

2008 Chevrolet Silverado 1500

2008 ACCESSORIES & EQUIPMENT Horns - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2008 ACCESSORIES & EQUIPMENT

Horns - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

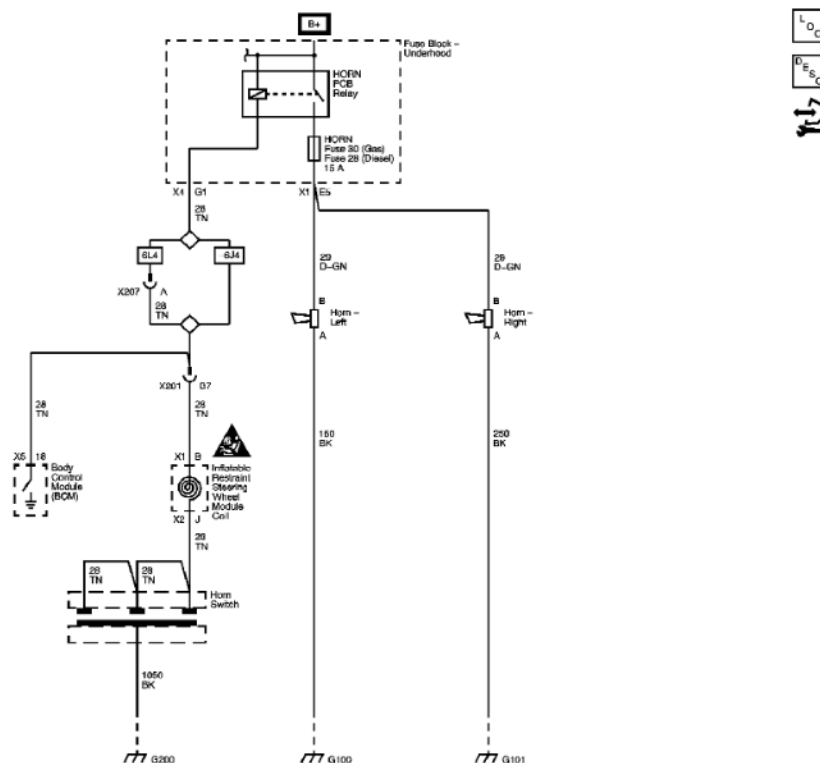
SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	Specification	
	Metric	English
Horn Bolt	9 N.m	80 lb in

SCHEMATIC AND ROUTING DIAGRAMS

HORN SCHEMATICS



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DIAGNOSTIC CODE INDEX

DIAGNOSTIC CODE INDEX

DTC	Description
DTC B2750	B2750 00: Horn Relay Coil Circuit

DIAGNOSTIC STARTING POINT - HORNS

Begin the system diagnosis with the **Diagnostic System Check - Vehicle** . 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.

DTC B2750

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC Descriptor

DTC B2750 00

Horn Relay Coil Circuit

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Horn Relay Control	B2750 00	B2750 00	B2750 00	-
Horn Control	2	2	1	-
Horn Switch Ground	-	2	2	-
Horn Ground	-	2	2	-

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1. Horn Always On
2. Horn Inoperative

Circuit/System Description

The body control module (BCM) controls the horn relay by grounding the control circuit of the horn relay coil energizing the relay. When the horn relay is energized, the horn relay contacts close applying voltage through the horn fuse and the horn control circuit to the horns.

Conditions for Running the DTC

When the output is actively being requested by the BCM.

Conditions for Setting the DTC

The BCM detects a short to ground, open or short to battery in the horn relay control circuit for approximately 125 milliseconds.

Action Taken When the DTC Sets

The BCM disables the output to the horn relay until the next ignition cycle.

Conditions for Clearing the DTC

- The DTC clears when the fault is no longer detected.
- The current DTC will become history when the request for the output is removed.
- The history DTC will clear after 50 consecutive fault-free ignition cycles have occurred.

Reference Information

Schematic Reference

Horn Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Horns System Description and Operation

Electrical Information Reference

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

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

Command the horn ON and OFF with the scan tool. The horn should turn ON and OFF when changing between the commanded states.

