# HORNS

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## DESCRIPTION AND OPERATION

### INTRODUCTION

**WARNING: ON VEHICLES EQUIPPED WITH AIRBAG, SEE GROUP 8M, RESTRAINT SYSTEMS FOR STEERING WHEEL OR COLUMN REMOVAL PROCEDURES.**

The horn circuit consists of a horn switch, horn relay, and horn. The horn circuit feed is from the fuse to the horn relay in the Power Distribution Center (PDC). The PDC is mounted on the battery tray. When the horn switch is depressed, it completes the ground circuit. The horn relay coil closes contacts and allows current to flow to the horn. The horn is grounded to the headlamp ground connection (Fig. 1).

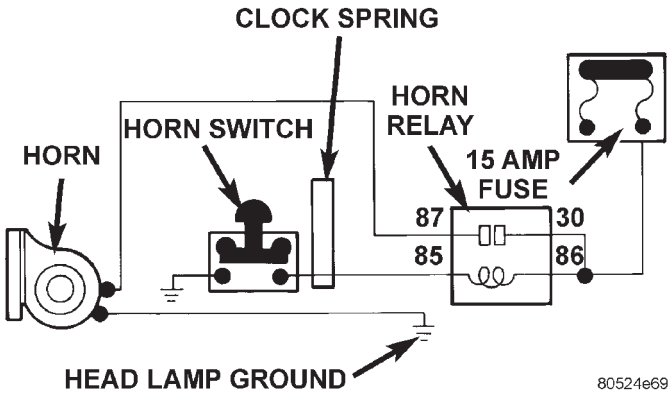


*Fig. 1 Horn System*

**NOTE: This group covers both Left-Hand Drive (LHD) and Right-Hand Drive (RHD) versions of this model. Whenever required and feasible, the RHD versions of affected vehicle components have been constructed as mirror-image of the LHD versions. While most of the illustrations used in this group represent only the LHD version, the diagnostic and service procedures outlined can generally be applied to either version. Exceptions to this rule have been clearly identified as LHD, RHD, or Export if a special illustration or procedure is required.**

*HORN SWITCH*

The horn switch is mounted between the outer and inner cover of the Driver Airbag Module (Fig. 2). When the Driver Airbag is pressed the horn switch makes contact to ground. The ground signal is carried to the horn relay and the horn sounds.

(1) The horn switch grounds to the airbag housing.
(2) If horn does not sound check for corrosion:
- Horn wire
- Horn switch ground connected to airbag metal housing
- Airbag to steering wheel
- Ensure horn wire is properly connected and insulator is in place on wire

(3) Refer to Group 8W, Wiring Diagrams if wire circuit needs to be repaired.

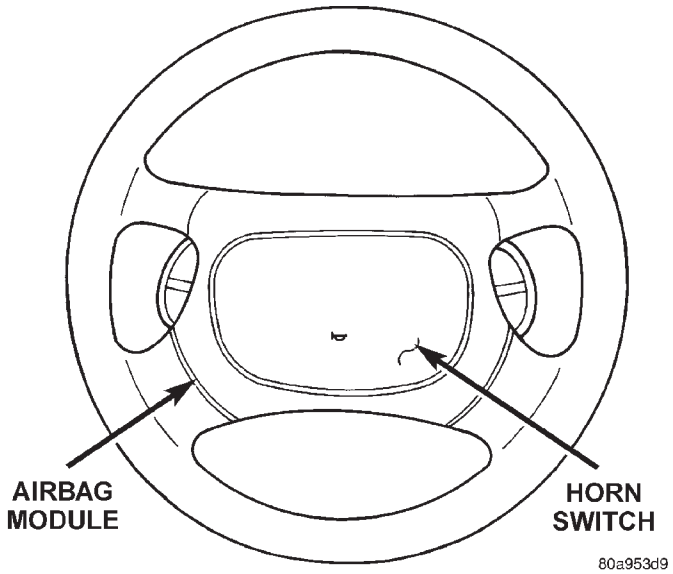


*Fig. 2 Horn Switch*

## DIAGNOSIS AND TESTING

### HORN

(1) Disconnect wire connector at horn.

