2007 ACCESSORIES & EQUIPMENT

Horns - H3

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

<table>
<thead>
<tr>
<th>Application</th>
<th>Specification</th>
<th>Metric</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horn Bolt</td>
<td>10 N.m</td>
<td>88 lb in</td>
<td></td>
</tr>
</tbody>
</table>

SCHEMATIC AND ROUTING DIAGRAMS

HORN SCHEMATICS

Fig. 1: Horn Circuit Schematic
COMPONENT LOCATOR

HORN COMPONENT VIEWS

Fig. 2: Forward Lamp Harness Components
Courtesy of GENERAL MOTORS CORP.

<table>
<thead>
<tr>
<th>Callout</th>
<th>Component Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>S185</td>
</tr>
<tr>
<td>2</td>
<td>S109</td>
</tr>
<tr>
<td>3</td>
<td>S112</td>
</tr>
<tr>
<td>4</td>
<td>S120</td>
</tr>
<tr>
<td>5</td>
<td>Horn</td>
</tr>
</tbody>
</table>

MY

Sunday, March 29, 2009 10:22:56 PM
## Horn Connector Parts Information

<table>
<thead>
<tr>
<th>Connector Part</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 C117</td>
<td>Forward Lamp Harness to Headlamp Jumper Harness</td>
</tr>
<tr>
<td>7 S134</td>
<td></td>
</tr>
<tr>
<td>8 C115</td>
<td>Forward Lamp Harness to Body Harness</td>
</tr>
<tr>
<td>9 C116</td>
<td>Forward Lamp Harness to Headlamp Jumper Harness</td>
</tr>
</tbody>
</table>

---

**Fig. 3: Horn Connector End View**

**Courtesy of GENERAL MOTORS CORP.**
Terminal Part Information

- Terminal/Tray: 12191818/8
- Core/Insulation Crimp: See Terminal Kit
- Release Tool/Test Probe: See Terminal Kit

Horn Connector Terminal Identification

<table>
<thead>
<tr>
<th>Pin</th>
<th>Wire Color</th>
<th>Circuit No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>BK</td>
<td>850</td>
<td>Ground</td>
</tr>
<tr>
<td>B</td>
<td>D-GN</td>
<td>1329</td>
<td>Horn Supply Voltage</td>
</tr>
</tbody>
</table>

Horn A - Note (NO4)

Fig. 4: Horn Connector End View
Courtesy of GENERAL MOTORS CORP.

Horn Connector Parts Information
- OEM: 15419715
- Service: 88988313
- Description: 2-Way F GT 150 Sealed (GY)

Terminal Part Information

- Terminal/Tray: 12191818/8
- Core/Insulation Crimp: See Terminal Kit
- Release Tool/Test Probe: See Terminal Kit

Horn A Terminal Identification

<table>
<thead>
<tr>
<th>Pin</th>
<th>Wire Color</th>
<th>Circuit No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>BK</td>
<td>850</td>
<td>Ground</td>
</tr>
<tr>
<td>B</td>
<td>D-GN</td>
<td>1329</td>
<td>Horn Supply Voltage</td>
</tr>
</tbody>
</table>

Horn F - Note (NO4)
**Fig. 5: Horn Connector End View**  
_Courtesy of GENERAL MOTORS CORP._

**Horn Connector Parts Information**

**Connector Part Information**

- OEM: 15419715
- Service: 88988313
- Description: 2-Way F GT 150 Sealed (GY)

**Terminal Part Information**

- Terminal/Tray: 12191818/8
- Core/Insulation Crimp: See Terminal Kit
- Release Tool/Test Probe: See Terminal Kit

**Horn F Terminal Identification**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Wire Color</th>
<th>Circuit No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>BK</td>
<td>850</td>
<td>Ground</td>
</tr>
<tr>
<td>B</td>
<td>D-GN</td>
<td>1329</td>
<td>Horn Supply Voltage</td>
</tr>
</tbody>
</table>

**DIAGNOSTIC INFORMATION AND PROCEDURES**

**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.

**SCAN TOOL OUTPUT CONTROLS**

**Scan Tool Output Controls**

<table>
<thead>
<tr>
<th>Scan Tool Output Control</th>
<th>Additional Menu Selection(s)</th>
<th>Description</th>
</tr>
</thead>
</table>
The Horns Scan Tool Data List contains all of the horn related parameters that are available on the scan tool. The parameters in the list are arranged in alphabetical order. The column, "Data List," indicates the location of the parameter within the scan tool menu selections. Use the Horns Scan Tool Data List as directed by a diagnostic table or in order to supplement the diagnostic procedures. Begin all of the diagnostic procedures with Diagnostic System Check - Vehicle.

