


2005-07 ACCESSORIES & EQUIPMENT

Cruise Control - Ion

SCHEMATIC AND ROUTING DIAGRAMS

CRUISE CONTROL SCHEMATIC ICONS

Cruise Control Schematic Icons

Icon	Icon Definition
	<p>CAUTION:</p> <p>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

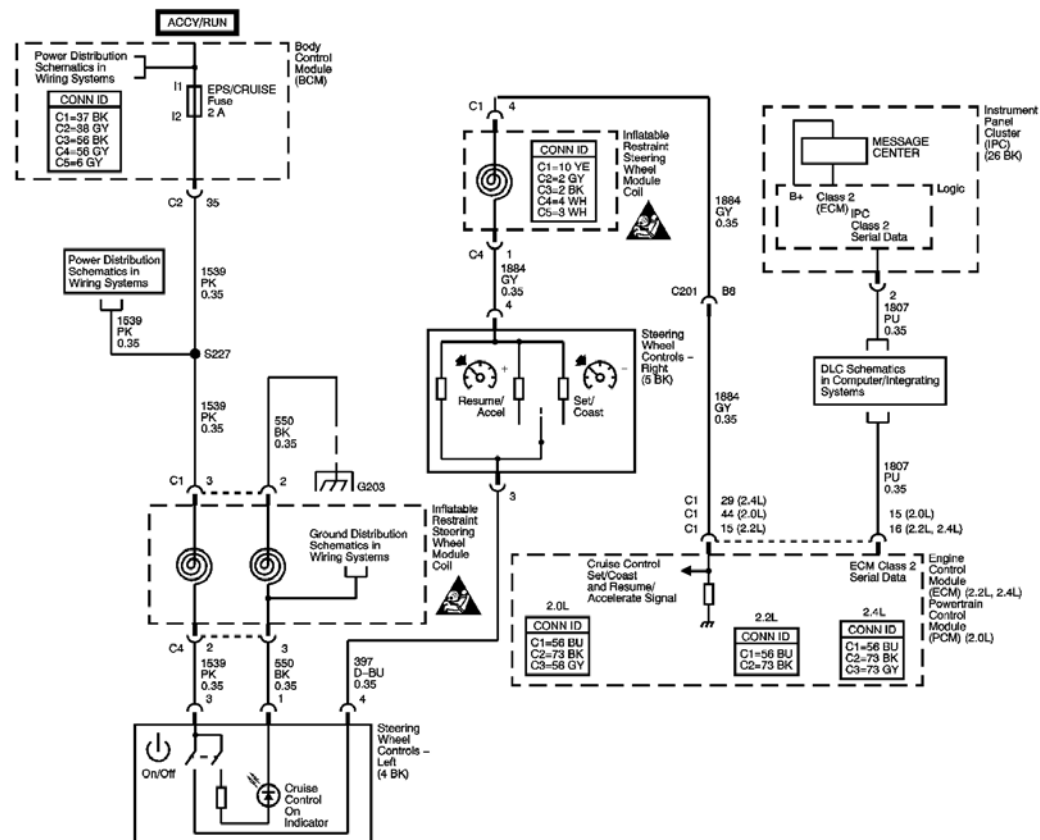


Fig. 1: Driver Controls

Courtesy of GENERAL MOTORS CORP.

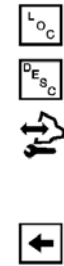
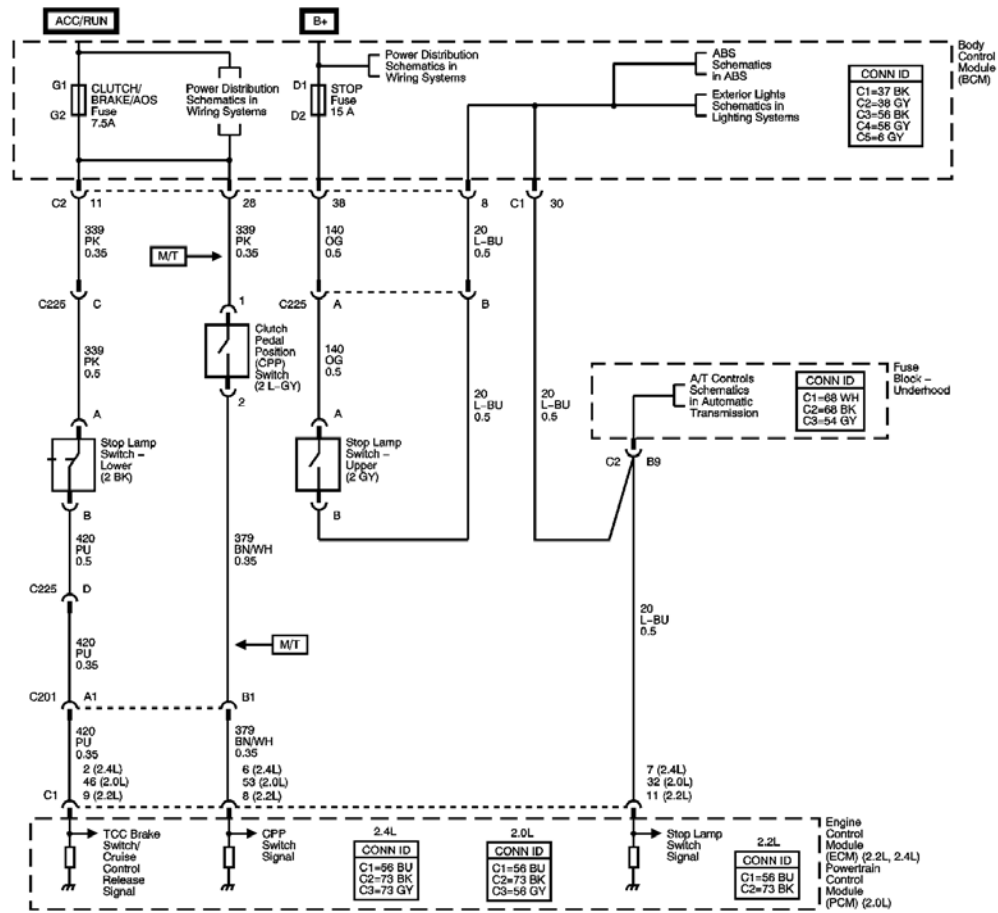


Fig. 2: Stop Lamp and Clutch Switches

Courtesy of GENERAL MOTORS CORP.

COMPONENT LOCATOR

CRUISE CONTROL COMPONENT VIEWS

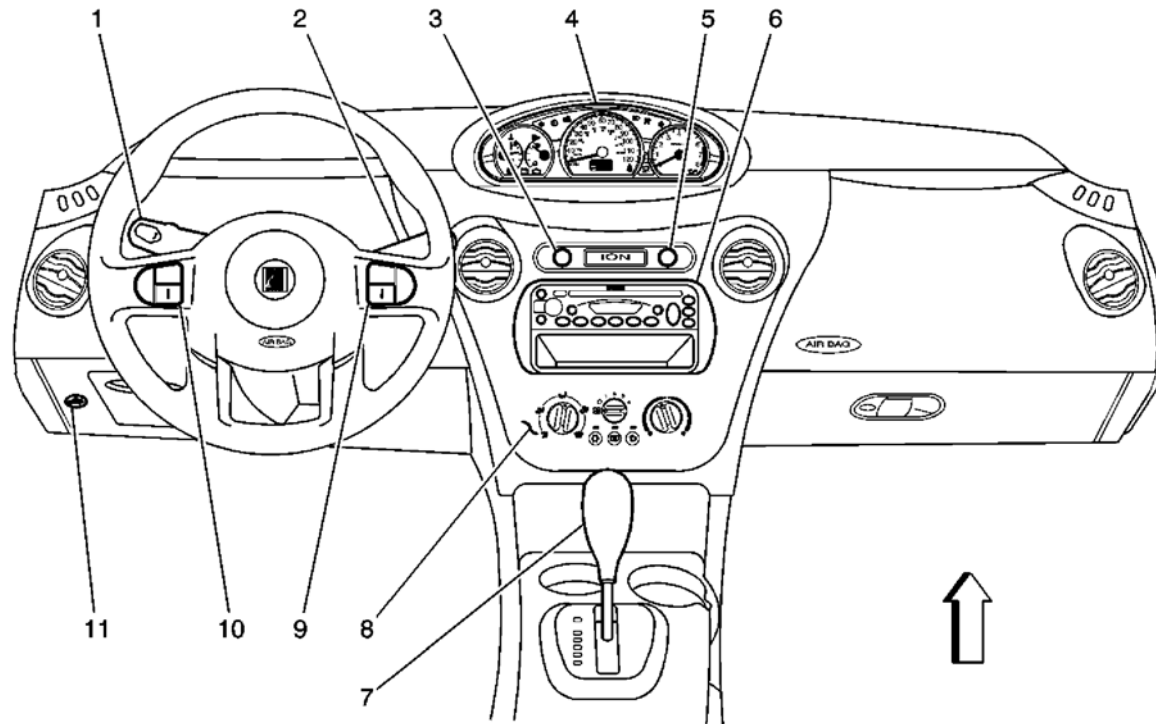


Fig. 3: Instrument Panel Component Views
 Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 3

Callout	Component Name
1	Turn Signal/Multifunction Switch
2	Windshield Wiper/Washer Switch
3	Hazard Switch
4	Instrument Panel Cluster (IPC)
5	Traction Control Switch (NW7)
6	Radio
7	A/T Shifter (MN5)
8	HVAC Control Assembly
9	Steering Wheel Controls - Right (K34)
10	Steering Wheel Controls - Left (K34)
11	Rear Compartment Lid Release Switch

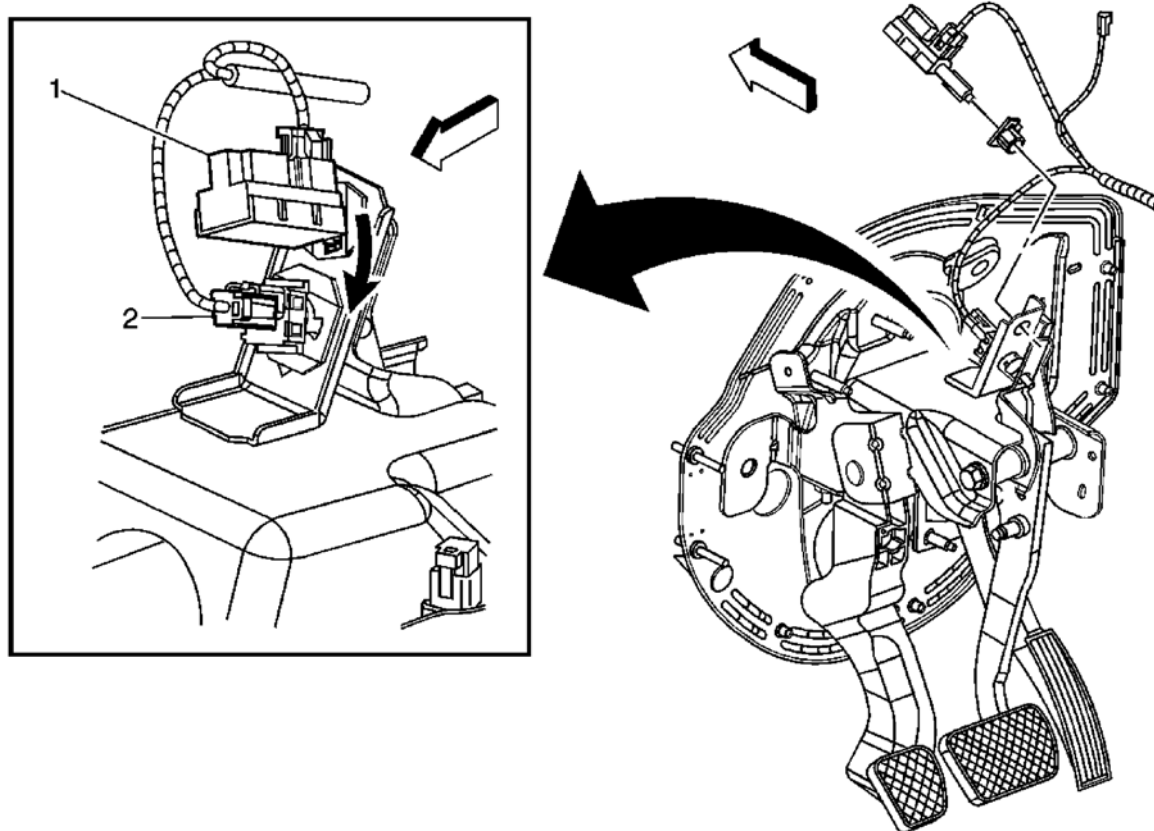


Fig. 4: Lower Left Front Of I/P Component View
 Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 4