Circuit/System Testing

1. Ignition OFF, disconnect the X4 harness connector at the underhood fuse block.
2. Connect a test lamp between the control circuit terminal G1 and B+.
3. Command the horn ON and OFF with a scan tool. The test lamp should turn ON and OFF when changing between the commanded states.
 - o If the test lamp is always OFF, test the control circuit for a short to voltage or an open/high resistance. If the circuit tests normal, replace the BCM.
4. If all circuits test normal, replace the underhood fuse block.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Underhood Electrical Center or Junction Block Bracket Replacement**
- **Control Module References** for BCM replacement, setup and programming

SYMPTOMS - HORNS

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

1. Perform **Diagnostic System Check - Vehicle** , before using the symptom tables in order to verify that all of the following are true:

- There are no DTCs set
 - The control modules can communicate via the serial data link
2. Review the system operation in order to familiarize yourself with the system functions. Refer to Horns System Description and Operation.

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the horn system. Refer to Checking Aftermarket Accessories .
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.
- Perform the following if a horn buzzes or has a harsh tone.
 - Inspect for debris in the joint where the horn fastens to the vehicle.
 - Test the torque of the horn mounting hardware. The horn mounting hardware should be tightened to a torque of 10 N.m (7 lb ft).

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 a symptom diagnostic procedure Horns Malfunction in order to diagnose the symptom.

HORNS MALFUNCTION

Diagnostic Instructions

- Perform the Diagnostic System Check - Vehicle prior to using this diagnostic procedure.
- Review Strategy Based Diagnosis for an overview of the diagnostic approach.
- Diagnostic Procedure Instructions provides an overview of each diagnostic category.

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance

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Horn Relay Control	B2750 00	B2750 00	B2750 00	-
Horn Control	2	2	1	-
Horn Switch Ground	-	2	2	-
Horn Ground	-	2	2	-
1. Horn Always On				
2. Horn Inoperative				

Circuit/System Description

Battery positive voltage is applied at all times to the horn relay coil and horn relay switch. Pressing the horn switch applies ground to the horn relay control circuit. The body control module (BCM) also may apply ground to the horn relay control circuit. When the horn relay control circuit is grounded, the horn relay is energized and battery positive voltage is applied to the horn via the horn control circuit. The horn will sound as long as ground is applied to the horn relay control circuit.

Diagnostic Aids

If diagnosing a Horn - Poor Tone condition, inspect the following:

- Debris or water in the horn assembly.
- Proper horn mounting hardware torque. Refer to **Fastener Tightening Specifications**.
- Debris in the joint where the horns attach to the vehicle.

Reference Information

Schematic Reference

Horn Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Horns System Description and Operation

Electrical Information Reference

- **Circuit Testing**

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

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

1. Ignition OFF, connect a test lamp between the HORN fuse test point and ground.
 2. Press and release the horn switch. The test lamp should turn ON and OFF when changing between the commanded states.
 - If the test lamp does not illuminate or remains illuminated at all times, refer to Horn Switch Circuit Test below.
 3. Ignition ON, command the horn ON and OFF with a scan tool. The test lamp should turn ON and OFF when changing between the commanded states.
 - If the test lamp does not illuminate, test the control circuit terminal 18 at the BCM for a short to voltage or an open/high resistance. If the circuit tests normal, replace the BCM.
 4. Connect a 10A fused jumper wire between the HORN fused test point and B+. The horns should sound and emit a clear and even tone.
 - If the horn does not sound, refer to Horn Circuit Test below.
- If the sound emitted is not clear and even, refer to Horn - Poor Tone below.

Circuit/System Testing

Horn Switch Circuit Test

1. Ignition OFF, disconnect the harness connector at the horn switch.
2. Test for less than 1 ohm between the ground circuit terminal B and ground.
 - If greater than the specified range, test the ground circuit for an open/high resistance.
3. Connect the harness connector at the horn switch.
4. Disconnect the X4 harness connector at the underhood fuse block.
5. Connect a test lamp between B+ and the control circuit terminal G1.
6. Press and release the horn switch. The test lamp should turn ON and OFF when changing between the commanded states.

