

2007 Cadillac Escalade

2007 ACCESSORIES & EQUIPMENT Secondary and Configurable Customer Controls - Avalanche, Escalade, Suburban, Tahoe & Yukon

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Secondary and Configurable Customer Controls - Avalanche, Escalade, Suburban, Tahoe & Yukon

SCHEMATIC AND ROUTING DIAGRAMS

STEERING WHEEL SECONDARY/CONFIGURABLE CONTROL SCHEMATICS

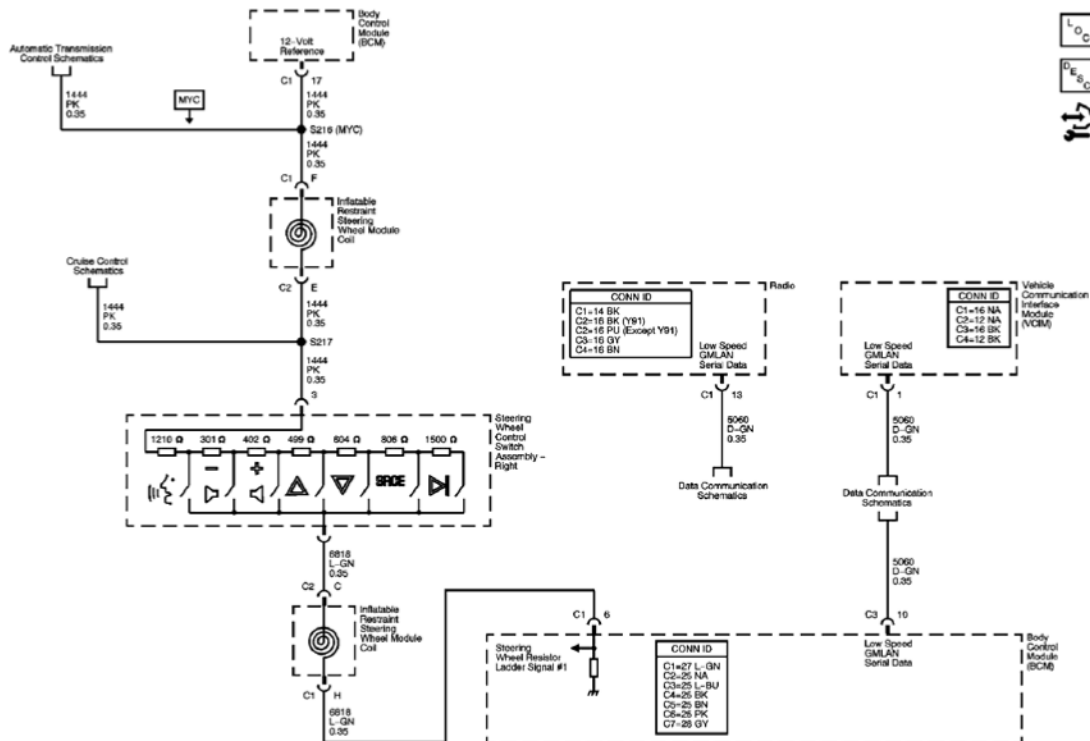


Fig. 1: Steering Wheel Controls

Courtesy of GENERAL MOTORS CORP.