Callout	Component Name
1	Stop Lamp Switch - Upper
2	Stop Lamp Switch - Lower

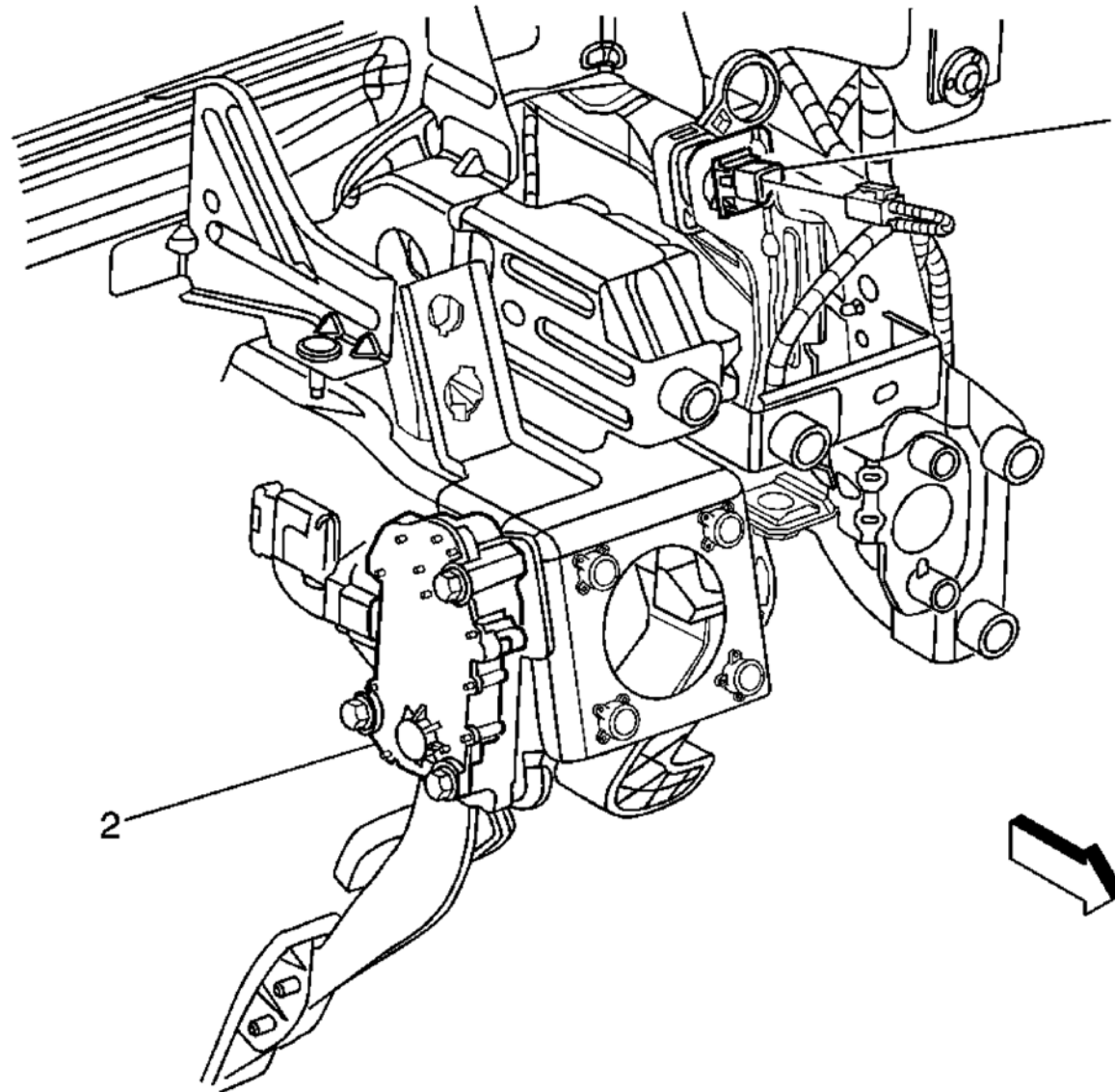


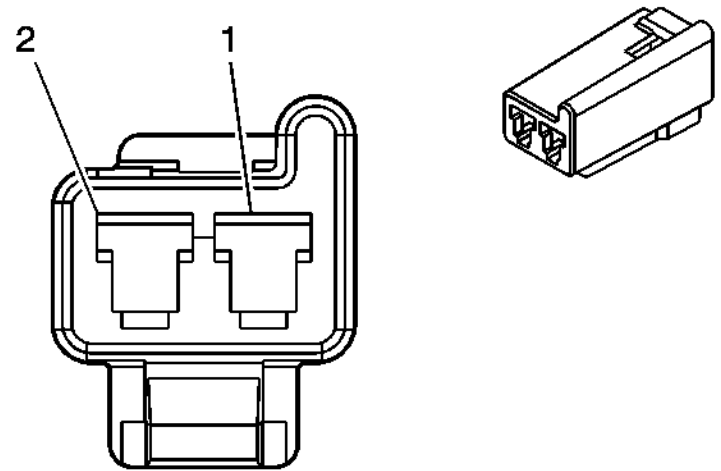
Fig. 5: Behind the Right Side of the I/P
 Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 5

Callout	Component Name
1	Clutch Pedal Position (CPP) Switch (K34)
2	Accelerator Pedal Position (APP) Switch

CRUISE CONTROL CONNECTOR END VIEWS

Clutch Pedal Position (CPP) Switch (K34 w/M86 or MU3)

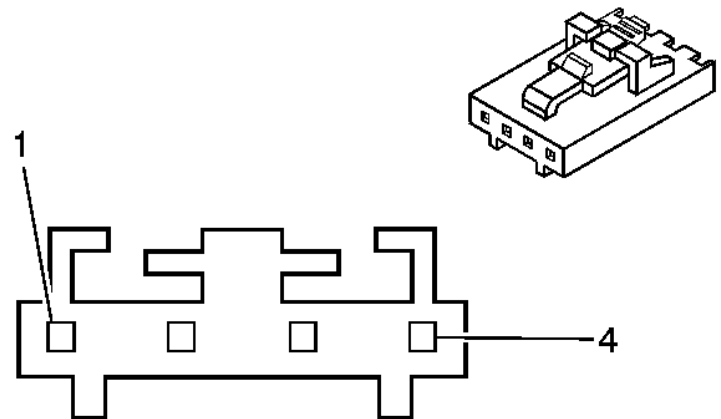


Connector Part Information

- 15479480
- 2-Way F Metri-Pack 280 (L-GY)

Pin	Wire Color	Circuit No.	Function
1	PK	339	Ignition 1 Voltage
2	BN/WH	379	CPP Switch Signal

Steering Wheel Controls - Left (K34)



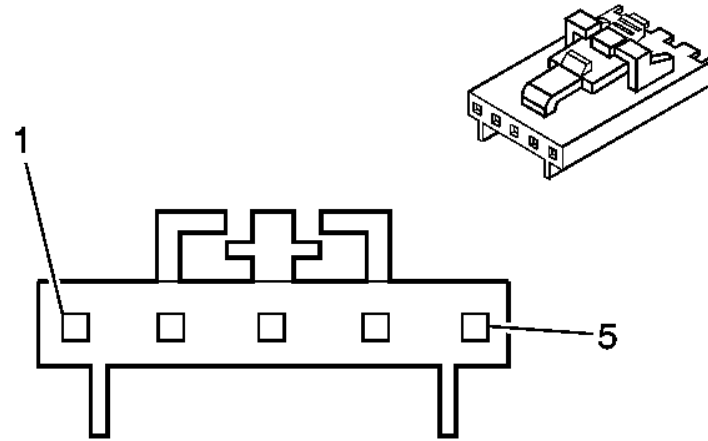
Connector Part Information

- 50-57-9404
- 4-Way F (BK) (Molex)

Pin	Wire Color	Circuit Number	Function
1	BK	550	Ground
2	-	-	Not Used

3	PK	1539	Ignition 1 Voltage
4	D-BU	397	Cruise Control On Switch Signal

Steering Wheel Controls - Right (K34)

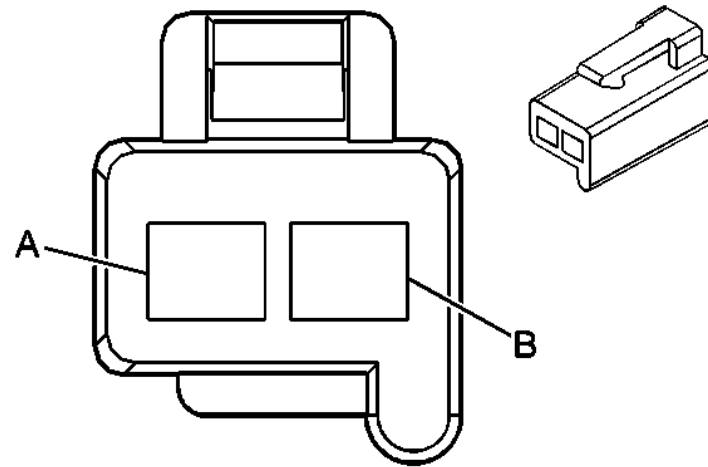


Connector Part Information

- 50-57-9405
- 5-Way F (BK) (Molex)

Pin	Wire Color	Circuit Number	Function
1	BK	-	Not Used
2	-	-	Not Used
3	D-BU	397	Cruise Control On Switch Signal
4	GY	1884	Cruise Control Set/Coast and Resume/Accelerate Signal
5	-	-	Not Used

Stop Lamp Switch - Lower (K34)



Connector Part Information

- 12041433
- 2-Way F Metri-Pack 280 Series (BK)

Pin	Wire Color	Circuit No.	Function
A	PK	339	Ignition 1 Voltage
B	PU	420	Stop Lamp Switch Signal

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC CODE INDEX

DIAGNOSTIC CODE INDEX

DTC	Description
DTC P0564 (2.0L)	DTC P0564 Cruise Control Multi-Function Switch Circuit
DTC P0564 (2.2L)	DTC P0564 Cruise Control Multi-Function Switch Circuit
DTC P0719 (2.0L - With Manual Transmission)	** MULTIPLE VALUES **
DTC P0719 (2.2L - With Manual Transmission)	** MULTIPLE VALUES **
DTC P0724 (2.0L - With Manual Transmission)	** MULTIPLE VALUES **
DTC P0724 (2.2L - With Manual Transmission)	** MULTIPLE VALUES **
DTC P1574 (2.0L)	DTC P1574 Stoplamp Switch Circuit
DTC P1574 (2.2L)	DTC P1574 Stoplamp Switch Circuit

DIAGNOSTIC STARTING POINT - CRUISE CONTROL

Begin the system diagnosis with the [Diagnostic System Check - Vehicle](#) in Vehicle DTC Information. 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.

SCAN TOOL DATA LIST

Powertrain - 2.0L (LSJ)

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Ignition ON/Engine Idling at Normal Operating Temperature/Vehicle is in Park or Neutral/Cruise On/Off Switch is Turned Off			
Clutch Pedal Switch	Cruise Control Data	Applied/Released	Released
Cruise Control Active	Cruise Control Data	Yes/No	No
Cruise Disengage (1 - 8) History	Cruise Control Data	Last reason for cruise control disengagement	Varies
Cruise On/Off Switch	Cruise Control Data	On/Off	Off
Cruise Resume/Accel. Switch	Cruise Control Data	On/Off	Off
Cruise Set/Coast Switch	Cruise Control Data	On/Off	Off
Engine Speed	Cruise Control Data	RPM	650
Ignition 1 Signal	Cruise Control Data	Volts	Varies
Reduced Engine Power	Cruise Control Data	Active/Inactive	Inactive
Stoplamp Pedal Switch	Cruise Control Data	Applied/Released	Released
Traction Control Status	Cruise Control Data	Active/Inactive	Inactive
Vehicle Speed Sensor	Cruise Control Data	km/h (mph)	0

Powertrain - 2.2L (L61)

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Ignition ON/Engine Idling at Normal Operating Temperature/Vehicle is in Park or Neutral/Cruise On/Off Switch is Turned Off			
CPP Switch	Cruise Control Data	Applied/Released	Released
Cruise Control Active	Cruise Control Data	Yes/No	No
Cruise Disengage (1 - 8) History	Cruise Control Data	Last reason for cruise control disengagement	Varies
Cruise On/Off Switch	Cruise Control Data	On/Off	Off
Cruise Resume/Accel. Switch	Cruise Control Data	On/Off	Off
Cruise Set Switch	Cruise Control Data	Active/Inactive	Inactive
Engine Speed	Cruise Control Data	RPM	650
Ignition 1 Signal	Cruise Control Data	Volts	Varies
Reduced Engine Power	TAC Data	Active/Inactive	Inactive
TCC/Cruise Brake Pedal Switch	Cruise Control Data	Applied/Released	Released
Traction Control Status	TAC Data	Active/Inactive	Inactive
Vehicle Speed Sensor	Cruise Control Data	km/h (mph)	0

SCAN TOOL DATA DEFINITIONS (CRUISE CONTROL)

The Scan Tool Data Definitions contains a brief description of all cruise control related parameters available on the scan tool. On vehicles equipped with a 2.0L engine, a

powertrain control module (PCM) is used. On vehicles equipped with a 2.2L engine, an engine control module (ECM) is used.

Battery Voltage Signal

The scan tool displays 6-18 Volts. The body control module (BCM) monitors the ignition voltage.

Clutch Pedal Switch

The scan tool displays Applied or Released. The PCM monitors the clutch pedal position (CPP) switch signal circuit. An open switch is displayed as Applied.

CPP Switch

The scan tool displays Applied or Released. The ECM monitors the clutch pedal position (CPP) switch signal circuit. An open switch is displayed as Applied.

Cruise Control Active

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

Cruise Control Switch

The scan tool displays Off/On/Error/Resume/Set. The body control module (BCM) monitors the cruise control set/coast and resume/accel switch signal circuit in order to determine the status of the cruise control switch.

Cruise Control Switch

The scan tool displays 0-5 Volts. The BCM monitors the voltage of the cruise control set/coast and resume/accel switch signal circuit. in order to determine the status of the cruise control switch. The listed values are voltage values from a known good cruise control switch. Off = 0.0 Volts / On = 0.6 Volts / Resume = 1.5 Volts / Set = 3.0 Volts.

Cruise Disengage (1-8) History

The scan tool displays the last 8 reasons why the cruise control system was disengaged. Refer to the [Scan Tool Data Definitions \(Disengage History\)](#) for descriptions.

Cruise On/Off Switch

The scan tool displays On/Off. This is the state of the cruise control On/Off switch as detected by the ECM/PCM. An active switch is displayed as On.

Cruise Resume/Accel Switch

The scan tool displays On or Off. This is the state of the resume/accel switch as detected by the ECM/PCM. An active cruise resume and accel switch is displayed as On. The cruise control On/Off switch must be On to view the parameter correctly.

Cruise Set/Coast Switch

The scan tool displays On or Off. This is the state of the cruise set switch as detected by the ECM/PCM. An active cruise set switch is displayed as On. The cruise control On/Off switch must be On to view the parameter correctly.

Engine Speed

The scan tool displays 0 to 9999 RPM. This is the engine RPM as monitored by the ECM/PCM. The ECM/PCM monitors the crankshaft position (CKP) signal circuit in order to determine the engine RPM.

Ignition 1 Signal

The scan tool displays 0 to 25.5 Volts. The ECM/PCM monitors the voltage of the ignition 1 voltage circuit.

Initial Brake Apply Signal

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

Reduced Engine Power

The scan tool displays Active or Inactive. When the ECM/PCM detects that a reduced engine power condition exists, the scan tool displays Active.

Stop Lamp Pedal Switch

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

TCC/Cruise Brake Pedal Switch

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

Traction Control Status

The scan tool displays Active or Inactive. When the ECM/PCM detects that a traction control condition exists, the scan tool displays Active.

Vehicle Speed Sensor

The scan tool displays 0-255 km/h (0-155 mph). The ECM/PCM monitors the vehicle speed sensor signal in order to calculate the vehicle speed for display.

SCAN TOOL DATA DEFINITIONS (DISENGAGE HISTORY)

The Cruise Control Scan Tool Definitions - Disengage History is a common list for all of the available cruise control disengagement definitions available on the scan tool. The cruise control system equipped on the vehicle determines which cruise control disengagement parameters are available on the scan tool.

One of the following conditions must be present in order for a disengagement parameter to appear:

- The cruise control system is active and disengagement is requested.
- The engagement of the cruise control system is requested while a fault is present.

Accel Rate

The powertrain control module (PCM)/engine control module (ECM) detects that the vehicle acceleration is greater than the calibrated cruise control threshold.

Bad Sequence

The PCM/ECM detects that a cruise control software execution error is present.

Brake

The PCM/ECM detects that the stop lamps have been activated or the PCM/ECM detects that a stop lamp pedal activation had not occurred before the cruise control system was requested.

Cancel

The PCM/ECM detects that the cruise control cancel switch has been activated.

CC Sw. Position

The PCM/ECM detects that the acceleration mode is active without the activation of the Accel. switch.

Clutch

The PCM/ECM detects that the clutch pedal switch has been activated.

Clutch Switch

The PCM/ECM detects that the clutch pedal switch has been activated.

Cruise Off

The PCM/ECM detects that the cruise On/Off switch was turned to OFF when the cruise control system was enabled.

Coast Low Speed

The PCM/ECM detects that the Set/Coast switch is activated until the vehicle speed is below 37 km/h (23 mph).

