

Horns

cardiagn.com

Description and Operation

cardiagn.com

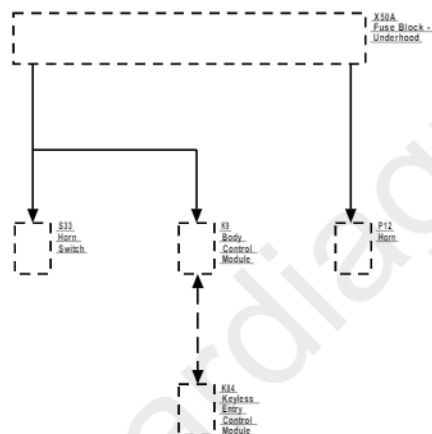
1. BODY SYSTEMS
2. HORNS
3. DESCRIPTION AND OPERATION
- 4.

Horns System Description and Operation

System Description

The horn system consists of the following components:

- HORN fuse
- Underhood fuse block (Contains the horn PCB relay)
- Horn switch
- Horn “left”
- Horn “right”
- Body control module (BCM)



[Click here for full size](#)

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 [Content Theft Deterrent \(CTD\) 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](#).
 - 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](#).

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.

cardiagn.com

Diagnostic Information and Procedures

cardiagn.com

1. BODY SYSTEMS

2. HORNS

3. DIAGNOSTIC INFORMATION AND PROCEDURES

4.

Symptoms - Horns

Note:

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

1. Perform the [Diagnostic System Check - Vehicle](#) before using the Symptom Tables in order to verify that all of the following are true:
2.
 - There are no DTCs set.
 - The control modules can communicate via the serial data link.
3. 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 system. Refer to [Checking Aftermarket Accessories](#).
- 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](#).

Symptom List

Refer to the symptom diagnostic procedure in order to diagnose the symptom.

[Horns Malfunction](#)

1. BODY SYSTEMS
2. HORNS
3. DIAGNOSTIC INFORMATION AND PROCEDURES
- 4.

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 Relay B+	2	2	â€”	â€”
Horn Relay Control	1	2	2	â€”
Horn Control	2	2	1	â€”
Horn Ground	â€”	2	2	â€”
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 and the horn control circuit to the horns.

Diagnostic Aids

A short to ground in the horn relay control circuit or a short to voltage in the horn control circuit will cause the horn to sound continuously until the horn overheats 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 â€” Poor Tone condition, inspect the following:

- Debris or water in the horn assembly.
- Proper horn mounting hardware torque. Refer to [Fastener 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

[Master Electrical Component List](#)

Description and Operation

[Horns System Description and Operation](#)

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

Circuit/System Verification

Ignition ON, press and release the steering wheel horn pad. The horns should sound and emit a clear and even tone only when the horn pad is pressed.

- If the horns do not sound when the horn pad is pressed or continues sounding after the horn pad is released, refer to Horn Switch Circuit Test.
- If the sound emitted from the horns are not clear and even, refer to Horn "Poor Tone."

Circuit/System Testing

Horn Switch Circuit Test

1. Disconnect the HORN relay.
2. Ignition ON, verify that a test lamp does not illuminate between the control circuit terminal 87 and ground.
3.
 - If the test lamp illuminates, test the control circuit for a short to voltage.
4. Verify that a test lamp illuminates between the B+ circuit terminal 30 and ground.
5.
 - If the test lamp does not illuminate, test the B+ circuit for a short to ground or an open/high resistance.
6. Verify that a test lamp illuminates between the B+ circuit terminal 86 and ground.
7.
 - If the test lamp does not illuminate, test the B+ circuit for an open/high resistance.
8. Disconnect the harness connector at the appropriate horn.
9. Test for less than 1 Ω between the ground circuit terminal 1 and ground.
10.
 - If greater than the specified range, test the ground circuit for an open/high resistance.
11. Connect the harness connector at the horn.
12. Connect a 20A fused jumper wire between the B+ circuit terminal 30 and the control circuit terminal 87. Verify the horns are activated.
13.
 - If the horns do not activate, test the control circuit for a short to ground or an open/high resistance. If the circuit tests normal, test or replace the horn.
14. Connect a test lamp between the B+ circuit terminal 86 and the control circuit terminal 85.
15. Press and release the steering wheel horn pad. The test lamp should turn ON and OFF when changing between the commanded states.
16.
 - If the test lamp is always ON, test the control circuit for a short to ground. If the circuit tests normal, inspect for a sticking horn switch.
 - 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, inspect for an open horn switch.