COMPONENT LOCATOR

SECONDARY/CONFIGURABLE CONTROL COMPONENT VIEWS

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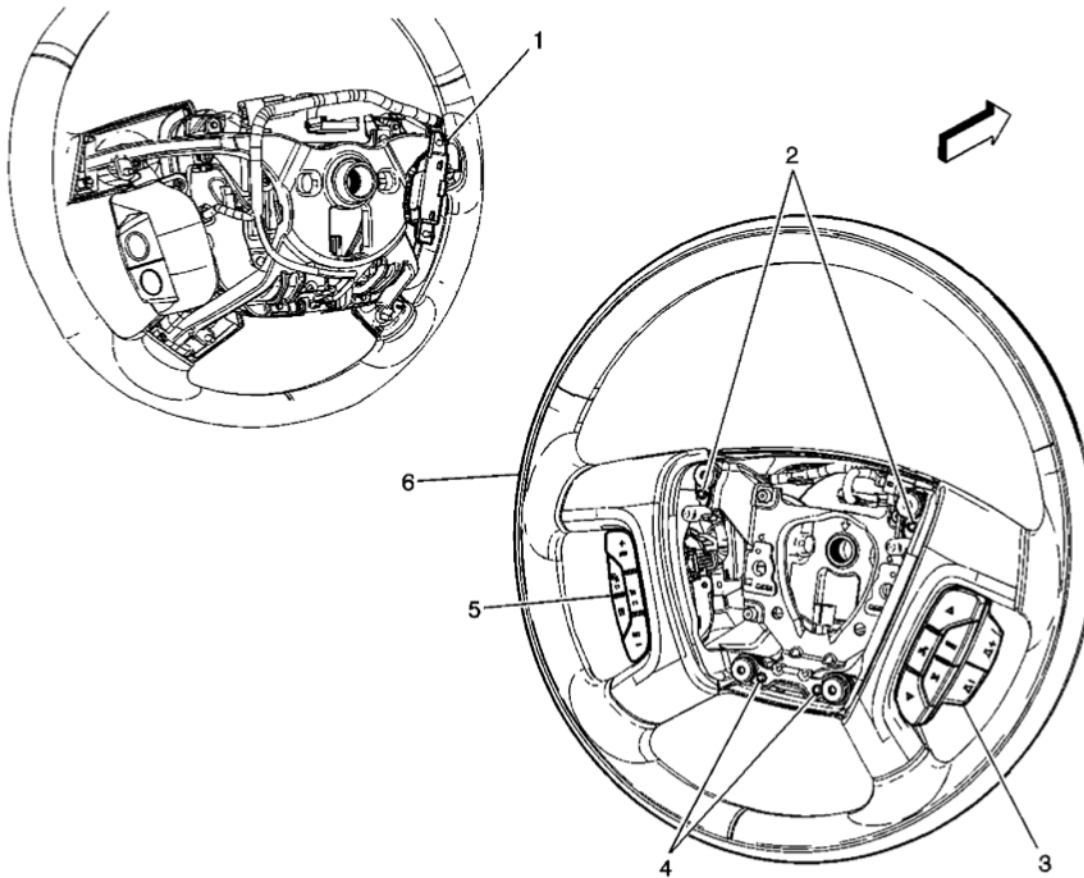


Fig. 2: Steering Wheel Components
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 2

Callout	Component Name
1	Horn Switch
2	Heated Steering Wheel Control Module (KA9)
3	Steering Wheel Control Switch Assembly - Right (UK3)
4	Steering Wheel Control Switch Assembly - Left (K34/KA9)
5	Horn Switch

VISUAL IDENTIFICATION

SECONDARY/CONFIGURABLE CONNECTOR END VIEWS

Steering Wheel Control Switch Assembly - Left (K34/KA9)

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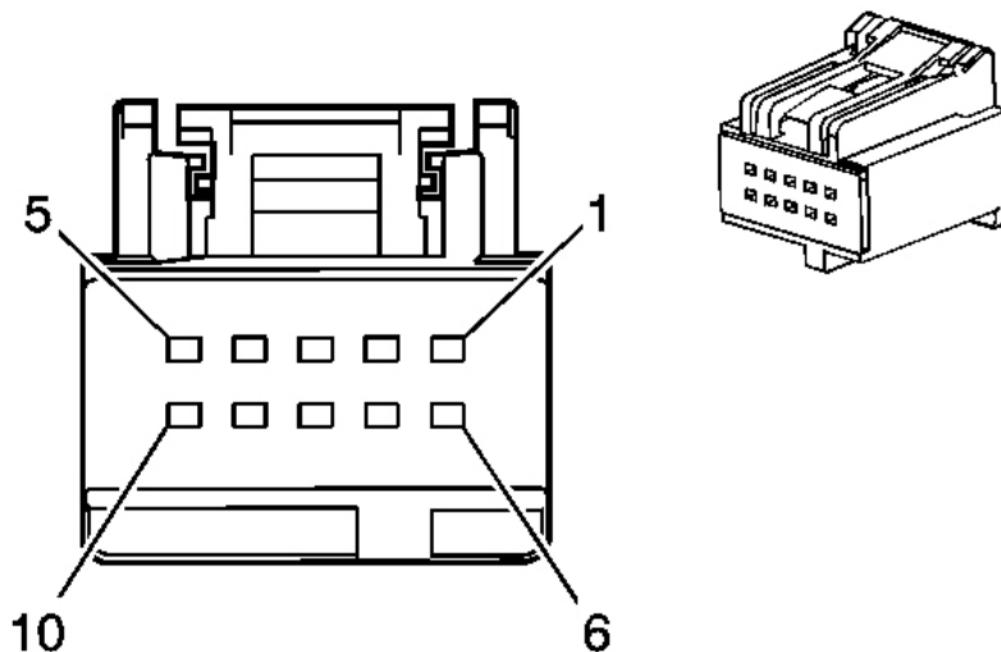


Fig. 3: Steering Wheel Control Switch Assembly - Left (K34/KA9) Connector End View
Courtesy of GENERAL MOTORS CORP.

