HORN SYSTEMS

CONTENTS

GENERAL INFORMATION

INTRODUCTION

Following are general descriptions of the major components in the factory-installed horn systems. Refer to 8W-41 - Horns/Cigar Lighter in Group 8W - Wiring Diagrams for complete circuit descriptions and diagrams.

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 or RHD, if a special illustration or procedure is required.

DESCRIPTION AND OPERATION

HORN RELAY

The horn relay is a International Standards Organization (ISO) relay. The relay is a electromechanical device that switches battery current to the horn when the horn switch grounds the relay coil. See the Diagnosis and Testing section of this group for more information on the operation of the horn relay.

The horn relay is located in the junction block, on the right cowl side panel below the instrument panel in the passenger compartment. If a problem is encountered with a continuously sounding horn, it can usually be quickly resolved by removing the horn relay from the junction block until further diagnosis is completed.

The horn relay cannot be repaired and, if faulty or damaged, it must be replaced.

HORN SWITCH

A center-blow, resistive membrane type horn switch is installed on the back side of the driver side airbag module trim cover in the center of the steering wheel. When the center area of the airbag trim cover is depressed, the horn switch completes a circuit to ground for the coil side of the horn relay. The steering wheel and steering column must be properly grounded for the horn switch to function.

The horn switch is only serviced as a part of the airbag module trim cover. If the horn switch should fail, or if the airbag is deployed, the airbag module trim cover and horn switch unit must be replaced.

HORN

Dual-note, electromagnetic diaphragm-type horns are standard equipment. The low-note horn is mounted and grounded to the left radiator closure panel brace, behind the front bumper. The high-note horn is connected in parallel with the low-note horn. The high-note horn is mounted and grounded to the right radiator closure panel brace, behind the front bumper. Both horns receive battery feed through the closed contacts of the horn relay.

The horns cannot be repaired or adjusted and, if faulty or damaged, they must be replaced.

NOTE: A cadmium-plated screw is used to mount the horns. Do not substitute other types of screws, as they may become corroded and cause a loss of horn ground.

DIAGNOSIS AND TESTING

HORN RELAY

For circuit descriptions and diagrams, refer to 8W-41 - Horns/Cigar Lighter in Group 8W - Wiring Diagrams.

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

RELAY TEST

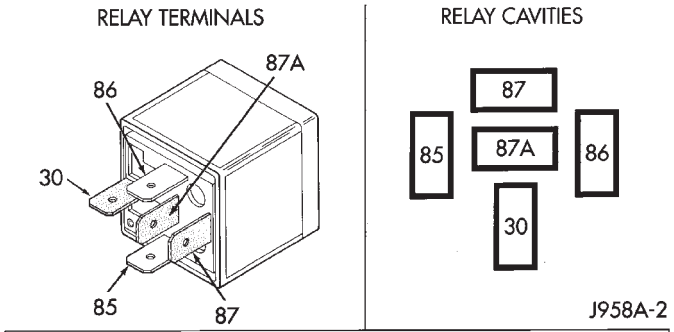
The horn relay is located in the junction block. The junction block is attached to the right cowl side inner panel, below the instrument panel and behind the right cowl side trim panel.

Remove the horn relay from the junction block as described in this group to perform the following tests:

(1) A relay in the de-energized position should have continuity between terminals 87A and 30, and no continuity between terminals 87 and 30. If OK, go to Step 2. If not OK, replace the faulty relay.

(2) Resistance between terminals 85 and 86 (electromagnet) should be 75 ± 5 ohms. If OK, go to Step 3. If not OK, replace the faulty relay.

(3) Connect a battery to terminals 85 and 86. There should now be continuity between terminals 30 and 87, and no continuity between terminals 87A and 30. If OK, see the Relay Circuit Test in this group. If not OK, replace the faulty relay.



TERMINAL LEGEND	
NUMBER	IDENTIFICATION
30	COMMON FEED
85	COIL GROUND
86	COIL BATTERY
87	NORMALLY OPEN
87A	NORMALLY CLOSED

Horn Relay

RELAY CIRCUIT TEST

(1) The relay common feed terminal cavity (30) is connected to battery voltage and should be hot at all times. If OK, go to Step 2. If not OK, repair the open circuit to the fuse in the junction block as required.

(2) The relay normally closed terminal (87A) is connected to terminal 30 in the de-energized position, but is not used for this application. Go to Step 3.