Coast Disengage

When the PCM/ECM detects that the cruise set/coast signal is active and the throttle blade fully closes the cruise control system will disengage until the PCM/ECM detects that the set/coast signal is inactive. The cruise control system will then engage and set with the new vehicle speed.

Decel Rate

The PCM/ECM detects that the vehicle deceleration is greater than the calibrated cruise control threshold.

DTC Set

The PCM/ECM detects that a DTC has been set which affects the cruise control operation.

Engine Run Time

The PCM/ECM detects that the cruise control system has been requested and the engine run time counter is not active.

Engine Speed

The PCM/ECM detects that the engine speed is less than or greater than a calibrated RPM.

ETC

The PCM/ECM detects a fault within the throttle actuator control (TAC) system.

First Gear

While the cruise control system is active, the PCM/ECM detects that the transmission is in Drive 1.

High Accel.

The PCM/ECM detects that the vehicle acceleration is greater than the calibrated cruise control threshold.

High Decel.

The PCM/ECM detects that the vehicle deceleration is greater than the calibrated cruise control threshold.

High Speed

The PCM/ECM detects that the vehicle speed is greater than the calibrated amount.

Illegal Mode

The PCM/ECM detects that the acceleration mode is active without the activation of the Accel. switch.

Injector Disable

The PCM/ECM detects that the engine is overspeed and that the fuel shutoff has been activated.

Low Speed

The PCM/ECM detects that the vehicle speed is less than 37 km/h (23 mph) while the cruise control system was enabled.

Low Voltage

The PCM/ECM detects that the ignition voltage is below 9 volts.

Manual/Neutral

The PCM/ECM detects that transmission is in Neutral, Reverse or Park.

Memory Corrupt

An internal PCM/ECM memory fault is detected.

MPH Limit

The PCM/ECM detects a that the vehicle is overspeed and that the fuel shutoff has been activated.

No History

This parameter is displayed when a new PCM/ECM has been installed.

None

This parameter is displayed when a new PCM/ECM has been installed.

Off

The PCM/ECM detects that the cruise On/Off switch was turned to OFF when the cruise control system was enabled.

Over Set Speed

This parameter is displayed when the current vehicle speed is greater than the set vehicle speed by more than a calibrated amount.

Over Speed

This parameter is displayed when the current vehicle speed is greater than the set vehicle speed by more than a calibrated amount.

Over Speed Tap

This parameter is displayed when the Set/Coast switch is briefly applied while the current vehicle speed is greater than the set vehicle speed by more than a calibrated amount.

Pedal Initialize

The PCM/ECM detects that a stop lamp pedal activation had not occurred before the cruise control system was requested.

PCM Error

The PCM/ECM detects that a cruise control software execution error is present.

PCM Inhibit

The PCM/ECM detects a RAM corruption associated to the cruise control system.

Pedal > Cruise

The PCM/ECM detects that the accelerator pedal overrides the set vehicle speed for approximately 60 seconds.

Serial Data

A fault in the serial data circuit from the cruise control switch to the platform module is detected.

S/C On, CC Off

When the PCM/ECM detects that the cruise set/coast signal is active and the throttle blade fully closes the cruise control system will disengage until the PCM/ECM detects that the set/coast signal is inactive. The cruise control system will then engage and set with the new vehicle speed.

S/C On - Speed High

This parameter is displayed when the Set/Coast switch is briefly applied while the current vehicle speed is greater than the set vehicle speed by more than a calibrated amount.

Stop Lamp Switch

The PCM/ECM detects that the stop lamps have been activated.

TAC Inhibit

The PCM/ECM detects a fault within the TAC system.

Traction

The PCM/ECM detects that the traction control system had been activated. It is also possible that a tire with low air pressure can also set this disengagement reason.

Traction Loss

The PCM/ECM detects that the traction control system had been activated. It is also possible that a tire with low air pressure can also set this disengagement reason.

Two Commands

The PCM/ECM detects that the Set/Coast switch and the Resume/Accel switch are active at the same time.

Two CC Commands

The PCM/ECM detects that the Set/Coast switch and the Resume/Accel switch are active at the same time.

Under Speed

The PCM/ECM detects that the vehicle speed is less than the cruise memory speed by more than a calibrated amount.

Under Set Speed

The PCM/ECM detects that the vehicle speed is less than the cruise memory speed by more than a calibrated amount.

DTC P0564 (2.0L)

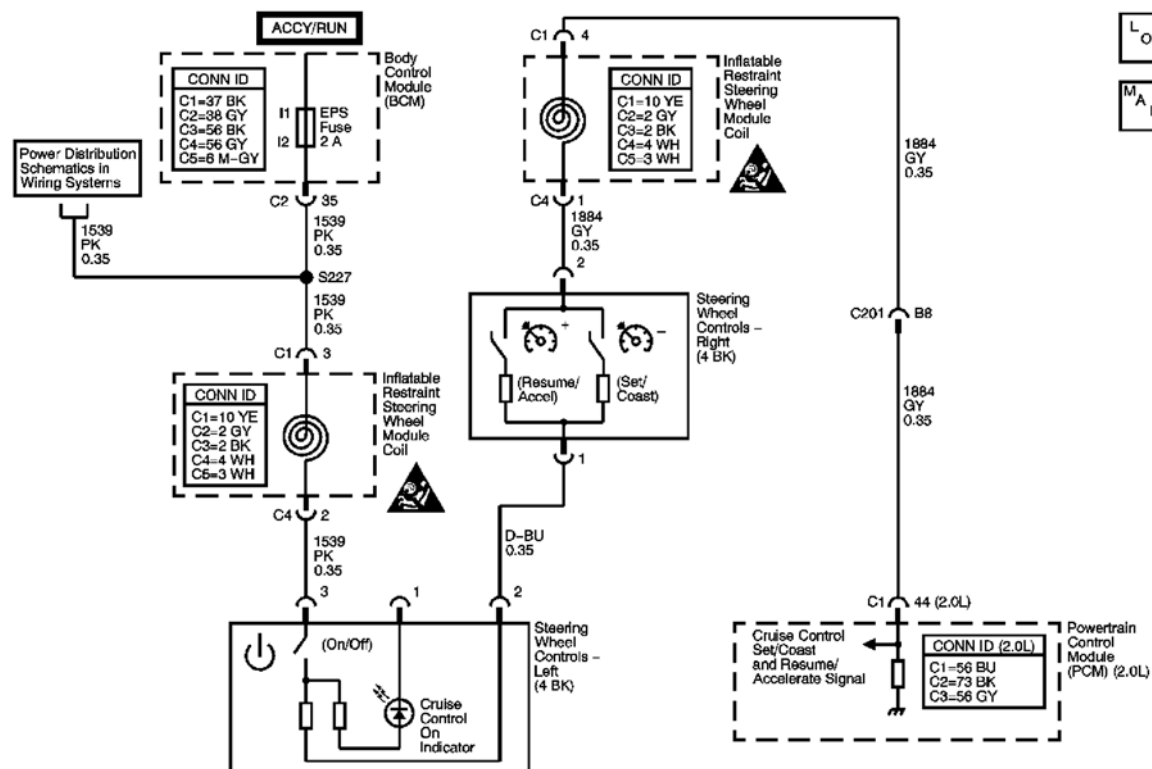


Fig. 6: Cruise Control Switch Circuit - PCM

Courtesy of GENERAL MOTORS CORP.

Circuit Description

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.

The cruise control switch is an input to the powertrain control module (PCM). The PCM monitors the cruise control set/coast and resume/accelerate switch signal circuit in order to detect when a cruise control function has been requested. The PCM detects a specific voltage signal on the cruise control set/coast and resume/accelerate switch signal circuit when a cruise control function switch is activated, with each switch having a different predetermined voltage value.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC P0564 Cruise Control Multi-Function Switch Circuit

Conditions for Running the DTC

- The ignition is ON.
- The cruise control on/off switch is ON.

Conditions for Setting the DTC

- This DTC sets when the PCM detects an invalid voltage signal on the cruise control set/coast and resume/accelerate switch signal circuit for greater than 1.5 seconds.
- This diagnostic runs every 0.5 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.

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

- With a scan tool, observe the associated cruise control switch parameter in the Powertrain Cruise Control Data list, while rotating the steering wheel to both steering stops and separately activating each cruise control switch. This will help eliminate the possibility of an internally shorted inflatable restraint steering wheel module coil.
- For an intermittent condition, refer to [Testing for Intermittent Conditions and Poor Connections](#) in Wiring Systems.

DTC P0564 (2.0L)

Step	Action	Values	Yes	No
Schematic Reference: Cruise Control Schematics Connector End View Reference: Cruise Control Connector End Views or to Powertrain Control Module (PCM) Connector End Views in Engine Controls - 2.0L				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	1. Turn OFF the ignition. 2. Remove the inflatable restraint steering wheel module. Refer to Inflatable Restraint Steering Wheel Module Replacement in SIR. 3. Disconnect C4 of the cruise control switch. 4. Turn ON the ignition, with the engine OFF. 5. With a DMM, measure the voltage of the ignition 1 voltage circuit.	B+	Go to Step 3	Go to Step 10

Step	Action	Values	Yes	No
3	<p>Does the voltage measure at the specified value?</p> <p>IMPORTANT: The cruise control on/off switch must be turned ON in order to correctly view the set/coast switch and the resume/accel switch resistance values with the DMM.</p> <ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. With a DMM, measure the resistance of the cruise control switch between the ignition 1 voltage circuit and the cruise control set/coast and resume/accelerate switch signal circuit. 3. Individually activate and hold the cruise control function switches while measuring the resistance of the cruise control function switches. <p>Do the cruise control function switch resistance values measure between the specified values?</p>	<p>Off = O.L. On = 7.8-8.6 K ohm Resume = 2.7-3.0 K ohm Set = 1.2-1.3 K ohm</p>	<p>Go to Step 4</p>	<p>Go to Step 5</p>
4	<p>Test the cruise control set/coast and resume/accelerate switch signal circuit between C4 of the cruise control switch and the powertrain control module (PCM) for the following:</p> <ul style="list-style-type: none"> • High resistance • Short to voltage • Short to ground <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>	<p>-</p>	<p>Go to Step 13</p>	<p>Go to Step 9</p>
5	<p>Test the ignition 1 voltage circuit between C4 and the cruise control switch for the following:</p> <ul style="list-style-type: none"> • High resistance • Short to voltage • Short to ground <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>	<p>-</p>	<p>Go to Step 13</p>	<p>Go to Step 6</p>
6	<p>Test the cruise control on switch signal circuit for the following:</p> <ul style="list-style-type: none"> • High resistance • Short to voltage • Short to ground <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>	<p>-</p>	<p>Go to Step 13</p>	<p>Go to Step 7</p>

Step	Action	Values	Yes	No
7	<p>Test the cruise control set/coast and resume/accelerate switch signal circuit between C4 and the cruise control switch for the following:</p> <ul style="list-style-type: none"> • High resistance • Short to voltage • Short to ground <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>	-	Go to Step 13	Go to Step 8
8	<p>Inspect for poor connections at the harness connector of the cruise control switch. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?</p>	-	Go to Step 13	Go to Step 11
9	<p>Inspect for poor connections at the harness connector of the PCM. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?</p>	-	Go to Step 13	Go to Step 12
10	<p>Repair the high resistance in the ignition 1 voltage circuit. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you complete the repair?</p>	-	Go to Step 13	-
11	<p>Replace the cruise control switch. Refer to Steering Wheel Control Switch Assembly Replacement in Steering Wheel and Column. Did you complete the replacement?</p>	-	Go to Step 13	-
12	<p>Replace the PCM. Refer to Control Module References in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?</p>	-	Go to Step 13	-
13	<ol style="list-style-type: none"> 1. Install the inflatable restraint steering wheel module. Refer to Inflatable Restraint Steering Wheel Module Replacement in SIR. 2. Enable the inflatable restraint steering wheel module. Refer to SIR Disabling and Enabling Zone 3 in SIR. 3. Use the scan tool in order to clear the DTCs. 4. Operate the vehicle within the Conditions for Running the DTC. <p>Does the DTC reset?</p>	-	Go to Step 2	System OK

DTC P0564 (2.2L)

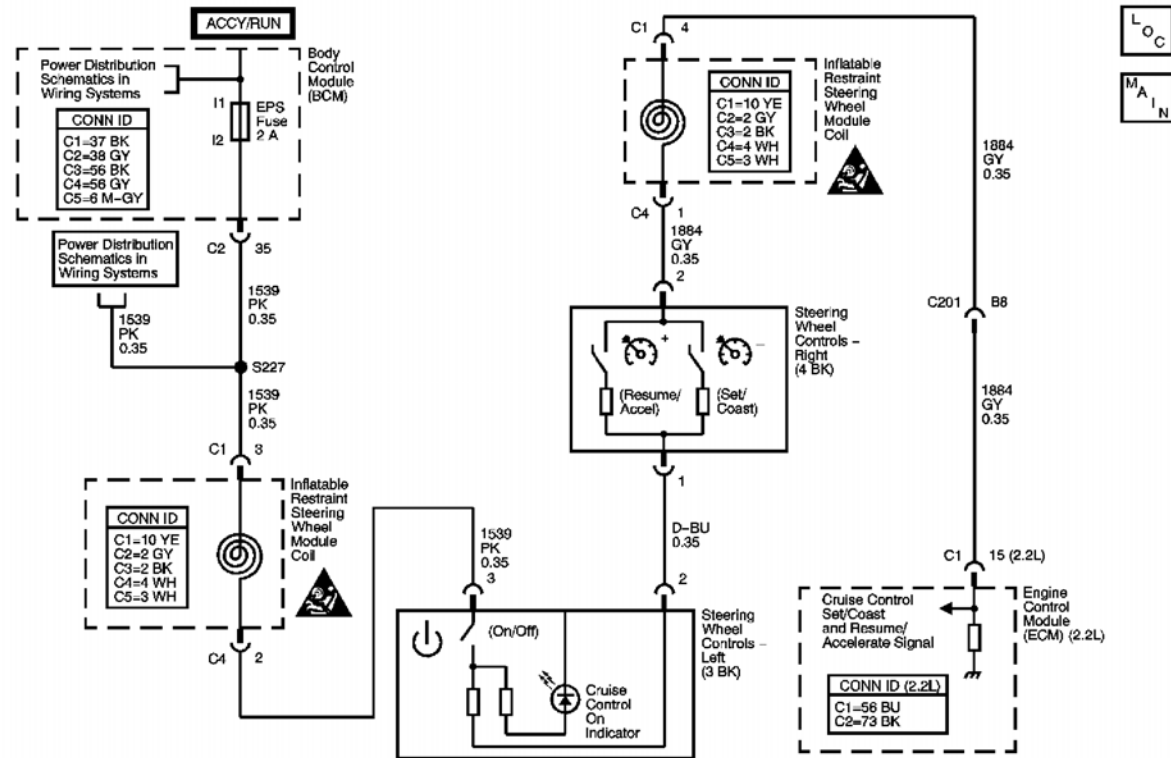


Fig. 7: Cruise Control Switch Circuit (2.2L)
 Courtesy of GENERAL MOTORS CORP.

Circuit Description

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.

