

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 contact, horn relay, and horns. The horn circuit feed is from the fuse to the horn relay in the Junction Block. When the horn contact is depressed, it completes the ground circuit. Then the horn relay coil closes a set of contacts which allows current to flow to the horns. The horn(s) are grounded at the shock tower. Refer to Group 8W, Wiring Diagrams for horn circuit.

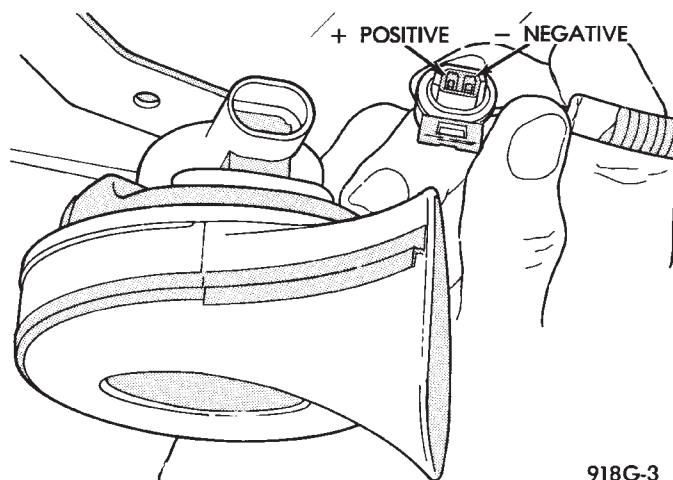
DIAGNOSIS AND TESTING

HORN

- Disconnect wire connector at horn.
- Using a voltmeter, connect one lead to ground terminal and the other lead to the positive wire terminal (Fig. 1).
- Depress the horn switch, battery voltage should be present.
- If no voltage, refer to Horn Does Not Sound. If voltage is OK, go to Step 5.
- Using ohmmeter, test ground wire for continuity to ground.
- If no ground repair as necessary.
- If wires test OK and horn does not sound, replace horn.

HORN SWITCH

The horn switch is mounted between the outer and inner covers of the Driver Airbag Module. When the driver airbag module is pressed the horn switch makes contact to ground. The ground signal is carried to the horn relay and horn sounds.



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Fig. 1 Horn and Connector

- The horn switch grounds to the airbag housing (Fig. 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
- Refer to Group 8W, Wiring Diagrams if wire circuit needs to be repaired.

HORN RELAY

- Remove horn relay from the Junction Block (Fig. 3).
- Using ohmmeter, test between the Junction Block relay terminal 7 and ground for continuity.
 - When the horn contact is not depressed, no continuity.
 - Continuity to ground when horn contact is depressed.
 - If continuity is not correct, repair horn contact or wiring as necessary. Refer to Group 8W, Wiring diagrams.

DIAGNOSIS AND TESTING (Continued)

