 1 o'clock position.
 - Slide the switch in the retainer until the plunger is fully depressed into the barrel.
 - Rotate the switch clockwise until the travel stop has been reached, approximately 60 degrees.

- Inspect the cruise brake switch to ensure the switch is properly locked into the switch retainer with the cruise brake switch electrical connector index notch pointing to the 3 o'clock position.

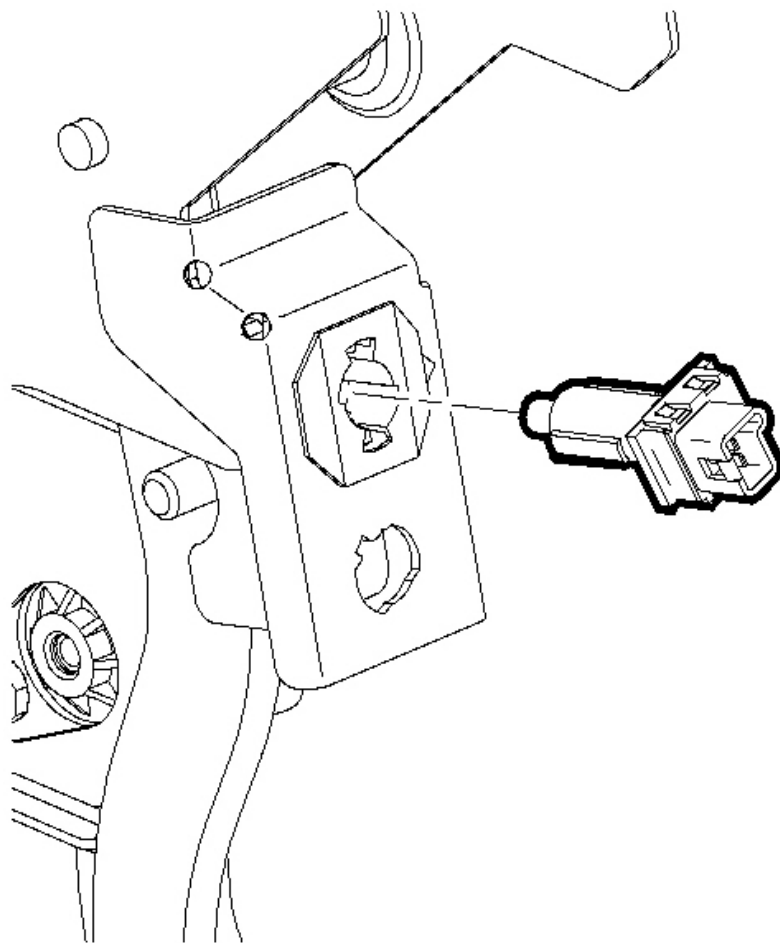


Fig. 16: View Of Cruise Brake Switch
Courtesy of GENERAL MOTORS CORP.