(3) The relay normally open terminal (87) is connected to the common feed terminal (30) in the energized position. This terminal supplies battery voltage to the horn(s). There should be continuity between the cavity for relay terminal 87 and the relay output circuit cavity of each horn wire harness connector at all times. If OK, go to Step 4. If not OK, repair the open circuit to the horn(s) as required.

(4) The coil battery terminal (86) is connected to the electromagnet in the relay. It is connected to battery voltage and should be hot at all times. Check for battery voltage at the cavity for relay terminal 86. If OK, go to Step 5. If not OK, repair the open circuit to the fuse in the junction block as required.

(5) The coil ground terminal (85) is connected to the electromagnet in the relay. It is grounded through the horn switch when the horn switch is depressed. Check for continuity to ground at the cavity for relay terminal 85. There should be continuity with the horn switch depressed, and no continuity with the horn switch released. If not OK, see the diagnosis for the Horn Switch in this group.

HORN SWITCH

For circuit descriptions and diagrams, refer to 8W-41 - Horns/Cigar Lighter in Group 8W - Wiring Diagrams.

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

(1) Disconnect and isolate the battery negative cable. Remove the steering column opening cover and knee blocker. Check for continuity between the metal steering column jacket and a good ground. There should be continuity. If OK, go to Step 2. If not OK, refer to Group 19 - Steering and check for proper installation of the steering column mounting nuts.

(2) Remove the driver side airbag module as described in Group 8M - Passive Restraint Systems. Unplug the horn switch wire harness connector from the airbag module. Unplug the horn relay from the

DIAGNOSIS AND TESTING (Continued)

junction block. Check for continuity between the steering column half of the horn switch feed wire harness connector and a good ground. There should be no continuity. If OK, go to Step 3. If not OK, repair the short circuit as required.

(3) Check for continuity between the steering column half of the horn switch feed wire harness connector and the horn relay control circuit cavity for the horn relay in the junction block. There should be continuity. If OK, go to Step 4. If not OK, repair the open circuit as required.

(4) Check for continuity between the horn switch feed wire and the horn switch ground wire on the airbag module. There should be no continuity. If OK, go to Step 5. If not OK, replace the faulty horn switch.

(5) Depress the center of the airbag module cover and check for continuity between the horn switch feed wire and the horn switch ground wire on the airbag module. There should now be continuity. If not OK, replace the faulty horn switch.

HORN

For circuit descriptions and diagrams, refer to 8W-41 - Horns/Cigar Lighter in Group 8W - Wiring Diagrams.

(1) Measure the resistance between the horn mounting bracket and a good ground. There should be zero ohms resistance. If OK, go to Step 2. If not OK, repair the horn ground connection as required.

(2) Unplug the horn wire harness connector. Depress the horn switch. There should be battery voltage at the horn wire harness connector. If OK, replace the faulty horn. If not OK, repair the open circuit to the horn relay as required.

REMOVAL AND INSTALLATION

HORN RELAY

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

(1) Disconnect and isolate the battery negative cable.

(2) Remove the fuse access panel by unsnapping it from the right cowl side trim panel.

(3) Remove the stamped nut that secures the right cowl side trim to the junction block stud (Fig. 1).

