

AUDIO SYSTEMS

CONTENTS

	page	page
GENERAL INFORMATION		
INTRODUCTION	1	
MEMORY SYSTEM	1	
DESCRIPTION AND OPERATION		
ANTENNA	3	
BODY CONTROL MODULE	2	
IGNITION-OFF DRAW FUSE	2	
RADIO NOISE SUPPRESSION	3	
RADIOS	1	
REMOTE RADIO SWITCHES	2	
SPEAKERS	2	
DIAGNOSIS AND TESTING		
ANTENNA	6	
AUDIO SYSTEM		3
RADIO FREQUENCY INTERFERENCE		7
RADIO		5
REMOTE RADIO SWITCHES		5
SPEAKERS		5
REMOVAL AND INSTALLATION		
AMPLIFIER		9
ANTENNA		11
RADIO		8
REMOTE RADIO SWITCHES		8
SPEAKERS		9

GENERAL INFORMATION

INTRODUCTION

Following are general descriptions of the major components used in both the standard and optional equipment audio systems. Refer to 8W-47 Audio System in Group 8W - Wiring Diagrams for complete circuit descriptions and diagrams.

MEMORY SYSTEM

An electronic memory system is an available option on this model. The memory system is able to store and recall the driver's power seat positions (including power lumbar and recliner positions), both outside power mirror positions, and ten radio station presets (including last station tuned) for two drivers. The memory system will automatically return to all of these settings when the corresponding button (Driver 1 or 2) of the memory switch on the driver's front door trim panel is depressed, or when the doors are unlocked using the corresponding (Driver 1 or 2) Remote Keyless Entry (RKE) transmitter.

The Driver Door Module (DDM) receives hard-wired input from the memory set/select switch on the driver's front door trim panel. The DDM also receives messages on the Chrysler Collision Detection (CCD) data bus network from the Remote Keyless Entry (RKE) receiver in the Passenger Door Module (PDM) for the memory select function. The DDM processes these inputs and sends messages to the radio on the CCD data bus for memory recall.

The CCD data bus network allows the sharing of sensor information. This helps to reduce wiring harness complexity, reduce internal controller hardware, and reduce component sensor current loads. At the same time, this system provides increased reliability, enhanced diagnostics, and allows the addition of many new feature capabilities.

This group covers only the diagnostic procedures for the conventional audio system components. For additional information on the features and functions of the memory system, refer to the vehicle owner's manual. For diagnosis of the memory system, use of a DRB scan tool and the proper Body Diagnostic Procedures Manual are recommended.

DESCRIPTION AND OPERATION

RADIOS

Radio options include an AM/FM/cassette (RAS sales code), an AM/FM/cassette/5-band graphic equalizer (RBN sales code), an AM/FM/CD/3-band graphic equalizer (RBR sales code), or an AM/FM/CD/cassette/3-band graphic equalizer (RAZ sales code). All receivers are stereo Electronically Tuned Radios (ETR) and include a clock function.

All radio receivers, except the RAS model, communicate on the Chrysler Collision Detection (CCD) data bus network through a separate two-way connector. The CCD data bus network allows the sharing of sensor information. This helps to reduce wiring harness complexity, internal controller hardware, and component sensor current loads. At the same time,

DESCRIPTION AND OPERATION (Continued)

this system provides increased reliability, enhanced diagnostics, and allows the addition of many new feature capabilities.

Models equipped with the optional Vehicle Information Center (VIC) have a clock synchronization feature. The VIC clock's minutes display is automatically updated to the setting shown on the radio clock through a message sent on the CCD data bus by the radio. This synchronization does not apply to the hours display of the radio or VIC clocks. Refer to Group 8E - Instrument Panel Systems for more information on the VIC module.

Several audio system functions can be diagnosed using a DRB scan tool. Refer to the proper Body Diagnostic Procedures Manual for more information on DRB testing of the audio systems. For more information on radio features, setting procedures, and control functions refer to the owner's manual in the vehicle glove box.