The cruise control switch is an input to the engine control module (ECM). The ECM monitors the cruise control set/coast and resume/accelerate switch signal circuit in order to detect when a cruise control function has been requested. The ECM detects a specific voltage signal on the cruise control set/coast and resume/accelerate switch signal circuit when a cruise control function switch is activated, with each switch having a different predetermined voltage value.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC P0564 Cruise Control Multi-Function Switch Circuit

Conditions for Running the DTC

- The ignition is ON.
- The cruise control on/off switch is ON.

Conditions for Setting the DTC

- This DTC sets when the ECM detects an invalid voltage signal on the cruise control set/coast and resume/accelerate switch signal circuit for greater than 1.5 seconds.

- This diagnostic runs every 0.5 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 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

- With a scan tool, observe the associated cruise control switch parameter in the Powertrain Cruise Control Data list, while rotating the steering wheel to both steering stops and separately activating each cruise control switch. This will help eliminate the possibility of an internally shorted inflatable restraint steering wheel module coil.
- For an intermittent condition, refer to [Testing for Intermittent Conditions and Poor Connections](#) in Wiring Systems.

DTC P0564 (2.2L)

Step	Action	Values	Yes	No
Schematic Reference: Cruise Control Schematics Connector End View Reference: Cruise Control Connector End Views or to Engine Control Module (ECM) Connector End Views in Engine Controls - 2.2L				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	1. Turn OFF the ignition. 2. Remove the inflatable restraint steering wheel module. Refer to Inflatable Restraint Steering Wheel Module Replacement in SIR. 3. Disconnect C4 of the cruise control switch. 4. Turn ON the ignition, with the engine OFF. 5. With a DMM, measure the voltage of the ignition 1 voltage circuit. Does the voltage measure at the specified value?	B+	Go to Step 3	Go to Step 10
3	IMPORTANT: The cruise control on/off switch must be turned ON in order to correctly view the set/coast switch and the resume/accel switch resistance values with the DMM. 1. Turn OFF the ignition. 2. With a DMM, measure the resistance of the cruise control switch between the ignition 1 voltage circuit and the cruise control set/coast and resume/accelerate switch signal circuit.	Off = O.L. On = 7.8-8.6 K ohm Resume = 2.7-3.0 K ohm Set = 1.2-1.3 K ohm	Go to Step 4	Go to Step 5

Step	Action	Values	Yes	No
4	<p>3. Individually activate and hold the cruise control function switches while measuring the resistance of the cruise control function switches.</p> <p>Do the cruise control function switch resistance values measure between the specified values?</p> <p>Test the cruise control set/coast and resume/accelerate switch signal circuit between C4 of the cruise control switch and the engine control module (ECM) for the following:</p> <ul style="list-style-type: none"> • High resistance • Short to voltage • Short to ground <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>	-	Go to Step 13	Go to Step 9
5	<p>Test the ignition 1 voltage circuit between C4 and the cruise control switch for the following:</p> <ul style="list-style-type: none"> • High resistance • Short to voltage • Short to ground <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>	-	Go to Step 13	Go to Step 6
6	<p>Test the cruise control on switch signal circuit for the following:</p> <ul style="list-style-type: none"> • High resistance • Short to voltage • Short to ground <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>	-	Go to Step 13	Go to Step 7
7	<p>Test the cruise control set/coast and resume/accelerate switch signal circuit between C4 and the cruise control switch for the following:</p> <ul style="list-style-type: none"> • High resistance • Short to voltage • Short to ground <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>	-	Go to Step 13	Go to Step 8

Step	Action	Values	Yes	No
8	Inspect for poor connections at the harness connector of the cruise control switch. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	-	Go to Step 13	Go to Step 11
9	Inspect for poor connections at the harness connector of the ECM. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	-	Go to Step 13	Go to Step 12
10	Repair the high resistance in the ignition 1 voltage circuit. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you complete the repair?	-	Go to Step 13	-
11	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 13	-
12	Replace the ECM. Refer to Control Module References in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?	-	Go to Step 13	-
13	<ol style="list-style-type: none"> 1. Install the inflatable restraint steering wheel module. Refer to Inflatable Restraint Steering Wheel Module Replacement in SIR. 2. Enable the inflatable restraint steering wheel module. Refer to SIR Disabling and Enabling Zone 3 in SIR. 3. Use the scan tool in order to clear the DTCs. 4. Operate the vehicle within the Conditions for Running the DTC. Does the DTC reset?	-	Go to Step 2	System OK

DTC P0567

Circuit Description

The cruise control resume/accel switch is an input to the engine control module (ECM). The ECM monitors 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 module detects a voltage signal on the cruise control resume/accel switch signal circuit when the switch is applied. This DTC sets if the ECM detects that voltage is present on the cruise control resume/accel switch signal circuit for longer than 90 seconds.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC P0567 Cruise Control Resume Switch Circuit

Conditions for Running the DTC

- The ignition is ON.
- The cruise control switch is ON.

Conditions for Setting the DTC

The ECM detects that the resume/accel switch is applied for longer than 90 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](#) .

Test Description

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

2. This step determines if condition is present.

DTC P0567

Step	Action	Values	Yes	No
Schematic Reference: Cruise Control Schematics Connector End View Reference: Cruise Control Connector End Views or to Engine Control Module (ECM) Connector End Views in Engine Controls - 2.2L				
1	Did you perform the Diagnostic System Check - Vehicle?		Go to Step 2	Go to Diagnostic System Check - Vehicle
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. Turn the cruise On/Off control switch ON. 4. With the scan tool, observe the Cruise Resume/Accel. Switch parameter in the Cruise/Traction Data list. Does the Cruise Resume/Accel. Switch parameter display Active?		Go to Step 3	Go to Diagnostic Aids
3	1. Turn OFF the ignition. 2. Disconnect the cruise control switch. 3. Turn ON the ignition, with the engine OFF. 4. With the scan tool, observe the Cruise Resume/Accel. Switch parameter in the Cruise/Traction Data list. Does the Cruise Resume/Accel. Switch parameter display Active?		Go to Step 4	Go to Step 5

Step	Action	Values	Yes	No
4	Test the cruise control resume/accel switch signal circuit for a short to voltage. Refer to <u>CIRCUIT TESTING</u> and to <u>WIRING REPAIRS</u> . Did you find and correct the condition?		Go to Step 9	Go to Step 6
5	Inspect for poor connections at the harness connector of the cruise control switch. Refer to <u>TESTING FOR INTERMITTENT CONDITIONS AND POOR CONNECTIONS</u> and to <u>CONNECTOR REPAIRS</u> . Did you find and correct the condition?		Go to Step 9	Go to Step 7
6	Inspect for poor connections at the harness connector of the engine control module (ECM). Refer to <u>TESTING FOR INTERMITTENT CONDITIONS AND POOR CONNECTIONS</u> and to <u>CONNECTOR REPAIRS</u> . Did you find and correct the condition?		Go to Step 9	Go to Step 8
7	Replace the cruise control switch. Refer to <u>MULTIFUNCTION, TURN SIGNAL SWITCH REPLACEMENT</u> . Did you complete the replacement?		Go to Step 9	--
8	Replace the ECM. Refer to Control Module References for replacement, setup, and programming. Did you complete the replacement?		Go to Step 9	--
9	1. Use the 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 P0568

Circuit Description

The cruise control set/coast switch is an input to the engine control module (ECM). The ECM monitors the cruise control set/coast switch signal circuit in order to detect when the driver has requested to set the vehicle speed or to allow the vehicle to coast. The ECM detects a voltage signal on the cruise control set/coast switch signal circuit when the switch is applied. This DTC sets if the ECM detects that voltage is present on the cruise control set/coast switch signal circuit for longer than 90 seconds.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC P0568 Cruise Control Set Switch Circuit

Conditions for Running the DTC

- The ignition is ON.
- The cruise control switch is ON.

Conditions for Setting the DTC

The ECM detects the set/coast switch is ON for longer than 90 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 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

- Inspect for a set/coast switch stuck in the engaged position or the signal circuit is shorted to voltage.
- For an intermittent, refer to [TESTING FOR INTERMITTENT CONDITIONS AND POOR CONNECTIONS](#) .

Test Description

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

2. This step determines if condition is present.

DTC P0568

Step	Action	Values	Yes	No
Schematic Reference: Cruise Control Schematics Connector End View Reference: Engine Control Module (ECM) Connector End Views				
1	Did you perform the Diagnostic System Check - Vehicle?		Go to Step 2	Go to Diagnostic System Check - Vehicle
2	<ol style="list-style-type: none"> 1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. Turn the cruise On/Off control switch ON. 4. With the scan tool, observe the Cruise Set/Coast Switch parameter in the Cruise/Traction Data list. Does the Cruise Set/Coast Switch parameter display Active?		Go to Step 3	Go to Diagnostic Aids
3	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Disconnect C1 of the engine control module (ECM). 3. Turn ON the ignition, with the engine OFF. 4. Connect a test lamp between the cruise control set/coast switch signal circuit and a good ground. Does the test lamp illuminate?		Go to Step 4	Go to Step 6
4	Test the cruise control set/coast switch signal circuit for a short to voltage. Refer to Circuit Testing and Wiring Repairs in WIRING SYSTEMS article. Did you find and correct the condition?		Go to Step 9	Go to Step 5

Step	Action	Values	Yes	No
5	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 article. Did you find and correct the condition?		Go to Step 9	Go to Step 7
6	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 article. Did you find and correct the condition?		Go to Step 9	Go to Step 8
7	Replace the cruise control switch. Refer to MULTIFUNCTION, TURN SIGNAL SWITCH REPLACEMENT . Did you complete the replacement?		Go to Step 9	--
8	Replace the ECM. Refer to Control Module References for replacement, setup, and programming. Did you complete the replacement?		Go to Step 9	--
9	1. Use the 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 P0719 (2.0L - WITH MANUAL TRANSMISSION)

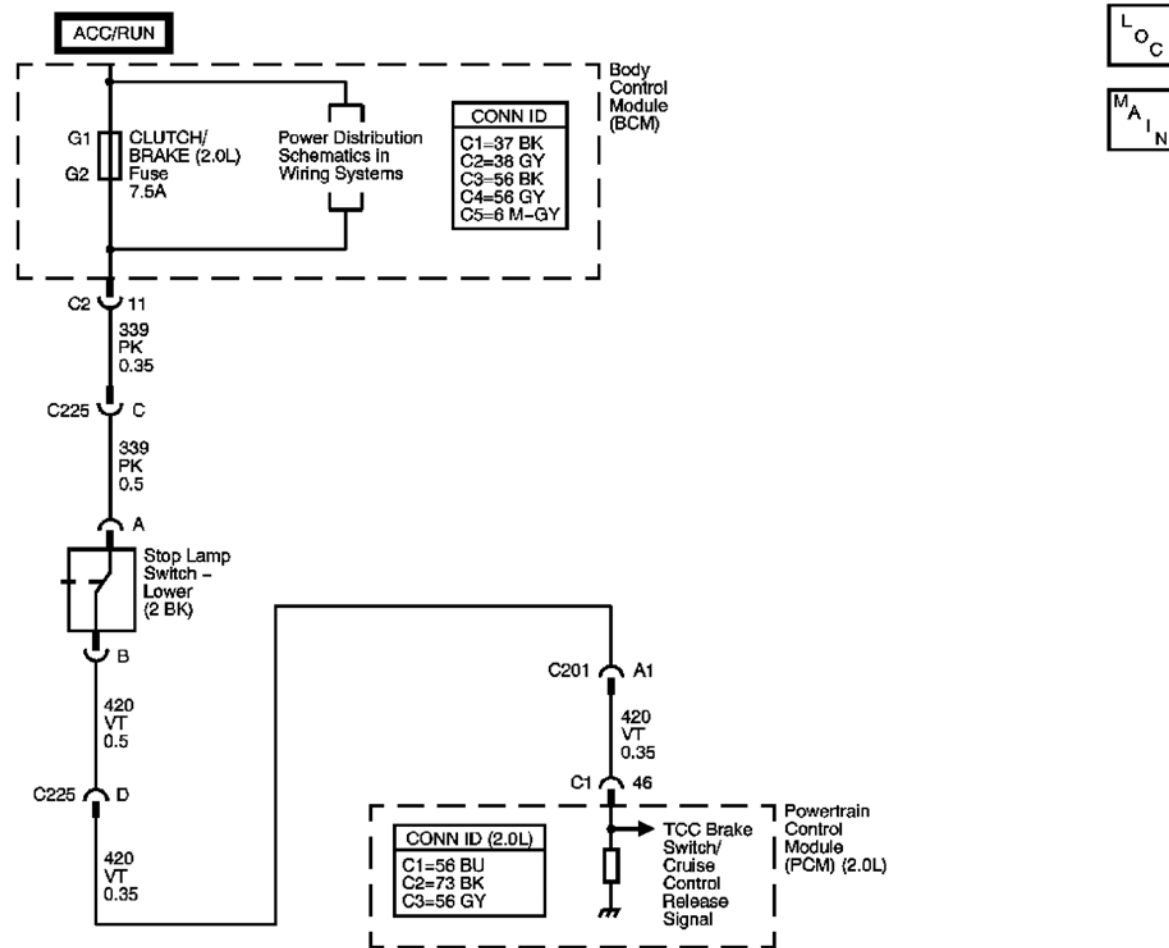


Fig. 8: Cruise Release Switch (2.0L)

Courtesy of GENERAL MOTORS CORP.

Circuit Description

The cruise release switch is a normally closed switch. The stop lamp switch signal circuit is a normally open switch. When the brake pedal is released, the powertrain control module (PCM) detects a high voltage signal on the torque converter clutch (TCC) brake switch/cruise control release signal circuit and a low signal voltage signal on the stop lamp switch signal circuit.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC P0719 Brake Switch Circuit Low Voltage

Conditions for Running the DTC

- The engine is ON.
- The traction control system or the antilock brake system are not active and have not failed.
- The vehicle has accelerated from 0 km/h (0 mph) to 60 km/h (37 mph) 3 times in one ignition cycle.
- This diagnostic runs continuously once the conditions for running the DTC has been achieved.

Conditions for Setting the DTC

When the brake pedal is released, the PCM detects a low voltage signal on the stop lamp switch signal circuit and a low voltage signal on the TCC brake switch/cruise control release signal circuit.

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.

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, inspect for proper adjustment of the cruise control release switch. Refer to [Cruise Release Switch Adjustment](#).

