

Horns - Malibu

FASTENER TIGHTENING SPECIFICATIONS

Application	Specification	
	Metric	English
Horn Nut	17 N.m	13 lb ft
Steering Wheel Horn Contact Bolts	8 N.m	71 lb in

HORN WIRING SCHEMATICS

Wiring Diagram for 1990-91 Chevrolet Blazer and Suburban

Legend:

- 28 BN/WH
- 29 BN/GY
- 18
- 19
- 1
- 10
- RD
- BK
- PK

Components and Connections:

- X56A Fuse Block Underhood:** Contains KR3 Horn Relay and PS1UA 15A fuse.
- X55 Steering Wheel Air Bag Coil:** Connected to X1 (1) and X2 (10).
- X53 Horn Switch:** Connected to RD and A (1550 PK).
- Grounds:** G305 and G101.

Wiring Details:

- Line 28 BN/WH connects to X2 (25) and X5 (19).
- Line 29 BN/GY connects to X1 (11) and X2 (25).
- Line 18 connects to X3 (18) and X1 (1).
- Line 19 connects to X5 (19) and X1 (1).
- Line 1 connects to X1 (1) and X2 (10).
- Line 10 connects to X2 (10) and X1 (1).
- Line RD connects to X1 (1) and X2 (10).
- Line BK connects to X1 (1) and X2 (10).
- Line PK connects to A (1550 PK) and G305.



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DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC CODE INDEX

DIAGNOSTIC CODE INDEX

DTC	Description
DTC B2750	DTC B2750 Horn Relay Secondary Circuit

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 Descriptors

DTC B2750

Horn Relay Secondary Circuit

For symptom byte information refer to: **Symptom Byte List**

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Control	B2750 02	B2750 04	B2750 01	-

Circuit/System Description

The Body Control Module provides a ground for the Horn printed circuit board relay within the underhood fuse block. The underhood fuse block will then provide B+ voltage to the horn control circuit, sounding the horn.

Conditions for Running the DTC

When the horn output is actively being requested by the Body Control Module.

Conditions for Setting the DTC

B2750 01

The Body Control Module detects a short to voltage in the relay coil control circuit.

B2750 02

The Body Control Module detects a short to ground in the relay coil control circuit.

B2750 04

The Body Control Module detects an open/high resistance in the relay coil control circuit.

Action Taken When the DTC Sets

- If B2750 01 or B2750 04 is current, the horns will be inoperative.
- If B2750 02 is current, the horns will sound continuously until the horn is disconnected or when the horns overheat and becomes inoperative.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present, the DTC will be a history DTC.
- A history DTC will clear after 50 ignition cycles.

Reference Information

Schematic Reference

Horn Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

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 ON.

2. Verify the P12A Horn-High Note and the P12B Horn-Low Note turns On and Off when commanding the Horn Relay On and Off with a scan tool.

- **If the P12A Horn-High Note and the P12B Horn-Low do not turn On and Off**

Refer to Circuit/System Testing below.

- **If the P12A Horn-High Note and the P12B Horn-Low turn On and Off**

3. All OK.

Circuit/System Testing

1. Ignition OFF, disconnect the X5 harness connector at the K9 Body Control Module, ignition ON.
2. Verify the P12A Horn-High Note and P12B Horn-Low Note are not activated.
 - **If the P12A Horn-High Note and P12B Horn-Low Note is activated**
 1. Ignition OFF, disconnect the X2 harness connector at the X50A Fuse Block-Underhood.
 2. Test for infinite resistance between the K9 Body Control Module control circuit terminal 19 X5 and ground.
 - If less than Infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the X50A Fuse Block-Underhood.
 - **If the P12A Horn-High Note and P12B Horn-Low Note are not activated**
3. Connect a 3 A fused jumper wire between the control circuit terminal 19 and ground.
4. Verify the P12A Horn-High Note and P12B Horn-Low Note activates.
 - **If the P12 Horn does not activate**
 1. Ignition OFF, remove the jumper wire, disconnect the X2 harness connector at the X50A Fuse Block-Underhood, ignition ON.
 2. Test for less than 1 V between the K9 Body Control Module control circuit terminal 19 X5 and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V
 3. Test for less than 2 ohms in the control circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, replace the X50A Fuse Block-Underhood.
 - **If the P12A Horn-High Note and P12B Horn-Low Note activates**
5. Replace the K9 Body Control Module.