REMOTE RADIO SWITCHES

A remote radio control switch option is available on Grand Cherokee Limited models with the AM/FM/cassette/5-band graphic equalizer (RBN sales code), or the AM/FM/CD/cassette/3-band graphic equalizer (RAZ sales code) radio receivers. Two rocker-type switches are mounted on the back (instrument panel side) of the steering wheel spokes. The switch on the left spoke is the seek switch and has seek up, seek down, and preset station advance functions. The switch on the right spoke is the volume control switch and has volume up, and volume down functions.

These switches are resistor multiplexed units that are hard-wired to the Body Control Module (BCM) through the clockspring. The BCM sends the proper messages on the Chrysler Collision Detection (CCD) data bus network to the radio receiver. For diagnosis of the BCM or the CCD bus, refer to the proper Body Diagnostic Procedures Manual. For more information on the operation of the remote radio switch controls, refer to the owner's manual in the vehicle glove box.

BODY CONTROL MODULE

A Body Control Module (BCM) is used on this model to control and integrate many of the vehicle's electrical functions and features. The BCM contains a central processing unit and interfaces with other modules in the vehicle on the Chrysler Collision Detection (CCD) data bus network.

The CCD data bus network allows the sharing of sensor information. This helps to reduce wiring harness complexity, reduce internal controller hardware, and reduce component sensor current loads. At the same time, this system provides increased reliability,

enhanced diagnostics, and allows the addition of many new feature capabilities.

One of the functions and features that the BCM supports and controls, is the remote radio switches. The BCM receives hard wired resistor multiplexed inputs from the remote radio switches. The programming in the BCM allows it to process those inputs and send the proper CCD data bus messages to control the radio volume, seek, and preset station advance functions.

The BCM is mounted under the left end of the instrument panel, behind the instrument panel support armature and below the left switch pod. Refer to Group 8E - Instrument Panel Systems for removal and installation procedures. For diagnosis of the BCM or the CCD data bus, refer to the proper Body Diagnostic Procedures manual. The BCM can only be serviced by an authorized repair station. Refer to the Warranty Policies and Procedures Manual for a listing of authorized repair stations.

IGNITION-OFF DRAW FUSE

All vehicles are equipped with an Ignition-Off Draw (IOD) fuse that is removed when the vehicle is shipped from the factory. This fuse feeds various accessories that require current when the ignition switch is in the Off position, including the clock and radio station preset memory functions. The fuse is removed to prevent battery discharge during vehicle storage.

When removing or installing the IOD fuse, it is important that the ignition switch be in the Off position. Failure to place the ignition switch in the Off position can cause the radio display to become scrambled when the IOD fuse is removed and replaced. Removing and replacing the IOD fuse again, with the ignition switch in the Off position, will correct the scrambled display condition.

The IOD fuse should be checked if the radio station preset memory or clock functions are erratic or inoperative. The IOD fuse is located in the junction block.

SPEAKERS

The standard equipment speaker system includes four full-range speakers, one mounted in each of the four doors. This speaker system is only offered on the standard AM/FM/cassette radio receiver (RAS sales code).

All other radio receivers include the Infinity Gold premium speaker and amplifier package upgrade. This package uses an Infinity 120 watt amplifier mounted on the floor beneath the rear seat cushion on the driver's side of the vehicle. The package includes an Infinity coaxial full-range speaker mounted in each rear door, an Infinity mid-range speaker mounted in each front door, and an Infinity

DESCRIPTION AND OPERATION (Continued)

tweeter mounted in each outboard end of the top of the instrument panel.

ANTENNA

All models use a fixed-length stainless steel rod-type antenna mast, installed at the right front fender of the vehicle. The antenna mast is connected to the center wire of the coaxial antenna cable and is not grounded to any part of the vehicle.