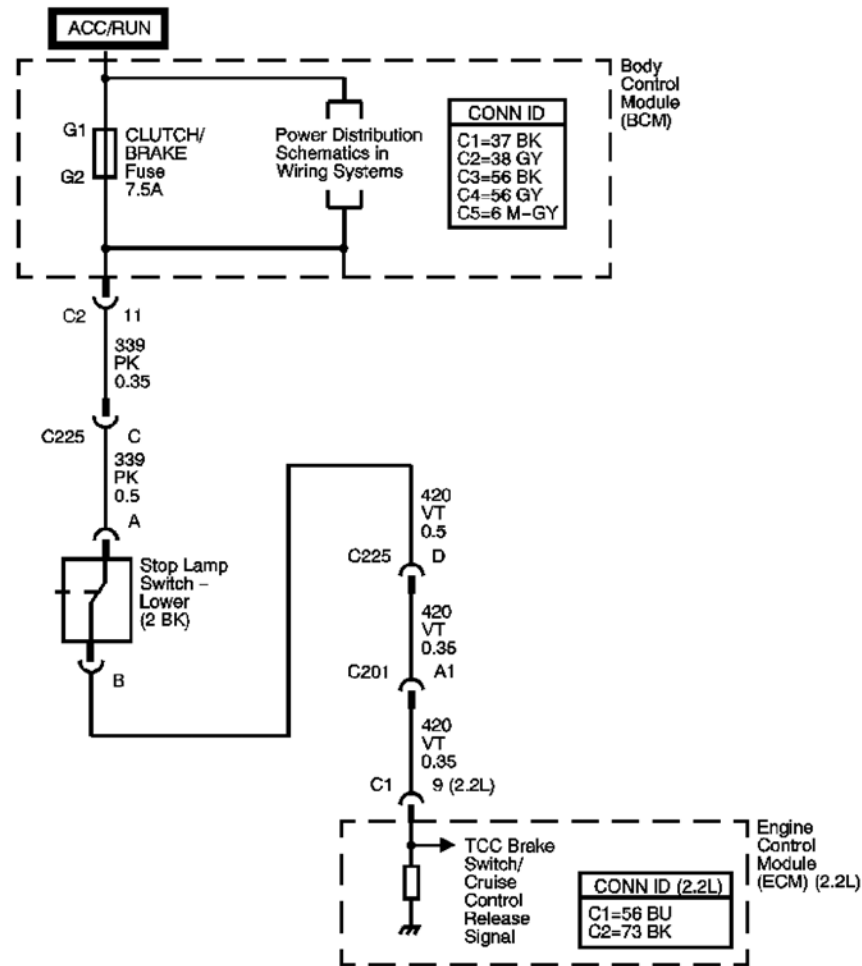
For an intermittent condition, refer to [Testing for Intermittent Conditions and Poor Connections](#) in Wiring Systems.

DTC P0719 (2.0L - With Manual Transmission)

Step	Action	Values	Yes	No
Schematic Reference: Cruise Control Schematics Connector End View Reference: Lighting Systems Connector End Views in Lighting Systems				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	1. Turn the ignition OFF. 2. Disconnect the cruise release 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 3	Go to Step 7
3	1. Turn the ignition OFF. 2. With a DMM, measure the resistance of the cruise release switch between the ignition 1 voltage circuit and the torque converter clutch (TCC) brake switch/cruise control release signal circuit at the male terminals. Does the resistance of the cruise release switch measure at the specified value?	O.L.	Go to Step 5	Go to Step 4

Step	Action	Values	Yes	No
4	Test the TCC brake switch/cruise control release signal circuit for an open, for a high resistance, or for a short to ground. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	-	Go to Step 10	Go to Step 6
5	Inspect for poor connections at the harness connector of the cruise release switch. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	-	Go to Step 10	Go to Step 8
6	Inspect for poor connections at the harness connector of the powertrain control module (PCM). Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	-	Go to Step 10	Go to Step 9
7	Repair the open, the high resistance, or the short to ground in the ignition 1 voltage circuit. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you complete the repair?	-	Go to Step 10	-
8	Replace the cruise release switch. Refer to Cruise Release Switch Replacement . Did you complete the repair?	-	Go to Step 10	-
9	Replace the PCM. Refer to Control Module References in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?	-	Go to Step 10	-
10	<ol style="list-style-type: none"> 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 P0719 (2.2L - WITH MANUAL TRANSMISSION)



LOC
 MAIN

Fig. 9: Cruise Release Switch (2.2L) - Schematic

Courtesy of GENERAL MOTORS CORP.

Circuit Description

The cruise release switch is a normally closed switch. The stop lamp switch signal circuit is a normally open switch. When the brake pedal is released, the engine control module (ECM) detects a high voltage signal on the torque converter clutch (TCC) brake switch/cruise control release signal circuit and a low signal voltage signal on the stop lamp switch signal circuit.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC P0719 Brake Switch Circuit Low Voltage

Conditions for Running the DTC

- The engine is ON.
- The traction control system or the antilock brake system are not active and have not failed.
- The vehicle has accelerated from 0 km/h (0 mph) to 60 km/h (37 mph) 3 times in one ignition cycle.
- This diagnostic runs continuously once the conditions for running the DTC has been achieved.

Conditions for Setting the DTC

When the brake pedal is released, the ECM detects a low voltage signal on the stop lamp switch signal circuit and a low voltage signal on the TCC brake switch/cruise control release signal circuit.

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 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, 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 P0719 (2.2L - With Manual Transmission)

Step	Action	Values	Yes	No
Schematic Reference: Cruise Control Schematics Connector End View Reference: Lighting Systems Connector End Views in Lighting Systems				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	1. Turn the ignition OFF. 2. Disconnect the cruise release 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 3	Go to Step 7
3	1. Turn the ignition OFF. 2. With a DMM, measure the resistance of the cruise release switch between the ignition 1 voltage circuit and the torque converter clutch (TCC) brake switch/cruise control release signal circuit at the male terminals. Does the resistance of the cruise release switch measure at the specified value?	O.L.	Go to Step 5	Go to Step 4

Step	Action	Values	Yes	No
4	Test the TCC brake switch/cruise control release signal circuit for an open, for a high resistance, or for a short to ground. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	-	Go to Step 10	Go to Step 6
5	Inspect for poor connections at the harness connector of the cruise release switch. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	-	Go to Step 10	Go to Step 8
6	Inspect for poor connections at the harness connector of the engine control module (ECM). Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	-	Go to Step 10	Go to Step 9
7	Repair the open, the high resistance, or the short to ground in the ignition 1 voltage circuit. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you complete the repair?	-	Go to Step 10	-
8	Replace the cruise release switch. Refer to Cruise Release Switch Replacement . Did you complete the repair?	-	Go to Step 10	-
9	Replace the ECM. Refer to Control Module References in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?	-	Go to Step 10	-
10	<ol style="list-style-type: none"> 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 P0724 (2.0L - WITH MANUAL TRANSMISSION)

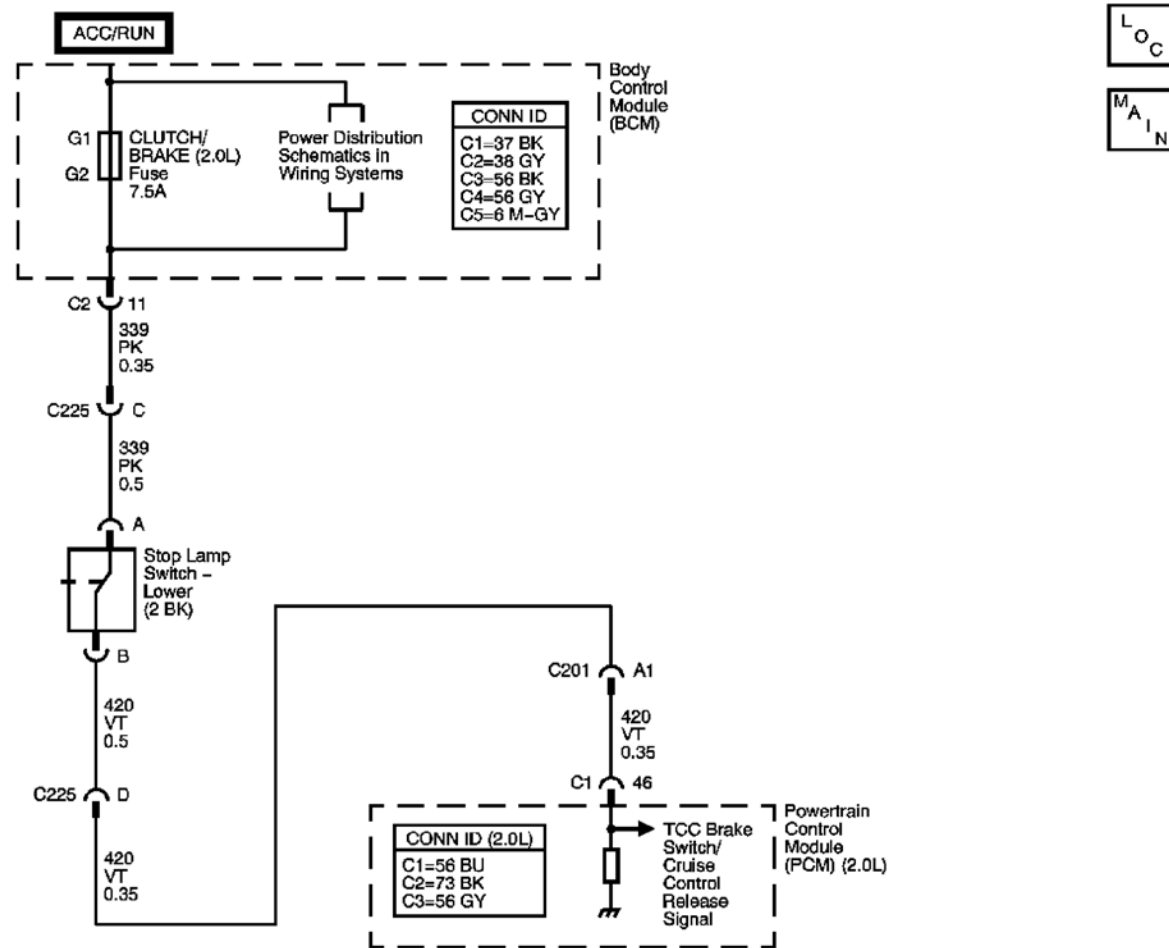


Fig. 10: Cruise Release Switch (2.0L) Circuit

Courtesy of GENERAL MOTORS CORP.

Circuit Description

The cruise release switch is a normally closed switch. The stop lamp switch signal circuit is a normally open switch. When the brake pedal is released, the powertrain control module (PCM) detects a high voltage signal on the torque converter clutch (TCC) brake switch/cruise control release signal circuit and a low signal voltage signal on the stop lamp switch signal circuit.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC P0724 Brake Switch Circuit High Voltage

Conditions for Running the DTC

- The engine is ON.
- The traction control system or the antilock brake system are not active and have not failed.
- The vehicle has accelerated from 0 km/h (0 mph) to 60 km/h (37 mph) 3 times in one ignition cycle.
- This diagnostic runs continuously once the conditions for running the DTC has been achieved.

Conditions for Setting the DTC

When the brake pedal is pressed, the PCM detects a high voltage signal on the stop lamp switch signal circuit and a high voltage signal on the TCC brake switch/cruise control release signal circuit.

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.

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, 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 P0724 (2.0L - With Manual Transmission)

Step	Action	Yes	No
Schematic Reference: Cruise Control Schematics Connector End View Reference: Lighting Systems Connector End Views in Lighting Systems			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	1. Turn the ignition OFF. 2. Disconnect the cruise release switch. 3. Turn the ignition ON, with the engine OFF. 4. Connect a test lamp between the torque converter clutch (TCC) brake switch/cruise control release signal circuit and a good ground. Does the test lamp illuminate?	Go to Step 3	Go to Step 4
3	Test the TCC brake switch/cruise control release signal circuit for a short to voltage. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 8	Go to Step 5
4	Inspect for poor connections at the harness connector of the cruise release switch. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 8	Go to Step 6
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 Connector Repairs in Wiring Systems.	Go to Step 8	Go to Step 7

Step	Action	Yes	No
6	Did you find and correct the condition?	Go to Step 8	-
	Replace the cruise release switch. Refer to Cruise Release Switch Replacement . Did you complete the repair?		
7	Replace the PCM. Refer to Control Module References in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?	Go to Step 8	-
8	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 P0724 (2.2L - WITH MANUAL TRANSMISSION)

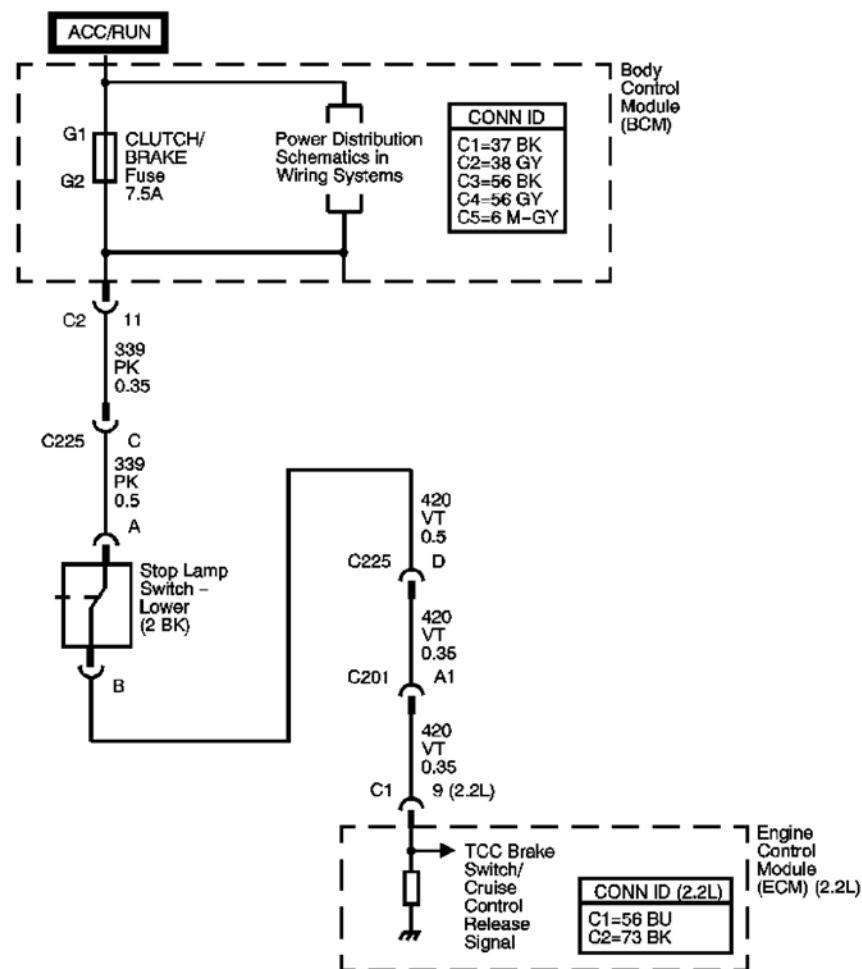


Fig. 11: Cruise Release Switch (2.2L) - Schematic
Courtesy of GENERAL MOTORS CORP.

Circuit Description

The cruise release switch is a normally closed switch. The stop lamp switch signal circuit is a normally open switch. When the brake pedal is released, the engine control module (ECM) detects a high voltage signal on the torque converter clutch (TCC) brake switch/cruise control release signal circuit and a low signal voltage signal on the

stop lamp switch signal circuit.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC P0724 Brake Switch Circuit High Voltage

Conditions for Running the DTC

- The engine is ON.
- The traction control system or the antilock brake system are not active and have not failed.
- The vehicle has accelerated from 0 km/h (0 mph) to 60 km/h (37 mph) 3 times in one ignition cycle.
- This diagnostic runs continuously once the conditions for running the DTC has been achieved.