(2) Using a voltmeter, connect one lead to ground terminal and the other lead to the positive wire terminal (Fig. 3).

(3) Depress the horn switch, battery voltage should be present.

(4) If no voltage, refer to Horn System Test. If voltage is OK, go to Step 5.

(5) Using ohmmeter, test ground wire for continuity to ground.

(6) If no ground repair as necessary.

(7) If wires test OK and horn does not sound, replace horn.

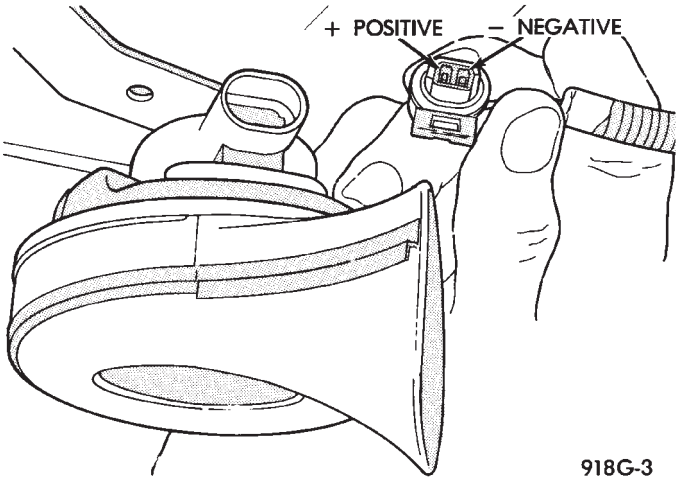


*Fig. 3 Horn and Connector*

### HORN RELAY

(1) Remove horn relay.

(2) Using ohmmeter, test for continuity between ground and circuit 65 of horn relay.

(a) When the horn switch is not depressed, no continuity should be present.

(b) Continuity to ground when horn switch is depressed.

(c) If continuity is not correct repair horn switch or wiring as necessary, refer to Group 8W, Wiring Diagrams.

(3) Insert a jumper wire between circuit 63 and 66 of the Power Distribution Center.

(a) If horn sounds replace relay.

(b) If the horn does not sound, install horn relay and refer to Horn Test.

(4) Using voltmeter, test voltage at:

(a) Circuit 62 and 66 test for battery voltage from fuse C to body ground.

(b) If voltage is incorrect repair as necessary. Refer to Group 8W, Wiring Diagrams.

(5) Check relay for 70 to 75 ohms resistance from terminal 85 to 86 (Fig. 4). If resistance not OK, replace relay.

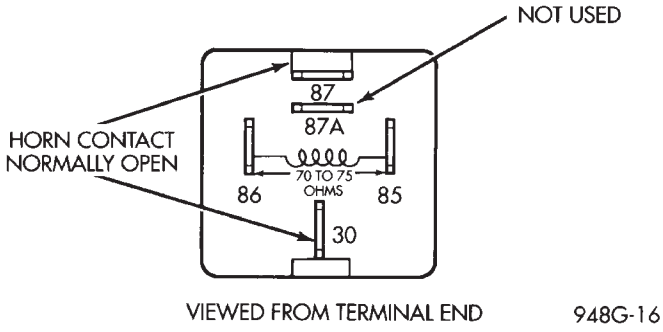


*Fig. 4 Horn and Connector*

### HORN SWITCH

(1) Remove horn relay from the Power Distribution Center.

(2) Using ohmmeter, connect one lead to ground and the other lead to cavity 65 of the power distribution center (Fig. 5).

(3) Depress horn switch, should have continuity. If no continuity go to Step 4.

(4) Test continuity at horn switch, remove the Driver Airbag Module. Refer to Driver Airbag Module Removal and Installation procedures.