Steering Wheel Control Switch Assembly - Left (K34/KA9) Connector Parts Information

Connector Part Information

- OEM: 15405522
- Service: See Catalog
- Description: 10-Way F Receptacle 0.64 Series (GY)
- Terminal/Tray: 1393364-2/7
- Core/Insulation Crimp: K/K
- Release Tool/Test Probe: 15315247/J-35616-64B (L-BU)

Steering Wheel Control Switch Assembly - Left (K34/KA9) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
1	PK/BK	1444	12-Volt Reference
2	-	-	Not Used
3	GY	1884	Cruise Control Switch Signal

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4-5	-	-	Not Used
6	BN	6136	Supply Voltage
7	-	-	Not Used
8	BK	1050	Ground
9	D-GN/WH	7158	Cruise Control Indicator Dimming Control
10	-	-	Not Used

Steering Wheel Control Switch Assembly - Right (UK3)

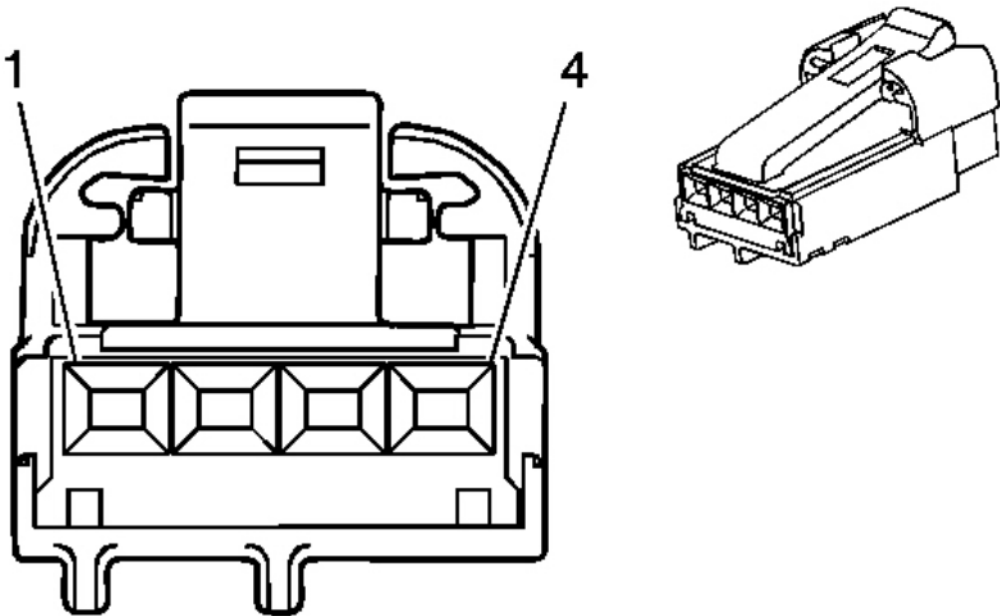


Fig. 4: Steering Wheel Control Switch Assembly - Right (UK3) Connector End View
Courtesy of GENERAL MOTORS CORP.

Steering Wheel Control Switch Assembly - Right (UK3) Connector Parts Information

Connector Part Information
• OEM: 15422579 • Service: See Catalog • Description: 6-Way F HDAC64 SR Series (BK)

Steering Wheel Control Switch Assembly - Right (UK3) Connector Terminal Identification

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Pin	Wire Color	Circuit No.	Function
1	BK	1050	Ground
2	BN	6136	Supply Voltage
3	PK/BK	1444	12-Volt Reference or I/P Dimming Control
4	L-GN	6818	Steering Wheel Resistor Ladder Signal #1

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC STARTING POINT - SECONDARY AND CONFIGURABLE CUSTOMER CONTROLS

Begin the system diagnosis with the **Diagnostic System Check - Vehicle** . The Diagnostic System Check - Vehicle 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 DTCs and their status

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

SCAN TOOL DATA LIST

Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Ignition ON			
SWC Bank 1 Status	Data Display	SW1-SW7	Pressed: SW1-SW7, Released: Idle

SCAN TOOL DATA DEFINITIONS

SWC Bank 1 Status

Indicates the switch pressed SW1-SW7, and Idle when released.

DTC B3622

DTC Descriptor

DTC B3622 07

Steering Wheel Controls Signal Circuit

Diagnostic Fault Information

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IMPORTANT: Always perform the Diagnostic System Check - Vehicle prior to using this diagnostic procedure.