Repair Instructions

Perform the **Diagnostic Repair Verification** after completing the repair.

- **Front Compartment Fuse Block Replacement**
- **Control Module References** for Body Control Module replacement, programming and setup

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
Horn Switch Signal	1	2	2	-
Horn Relay Control	B2750 02	B2750 04	B2750 01	-

Horn Control	2	2	1	-
Horn Ground	-	2	-	-
Horn Switch Ground	-	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 the horn relay switch. Pressing the horn switch applies ground through the switch contacts and the horn relay control circuit to the coil side of the relay, energizing the relay. Battery voltage is then applied through the switch side of the relay, the horn circuit fuse, and the horn control circuit to the horns. The horns sound as long as ground is applied to the horn relay control circuit.

Diagnostic Aids

OnStar® RemoteLink™ applications or "apps" downloads are available to owners of certain mobile devices. Unwanted or inadvertent horn activations have been associated with these applications to which the customer may be unaware. Contact the GM Technical Assistance Center regarding information on a remedy for this situation.

A short to ground in the horn relay control circuit or a short to voltage in the horn control circuit will cause the horns to sound continuously until the horns overheat and become inoperative.

Rotate the steering wheel while pressing the horn pad to identify intermittent and poor connections within the steering column.

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
- Debris in direct contact with the horn
- Vehicle components vibrating while the horn is sounding

Reference Information

Schematic Reference

Horn Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

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 ON.
2. Verify the scan tool Horn Switch parameter changes between Active and Inactive when pressing and releasing the horn pad.
 - **If the parameter does not change**

Refer to Circuit/System Testing below- Horn Switch Malfunction.
 - **If the parameter changes**
3. Verify the P13 Horn Assembly turns ON and OFF and emit a clear and even tone when commanding the Horn Relay On and OFF with a scan tool.
 - **If the P13 Horn Assembly does not turn ON and OFF**

Refer to Circuit/System Testing below- Horns or Horn Command Malfunction.
 - **If the sound emitted is not clear and even**

Refer to Circuit/System Testing below- Horn - Poor Tone.
 - **If the P13 Horn Assembly turns ON and OFF and emit a even and clear tone**
4. All OK.

Circuit/System Testing

Horn Switch Malfunction

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the S33 Horn Switch. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 10 ohms between the ground circuit terminal A and ground.
 - **If 10 ohms or greater**
 1. Ignition OFF.

2. Test for less than 2 ohms in the ground circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, repair the open/high resistance in the ground connection.
 - **If less than 10 ohms**
3. Ignition ON.
4. Verify the scan tool Horn Switch parameter is Inactive.
 - **If not Inactive**
 1. Ignition OFF, disconnect the harness connector at the K9 Body Control Module.
 2. Test for infinite resistance between the signal circuit terminal B and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the K9 Body Control Module.
 - **If Inactive**
5. Install a 3 A fused jumper wire between the signal circuit terminal B and the ground circuit terminal A.
6. Verify the scan tool Horn Switch parameter is Active.
 - **If not Active**
 1. Ignition OFF, remove the 3 A fused jumper wire, disconnect the harness connector at the K9 Body Control Module, ignition ON.
 2. Test for less than 1 V between the signal circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V
 3. Test for less than 2 ohms in the signal circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, replace the K9 Body Control Module.
 - **If Active**
7. Test or replace the S33 Horn Switch.

Horns or Horn Command Malfunction

1. Ignition OFF, and all vehicle systems OFF. Disconnect the harness connector at the P13 Horn Assembly. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 1 ohms between the ground circuit terminal 1 and ground.
 - **If 1 ohms or greater**
 1. Ignition OFF.
 2. Test for less than 2 ohms in the ground circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, repair the open/high resistance in the ground connection.
 - **If less than 1 ohms**
3. Connect a test lamp between the control circuit terminal 2 and ground, ignition ON.
4. Verify the test lamp does not turn ON and OFF when commanding the Horn Relay On and Off with a

scan tool.

- **If the test lamp turns ON and OFF**

Test or replace the P13 Horn Assembly.