Use the Scan Tool Data List only after the following is determined:

- There is no published DTC procedure nor published symptom procedure for the customer concern.
- The DTC or symptom diagnostic procedure indicated by the diagnostic system check does not resolve the customer concern.

The Typical Data Values are obtained from a properly operating vehicle under the conditions specified in the first row of the Scan Tool Data List table. Comparison of the parameter values from the suspect vehicle with the Typical Data Value(s) may reveal the source of the customer concern.

**Scan Tool Data List**

<table>
<thead>
<tr>
<th>Scan Tool Parameter</th>
<th>Data List</th>
<th>Units Displayed</th>
<th>Typical Data Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating Conditions:</strong></td>
<td>Ignition ON/Engine OFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery Voltage</td>
<td>Data</td>
<td>Volts</td>
<td>Varies</td>
</tr>
<tr>
<td>Horn Relay Command</td>
<td>Outputs</td>
<td>On/Off</td>
<td>Off</td>
</tr>
</tbody>
</table>

**SCAN TOOL DATA DEFINITIONS**

**Battery Voltage**

The scan tool displays the current state of the battery in volts.

**Horn Relay Command**
The scan tool displays On/Off to indicate the current state of the horn relay as commanded by the body control module (BCM) or the horn switch.

**SYMPTOMS - HORNS**

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

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 from the following list in order to diagnose the symptom:

- **Horns Always On**
- **Horns Inoperative**
- **Horns - Poor Tone**

**HORNS ALWAYS ON**

**Test Description**

The number below refers to the step number on the diagnostic table.
5: Tests if ground is constantly being applied to the horn relay.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Did you perform the Diagnostic System Check - Vehicle?</td>
<td></td>
<td>Go to Diagnostic System Check - Vehicle</td>
</tr>
<tr>
<td>2</td>
<td>Depress and release the horn switch. Are the horns ON at all times?</td>
<td></td>
<td>Go to Testing for Intermittent Conditions and Poor Connections</td>
</tr>
<tr>
<td>3</td>
<td>Disconnect the body control module (BCM). Are the horns ON at all times?</td>
<td></td>
<td>Go to Step 8</td>
</tr>
<tr>
<td>4</td>
<td>Disconnect the horn relay. Are the horns ON at all times?</td>
<td>Go to Step 10</td>
<td>Go to Step 5</td>
</tr>
<tr>
<td>5</td>
<td>Connect a test lamp between the battery positive voltage circuit of the horn relay coil and the horn relay control circuit. Does the test lamp illuminate?</td>
<td></td>
<td>Go to Step 7</td>
</tr>
<tr>
<td>6</td>
<td>Inspect for poor connections at the horn relay. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs. Did you find and correct the condition?</td>
<td></td>
<td>Go to Step 13</td>
</tr>
<tr>
<td>7</td>
<td>Repair the short to ground in the horn relay control circuit. Refer to Circuit Testing and Wiring Repairs. Did you complete the repair?</td>
<td></td>
<td>Go to Step 13</td>
</tr>
<tr>
<td>8</td>
<td>Test the horn switch signal circuit for a short to ground. Refer to Circuit Testing and Wiring Repairs. Did you find and correct the condition?</td>
<td></td>
<td>Go to Step 13</td>
</tr>
<tr>
<td>9</td>
<td>Inspect for poor connections at the harness connector of the BCM. Refer to Testing for Intermittent Conditions and Poor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Horns Inoperative**

**Test Description**

The numbers below refer to the step numbers on the diagnostic table.

4: Tests for voltage at the battery positive voltage terminal of the horn relay coil.

6: Tests for voltage at the battery positive voltage terminal of the horn relay switch. The HORN fuse supplies power to the battery positive voltage terminal of the horn relay switch.

14: The horns need maximum current flow to operate properly. A high resistance (greater than 0.5 ohms) in the horn control circuit or the horn ground circuit could cause operating problems with the horns. Inspect the circuits for faults that would restrict current flow.