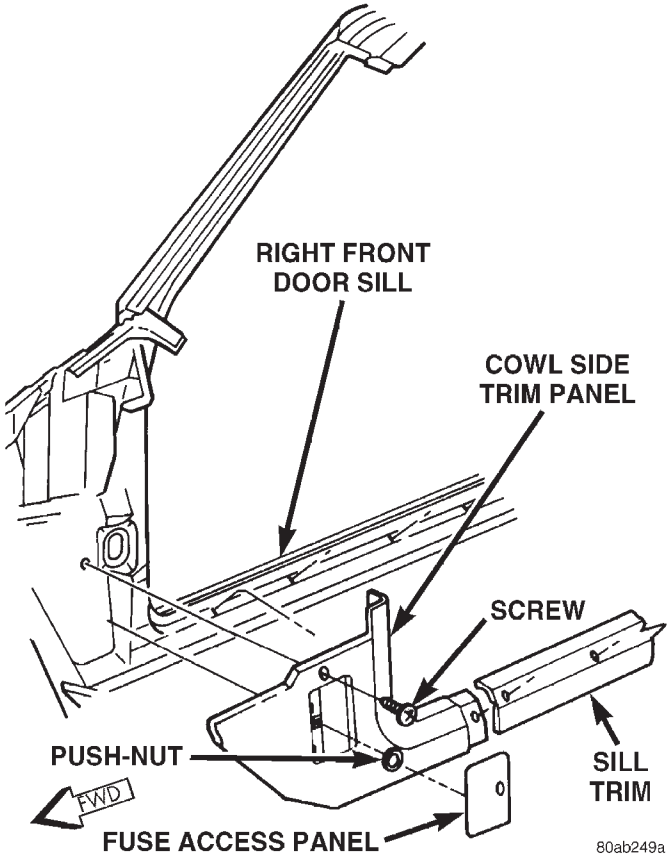


Fig. 1 Right Cowl Side Trim Remove/Install

(4) Remove the screw located above the fuse access opening that secures the right cowl side trim to the right cowl side inner panel.

(5) Remove the screw that secures the right door sill trim and the right cowl side trim to the right door opening sill.

(6) Remove the right cowl side trim panel from the vehicle.

(7) Unplug the horn relay from the junction block.

(8) Install the horn relay by aligning the relay terminals with the cavities in the junction block and pushing the relay firmly into place.

(9) Connect the battery negative cable.

(10) Test the relay operation.

(11) Install the right cowl side trim and the fuse access panel.

REMOVAL AND INSTALLATION (Continued)

HORN SWITCH

WARNING: ON VEHICLES EQUIPPED WITH A DRIVER SIDE AIRBAG, THE HORN SWITCH IS INTEGRAL TO THE AIRBAG MODULE TRIM COVER. SERVICE OF THIS COMPONENT SHOULD BE PERFORMED ONLY BY CHRYSLER-TRAINED AND AUTHORIZED DEALER SERVICE TECHNICIANS. FAILURE TO TAKE THE PROPER PRECAUTIONS OR TO FOLLOW THE PROPER PROCEDURES COULD RESULT IN ACCIDENTAL, INCOMPLETE, OR IMPROPER AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY. REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS FOR THE SERVICE PROCEDURES.

HORN

(1) Disconnect and isolate the battery negative cable.

(2) Raise and support the vehicle.

(3) Remove the front underbody splash shield.

NOTE: Do not remove the horn from its mounting bracket.

(4) Remove the horn mounting bracket screw and lower the horn and mounting bracket unit far enough to access the wire harness connector (Fig. 2).

(5) Unplug the wire harness connector from the horn.

(6) Remove the horn and mounting bracket from the vehicle.

(7) Reverse the removal procedures to install. Tighten the horn mounting bracket screw to 28.5 N·m (21 ft. lbs.).

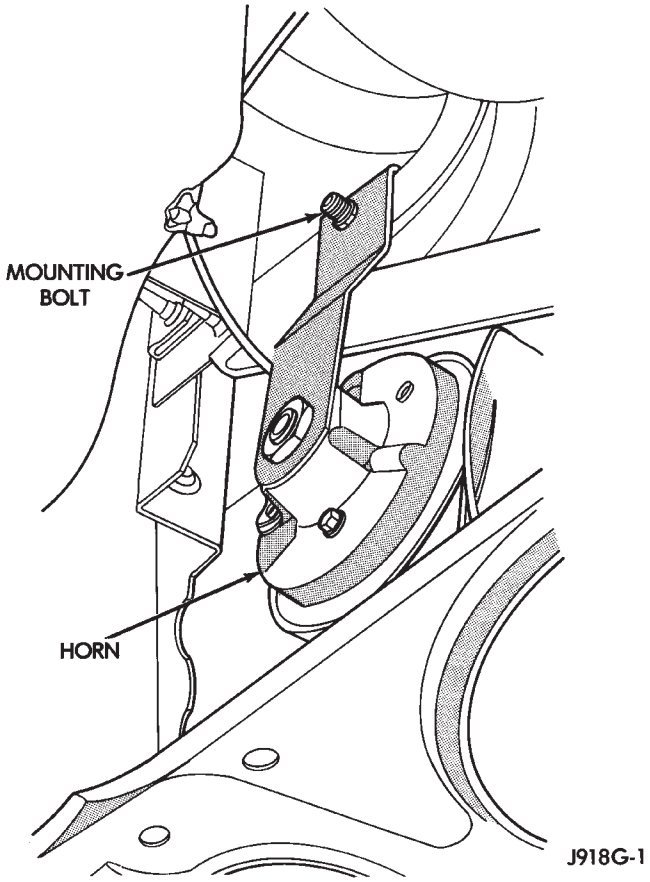


Fig. 2 Horns Remove/Install