(5) Using ohmmeter, connect one lead to the airbag module ground and the other lead to B+ wire (Fig. 6).

(6) Depress horn switch, and the meter should show continuity. If no continuity, replace the Driver Airbag Module. If OK, repair as necessary.

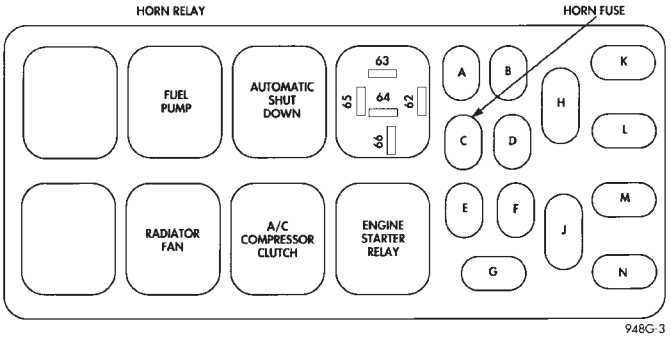


*Fig. 5 Power Distribution Center*

DIAGNOSIS AND TESTING (Continued)

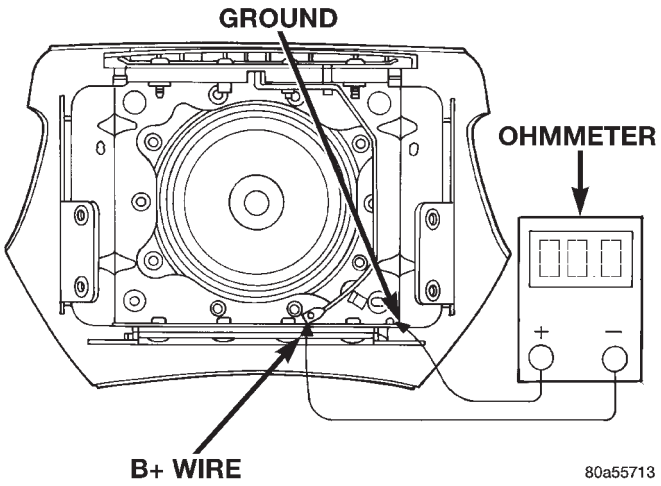


*Fig. 6 Test Horn Switch - Driver Airbag Module*

## SYSTEM TEST

Refer to Horn System Test below. If the horn does not sound, check horn fuse located in the Power Distribution Center. If the fuse is blown, replace with the correct fuse. If the horn fail to sound and the new fuse blows when depressing the horn switch, a short circuit in the horn or the horn wiring between the fuse terminal and the horn is responsible, or a defective horn switch allowed the horn to burn out is responsible.

If the fuse is OK, test horn relay refer to Horn Relay Test.

If the relay is OK, test horn refer to Horn Test.

**CAUTION: Continuous sounding of horn may cause horn relay to fail.**

Should the horn sound continuously:

- Unplug the horn relay from Power Distribution Center.
- Refer to Horn Relay Test.

Refer to Group 8W, wiring Disgrams for circuit and wiring information.

REMOVAL AND INSTALLATION (Continued)