Circuit/System Description

The body control module (BCM) monitors the signal circuit voltage. If the voltage level is too high, damage may result in the system. When a high voltage condition is detected, the BCM will ignore the switch command.

Conditions for Running the DTC

Ignition ON.

Conditions for Setting the DTC

BCM detects voltage above 18.5 volts for 100 msec.

Action Taken When the DTC Sets

BCM will ignore the switch command.

Conditions for Clearing the DTC

- The condition for setting the DTC is no longer present and the DTC is cleared with a scan tool.
- The BCM automatically clears the history DTC when a current DTC is not detected in 100 consecutive ignition cycles.

Diagnostic Aids

Test the charging system. Refer to Charging System Test.

SYMPTOMS - SECONDARY AND CONFIGURABLE CUSTOMER CONTROLS

- IMPORTANT:**
1. Perform the Diagnostic System Check - Vehicle, before using the Symptom Tables in order to verify that all of the following conditions are true:
 - There are no DTCs set.
 - The control modules can communicate via the serial data link.
 2. Review the system operation in order to familiarize yourself with the system functions. Refer to Steering Wheel Controls Description and Operation.

Visual/Physical Inspection

- Inspect for aftermarket devices which may affect the operation of the Steering Wheel Controls System. Refer to Checking Aftermarket Accessories.

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- Inspect for easily accessible or visible system components for obvious damage or conditions which may 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**.

Symptom List

Refer to **Steering Wheel Controls Inoperative** in order to diagnose the symptom.

STEERING WHEEL CONTROLS INOPERATIVE

Diagnostic Fault Information

Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.

Circuit/System Description

The body control module (BCM) supplies voltage to the audio steering wheel control multiple momentary contact switches and monitors the return signal. Each switch is associated to a set resistance value, when pressed a specific voltage drop occurs through a series of resistors unique to that switch. The BCM identifies the selection, then sends a serial data message that is received by the component controlled, activating the feature.

Diagnostic Aids

- This diagnostic is for the audio steering wheel controls.
- Before diagnosis of the steering wheel controls, ensure the primary controls of the associated component are functioning properly.
- Review schematic when testing switch resistance values.
- If a single switch function is inoperative, test the suspect switch. Refer to **Component Testing**.

Reference Information

Schematic Reference

Steering Wheel Secondary/Configurable Control Schematics

Connector End View Reference

- **Data Communication Connector End Views**
- **Secondary/Configurable Connector End Views**

Description and Operation

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Steering Wheel Controls Description and Operation

Electrical Information Reference

- Circuit Testing
- Connector Repairs
- Testing for Intermittent Conditions and Poor Connections
- Wiring Repairs

Scan Tool Reference

- Scan Tool Data List
- Scan Tool Data Definitions

Circuit/System Verification

Ignition ON, observe the scan tool SWC Bank 1 status while pressing and releasing the switches. The reading should be SW1-SW7 identifying the switch pressed, and Idle when released.

Circuit/System Testing

IMPORTANT: It is recommended that component testing is performed before circuit testing when diagnosing steering wheel controls.

CAUTION: Refer to SIR Caution .

1. Ignition OFF, disconnect the harness connector at the right steering wheel control switch.
2. Ignition ON, test for 11.5-12.5 volts between the 12-volt reference circuit terminal 3 and ground.
 - If less than specified value, test the 12-volt reference circuit for a short to ground or open/high resistance. If the circuit tests normal, replace the BCM.
 - If greater than the specified value, test the 12-volt reference circuit for a short to voltage. If the circuit tests normal, replace the BCM.
3. Test for the 0 volts between the signal circuit terminal 4 and ground.
 - If greater than specified value, test the signal circuit for a short to voltage. If the circuit tests normal, replace the BCM.
4. Test for 11.5-12.5 volts between the 12-volt reference circuit terminal 3 and the signal circuit terminal 4.
 - If less than specified value, test the signal circuit for an open/high resistance. If the circuit tests normal, replace the BCM.
5. Ignition OFF, disconnect the harness connector C1 at the BCM.
6. Test for infinite resistance between the signal circuit terminal 6 and ground.
 - If less than specified value, test the signal circuit for a short to ground.

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7. If all circuits test normal, test or replace switch.

Component Testing

CAUTION: Refer to SIR Caution .

1. Ignition OFF, disconnect the harness connector at the suspect steering wheel control switch.
2. Test for infinite resistance between the 12-volt reference terminal 3 and the signal terminal 6 with the switch in the open position.
 - o If less than specified value, replace the switch.
3. Test resistance values between the 12-volt reference terminal and the signal terminal with the switch closed in each position and verify readings are approximate to what the schematic reads.
 - o If values do not match, replace the switch.