17. If all circuits test normal, test or replace the HORN relay.

Horn â€” Poor Tone

1. Ignition OFF, disconnect the harness connector at the appropriate horn.
2. Test for less than 1â€” between the ground circuit terminalâ€”1 and ground.
3.
 - â€” If greater than the specified range, test the ground circuit for a high resistance.
4. Disconnect the HORN relay.
5. Test for less than 1â€” between the control circuit terminalâ€”87 at the HORN relay and the control circuit terminalâ€”2 at the horn.
6.
 - â€” If greater than the specified range, test the control circuit for a high resistance.
7. 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 15A fused jumper wire between the control terminalâ€”2 and 12V. Install a jumper wire between the ground terminal 1 and ground. Verify the horn emits a clear and even tone.
3.
 - â€” If the sound emitted is not clear and even, replace the horn.

Relay Test

1. Ignition OFF, disconnect the HORN relay.
2. Test for 60â€”180â€” between terminalsâ€”85 and 86.
3.
 - â€” If not within the specified range, replace the relay.
4. Test for infinite resistance between the following terminals:
5.
 - â€” 30 and 86
 - â€” 30 and 87
 - â€” 30 and 85
 - â€” 85 and 87
6.
 - â€” If not the specified value, replace the relay.
7. Install a 30A fused jumper wire between relay terminalâ€”85 and 12V. Install a jumper wire between relay terminalâ€”85 and ground. Test for less than 2â€” between terminalsâ€”30 and 87.
8.
 - â€” If greater than the specified range, replace the relay.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the diagnostic procedure.

- [Relay Replacement](#)
- [Horn Replacement](#)
- [Airbag Steering Wheel Module Replacement](#)

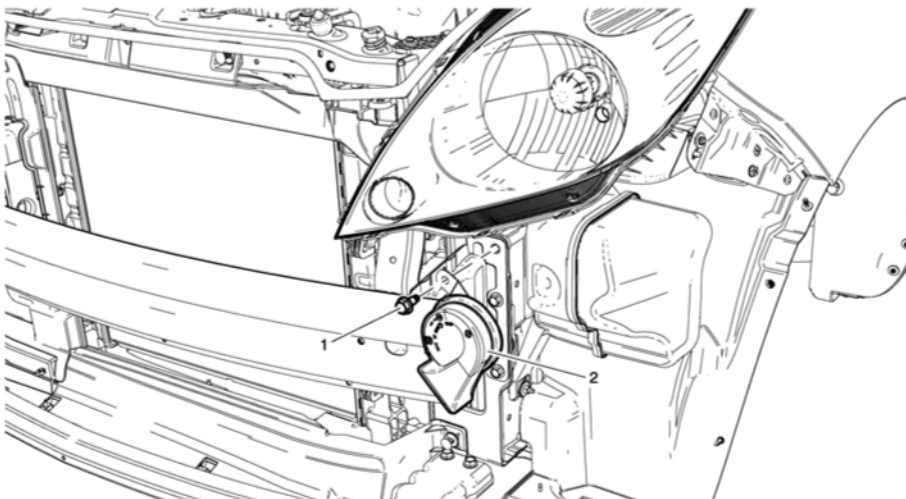
cardiagn.com

Repair Instructions

cardiagn.com

1. BODY SYSTEMS
2. HORNS
3. REPAIR INSTRUCTIONS
- 4.

Horn Replacement





[Click here for full size](#)