Conditions for Setting the DTC

When the brake pedal is pressed, the PCM detects a high voltage signal on the stop lamp switch signal circuit and a high voltage signal on the TCC brake switch/cruise control release signal circuit.

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 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, 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 P0724 (2.2L - With Manual Transmission)

Step	Action	Yes	No
Schematic Reference: Cruise Control Schematics Connector End View Reference: Lighting Systems Connector End Views in Lighting Systems			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	<ol style="list-style-type: none">1. Turn the ignition OFF.2. Disconnect the cruise release switch.3. Turn the ignition ON, with the engine OFF.4. Connect a test lamp between the torque converter clutch (TCC) brake	Go to Step 3	Go to Step 4

Step	Action	Yes	No
	switch/cruise control release signal circuit and a good ground.		
	Does the test lamp illuminate?		
3	Test the TCC brake switch/cruise control release signal circuit for a short to voltage. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 8	Go to Step 5
4	Inspect for poor connections at the harness connector of the cruise release switch. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 8	Go to Step 6
5	Inspect for poor connections at the harness connector of the engine control module (ECM). Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 8	Go to Step 7
6	Replace the cruise release switch. Refer to Cruise Release Switch Replacement . Did you complete the repair?	Go to Step 8	-
7	Replace the ECM. Refer to Control Module References in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?	Go to Step 8	-
8	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 (2.0L)

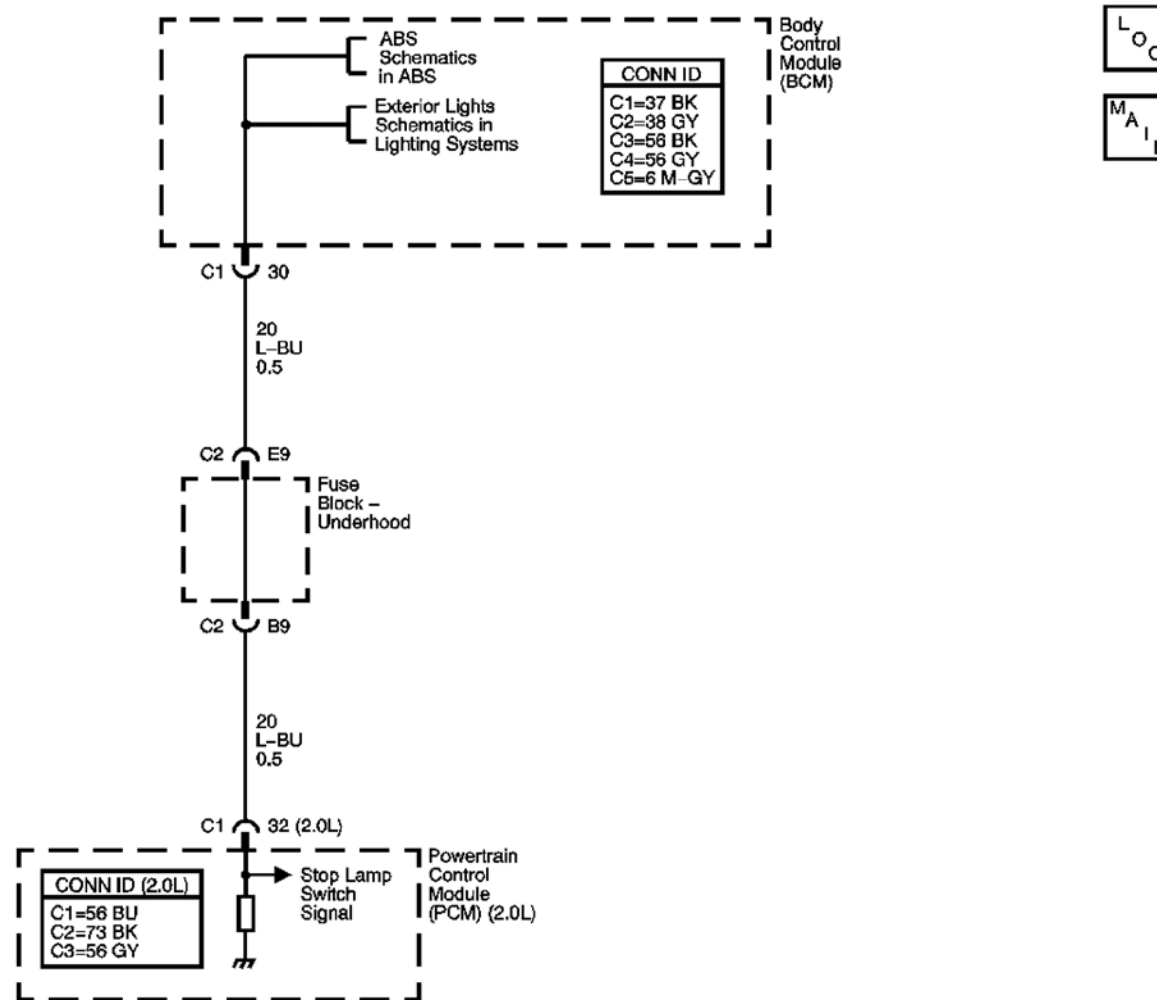


Fig. 12: Cruise Release Switch Circuit (2.0L)

Courtesy of GENERAL MOTORS CORP.

Circuit Description

The cruise release switch is a normally closed switch. The stop lamp switch signal circuit is a normally open switch. When the brake pedal is released, the powertrain control module (PCM) detects a high voltage signal on the torque converter clutch (TCC) brake switch/cruise control release signal circuit and a low signal voltage signal on the stop lamp switch signal circuit.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC P1574 Stoplamp Switch Circuit

Conditions for Running the DTC

- The engine is ON.
- The traction control system or the antilock brake system are not active and have not failed.
- The vehicle has accelerated from 0 km/h (0 mph) to 60 km/h (37 mph) 3 times in one ignition cycle.
- This diagnostic runs continuously once the conditions for running the DTC has been achieved.

Conditions for Setting the DTC

When the brake pedal is pressed, the PCM detects a low voltage signal on the stop lamp switch signal circuit and a low voltage signal on the TCC brake switch/cruise control release signal circuit.

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.

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.
- For an intermittent condition, refer to [Testing for Intermittent Conditions and Poor Connections](#) in Wiring Systems.

DTC P1574 (2.0L)

Step	Action	Yes	No
Schematic Reference: Cruise Control Schematics Connector End View Reference: Lighting Systems Connector End Views in Lighting Systems			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	Do the stop lamps work properly?	Go to Step 3	Go to Stop Lamps Inoperative in Lighting Systems
3	Test the stop lamp switch signal circuit for an open or for a high resistance between the body control module (BCM) and the powertrain control module (PCM). Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 6	Go to Step 4
4	Inspect for poor connections at the harness connector of the PCM. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 6	Go to Step 5
5	Replace the PCM. Refer to Control Module References in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?	Go to Step 6	-

Step	Action	Yes	No
6	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)

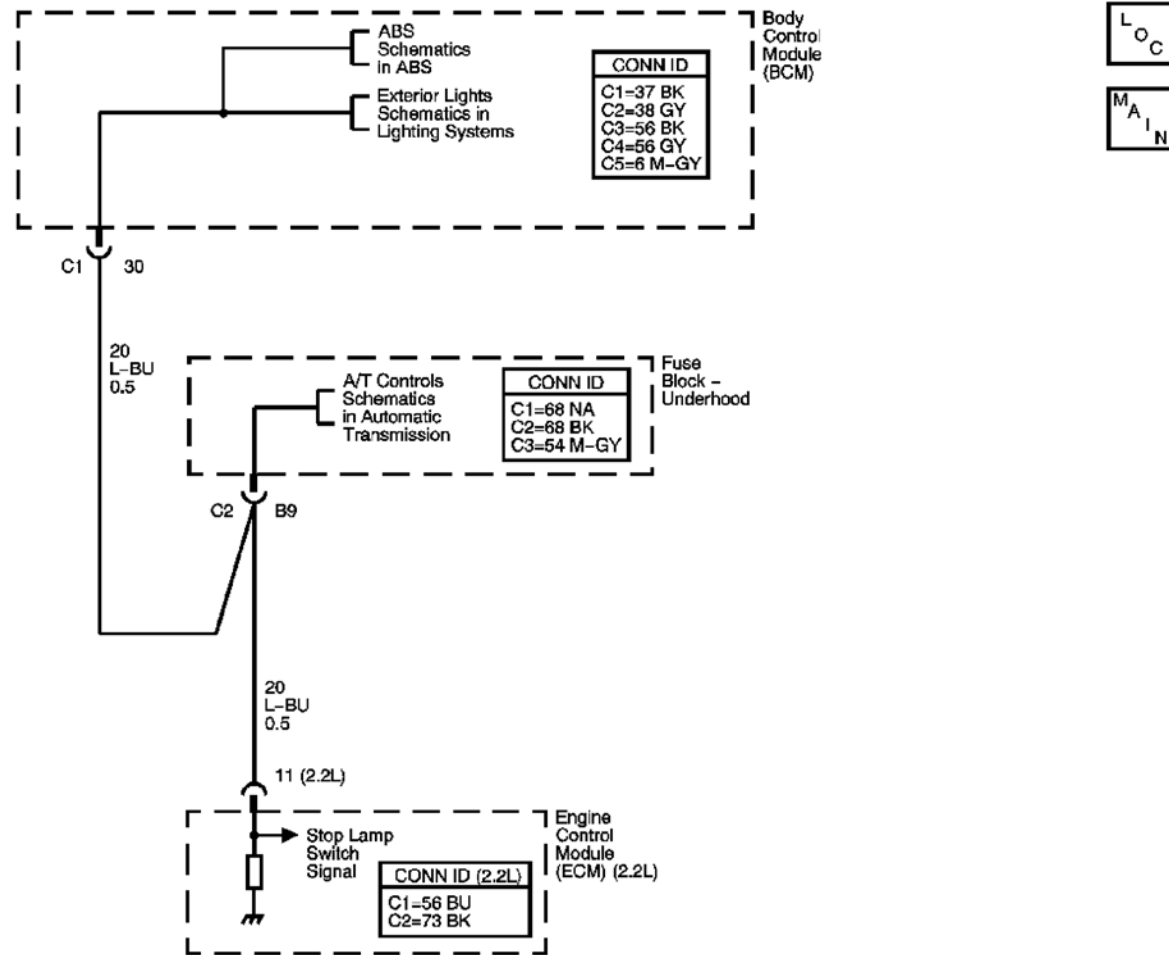


Fig. 13: Cruise Release Switch Circuit (2.2L)

Courtesy of GENERAL MOTORS CORP.

Circuit Description

The cruise release switch is a normally closed switch. The stop lamp switch signal circuit is a normally open switch. When the brake pedal is released, the engine control module (ECM) detects a high voltage signal on the torque converter clutch (TCC) brake switch/cruise control release signal circuit and a low signal voltage signal on the stop lamp switch signal circuit.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC P1574 Stoplamp Switch Circuit

Conditions for Running the DTC

- The engine is ON.
- The traction control system or the antilock brake system are not active and have not failed.
- The vehicle has accelerated from 0 km/h (0 mph) to 60 km/h (37 mph) 3 times in one ignition cycle.
- This diagnostic runs continuously once the conditions for running the DTC has been achieved.

Conditions for Setting the DTC

When the brake pedal is pressed, the ECM detects a low voltage signal on the stop lamp switch signal circuit and a low voltage signal on the TCC brake switch/cruise control release signal circuit.

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 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.
- 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 Connector End View Reference: Lighting Systems Connector End Views in Lighting Systems			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	Do the stop lamps work properly?	Go to Step 3	Go to Stop Lamps Inoperative in Lighting Systems
3	Test the stop lamp switch signal circuit for an open or for a high resistance between the body control module (BCM) and the engine control module (ECM). Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 6	Go to Step 4
4	Inspect for poor connections at the harness connector of the ECM. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring	Go to Step 6	Go to Step 5

Step	Action	Yes	No
5	Systems. Did you find and correct the condition?	Go to Step 6	-
	Replace the ECM. Refer to Control Module References in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?		
6	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

SYMPTOMS - CRUISE CONTROL

IMPORTANT: The following steps must be completed before using the symptom tables.

- Perform the [Diagnostic System Check - Vehicle](#) in Vehicle DTC Information before using the Symptom Tables in order to verify that all of the following are true:
 - There are not any DTCs set.
 - The control modules can communicate via the serial data link.
- Review the system operation in order to understand the system functions. Refer to [Cruise Control Description and Operation \(2.0L\)](#) or [Cruise Control Description and Operation \(2.2L\)](#).

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 \(2.0L\)](#) or [Cruise Control Inoperative/Malfunctioning \(2.2L\)](#).

CRUISE CONTROL INOPERATIVE/MALFUNCTIONING (2.0L)

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.

- Ensure that the following cruise control switches are not stuck in the engaged position:
 - On/off switch
 - SET switch
 - + RES switch
- With a scan tool, observe the associated cruise control switch parameter in the Powertrain Cruise Control Data list, while rotating the steering wheel to both steering stops and separately activating each cruise control switch. This will help eliminate the possibility of an internally shorted inflatable restraint steering wheel module

coil.

- For an intermittent condition, refer to [Testing for Intermittent Conditions and Poor Connections](#) in Wiring Systems.