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- If the test lamp is always ON, test the control circuit for a short to ground or a sticking horn switch. If the circuit tests normal, replace the BCM.
- If the test lamp is always OFF, test the control circuit for a short to voltage, an open high resistance, or a horn switch which is not closing.
- 7. Ignition OFF, connect the harness connector at the underhood fuse block. Disconnect the harness connector at the appropriate horn.
- 8. Verify that a test lamp does not illuminate between the control circuit terminal B and ground.
 - If the test lamp illuminates, test the control circuit for a short to voltage. If the circuit tests normal, replace the underhood fuse block.
- 9. If all circuits test normal, replace the underhood fuse block.

Horn Circuit Test

1. Ignition OFF, disconnect the harness connector at the appropriate horn.
2. Test for less than 1 ohm between the ground circuit terminal A and ground.
 - If greater than the specified range, test the ground circuit for an open/high resistance.
3. Connect a test lamp between the control circuit terminal B and ground.
4. Press and release the horn switch. The test lamp should turn ON and OFF when changing between the commanded states.
 - If the test lamp is always ON, test the control circuit for a short to voltage. If the circuit tests normal, replace the underhood fuse block.
 - If the test lamp is always OFF and the circuit fuse is good, test the control circuit for an open/high resistance. If the circuit tests normal, replace the underhood fuse block.
 - If the test lamp is always OFF and the circuit fuse is open, test the control circuit for a short to ground. If the circuit tests normal, test or replace the horn.
5. If all circuit test normal, test or replace the horn.

Horn - Poor Tone

1. Ignition OFF, disconnect the harness connector at the appropriate horn.
2. Test for less than 1 ohm between the horn ground circuit terminal A and ground.
 - If greater than the specified range, test the ground circuit for a high resistance.
3. Disconnect the X1 harness connector at the underhood fuse block.
4. Test for less than 1 ohm between the control circuit terminal E5 at the underhood fuse block and the control circuit terminal B at the horn.

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- If greater than the specified range, test the control circuit for a high resistance.
- 5. If all circuits test normal, test or replace the horn.

Component Testing

Horn

1. Ignition OFF, disconnect the harness connector at the appropriate horn.
2. Install a 10A fused jumper wire between the control terminal B and 12 volts.
3. Install a jumper wire between the ground terminal A and ground. Verify the horn emits a clear and even tone.
 - If the sound emitted is not clear and even, replace the horn.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Underhood Electrical Center or Junction Block Bracket Replacement**
- **Horn Replacement - Left Side (GMC)** or **Horn Replacement - Left Side (Chevrolet)**
- **Horn Replacement - Right Side (GMC)** or **Horn Replacement - Right Side (Chevrolet)**
- **Steering Wheel Horn Switch Replacement**
- **Control Module References** for BCM replacement, setup, and programming

REPAIR INSTRUCTIONS

HORN REPLACEMENT - LEFT SIDE (GMC)