- **If the test lamp does not turn ON and OFF**

5. Ignition OFF, connect the harness connector at the P13 Horn Assembly. Disconnect the X1 harness connector at the X50A Fuse Block-Underhood, ignition ON.
6. Verify the P13 Horn Assembly is not activated.
 - **If the P13 Horn Assembly is activated**
 1. Ignition OFF, disconnect the harness connector at the P13 Horn Assembly, ignition ON.
 2. Test for less than 1 V between the control circuit terminal 2 and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V, test or replace the P13 Horn Assembly.
 - **If the P13 Horn Assembly is not activated**
7. Connect a 15 A fused jumper wire between the control circuit terminal 11 and B+.
8. Verify the P13 Horn Assembly activates.
 - **If the P13 Horn Assembly does not activate**
 1. Ignition OFF, remove the jumper wire, disconnect the harness connector at the P13 Horn Assembly, ignition ON.
 2. Test for infinite resistance between the control circuit and ground.
 - If less than Infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance
 3. Test for less than 2 ohms in the control circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, test or replace the P13 Horn Assembly.
 - **If the P13 Horn Assembly activates**
9. Ignition OFF, connect the X1 harness connector at the X50A Fuse Block-Underhood. Disconnect the X5 harness connector at the K9 Body Control Module, ignition ON.
10. Verify the P13 Horn Assembly is not activated.
 - **If the P13 Horn Assembly is activated**
 1. Ignition OFF, disconnect the X2 harness connector at the X50A Fuse Block-Underhood.
 2. Test for infinite resistance between the X50A Fuse Block-Underhood control circuit terminal 25 and ground.
 - If less than Infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, test or replace the X50A Fuse Block-Underhood.
 - **If the P13 Horn Assembly is not activated**
11. Connect a 3 A fused jumper wire between the control circuit terminal 19 and ground.
12. Verify the P13 Horn Assembly activates.

- **If the P13 Horn Assembly does not activate**

1. Ignition OFF, remove the jumper wire, disconnect the X2 harness connector at the X50A Fuse Block-Underhood, ignition ON.
2. Test for less than 1 V between the X50A Fuse Block-Underhood control circuit terminal 25 and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V
3. Test for less than 2 ohms in the control circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, test or replace the X50A Fuse Block-Underhood.

- **If the P13 Horn Assembly activates**

13. Replace the K9 Body Control Module.

Horn - Poor Tone

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the P13 Horn Assembly. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 1 ohms between the ground circuit terminal 1 and ground.
 - **If 1 ohms or greater**
 1. Ignition OFF.
 2. Test for less than 2 ohms in the ground circuit end to end.
 - If 2 ohms or greater, repair the high resistance in the circuit.
 - If less than 2 ohms, repair high resistance in the ground connection.
 - **If less than 1 ohms**
3. Ignition OFF, disconnect the X1 harness connector at the X50A Fuse Block-Underhood.
4. Test for less than 2 ohms between the P13 Horn Assembly control circuit terminal 2 and the X50A Fuse Block-Underhood control circuit terminal 11 X1.
 - **If 2 ohms or greater**

Repair the high resistance in the control circuit.

- **If less than 2 ohms**

5. Test or replace the P13 Horn Assembly.

Component Testing

Horn Test

1. Ignition OFF, disconnect the harness connector at the P13 Horn Assembly.
2. Install a 15 A fused jumper wire between the control terminal 2 and 12 V. Install a jumper wire between the ground terminal 1 and ground.
3. Verify the P13 Horn Assembly turns ON and OFF

- **If the P13 Horn Assembly does not turn ON and OFF**

Replace the P12 Horn Assembly.

- **If the P13 Horn Assembly turns ON and OFF**

4. All OK

Horn Switch

1. Ignition OFF, disconnect the harness connector at the S33 Horn Switch.
2. Test for infinite resistance between the signal terminal B and the ground terminal A with the switch in the open position.

- **If less than infinite resistance**

Replace the S33 Horn Switch.

- **If infinite resistance**

3. Test for less than 3 ohms between the signal terminal B and the ground terminal A with the switch in the closed position.

- **If 3 ohms or greater**

Replace the S33 Horn Switch.