3. Connect the cruise brake switch harness connector.

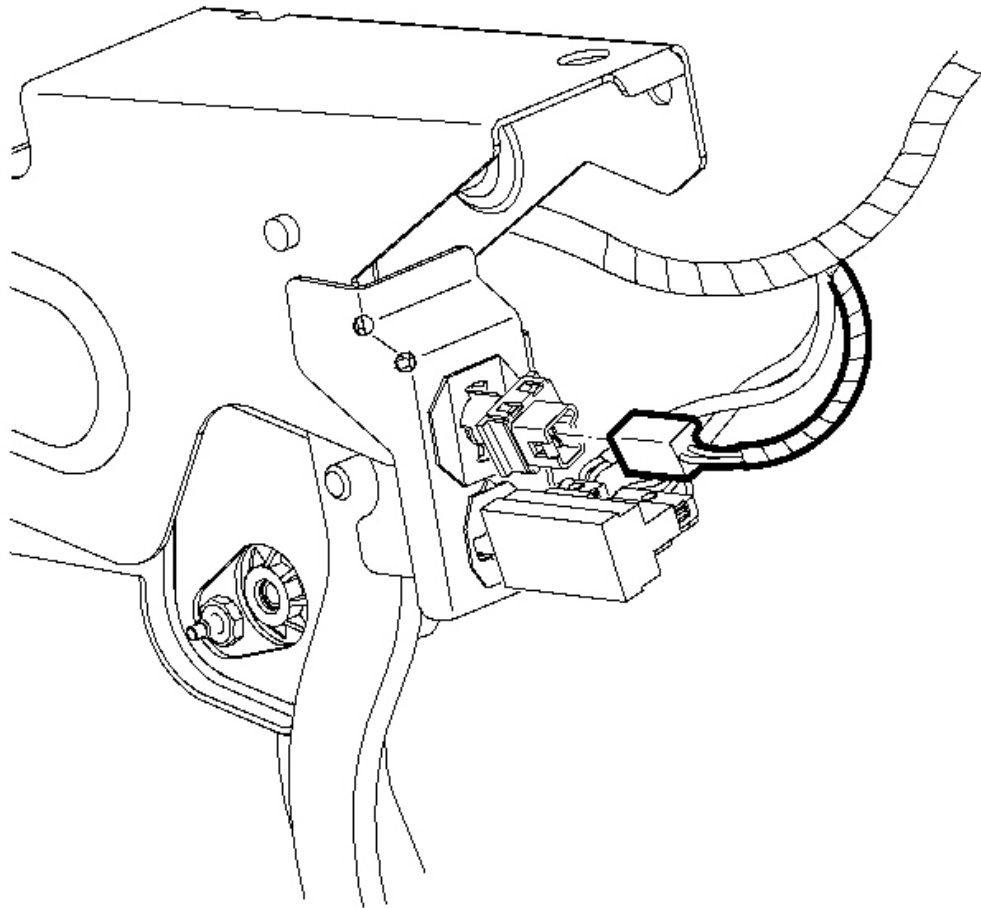


Fig. 17: View Of Cruise Brake Switch Harness Connector
Courtesy of GENERAL MOTORS CORP.

4. Use the scan tool to monitor CRUISE BRAKE SWITCH in the engine control module (ECM) General Information data table, while depressing and releasing the brake pedal. Verify the APPLIED and RELEASED states read correctly.

DESCRIPTION AND OPERATION

CRUISE CONTROL DESCRIPTION AND OPERATION

Cruise control is a speed control system that maintains a desired vehicle speed under normal driving conditions at vehicle speeds above 40 km/h (25 mph). Steep grades may cause variations in the selected vehicle speeds.

The following are the main components of the cruise control system:

- The accelerator pedal
- The clutch start switch, if equipped with a manual transmission
- The engine control module (ECM), if equipped with a 2.2 L (L61)
- The powertrain control module (PCM), if equipped with a 3.5 L (L66)
- The on/off switch
- The resume/accel switch
- The set/coast switch
- The cruise brake switch
- The stop lamp switch
- The throttle actuator control (TAC) motor
- The vehicle speed sensor

Cruise Control Engaged

The cruise control system will engage and adjust vehicle speeds based on the activation of the following cruise control switches:

- On/off
- Resume/accel
- Set/coast

The cruise control switches are located on the steering wheel.

The ECM/PCM monitors the signal circuits of the cruise control switches. The ECM/PCM uses the status of the cruise control switches in order to determine when to capture and maintain the selected vehicle speed. The ECM/PCM monitors the signal circuit of the vehicle speed sensor in order to determine the desired vehicle speed. The ECM/PCM uses the TAC motor in order to maintain the vehicle speed. For further information on the TAC system, refer to **Throttle Actuator Control (TAC) System Description** in Engine Controls - 2.2L (L61) or to **Throttle Actuator Control (TAC) System Description** in Engine Controls - 3.5L (L66).