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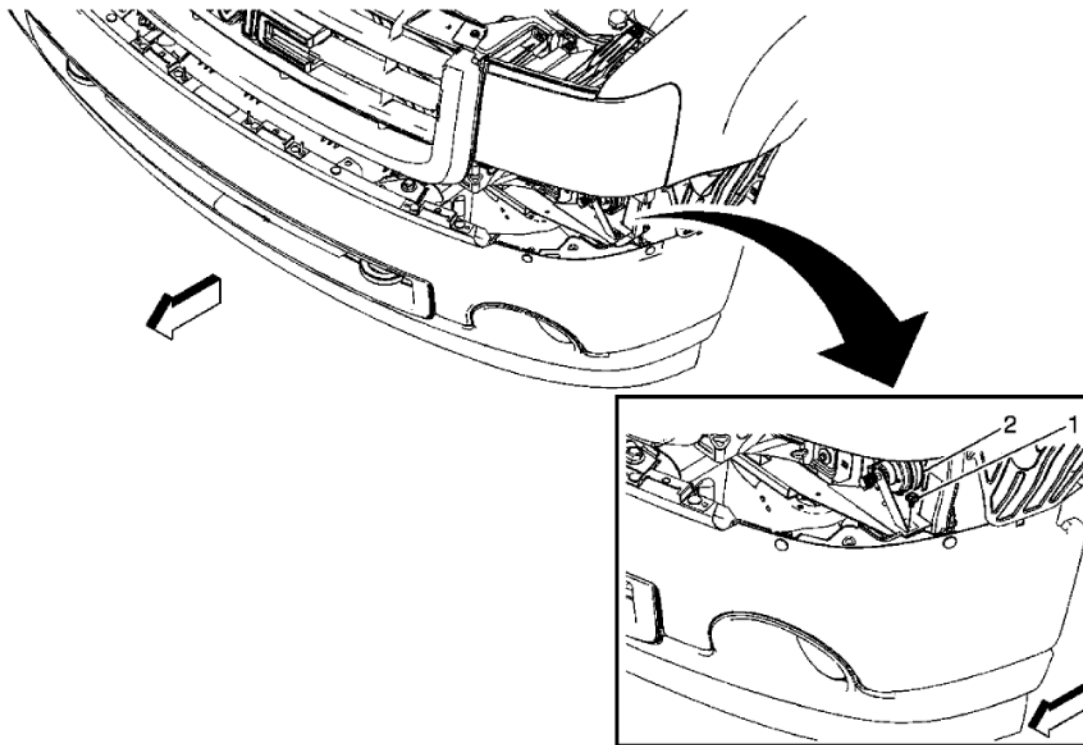


Fig. 2: Horn - Left Side (GMC)
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedure: Remove the front bumper fascia trim cap. Refer to <u>Front Bumper Fascia Trim Cap Replacement (GMC)</u> .	
1	Left Side Horn Bolt NOTE: Refer to <u>Fastener Notice</u> . Tighten: 9 N.m (80 lb in)
2	Left Side Horn Tip: Disconnect the electrical connector.

HORN REPLACEMENT - LEFT SIDE (CHEVROLET)

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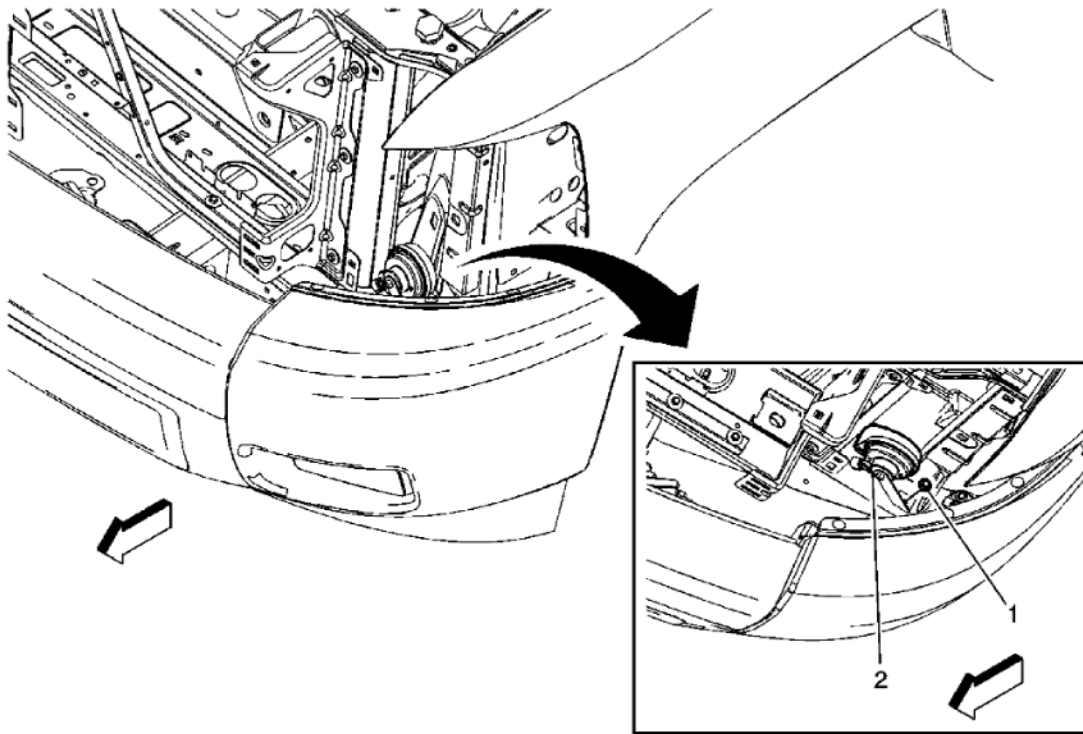