- **If less than 3 ohms**

4. All OK

Repair Instructions

Perform the **Diagnostic Repair Verification** after completing the repair

- **Steering Wheel Horn Contact Replacement**
- **Horn Replacement**
- **Front Compartment Fuse Block Replacement**
- **Control Module References** for body control module replacement, programming and setup

REPAIR INSTRUCTIONS

HORN REPLACEMENT

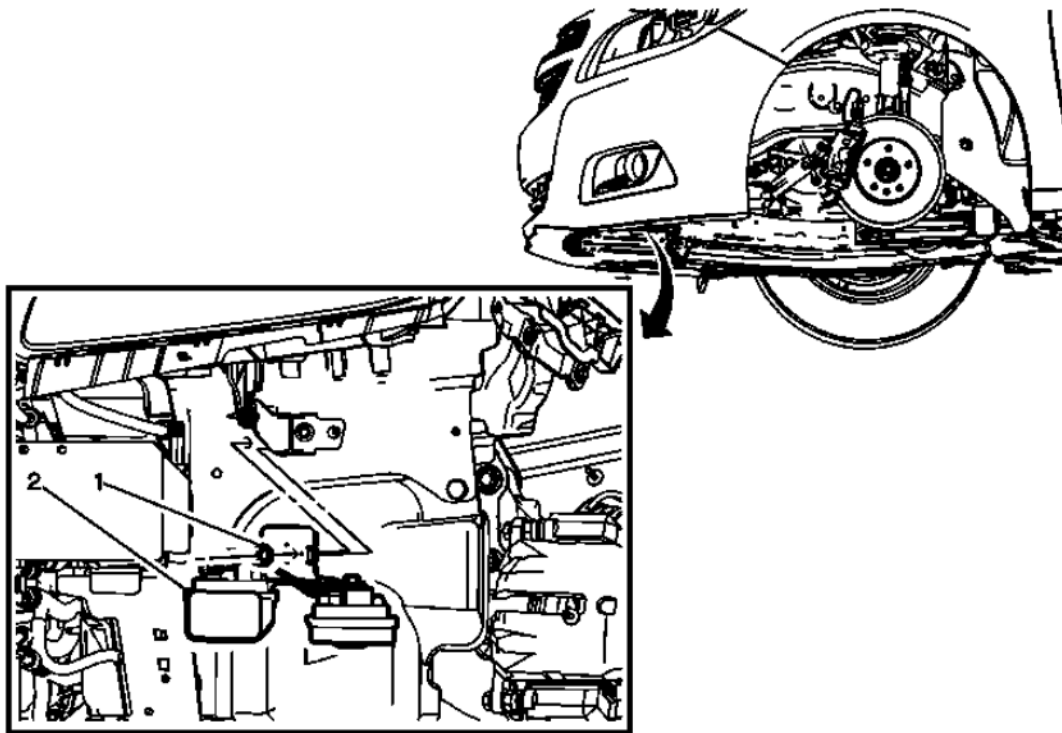


Fig. 2: Horn
 Courtesy of GENERAL MOTORS COMPANY

Horn Replacement

Callout	Component Name
Preliminary Procedure Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement .	
1	Horn Nut CAUTION: Refer to Fastener Caution . Tighten 17 (13 lb ft)
2	Horn Procedure Disconnect the electrical connector.