| HORN SYSTEM TEST | | |
|---|---|---|
| **CONDITION** | **POSSIBLE CAUSE** | **CORRECTION** |
| Horn sounds continuously.<br>NOTE: Immediately unplug horn relay in the Power Distribution Center (PDC) | (1) Faulty horn relay.<br>(2) Horn control circuit to relay shorted to ground.<br>(3) Pinched horn switch wire under Driver Airbag Module.<br>(4) Defective horn switch | (1) Refer to horn relay test.<br>(2) Check terminal 65 in PDC for continuity to ground. If continuity to ground indicates:<br>(a) Steering Wheel horn switch/lead shorted to ground.<br>(b) Wiring harness shorted to ground. Find the short and repair as necessary.<br>(3) Replace Driver Airbag Module.<br>(4) Replace Driver Airbag Module. |
| Horn sound intermittently as the steering wheel is turned. | (1) Horn relay control circuit X3 is shorted to ground inside steering wheel.<br>(2) Pinched horn switch wire under Driver Airbag Module<br>(3) Defective horn switch | (1) Remove Driver Airbag Module and/or steering wheel. Check for rubbing or loose wire/connector, repair as necessary.<br>(2) Replace Driver Airbag Module.<br>(3) Replace Driver Airbag Module. |
| Horn does not sound | (1) Check fuse 23 in PDC<br>(2) No Voltage at horn RELAY TERMINALS 62 & 66, and fuse is OK.<br>(3) Open circuit from terminal 65 of the horn relay to horn switch X3 circuit.<br>(4) Defective or damaged horn.<br>(5) Defective horn switch | (1) Replace fuse if blown repair as necessary.<br>(2) No voltage, repair PDC as necessary.<br>(3) Repair circuit as necessary.<br>(4) Voltage at horn when horn switch is pressed, replace horn.<br>(5) Replace Driver Airbag Module. |
| Fuse blows when horn sounds | (1) Short circuit in horn or horn wiring | (1) Remove horn relay, check for shorted horn or horn wiring. Disconnect horn wire harness to isolate short and repair as necessary. |
| Fuse blows without blowing horn<br><br>NOTE: For wiring repairs refer to Group 8W, Wire Diagrams. | (1) Short circuit | (1) Remove relay, install new fuse, if fuse does not blow replace horn relay. If fuse blows with relay removed, check for short to ground with ohmmeter on circuit between terminals 62 & 66 and the fuse terminal. Repair as necessary. |

## REMOVAL AND INSTALLATION

### HORN

*REMOVAL*

Disconnect connector and remove horn attaching nuts from the bumper support bracket (Fig. 7).

*INSTALLATION*

For installation, reverse the above procedures. Insure that the horn projector does not touch bumper reinforcement or the sound output may be altered.

### HORN RELAY

*REMOVAL*

(1) Remove the Power Distribution Center cover and locate the horn relay.

(2) Remove the horn relay (Fig. 5).

*INSTALLATION*

For installation, reverse the above procedures.

### HORN SWITCHES

The Horn Switch is part of the Driver Airbag Module. Refer to Driver Airbag Module Removal and Installation procedures in Group 8M.

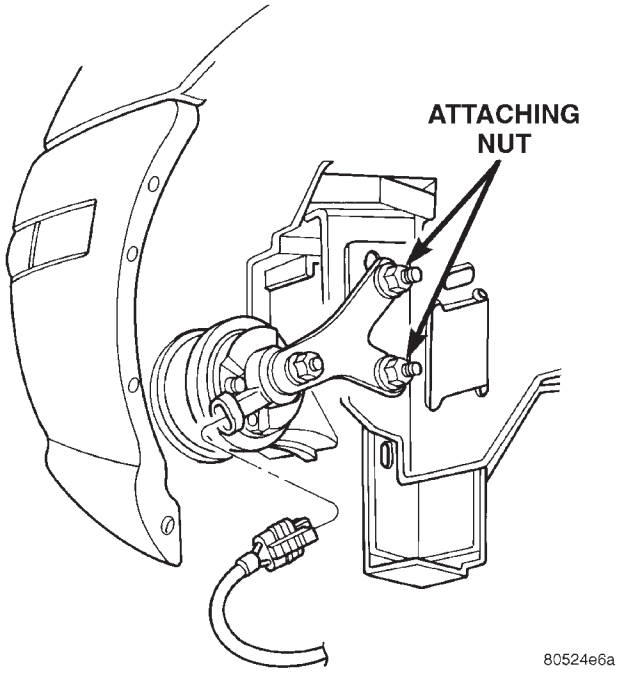


***Fig. 7 Horn Location***