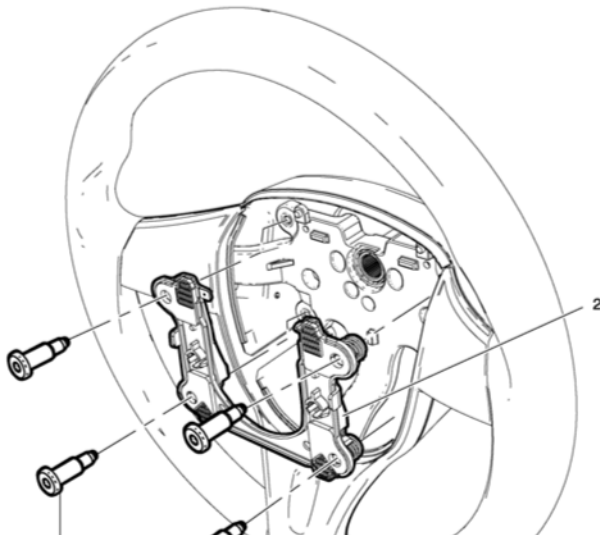
Callout	Component Name
Preliminary Procedure	
1. Front Wheelhouse Front Liner - Left Side >> Remove - Front Wheelhouse Liner Replacement	
2. Air Cleaner Resonator Replacement	
1	Horn Bolt (Qty:1) Caution: Refer to Fastener Caution . Tighten 21 N-m (16 lb-ft)
2	Horn Tip Disconnect electrical connectors.

Related Part Information

Part Name	Catalog Name	Part Code
Horn	HORN,GENERIC	0030A
Horn	HORN KIT,GENERIC (HIGH NOTE)	0031A
Horn	HORN,GENERIC (HIGH NOTE)	0031B
Horn	HORN KIT,GENERIC (LOW NOTE)	0032A
Horn	HORN,GENERIC (LOW NOTE)	0032B
Horn	HORN,EXP	0040A
Horn	HORN PKG,	0041A
Horn	HORN KIT,A NOTE	0049Z
Horn	HORN,HIGH A NOTE	0050A
Horn	HORN,A NOTE & F NOTE	0052A
Horn	HORN KIT,C NOTE	0099Z
Horn	HORN,HIGH C NOTE	0100A
Horn	HORN KIT,D NOTE	0149Z
Horn	HORN,LOW D NOTE	0150A
Horn	HORN KIT,F NOTE	0199Z
Horn	HORN,LOW F NOTE	0200A
Horn	HORN,LOW G NOTE	0205A
Horn	HORN,405 & 485 HZ	0206A
Horn	HORN,410 & 510 HZ	0207A
Horn	HORN,400 & 500 HZ	0208A
Horn	HORN,400 & 480 HZ	0209A
Horn	HORN,500 HZ	0210A
Horn	HORN,510 HZ	0212A
Horn	HORN,400 HZ	0215A
Horn	HORN,405 HZ	0215J
Horn	HORN,410 HZ	0217A
Horn	HORN,410 HZ (W/ BRKT)	0218A
Horn	HORN,420 HZ	0220A
Horn	HORN,450 HZ	0220F
Horn	HORN,360 HZ	0221A
Horn	HORN,350 HZ	0222A
Horn	HORN,485 HZ	0223A
Horn	HORN,480 HZ	0223C
Horn	HORN,440 HZ	0223D
Horn	HORN,330 HZ	0224A
Horn	HORN,370 HZ	0224B

1. BODY SYSTEMS
2. HORNS
3. REPAIR INSTRUCTIONS
- 4.

Steering Wheel Horn Contact Replacement



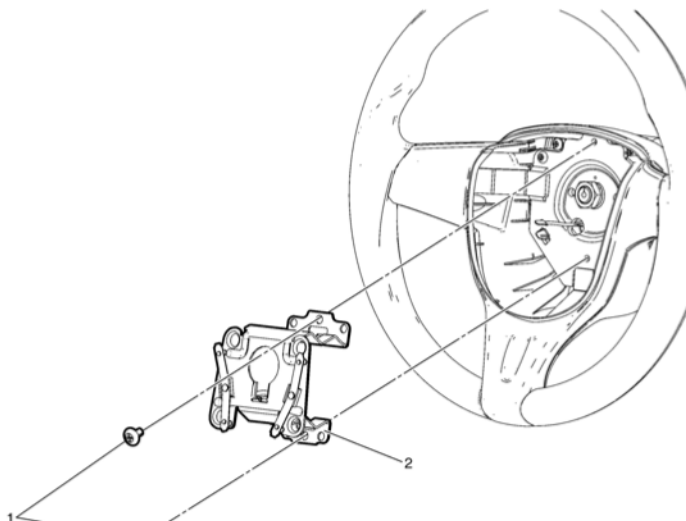


[Click here for full size](#)

Callout	Component Name
Preliminary Procedure	
Remove inflatable restraint steering wheel module. Refer to Airbag Steering Wheel Module Replacement .	
1	Steering Wheel Horn Contact Bolt (Qty: 4) Caution: Refer to Fastener Caution . Tighten 5.5 N·m (49 lb·in)
2	Steering Wheel Horn Contact Tip Disconnect the electrical connector.