To eliminate static, the antenna base must have a good ground. The coaxial antenna cable shield (the outer wire mesh of the cable) is grounded to the antenna base and the radio chassis. The antenna cable has an additional disconnect, located near the right end of the instrument panel and the right cowl side panel, to allow instrument panel installation and removal without removing the radio.

The factory-installed ETRs automatically compensate for radio antenna trim. Therefore, no antenna trimmer adjustment is required or possible when replacing the receiver or the antenna.

RADIO NOISE SUPPRESSION

Radio Frequency Interference (RFI) and Electro-Magnetic Interference (EMI) noise suppression is accomplished primarily through circuitry internal to the radio receivers. These internal suppression devices are only serviced as part of the radio receiver.

External suppression devices that are serviced, and should be checked in the case of RFI or EMI noise complaints, include the following:

- Radio antenna base ground
- Radio chassis ground wire, strap, or bracket
- Engine-to-body ground strap (if equipped)
- Cab-to-bed ground strap (if equipped)
- Heater core ground strap (if equipped)
- Resistor-type spark plugs
- Radio suppression-type secondary ignition wiring.

In addition, if the source of RFI or EMI noise is identified as a component on the vehicle (i.e., generator, blower motor, etc.), the ground path for that component should be checked. If excessive resistance

is found in that circuit, repair that circuit as required before considering any component replacement.

If the source of the noise is identified as two-way mobile radio or telephone equipment, check the following:

- Power connections should be made directly to the battery, and fused as closely to the battery as possible.
- The antenna should be mounted on the roof or toward the rear of the vehicle. Remember that magnetic antenna mounts on the roof panel can adversely affect the operation of an overhead console compass, if the vehicle is so equipped.
- The antenna cable should be fully shielded coaxial cable, should be as short as is practical, and should be routed away from the vehicle wiring whenever possible.
- The antenna and cable must be carefully matched to ensure a low Standing Wave Ratio (SWR).

Fleet vehicles are available with an extra-cost RFI-suppressed Powertrain Control Module (PCM). This unit reduces interference generated by the PCM on some radio frequencies used in two-way radio communications. However, this unit will not resolve complaints of RFI in the commercial AM or FM radio frequency ranges.

DIAGNOSIS AND TESTING

AUDIO SYSTEM

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING 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.

DIAGNOSIS AND TESTING (Continued)

Audio System Diagnosis		
CONDITION	POSSIBLE CAUSE	CORRECTION
NO AUDIO.	1. Fuse faulty. 2. Radio connector faulty. 3. Wiring faulty. 4. Ground faulty. 5. Radio faulty. 6. Speakers faulty.	1. Check radio fuses in fuseblock module. Replace fuses, if required. 2. Check for loose or corroded radio connector. Repair, if required. 3. Check for battery voltage at radio connector. Repair wiring, if required. 4. Check for continuity between radio chassis and a known good ground. There should be continuity. Repair ground, if required. 5. Exchange or replace radio, if required. 6. See speaker diagnosis, in this group.
NO DISPLAY.	1. Fuse faulty. 2. Radio connector faulty. 3. Wiring faulty. 4. Ground faulty. 5. Radio faulty.	1. Check radio fuses in fuseblock module. Replace fuses, if required. 2. Check for loose or corroded radio connector. Repair, if required. 3. Check for battery voltage at radio connector. Repair wiring, if required. 4. Check for continuity between radio chassis and a known good ground. There should be continuity. Repair ground, if required. 5. Exchange or replace radio, if required.
NO MEMORY.	1. Fuse faulty. 2. Radio connector faulty. 3. Wiring faulty. 4. Ground faulty. 5. Radio faulty.	1. Check ignition-off draw fuse. Replace fuse, if required. 2. Check for loose or corroded radio connector. Repair, if required. 3. Check for battery voltage at radio connector. Repair wiring, if required. 4. Check for continuity between radio chassis and a known good ground. There should be continuity. Repair ground, if required. 5. Exchange or replace radio, if required.
POOR RADIO RECEPTION.	1. Antenna faulty. 2. Ground faulty. 3. Radio faulty.	1. See antenna diagnosis, in this group. Repair or replace antenna, if required. 2. Check for continuity between radio chassis and a known good ground. There should be continuity. Repair ground, if required.. 3. Exchange or replace radio, if required.
NO/POOR TAPE OPERATION.	1. Faulty tape. 2. Foreign objects behind tape door. 3. Faulty tape deck.	1. Insert known good tape and test operation. 2. Remove foreign objects and test operation. 3. Exchange or replace radio, if required.
NO COMPACT DISC OPERATION	1. Faulty CD. 2. Foreign material on CD. 3. Condensation on CD or optics. 4. Faulty CD player.	1. Insert known good CD and test operation. 2. Clean CD and test operation. 3. Allow temperature of vehicle interior to stabilize and test operation. 4. Exchange or replace radio, if required.