Fig. 3: Horn - Left Side (Chevrolet)

Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedure: Remove the headlamp. Refer to <u>Headlamp Replacement (GMC HD)</u> or <u>Headlamp Replacement (Chevrolet)</u> .	
1	Left Side Horn Bolt NOTE: Refer to <u>Fastener Notice</u> . Tighten: 9 N.m (80 lb in)
2	Left Side Horn Tip: Disconnect the electrical connector.

HORN REPLACEMENT - RIGHT SIDE (GMC)

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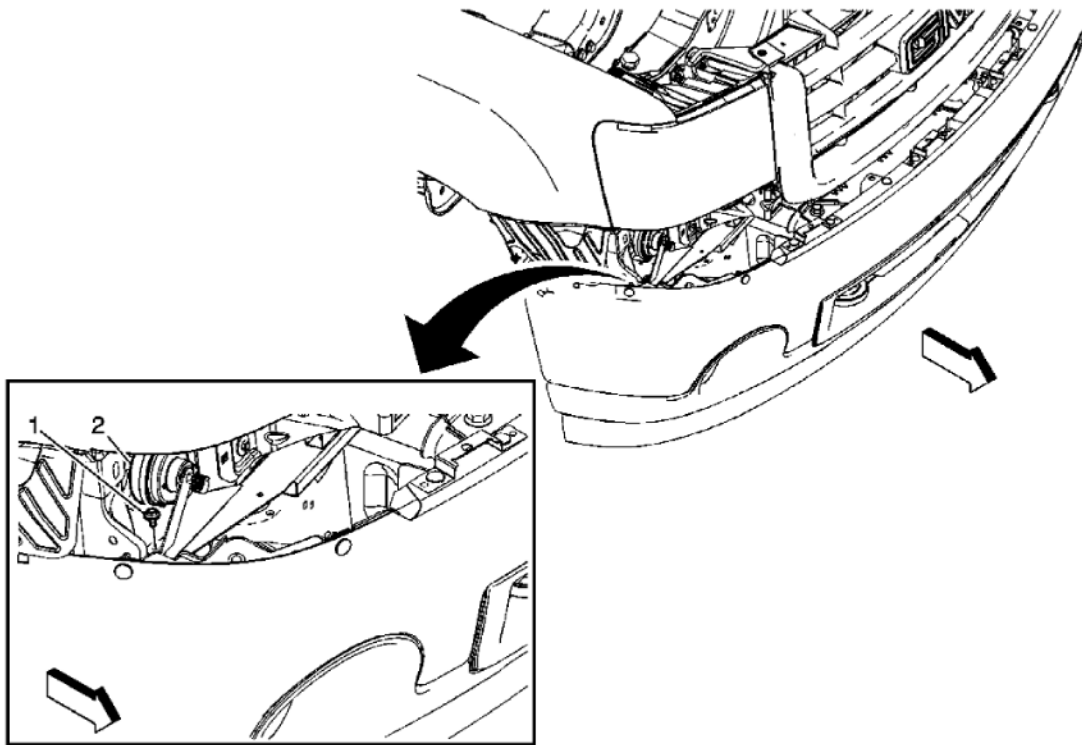


Fig. 4: Horn - Right Side (GMC)
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedure: Remove the front bumper fascia trim cap. Refer to <u>Front Bumper Fascia Trim Cap Replacement (GMC)</u> .	
1	Right Side Horn Bolt NOTE: Refer to <u>Fastener Notice</u> . Tighten: 9 N.m (80 lb in)
2	Right Side Horn Tip: Disconnect the electrical connector.