1. BODY SYSTEMS
2. HORNS
3. REPAIR INSTRUCTIONS
- 4.

Steering Wheel Horn Contact Replacement (W/O Steering Wheel Inflatable Restraint Module)





cardiagn.com

[Click here for full size](#)

Callout	Component Name
Preliminary Procedure	
Remove the steering wheel horn cap. Refer to Steering Wheel Horn Cap Replacement .	
1	Steering Wheel Horn Contact Screw (Qty:â€‰2) Caution: Refer to Fastener Caution .
2	Steering Wheel Horn Contact Note: Disconnect the electrical connector.

Related Part Information

Part Name	Catalog Name	Part Code
Steering Wheel Horn Contact	CONTACT,STRG WHL HORN	1149Z

Part Name	Catalog Name	Part Code
Steering Wheel Horn Contact	CONTACT,STRG WHL HORN	1150A
Steering Wheel Horn Contact	CONTACT,STRG WHL HORN	1151A

cardiagn.com

Specifications

cardiagn.com

- 1. BODY SYSTEMS
- 2. HORNS
- 3. SPECIFICATIONS
- 4.

Fastener Specifications

Reusable Threaded Fastener Tightening Specifications

Application	Specification
	Metric (English)
Note:	
All fasteners listed in this table can be reused after removal.	
Horn Bolt	21â€%N-mâ€%(16â€%lbâ€%ft)
Steering Wheel Horn Contact Bolt	5.5â€%N-mâ€%(49â€%lbâ€%in)

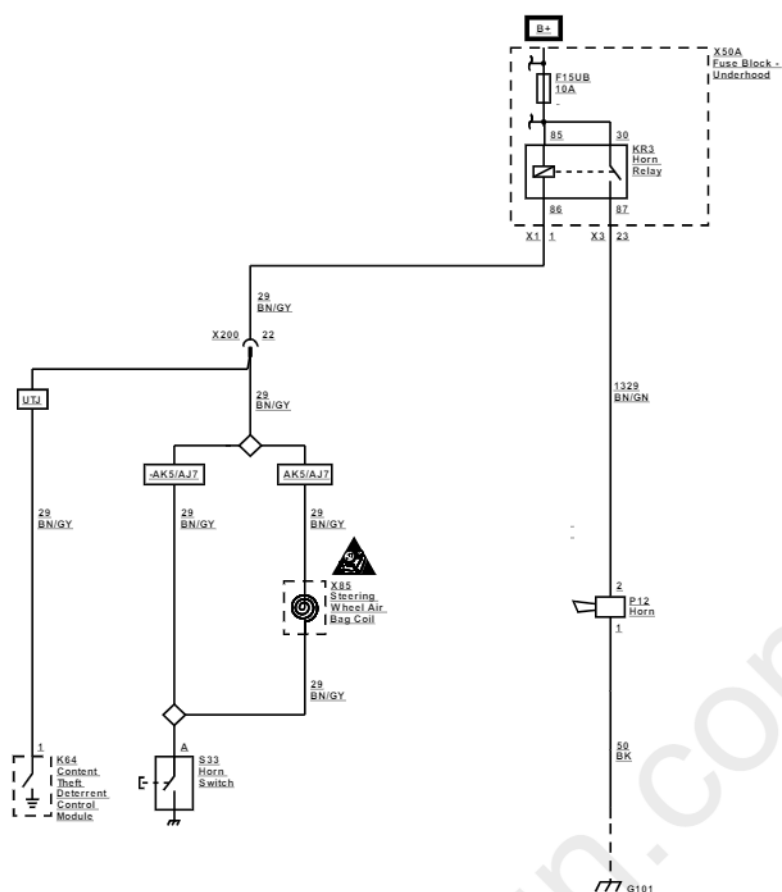
Schematic and Routing Diagrams

cardiagn.com

Horn Schematics

cardiagn.com

Horns



[Click here for full size](#)