Repair Procedures

Perform the Diagnostic Repair Verification after completing the diagnostic procedure.

- Steering Wheel Control Switch Assembly Replacement
- Control Module References for BCM replacement, setup, and programming

REPAIR INSTRUCTIONS

STEERING WHEEL CONTROL SWITCH ASSEMBLY REPLACEMENT

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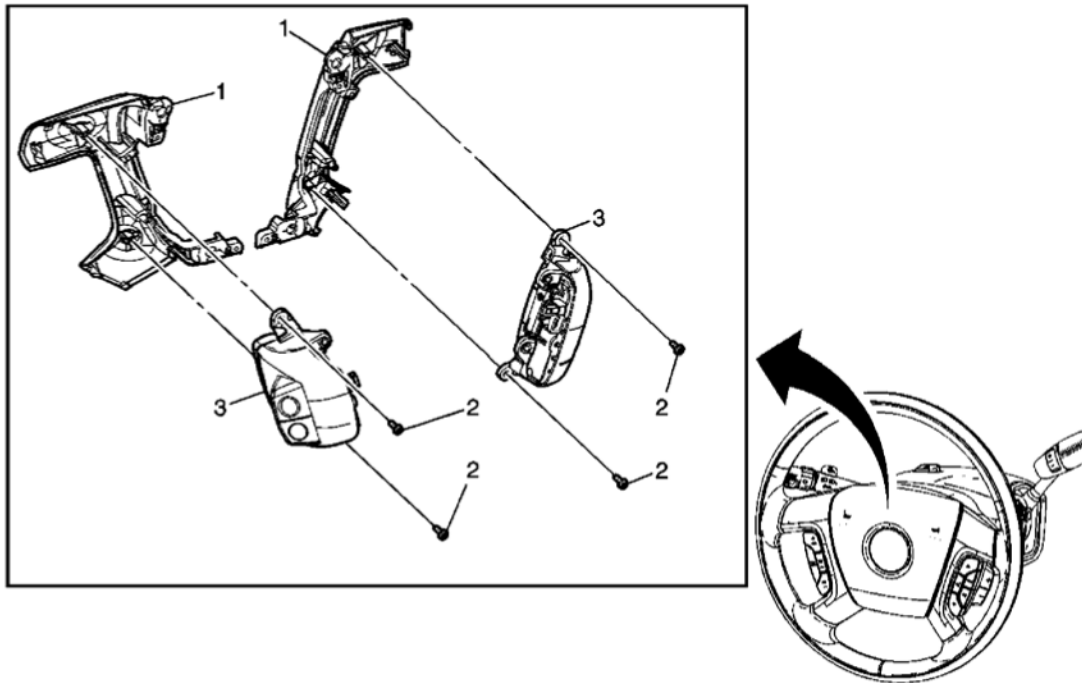


Fig. 5: View Of Steering Wheel Control Switch Assembly Components
Courtesy of GENERAL MOTORS CORP.

Steering Wheel Control Switch Assembly Replacement

Callout	Component Name
CAUTION: Refer to <u>SIR Caution</u> .	
Preliminary Procedure	
1. Disable the supplemental inflatable restraint (SIR) system. Refer to <u>SIR Disabling and Enabling</u> . 2. Remove the steering wheel. Refer to <u>Steering Wheel Replacement</u> . 3. Remove the horn switch. Refer to <u>Horn Switch Replacement</u> .	
1	Steering Wheel Trim Cover (Qty: 2) Tip: Remove the 4 horn contact screws.
2	Steering Wheel Control Switch Assembly Screw (Qty: 4) Tip: • Quantity may vary with vehicle options. • DO NOT over tighten the steering wheel control switch screws or damage to the switch(s) or steering wheel covers may occur.
	Steering Wheel Control Switch Assembly (Qty: 2) Tip:

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- Quantity may vary with vehicle options.
- Make sure the steering wheel control switch(s) are properly seated to the steering wheel shroud during installation.

DESCRIPTION AND OPERATION

STEERING WHEEL CONTROLS DESCRIPTION AND OPERATION

The steering wheel control switches duplicate the function of the primary controls of the associated component, through a network of multiple momentary contact switches and a series of resistors. The body control module (BCM) supplies voltage to the switches and monitors the return signal for when a switch is pressed, a specific voltage drop occurs. The BCM identifies the one selected, then sends a serial data message that is received by the component controlled, activating the feature.

This section is intended to diagnosis the circuits between the BCM and the steering wheel control switches. If the primary control for the device is inoperative, refer to the appropriate section for the component the steering wheel control switch is functioning.