HORN REPLACEMENT - RIGHT SIDE (CHEVROLET)

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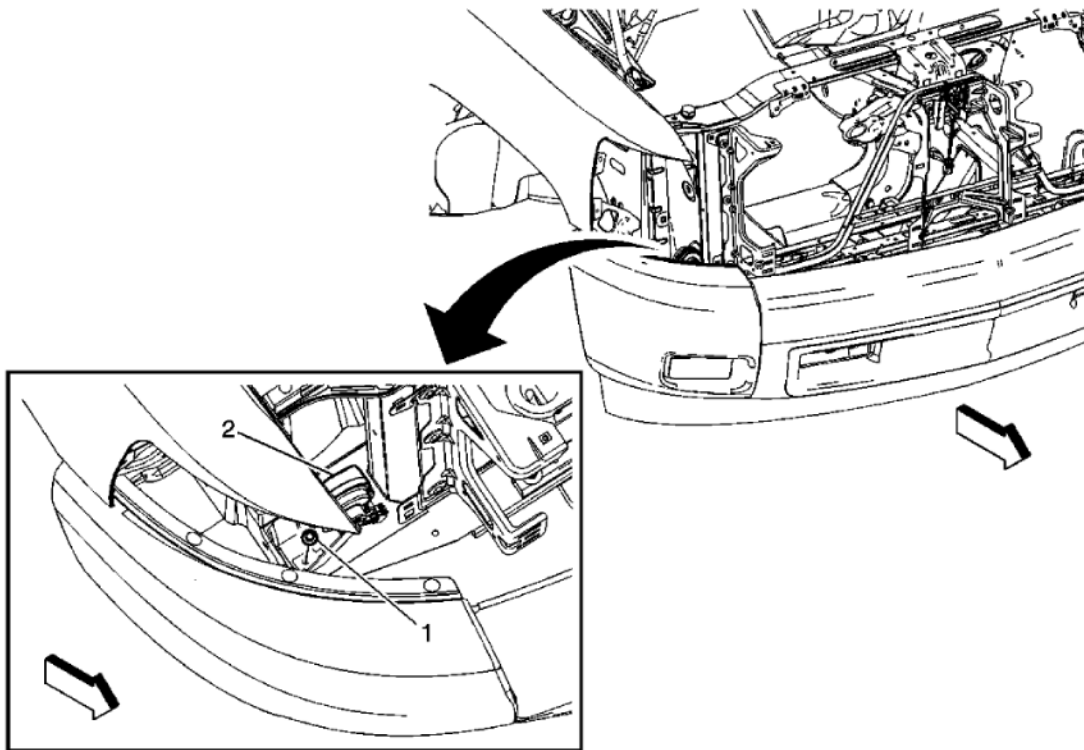


Fig. 5: Horn - Right Side (Chevrolet)
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedure: Remove the headlamp. Refer to <u>Headlamp Replacement (GMC HD)</u> or <u>Headlamp Replacement (Chevrolet)</u> .	
1	Right Side Horn Bolt NOTE: Refer to <u>Fastener Notice</u> . Tighten: 9 N.m (80 lb in)
2	Right Side Horn Tip: Disconnect the electrical connector.