Cruise Control Inoperative/Malfunctioning (2.0L)

Step	Action	Values	Yes	No
Schematic Reference: Cruise Control Schematics Connector End View Reference: Cruise Control Connector End Views or Powertrain Control Module (PCM) Connector End Views in Engine Controls - 2.0L				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. Turn the cruise control On/Off switch OFF. 4. With the scan tool, observe the following cruise control parameters in the Cruise Control Data list: <ul style="list-style-type: none"> • Cruise On/Off Switch • Cruise Resume/Accel Switch • Cruise Set/Coast Switch Do all of the parameters listed above display Off?	-	Go to Step 3	Go to Step 6
3	1. With the scan tool, observe the Cruise On/Off Switch parameter. 2. Turn the cruise control on/off switch ON. Does the Cruise On/Off Switch parameter display On?	-	Go to Step 4	Go to Step 7

Step	Action	Values	Yes	No
4	<ol style="list-style-type: none"> 1. With the scan tool, observe the Cruise Set/Coast Switch parameter. 2. Press and hold the - SET switch. <p>Does the Cruise Set/Coast Switch parameter display On?</p>	-	Go to Step 5	Go to Step 8
5	<ol style="list-style-type: none"> 1. With the scan tool, observe the Cruise Resume/Accel Switch parameter. 2. Press and hold the + RES switch. <p>Does the Cruise Resume/Accel Switch parameter display On?</p>	-	Go to Diagnostic Aids	Go to Step 8
6	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Remove the inflatable steering wheel module. Refer to <u>Inflatable Restraint Steering Wheel Module Replacement</u> in SIR. 3. Disconnect C4 of the cruise control switch. 4. Turn ON the ignition, with the engine OFF. 5. Observe the Cruise On/Off Switch parameter in the Cruise Control Data list. <p>Does the Cruise On/Off Switch parameter display Off?</p>	-	Go to Step 9	Go to Step 14
7	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Remove the inflatable steering wheel module. Refer to <u>Inflatable Restraint</u> 	-	Go to Step 8	Go to Step 18

Step	Action	Values	Yes	No
	<p><u>Steering Wheel Module Replacement</u> in SIR.</p> <ol style="list-style-type: none"> 3. Disconnect C4 of the cruise control switch. 4. Turn ON the ignition, with the engine OFF. 5. Connect a test lamp between the ignition 1 voltage circuit and a good ground. <p>Does the test lamp illuminate?</p>			
8	<p>IMPORTANT: The cruise control on/off switch must be turned ON in order to correctly view the set/coast switch and the resume/accel switch resistance values with the DMM.</p> <ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. With a DMM, measure the resistance of the cruise control switch between the ignition 1 voltage circuit and the cruise control set/coast and resume/accelerate switch signal circuit. 3. Individually activate and hold the cruise control function switches while measuring the resistance of the cruise control function switches. <p>Do the cruise control function switch resistance values measure between the specified values?</p>	<p>Off = O.L. On = 7.8-8.6 K ohm Resume = 2.7-3.0 K ohm Set = 1.2-1.3 K ohm</p>	<p>Go to Step 15</p>	<p>Go to Step 11</p>

Step	Action	Values	Yes	No
9	Test the cruise control on switch signal circuit for a short to voltage. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	-	Go to Step 21	Go to Step 10
10	Test the cruise control set/coast and resume/accelerate switch signal circuit for a short to voltage between C4 and the cruise control switch. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	-	Go to Step 21	Go to Step 16
11	Test the ignition 1 voltage circuit for an open or for a high resistance between C4 and the cruise control switch. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	-	Go to Step 21	Go to Step 12
12	Test the cruise control set/coast and resume/accelerate switch signal circuit between C4 and the cruise control switch for the following: <ul style="list-style-type: none"> • Open • Short to voltage • Short to ground • High resistance Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	-	Go to Step 21	Go to Step 13
13	Test the cruise control on switch signal circuit for the following:		Go to Step 21	Go to Step 16

Step	Action	Values	Yes	No
	<ul style="list-style-type: none"> • Open • Short to voltage • Short to ground • High resistance <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>			
14	<p>Test the cruise control set/coast and resume/accelerate switch signal circuit for a short to voltage between C4 and the powertrain control module (PCM). Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>	-	Go to Step 21	Go to Step 17
15	<p>Test the cruise control set/coast and resume/accelerate switch signal circuit for the following:</p> <ul style="list-style-type: none"> • Open • Short to ground • Short to voltage • High resistance <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>	-	Go to Step 21	Go to Step 17
16	<p>Inspect for poor connections at the harness connector of the cruise control switch. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.</p>	-	Go to Step 21	Go to Step 19

Step	Action	Values	Yes	No
17	<p>Did you find and correct the condition?</p> <p>Inspect for poor connections at the harness connector of the PCM. Refer to Testing for Intermittent Conditions and Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	-	Go to Step 21	Go to Step 20
18	<p>Repair the following in the ignition 1 voltage circuit:</p> <ul style="list-style-type: none"> • Open • Short to ground • High resistance <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems.</p> <p>Did you complete the repair?</p>	-	Go to Step 21	-
19	<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 21	-
20	<p>Replace the PCM. Refer to Control Module References in Computer/Integrating Systems for replacement, setup, and programming.</p> <p>Did you complete the replacement?</p>	-	Go to Step 21	-
21	<ol style="list-style-type: none"> 1. Install the inflatable steering wheel module. Refer to Inflatable Restraint Steering Wheel Module Replacement in SIR. 2. Enable the inflatable restraint steering wheel module. Refer 	-	System OK	Go to Step 2

Step	Action	Values	Yes	No
	to SIR Disabling and Enabling Zone 3 in SIR. 3. Operate the vehicle with in the conditions for cruise control operation. Does the cruise control system operate properly?			

CRUISE CONTROL INOPERATIVE/MALFUNCTIONING (2.2L)

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.

- Ensure that the following cruise control switches are not stuck in the engaged position:
 - On/off switch
 - - SET switch
 - + RES switch
- With a scan tool, observe the associated cruise control switch parameter in the Powertrain Cruise Control Data list, while rotating the steering wheel to both steering stops and separately activating each cruise control switch. This will help eliminate the possibility of an internally shorted inflatable restraint steering wheel module coil.
- For an intermittent condition, refer to [Testing for Intermittent Conditions and Poor Connections](#) in Wiring Systems.

Cruise Control Inoperative/Malfunctioning (2.2L)

Step	Action	Values	Yes	No
Schematic Reference: Cruise Control Schematics Connector End View Reference: Cruise Control Connector End Views or Engine Control Module (ECM) Connector End Views in Engine Controls - 2.2L				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. Turn the cruise control On/Off switch OFF.	-	Go to Step 3	Go to Step 6

Step	Action	Values	Yes	No
	<p>4. With the scan tool, observe the following cruise control parameters in the Cruise Control Data list:</p> <ul style="list-style-type: none"> • Cruise On/Off Switch • Cruise Resume/Accel Switch • Cruise Set/Coast Switch <p>Do all of the parameters listed above display Off?</p>			
3	<p>1. With the scan tool, observe the Cruise On/Off Switch parameter.</p> <p>2. Turn the cruise control on/off switch ON.</p> <p>Does the Cruise On/Off Switch parameter display On?</p>	-	Go to Step 4	Go to Step 7
4	<p>1. With the scan tool, observe the Cruise Set/Coast Switch parameter.</p> <p>2. Press and hold the - SET switch.</p> <p>Does the Cruise Set/Coast Switch parameter display On?</p>	-	Go to Step 5	Go to Step 8
5	<p>1. With the scan tool, observe the Cruise Resume/Accel Switch parameter.</p> <p>2. Press and hold the + RES switch.</p> <p>Does the Cruise Resume/Accel Switch parameter display On?</p>	-	Go to Diagnostic Aids	Go to Step 8

Step	Action	Values	Yes	No
6	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Remove the inflatable steering wheel module. Refer to Inflatable Restraint Steering Wheel Module Replacement in SIR. 3. Disconnect C4 of the cruise control switch. 4. Turn ON the ignition, with the engine OFF. 5. Observe the Cruise On/Off Switch parameter in the Cruise Control Data list. <p>Does the Cruise On/Off Switch parameter display Off?</p>	-	Go to Step 9	Go to Step 14
7	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Remove the inflatable steering wheel module. Refer to Inflatable Restraint Steering Wheel Module Replacement in SIR. 3. Disconnect C4 of the cruise control switch. 4. Turn ON the ignition, with the engine OFF. 5. Connect a test lamp between the ignition 1 voltage circuit and a good ground. <p>Does the test lamp illuminate?</p>	-	Go to Step 8	Go to Step 18
8	<p>IMPORTANT: The cruise control on/off switch must be turned ON in order to correctly view the set/coast switch and the resume/accel switch</p>	Off = O.L. On = 7.8-8.6 K ohm Resume =	Go to Step 15	Go to Step 11

Step	Action	Values	Yes	No
	<p>resistance values with the DMM.</p> <ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. With a DMM, measure the resistance of the cruise control switch between the ignition 1 voltage circuit and the cruise control set/coast and resume/accelerate switch signal circuit. 3. Individually activate and hold the cruise control function switches while measuring the resistance of the cruise control function switches. <p>Do the cruise control function switch resistance values measure between the specified values?</p>	<p>2.7-3.0 K ohm Set = 1.2-1.3 K ohm</p>		
9	<p>Test the cruise control on switch signal circuit for a short to voltage. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>	-	Go to Step 21	Go to Step 10
10	<p>Test the cruise control set/coast and resume/accelerate switch signal circuit for a short to voltage between C4 and the cruise control switch. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>	-	Go to Step 21	Go to Step 16
11	<p>Test the ignition 1 voltage circuit for an open or for a high resistance between C4 and the cruise control</p>	-	Go to Step 21	Go to Step 12

Step	Action	Values	Yes	No
12	<p>switch. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p> <p>Test the cruise control set/coast and resume/accelerate switch signal circuit between C4 and the cruise control switch for the following:</p> <ul style="list-style-type: none"> • Open • Short to voltage • Short to ground • High resistance <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>	-	Go to Step 21	Go to Step 13
13	<p>Test the cruise control on switch signal circuit for the following:</p> <ul style="list-style-type: none"> • Open • Short to voltage • Short to ground • High resistance <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?</p>		Go to Step 21	Go to Step 16
14	<p>Test the cruise control set/coast and resume/accelerate switch signal circuit for a short to voltage between C4 and the engine control module (ECM). Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the</p>	-	Go to Step 21	Go to Step 17

Step	Action	Values	Yes	No
15	<p>condition?</p> <p>Test the cruise control set/coast and resume/accelerate switch signal circuit for the following:</p> <ul style="list-style-type: none"> • Open • Short to ground • Short to voltage • High resistance <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	-	Go to Step 21	Go to Step 17
16	<p>Inspect for poor connections at the harness connector of the cruise control switch. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	-	Go to Step 21	Go to Step 19
17	<p>Inspect for poor connections at the harness connector of the ECM. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	-	Go to Step 21	Go to Step 20
18	<p>Repair the following in the ignition 1 voltage circuit:</p> <ul style="list-style-type: none"> • Open • Short to ground • High resistance <p>Refer to Circuit Testing and Wiring Repairs in Wiring Systems.</p>	-	Go to Step 21	-

Step	Action	Values	Yes	No
19	<p>Did you complete the repair?</p> <p>Replace the cruise control switch. Refer to Steering Wheel Control Switch Assembly Replacement in Steering Wheel and Column. Did you complete the replacement?</p>	-	Go to Step 21	-
20	<p>Replace the ECM. Refer to Control Module References in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?</p>	-	Go to Step 21	-
21	<ol style="list-style-type: none"> 1. Install the inflatable steering wheel module. Refer to Inflatable Restraint Steering Wheel Module Replacement in SIR. 2. Enable the inflatable restraint steering wheel module. Refer to SIR Disabling and Enabling Zone 3 in SIR. 3. 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

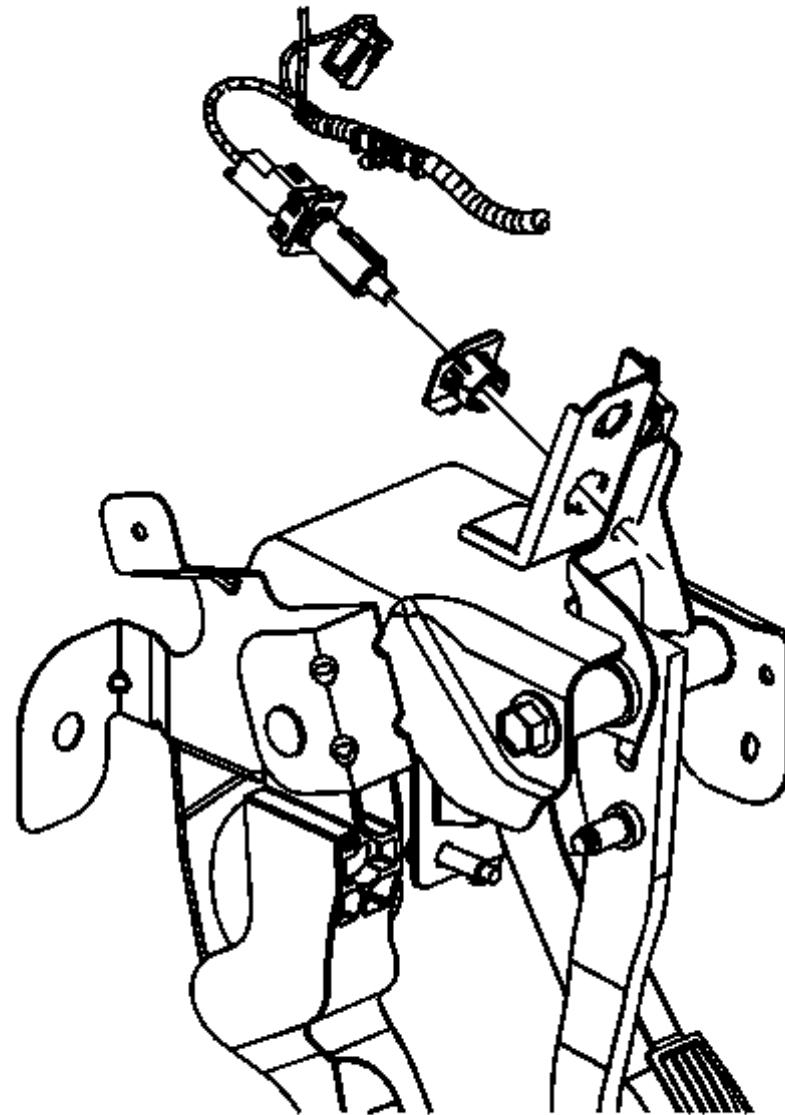


Fig. 14: View Of Cruise Control Release Switch
Courtesy of GENERAL MOTORS CORP.

1. Ensure that the cruise control release switch is fully seated in the bracket.
2. Slowly pull the brake pedal rearward until the audible clicking is no longer heard.

The switch will be moved in the retainer providing adjustment.

3. Release the brake pedal.

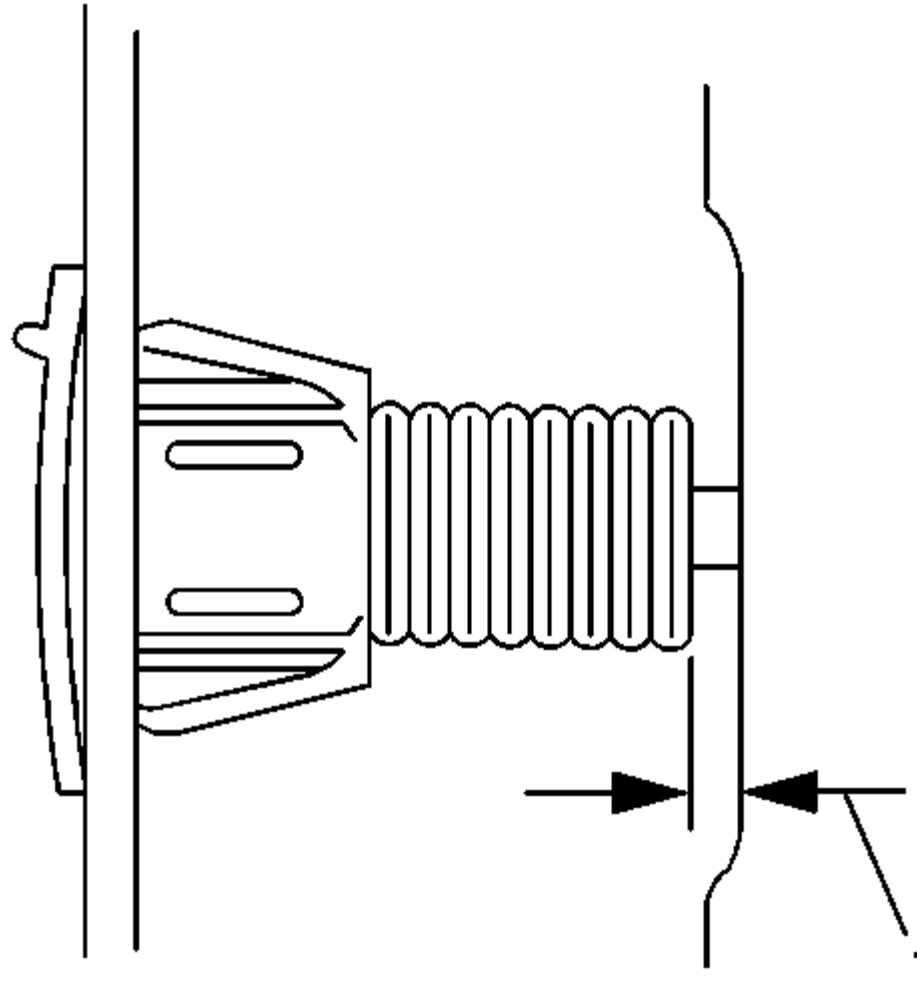


Fig. 15: Locating Release Switch Contact
Courtesy of GENERAL MOTORS CORP.