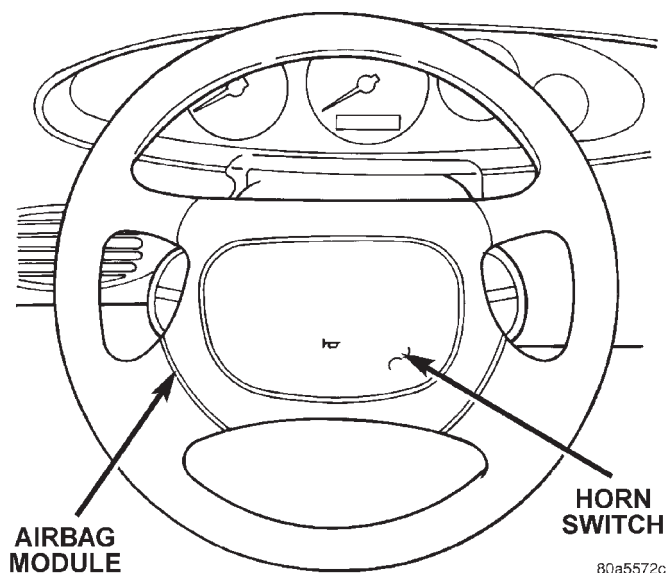


Fig. 2 Horn Switch

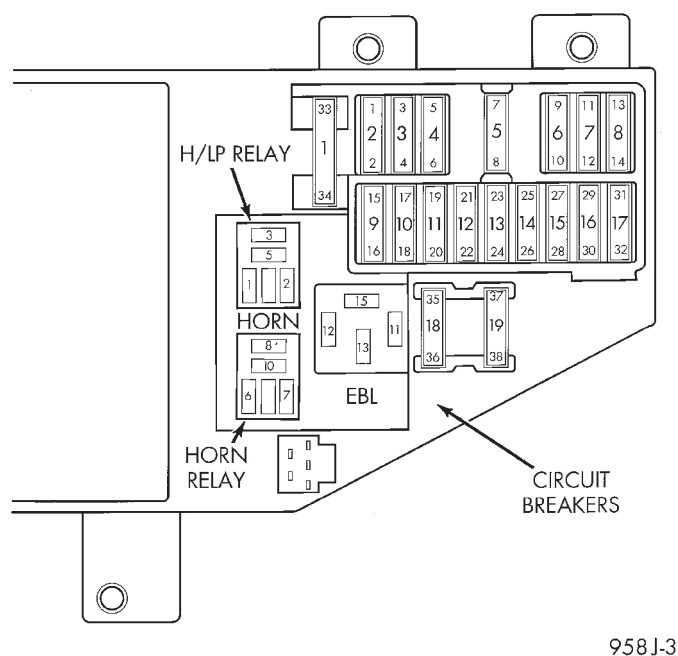


Fig. 3 Horn Relay Location

- (3) Insert a jumper wire between terminals 8 and 10 of the horn relay in the Junction Block.
 - (a) If horns sound replace relay.
 - (b) If the horns do not sound, install horn relay and refer to Horn Test.
- (4) Using voltmeter, test battery voltage:
 - (a) Test Junction Block horn relay terminals 6 and 8 for voltage from fuse 8.
 - (b) If not OK, repair as necessary. Refer to Group 8W, Wiring Diagrams.

HORNS WILL NOT SOUND

Check horn fuse 12 in the Power Distribution Center and fuse 8 in the Junction Block. If fuse is blown refer to Fuse Blown section. If fuse is OK, refer to Fuse OK section.

FUSE BLOWN

- (1) Verify condition of battery terminals and voltage, refer to Group 8A, Battery. If battery connections and battery charge is OK, go to Step 2.
- (2) Using a voltmeter, test for battery voltage at both sides of horn fuse 8. If voltage is OK, on both sides of fuse, go to Fuse OK. If voltage is OK, on one side of fuse, the fuse is blown, go to Step 3.
- (3) Using a suitable ammeter in place of the fuse, test amperage draw of the horn circuit. If amperage draw is greater than 20 amps without the horn switch depressed, a grounded circuit exists between the fuse and the horn relay. Go to Step 4. If amperage draw is greater than 20 amps with the horn switch depressed, a grounded circuit exists between the horn relay and the horn. Go to Step 6.
- (4) Remove the horn relay from the Junction Block. If the amperage draw drops to 0 amps, the horn switch or circuit is shorted. Refer to group 8W, Wiring Diagrams for circuit information. If amperage does not drop go to Step 5.
- (5) Disconnect both horns. If amperage does not drop with both horns disconnected and the horn switch depressed, go to Step 7. If the amperage draw drops go to Step 6.
- (6) Disconnect the wire connector from one of the horns. If amperage drops and the connected horn sounds, reverse the procedure, and replace the faulty horn.

(7) Using a continuity tester, with the horns disconnected test continuity of the X2 cavity of the horn relay to ground. Refer to Group 8W, Wiring Diagrams for circuit information. If continuity is detected, the circuit is grounded between the Junction Block and the horns. Locate and repair pinched harness. If the amperage draw does not drop to 0 amps, repair short at the Junction Block.

FUSE OK

- (1) Remove the horn relay from the Junction Block.
- (2) Using a continuity tester, Depress horn switch and test continuity from the X3 cavity of the horn relay to ground. Refer to Group 8W, Wiring Diagrams for circuit information.
 - (a) If continuity is detected, go to Step 3.
 - (b) If NO continuity, go to Step 4.
- (3) Using a suitable jumper wire, jump across the fuse F62 cavity and the X2 cavity of the horn relay in the Junction Block.
 - (a) If the horn sounds, replace the horn relay.

DIAGNOSIS AND TESTING (Continued)

- (b) If the horn does not sound, go to Step 4.
- (4) Remove driver airbag module from steering wheel. Refer to Group 8M, Restraint Systems for proper procedures.
- (5) Test continuity across horn switch wire to the airbag metal housing with horn switch depressed.
 - (a) If continuity is detected, check for a open circuit between the relay and the horn switch.
 - (b) If NO continuity:
 - (I) Remove the horn attaching screws. Refer to Horn Switch Removal and Installation procedures.
 - (II) Lift top of outer cover and check continuity between the horn wire and the horn switch ground contact. If no continuity replace horn switch. If OK, check airbag module surface for corrosion, repair as necessary.
- (6) Install horn relay into Junction Block.
- (7) Disconnect the wire connectors from horns.