STEERING WHEEL HORN CONTACT REPLACEMENT

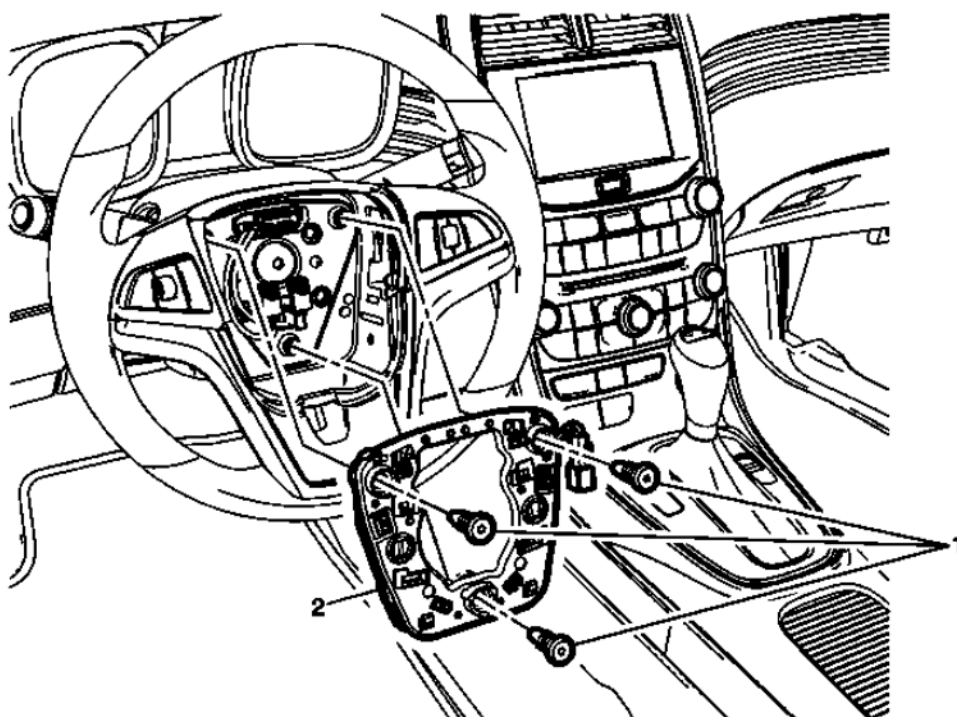


Fig. 3: Steering Wheel Horn Contact
Courtesy of GENERAL MOTORS COMPANY

Steering Wheel Horn Contact Replacement

Callout	Component Name
Preliminary Procedure Remove the steering wheel airbag. Refer to Steering Wheel Airbag Replacement .	
1	Steering Wheel Horn Contact Spring Retainer Bolt (Qty: 3) CAUTION: Refer to Fastener Caution . Tighten 8 N.m (71 lb in)
2	Steering Wheel Horn Contact Assembly Procedure Disconnect the electrical connectors.

DESCRIPTION AND OPERATION

HORNS SYSTEM DESCRIPTION AND OPERATION

System Description

The horn system consists of the following components:

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

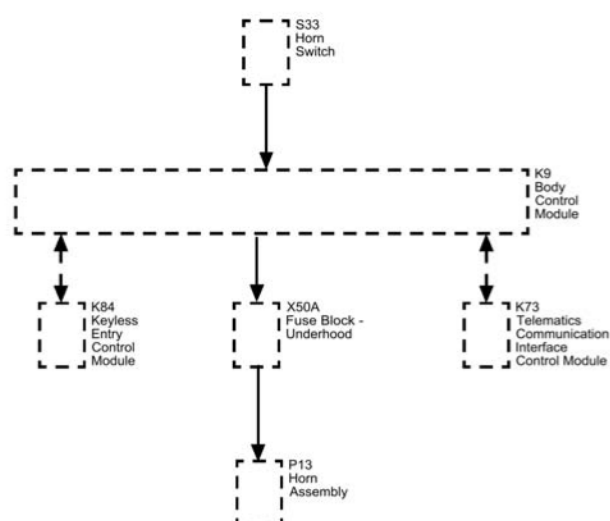


Fig. 4: Horns System Description Chart
Courtesy of GENERAL MOTORS COMPANY

System Operation

The vehicle horn system is activated under the following conditions:

- When the horn switch is depressed
- The BCM commands the horns ON under any of the following conditions:
 - When the content theft deterrent system detects a vehicle intrusion-For further information refer to **Theft Systems Description and Operation** .
 - When the panic button is depressed on the remote control door lock transmitter-For further information refer to **Keyless Entry System Description and Operation (without BTM)** , **Keyless Entry System Description and Operation (with BTM)** .
 - 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 (without BTM)** , **Keyless Entry System Description and Operation (with BTM)** .

- 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 either of the horn switches applies ground to the horn relay control circuit. The BCM may also apply ground to the horn relay control circuit as described above. When the horn relay control circuit is grounded, the horn relay is energized and battery positive voltage is applied to the horns through the horn control circuit. The horns sound as long as ground is applied to the horn relay control circuit.