STEERING WHEEL HORN SWITCH REPLACEMENT

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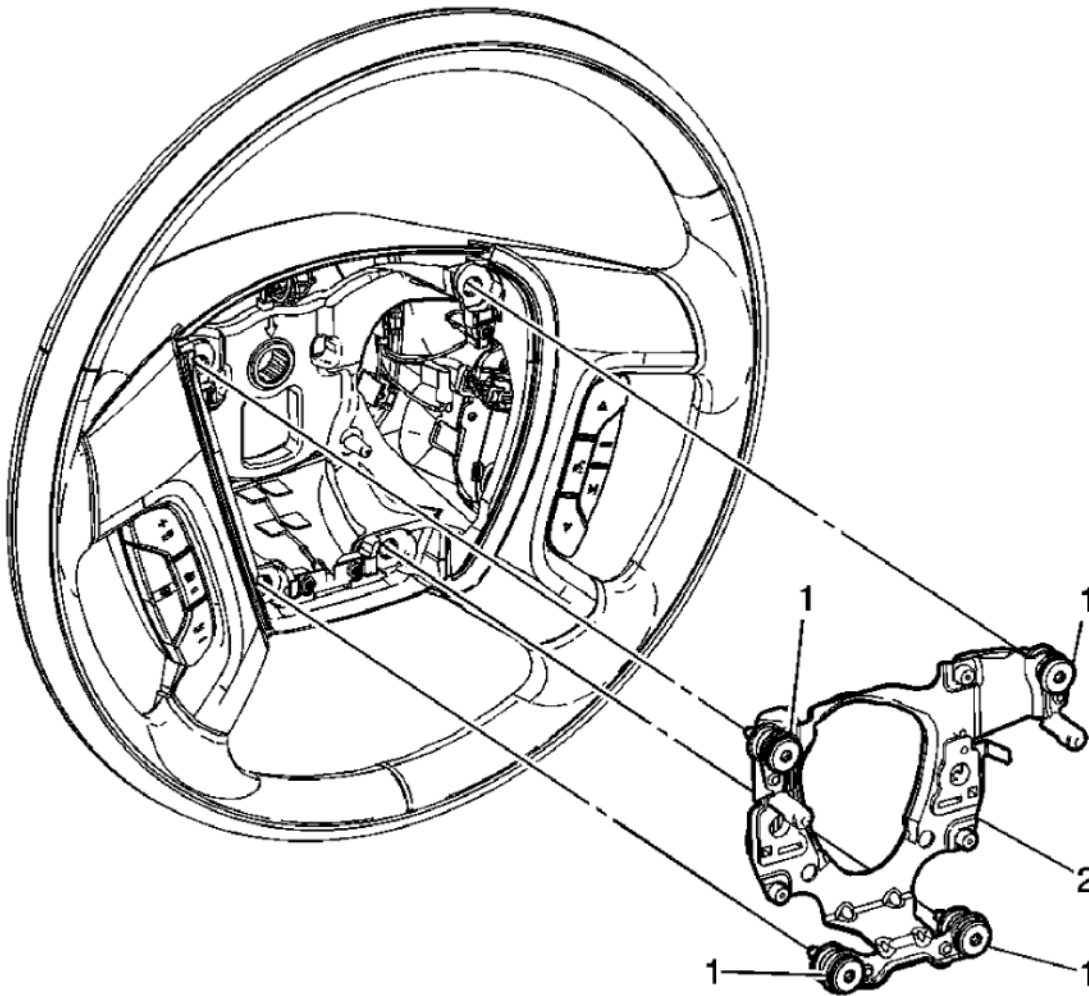


Fig. 6: Steering Wheel Horn Switch

Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
CAUTION: Refer to <u>SIR Caution</u> .	
Preliminary Procedure: Remove the inflatable restraint steering wheel module. Refer to <u>Inflatable Restraint Steering Wheel Module Replacement</u> .	
1	Horn Switch Bolt (Qty: 4) NOTE: Refer to <u>Fastener Notice</u> .

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	Tighten: 8 N.m (71 lb in)
2	Horn Switch Procedure: Disconnect any electrical connectors as needed.

DESCRIPTION AND OPERATION

HORNS SYSTEM DESCRIPTION AND OPERATION

System Description

The horn system consists of the following components:

- HORN fuse
- Horn PCB relay
- Horn switch
- Horn
- Body control module (BCM)

System Operation

- The vehicle horns are activated whenever the horn switch is depressed.
- The BCM commands the horns ON under any of the following conditions:
 - When the panic button is depressed on the remote control door lock transmitter. For further information refer to **Keyless Entry System Description and Operation** .
 - When the keyless entry system is used to lock the vehicle, a horn chirp may sound to notify the driver that the vehicle has been locked. The notification feature may be enabled or disabled through personalization. For further information refer to **Keyless Entry System Description and Operation** .
 - When the OnStar® system is used to sound the horns if equipped. For further information, refer to **OnStar Description and Operation** .

Circuit Operation

Battery positive voltage is applied at all times to the horn relay coil and the horn relay switch. Pressing the horn switch applies ground to the horn relay control circuit. When the horn relay control circuit is grounded, the horn relay is energized and battery positive voltage is applied to the horn through the horn control circuit. The horn will sound as long as ground is applied to the horn relay control circuit.