### Horns Inoperative

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Did you perform the Diagnostic System Check - Vehicle?</td>
<td>Go to Step 2</td>
<td>Go to <strong>Diagnostic System Check - Vehicle</strong></td>
</tr>
<tr>
<td>2</td>
<td>Depress the horn switch. Do the horns operate?</td>
<td>Go to <strong>Testing for Intermittent Conditions and Poor Connections</strong></td>
<td>Go to Step 3</td>
</tr>
</tbody>
</table>
1. Install a scan tool.
2. Turn ON the ignition, with the engine OFF.
3. With a scan tool, command the horn relay ON and OFF.

Do the horns turn ON and OFF with each command?

Go to Step 11  
Go to Step 4

1. Disconnect the horn relay.
2. Connect a test lamp between the battery positive voltage circuit of the horn relay coil and a good ground.

Does the test lamp illuminate?

Go to Step 5  
Go to Step 15

1. Connect a test lamp between the battery positive voltage circuit of the horn relay coil and the horn relay control circuit.
2. Depress and hold the horn switch.

Does the test lamp illuminate?

Go to Step 6  
Go to Step 12

Connect a test lamp between the battery positive voltage circuit of the horn relay switch and a good ground.

Does the test lamp illuminate?

Go to Step 7  
Go to Step 16

Momentarily connect a 15-amp fused jumper wire between the battery positive voltage circuit of the horn relay switch and the horn fuse supply voltage circuit.

Do the horns operate?

Go to Step 10  
Go to Step 8

1. Reconnect the horn relay.
2. Disconnect the horn connector.
3. Connect a test lamp between the horn fuse supply voltage circuit and a good ground.
4. Depress and hold the horn switch.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Does the test lamp illuminate?</th>
<th>Go to Step 9</th>
<th>Go to Step 17</th>
</tr>
</thead>
</table>
| 9 |   | 1. Connect a test lamp between the horn fuse supply voltage circuit and the horn ground circuit.  
    2. Depress and hold the horn switch.  
    Does the test lamp illuminate? | Go to Step 13 | Go to Step 18 |
| 10 |   | Inspect for poor connections at the horn relay. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs**.  
    Did you find and correct the condition? | Go to Step 22 | Go to Step 19 |
| 11 |   | Test the horn switch signal for a short to voltage or open. Refer to **Circuit Testing** and **Wiring Repairs**.  
    Did you find and correct the condition? | Go to Step 22 | Go to Step 21 |
| 12 |   | Test the control circuit of the horn relay for a short to voltage or an open. Refer to **Circuit Testing** and **Wiring Repairs**.  
    Did you find and correct the condition? | Go to Step 22 | Go to Step 21 |
| 13 |   | 1. Connect a 15-amp fused jumper wire between the positive battery terminal and the horn fuse supply voltage circuit terminal of the horn.  
    2. Momentarily connect another jumper wire between the negative battery terminal and the ground terminal of the horn.  
    Does the horn sound? | Go to Step 14 | Go to Step 20 |
| 14 |   | Repair the open or high resistance in the horn fuse supply voltage circuit or the horn ground. A resistance as low as 0.5 ohms could cause operating problems with the horns. Refer to **Circuit Testing** and **Wiring Repairs**.  
    Did you complete the repair? | Go to Step 22 | Go to Step 22 |
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>battery positive voltage circuit of the horn relay coil. Refer to Circuit Testing and Wiring Repairs. Did you complete the repair?</td>
<td>Go to Step 22</td>
<td>-</td>
</tr>
<tr>
<td>16</td>
<td>Repair the open or high resistance in the battery positive voltage circuit of the horn relay switch. Refer to Circuit Testing and Wiring Repairs. Did you complete the repair?</td>
<td>Go to Step 22</td>
<td>-</td>
</tr>
<tr>
<td>17</td>
<td>Repair the open, high resistance or short to ground in the horn fuse supply voltage circuit. Refer to Circuit Testing and Wiring Repairs. Did you complete the repair?</td>
<td>Go to Step 22</td>
<td>-</td>
</tr>
<tr>
<td>18</td>
<td>Repair the open or high resistance in the horn ground circuit. Refer to Circuit Testing and Wiring Repairs. Did you complete the repair?</td>
<td>Go to Step 22</td>
<td>-</td>
</tr>
<tr>
<td>19</td>
<td>Replace the horn relay. Refer to Relay Replacement (Attached to Wire Harness) or Relay Replacement (Within an Electrical Center). Did you complete the replacement?</td>
<td>Go to Step 22</td>
<td>-</td>
</tr>
<tr>
<td>20</td>
<td>Replace the horn assembly. Refer to Horn Replacement. Did you complete the replacement?</td>
<td>Go to Step 22</td>
<td>-</td>
</tr>
<tr>
<td>21</td>
<td>Replace the body control module (BCM). Refer to Control Module References for replacement, setup and programming. Did you complete the replacement?</td>
<td>Go to Step 22</td>
<td>-</td>
</tr>
<tr>
<td>22</td>
<td>Operate the horns. Do the horns operate properly?</td>
<td>System OK</td>
<td>Go to Step 1</td>
</tr>
</tbody>
</table>