Ignition positive voltage is supplied to the cruise control switches from the 2-ampere CRUISE fuse, located in the IPC fuse block. When the normally open cruise control on/off switch is switched ON, the switch closes and the ECM/PCM detects a high signal voltage on the cruise on switch signal circuit. The cruise control indicator, located on the cruise control on/off switch, will illuminate when the cruise control on/off switch is switched ON. To engage the cruise control system, turn the cruise control system ON by pressing the cruise control on/off switch ON and momentarily press the set/coast switch.

When the set/coast switch is pressed, the normally open set/coast switch closes and the ECM/PCM detects a high signal voltage on the set/coast switch signal circuit. The ECM/PCM will confirm that the cruise control enable criteria has been met and then engage the cruise control system. The ECM/PCM will record the selected vehicle speed. Pressing the accelerator, while the cruise control system is engaged, will allow the driver to override the cruise control system in order to accelerate the vehicle beyond the current set vehicle speed. When

the accelerator pedal is released, the vehicle will decelerate and resume the current set vehicle speed.

The driver can also override the cruise control system via the set/coast switch and the resume/accel switch. When the cruise control system is engaged, pressing and holding the set/coast switch will allow the vehicle to decelerate from the current set vehicle speed without deactivating the cruise control system. When the set/coast switch is released, the ECM/PCM will record the vehicle speed and maintain the vehicle speed as the new set vehicle speed. When the cruise control system is engaged, momentarily pressing the set/coast switch will allow the vehicle to decelerate at 1.6 km/h (1 mph) increments for each time that the set/coast switch is momentarily pressed, with a minimum vehicle speed of 37 km/h (23 mph).

Pressing and holding the resume/accel switch, when the cruise control system is engaged, will allow the vehicle to accelerate to a greater vehicle speed than the current set vehicle speed. When the resume/accel switch is pressed, the normally open resume/accel switch closes and the ECM/PCM detects a high signal voltage on the resume/accel switch signal circuit. When the resume/accel switch is released, the ECM/PCM will record the vehicle speed and maintain the vehicle speed as the new set vehicle speed. When the cruise control system is engaged, momentarily pressing the resume/accel switch will allow the vehicle to accelerate at 1.6 km/h (1 mph) increments for each time that the resume/accel switch is momentarily pressed, with a maximum acceleration total of 16 km/h (10 mph) over the current set vehicle speed. Momentarily pressing the resume/accel switch, when the cruise control system has been disengaged by pressing the brake pedal, will recall the previous selected vehicle speed that is recorded in the ECM/PCM.

Cruise Control Disengaged

The ECM disengages the cruise control operation based on the signals from the following switches:

- The on/off switch
- The clutch start switch
- The cruise brake switch
- The stop lamp switch

The cruise brake switch, the clutch start switch, and the stop lamp switch are used to disengage the cruise control system. The stop lamp and cruise brake switch are incorporated into an assembly and are mounted to the brake pedal bracket. When the brake pedal is pressed, the normally closed cruise brake switch opens and the normally open stop lamp switch closes. The ECM/PCM detects a low signal voltage on the cruise brake signal circuit and detects a high signal voltage on the stop lamp switch signal circuit. When the clutch pedal is pressed, the normally closed clutch start switch opens and the ECM/PCM detects a low signal voltage on the clutch start switch signal circuit. The cruise control system will disengage when the cruise control on/off switch is switched to OFF. The vehicle speed stored in the memory of the ECM/PCM will be erased when the cruise control on/off switch is turned OFF, or the ignition switch is turned OFF.

The cruise control system will disengage when the ECM/PCM detects that a driver override function has been active for approximately 60 seconds.

Cruise Control Inhibited

The ECM inhibits the cruise control operation when any of the following conditions exist:

- A cruise control related DTC has been set.
- The anti-lock brake system/traction control system is active for more than 2 seconds.
- The engine RPM is too low.
- The engine RPM is too high.
- The system voltage is not between 9 volts and 16 volts.
- The vehicle speed is less than 40 km/h (25 mph).
- The vehicle speed is too high.
- The vehicle is in PARK, REVERSE, NEUTRAL, or 1st gear.