4. Ensure that the following contacts open at 25.4 mm (1 in) or less of pedal travel:
 - A. The release switch (1)
 - B. The stop lamp and torque converter clutch (TCC) switch.
5. Ensure the switches open simultaneously or before the onset of braking.
6. The brake pedal may travel up to 25.4 mm (1 in) before the cruise control system disengages.

CRUISE RELEASE SWITCH REPLACEMENT

Removal Procedure

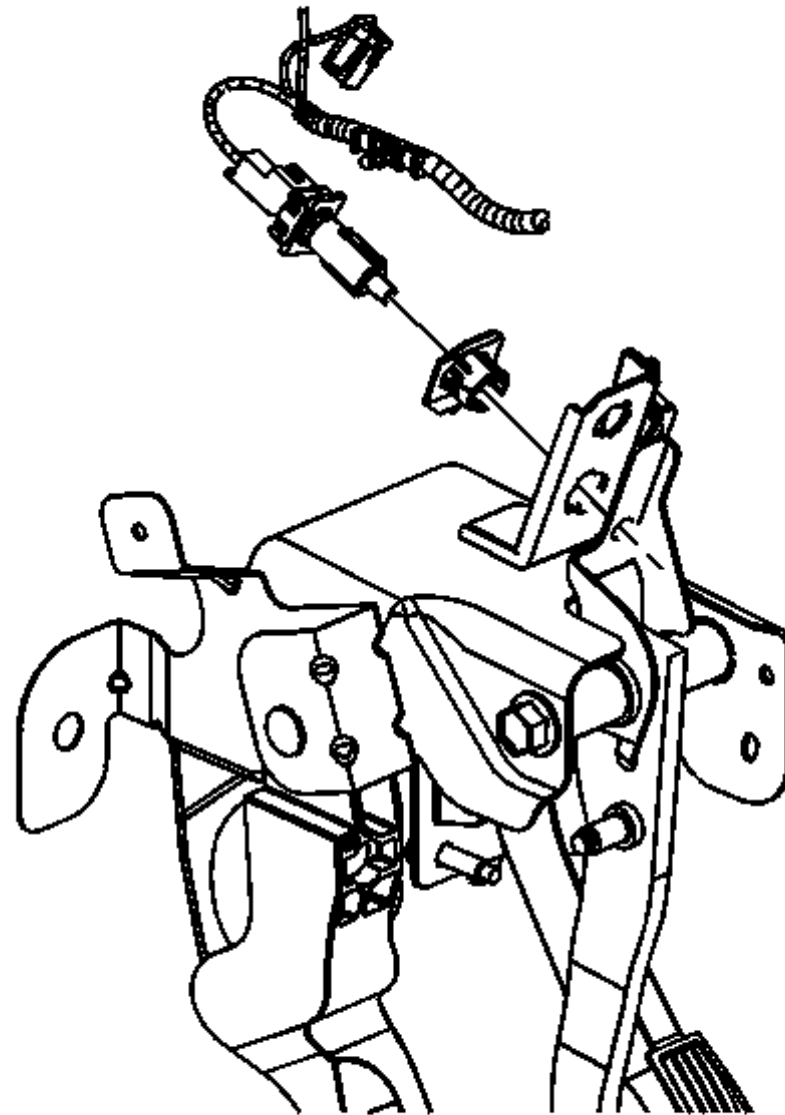


Fig. 16: View Of Cruise Control Release Switch
Courtesy of GENERAL MOTORS CORP.

1. Disconnect the electrical connector from the cruise control release switch.
2. Remove the cruise control release switch from the bracket.

Installation Procedure

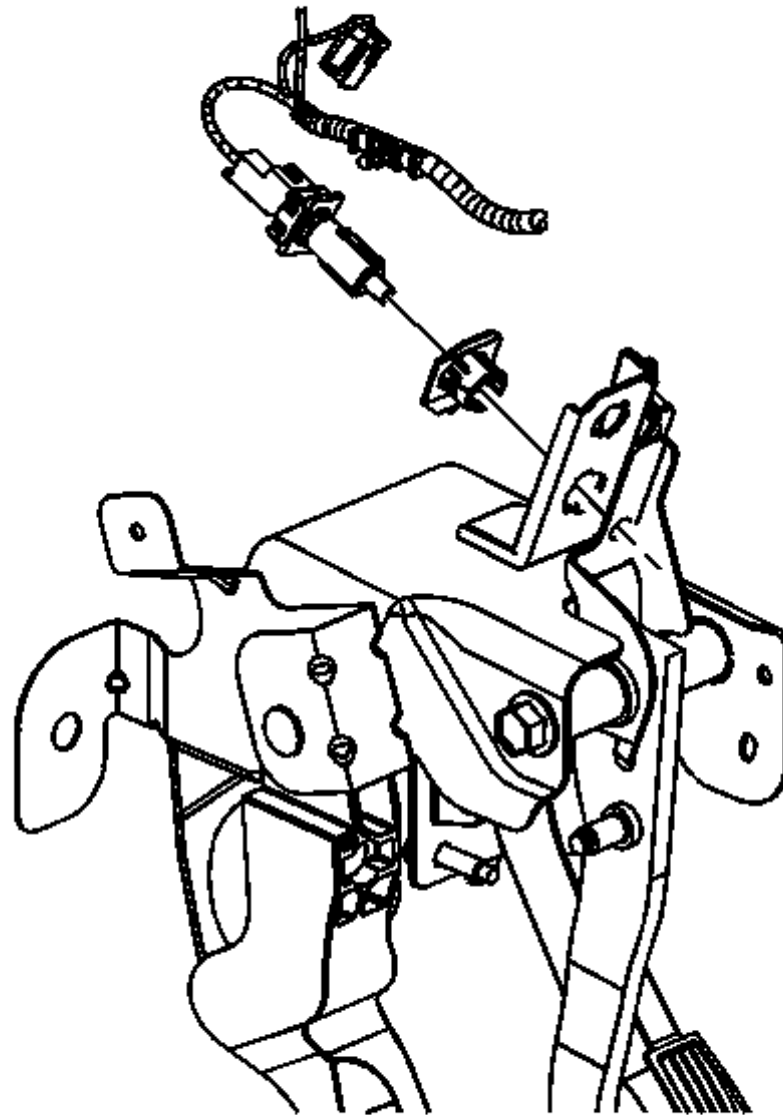


Fig. 17: View Of Cruise Control Release Switch
Courtesy of GENERAL MOTORS CORP.

1. Depress the brake pedal and insert the cruise control release switch into the bracket until the retainer is fully seated.
2. Connect the electrical connector to the cruise control release switch.
3. Adjust the cruise control release switch as needed. Refer to [Cruise Release Switch Adjustment](#).

DESCRIPTION AND OPERATION

CRUISE CONTROL DESCRIPTION AND OPERATION (2.0L)

Cruise control is a speed control system that maintains a desired vehicle speed under normal driving conditions at 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 cruise control switches
- The powertrain control module (PCM)
- The stop lamp switch
- The cruise release switch
- The throttle actuator control (TAC) motor
- The vehicle speed sensor (VSS)

Cruise Control Engaged

The Cruise Control System will engage and adjust vehicle speeds, based on the activation of the following cruise control switches:

- The on/off switch
- The + RES switch
- The - SET switch

The powertrain control module (PCM) monitors the cruise control set/coast and resume/accel switch signal circuit in order to determine when to capture and maintain the vehicle speed. The PCM monitors the vehicle speed sensor signal circuit in order to determine the vehicle speed. The PCM uses the throttle actuator control (TAC) motor in order to control the vehicle speed. For further information on the TAC System, refer to [Throttle Actuator Control \(TAC\) System Description](#) in Engine Controls - 2.0L (LSJ).

Ignition voltage is supplied to the cruise control switch from the 2-ampere EPS fuse via the ignition 1 voltage circuit. The cruise control switches are arranged in a resistive ladder, with each cruise control function switch having a different resistance value. The PCM detects a specific voltage value that is associated with the cruise control function switch being activated. When the normally open cruise control On/Off switch is turned ON, the switch closes and the PCM detects a predetermined voltage signal on the cruise control switch signal circuit indicating that the On/Off switch is active. Similarly, when the set/coast switch or the resume/accel switch are activated, the PCM detects the predetermined voltage signal on the cruise control set/coast and resume/accel switch signal circuit. To engage the Cruise Control System, turn the Cruise Control System ON by pressing the cruise On/Off switch On and momentarily press the set/coast switch. The PCM will confirm that the cruise control criteria has been met and will record the vehicle speed. The set/coast switch and the resume/accel switch will remain inactive when the PCM has not received the predetermined voltage signal from the on/off switch. Pressing the accelerator pedal, 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 current set vehicle speed 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 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). Activating 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 released, the 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 activating 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 activated, with the maximum acceleration total of 16 km/h (10 mph) over the current set vehicle speed. Momentarily activating the resume/accel switch, after the Cruise Control System has been disengaged by pressing the brake pedal, will recall the previous set vehicle speed that is recorded in the PCM.

Cruise Control Disengaged

The powertrain control module (PCM) disengages the cruise control operation based on the signals from the following switches:

- The stop lamp switch

- The cruise release switch
- The cruise control on/off switch

The cruise release switch and the stop lamp switch are mounted on the brake pedal bracket. When the brake pedal is applied, the normally closed cruise release switch opens and the normally open stop lamp switch closes. The PCM detects a low signal voltage on the cruise release switch signal circuit and a high signal voltage on the stop lamp switch signal circuit. The vehicle speed stored in the memory of the PCM will be erased when the cruise control On/Off button is pressed, or the ignition switch is turned OFF.

The Cruise Control System will also disengage when the PCM detects that one of the following conditions exist:

- A driver override function has been active for greater than 60 seconds.
- The clutch pedal is pressed, with the cruise control enabled, and the engine RPM rapidly increases.

Cruise Control Inhibited

The powertrain control module (PCM) inhibits the cruise control operation when any of the following conditions exist:

- A cruise control related DTC has been set.
- The vehicle speed is less than 40.2 km/h (25 mph).
- The vehicle is in PARK, REVERSE, NEUTRAL, or 1st gear.
- The engine RPM is too low.
- The engine RPM is too high, with fuel cut OFF.
- The vehicle speed is too high, with fuel cut OFF.
- The system voltage is not between 9-16 volts.
- The Antilock Brake System (ABS)/Traction Control System (TCS) is active for more than 2 seconds.

CRUISE CONTROL DESCRIPTION AND OPERATION (2.2L)

Cruise control is a speed control system that maintains a desired vehicle speed under normal driving conditions at 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 cruise control switch
- The clutch pedal position (CPP) switch (if equipped)
- The engine control module (ECM)
- The stop lamp switch
- The cruise release switch
- The throttle actuator control (TAC) motor
- The vehicle speed sensor (VSS)

Cruise Control Engaged

The Cruise Control System will engage and adjust vehicle speeds, based on the activation of the following cruise control switches:

- The On/Off switch
- The + RES switch
- The - SET switch

The engine control module (ECM) monitors the cruise control set/coast and resume/accel switch signal circuit in order to determine when to capture and maintain the vehicle speed. The ECM monitors the vehicle speed sensor signal circuit in order to determine the vehicle speed. The ECM uses the throttle actuator control (TAC) motor in order to control the vehicle speed. For further information on the TAC System, refer to [Throttle Actuator Control \(TAC\) System Description](#) in Engine Controls - 2.2L (L61).

Ignition voltage is supplied to the cruise control switch from the 2-ampere electric power steering (EPS) fuse via the ignition 1 voltage circuit. The cruise control switches are arranged in a resistive ladder, with each cruise control function switch having a different resistance value. The ECM detects a specific voltage value that is associated with the cruise control function switch being activated. When the normally open cruise control On/Off switch is turned ON, the switch closes and the ECM detects a predetermined voltage signal on the cruise control switch signal circuit indicating that the On/Off switch is active. Similarly, when the set/coast switch or the resume/accel switch are activated, the ECM detects the pre-determined voltage signal on the cruise control set/coast and resume/accel switch signal circuit. To engage the Cruise Control System, turn the Cruise Control System ON by pressing the cruise On/Off switch ON and momentarily press the set/coast switch. The ECM will confirm that the cruise control criteria has been met and will record the vehicle speed. The set/coast switch and the resume/accel switch will remain inactive when the ECM has not received the predetermined voltage signal from the On/Off switch. Pressing the accelerator pedal, 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 current set vehicle speed 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 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). Activating 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 released, the ECM will record the vehicle speed and maintain the vehicle speed as the new set vehicle speed. When the Cruise Control System is engaged, momentarily activating 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 activated, with the maximum acceleration total of 16 km/h (10 mph) over the current set vehicle speed. Momentarily activating the resume/accel switch, after the Cruise Control System has been disengaged by pressing the brake pedal, will recall the previous set vehicle speed that is recorded in the ECM.

Cruise Control Disengaged

The engine control module (ECM) disengages the cruise control operation based on the signals from the following switches:

- The stop lamp switch
- The clutch pedal position (CPP) switch
- The cruise release switch
- The cruise control On/Off switch

The cruise release switch and the stop lamp switch are mounted on the brake pedal bracket. When the brake pedal is applied, the normally closed cruise release switch opens and the normally open stop lamp switch closes. The ECM detects a low signal voltage on the cruise release switch signal circuit and a high signal voltage on the stop lamp switch signal circuit. When the clutch pedal is pressed, the normally open CPP switch closes and the ECM detects a high voltage signal on the CPP switch signal circuit. The vehicle speed stored in the memory of the ECM will be erased when the cruise control On/Off button is pressed, or the ignition switch is turned OFF.

The Cruise Control System will disengage when the ECM detects that a driver override function has been active for greater than 60 seconds.

Cruise Control Inhibited

The engine control module (ECM) inhibits the cruise control operation when any of the following conditions exist:

- A cruise control related DTC has been set.
- The vehicle speed is less than 40.2 km/h (25 mph).
- The vehicle is in PARK, REVERSE, NEUTRAL, or 1st gear.
- The engine RPM is too low.
- The engine RPM is too high, with fuel cut OFF.

- The vehicle speed is too high, with fuel cut OFF.
 - The system voltage is not between 9-16 volts.
 - The Antilock Brake System (ABS)/Traction Control System (TCS) is active for more than 2 seconds.
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