HORNS - POOR TONE

Horns - Poor Tone

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Did you perform the Diagnostic System</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Go to Step 1
<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Check - Vehicle?</td>
</tr>
<tr>
<td>2</td>
<td>Depress the horn switch. Do the horns have a harsh tone or buzzing?</td>
</tr>
</tbody>
</table>
| 3    | 1. Test the horn mounting hardware for adequate torque. Refer to **Fastener Tightening Specifications**.  
    2. Inspect the horns for debris in the joint where the horns attach to the vehicle. |
|      | Did you find and correct the condition? |
| 4    | Perform the following for each of the horns:  
    1. Disconnect the horn connector.  
    2. Connect a 15-amp fuse jumper wire between the positive battery terminal and the horn fuse supply voltage circuit terminal of the horn.  
    3. Connect another jumper wire between the negative battery terminal and the ground terminal of the horn. |
| 5    | Repair the high resistance in the horn fuse supply voltage circuit or the horn ground circuit. Refer to **Circuit Testing** and **Wiring Repairs**.  
    Did you complete the repair? |
| 6    | Replace the horn. Refer to **Horn Replacement**.  
    Did you complete the replacement? |
| 7    | Operate the horns.  
    Do the horns operate properly? |

**Diagnostic System Check - Vehicle**

**Testing for Intermittent Conditions and Poor Connections**

**Circuit Testing and Wiring Repairs**

**Horn Replacement**
REPAIR INSTRUCTIONS

HORN REPLACEMENT

Removal Procedure

![View Of Horn Assembly](image)

Fig. 6: View Of Horn Assembly

Courtesy of GENERAL MOTORS CORP.

1. Remove the grille. Refer to Grille Replacement.
2. Disconnect the horn assembly electrical connector.
3. Remove the bolt that retains the horn assembly to the radiator support.
4. Remove the horn assembly from the body.

**Installation Procedure**

1. Install the horn assembly to the radiator support.

   **NOTE:** Refer to FASTENER NOTICE.

2. Install the bolt that retains the horn assembly to the radiator support.

---

*Fig. 7: View Of Horn Assembly*
**Courtesy of GENERAL MOTORS CORP.**
Tighten: Tighten the bolt to 10 N.m (88 lb in).

3. Connect the horn assembly electrical connector.
4. Install the grille. Refer to Grille Replacement.

HORN SWITCH REPLACEMENT

The horn switch is an internal component of the steering wheel inflator module and is not serviceable. If the horn switch fails and needs replacement. Refer to Inflatable Restraint Steering Wheel Module Replacement.

DESCRIPTION AND OPERATION

HORNS SYSTEM DESCRIPTION AND OPERATION

System Description

The horn system consists of the following components:

- The HORN fuse
- The horn relay
- The horn switch
- The horn assembly
- The body control module (BCM)

System Operation

The vehicle horn system is activated under the following conditions:

- The horn switch is depressed.
- The BCM commands the horns on. 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 OnStar® system is used to sound the horns (if equipped.) For further information refer to OnStar Description and Operation.
  - When the unlock button on the keyless entry transmitter is pressed, a horn chirp will
sound to notify the driver that the vehicle has been unlocked. For further information refer to **Keyless Entry System Description and Operation**.

- When the lock button on the keyless entry transmitter is pressed twice within 5 seconds, a horn chirp will sound to notify the driver that the vehicle has been locked. 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 the horn switch 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 fuse supply voltage circuit. The horns sound as long as ground is applied to the horn relay control circuit.