- (8) Using a voltmeter, with the horn switch depressed test voltage across horn connector terminals of the wire harness (Fig. 1).
 - (a) If voltage is detected, replace horns.
 - (b) If NO voltage, go to Step 9.
- (9) With the horn switch depressed, test for voltage between the X2 circuit and ground.
 - (a) If voltage OK, repair system ground at right cowl area. Refer to Group 8W, Wiring Diagrams.
 - (b) If NO voltage, repair open X2 circuit between the relay and the horns.

SYSTEM TEST

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

Check fuse 8 in the Junction Block, and refer to Horn System Test.

HORN SYSTEM TEST		
CONDITION	POSSIBLE CAUSE	CORRECTION
Horn sounds continuously. NOTE: Immediately unplug horn and relay in the Junction Block	(1) Faulty horn relay. (2) Horn control circuit to relay shorted to ground. (3) Pinched horn switch wire under Driver Airbag Module. (4) Defective horn switch	(1) Refer to horn relay test. (2) Check horn relay terminal 8 in the Junction Block for continuity to ground indicates: (a) Wiring harness shorted to ground. (b) Find the short and repair as necessary. (3) Remove Driver Airbag Module and check for rubbing, shorted or loose wire connector and repair as necessary. (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 column or the wheel. (2) Pinched horn switch wire under Driver Airbag Module (3) Defective horn switch	(1) Remove Driver Airbag Module and/or steering wheel as needed. Check for rubbing or loose wire/connector, repair as necessary. (2) Replace Driver Airbag Module. (3) Replace Driver Airbag Module.
Horn does not sound	(1) Check fuse 8 in the Junction Block. (2) No Voltage at horn relay terminals 6 & 8, and fuse is OK. (3) Defective or damaged horn. (4) Defective horn switch	(1) Replace fuse if blown as repair as necessary. (2) No voltage, Repair or replace Junction Block as necessary. (3) Voltage at horn when horn switch is pressed, replace horn. (4) Replace Driver Airbag Module.
Fuse blows when horn is blown	(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 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 6 & 8 and the fuse terminal. Repair as necessary.

DIAGNOSIS AND TESTING (Continued)

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

REMOVAL AND INSTALLATION**HORNS****REMOVAL**

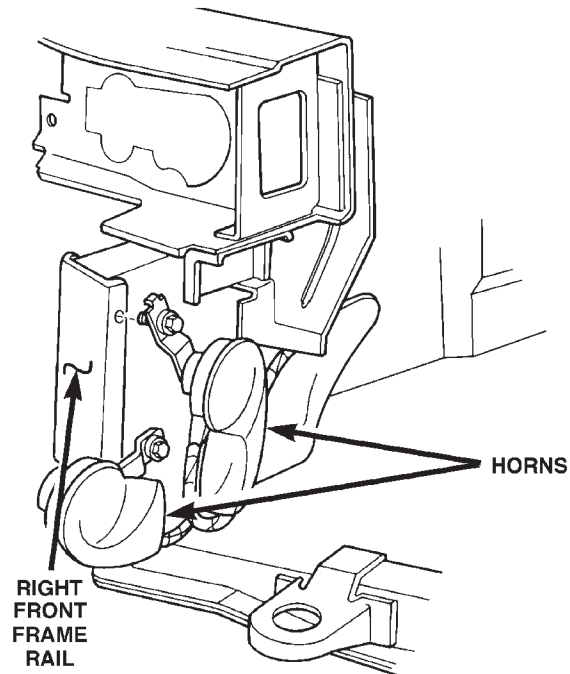
- (1) Hoist and support front vehicle on safety stands.
- (2) The horns are located behind the front fascia on the right front frame rail. Remove the splash shield as necessary for access, front.
- (3) Disconnect the wire connector from the horn.
- (4) Remove mount bracket attaching bolt from the front frame rail. Do not remove horn from mounting bracket (Fig. 4).
- (5) Remove horn from vehicle.

INSTALLATION

For installation, reverse the above procedures

HORN SWITCH

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



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Fig. 4 Horn Location

HORN RELAY**REMOVAL**

- (1) Open driver's door and remove instrument panel end cover.
- (2) Remove horn relay (Fig. 3).

INSTALLATION

For installation, reverse the above procedures.