DIAGNOSIS AND TESTING (Continued)

RADIO

For circuit descriptions and diagrams, refer to 8W-47 - Audio System in Group 8W - Wiring Diagrams.

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

CAUTION: The speaker output of the radio is a "floating ground" system. Do not allow any speaker lead to short to ground, as damage to the radio may result.

(1) Check the fuse(s) in the junction block and the Power Distribution Center (PDC). If OK, go to Step 2. If not OK, replace the faulty fuse(s).

(2) Check for battery voltage at the fuse in the PDC. If OK, go to Step 3. If not OK, repair the open circuit as required.

(3) Turn the ignition switch to the On position. Check for battery voltage at the fuse in the junction block. If OK, go to Step 4. If not OK, repair the open circuit as required.

(4) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Remove the instrument cluster bezel. Remove the radio, but do not unplug any connections. Check for continuity between the radio chassis and a good ground. There should be continuity. If OK, go to Step 5. If not OK, repair the open circuit as required.

(5) Connect the battery negative cable. Turn the ignition switch to the On position. Check for battery voltage at the fused ignition switch output circuit cavity of the left (gray) radio connector. If OK, go to Step 6. If not OK, repair the open circuit as required.

(6) Turn the ignition switch to the Off position. Check for battery voltage at the fused B(+) circuit cavity of the left (gray) radio connector. If OK, replace the faulty radio. If not OK, repair the open circuit as required.

REMOTE RADIO SWITCHES

WARNING: ON VEHICLES EQUIPPED WITH AIR-BAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRE-

CAUTIONS COULD RESULT IN ACCIDENTAL AIR-BAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

(1) Disconnect and isolate the battery negative cable. Wait two minutes for the airbag system capacitor to discharge before further service.

(2) Remove the remote radio switches as described in this group.

(3) Use an ohmmeter to check the switch resistance as shown in the Remote Radio Switch Test chart.

Remote Radio Switch Test	
Switch Position	Resistance
Volume Up	7320 Ohms
Volume Down	1210 Ohms
Seek Up	4530 Ohms
Seek Down	2050 Ohms
Pre-Set Station Advance	10 Ohms

(4) If the switch checks OK, go to Step 5. If not OK, replace the faulty switch.

(5) Check for continuity between the ground circuit cavity of the switch connector and a good ground. There should be continuity. If OK, go to Step 6. If not OK, repair the open circuit as required.

(6) Unplug the 24-way white connector from the Body Control Module (BCM). Check for continuity between the radio control mux circuit cavity of the remote radio switch connector and a good ground. There should be no continuity. If OK, go to Step 7. If not OK, repair the short circuit as required.

(7) Check for continuity between the radio control mux circuit cavities of the remote radio switch and the BCM connectors. There should be continuity. If OK, refer to the proper Body Diagnostic Procedures Manual to test the BCM and the CCD data bus. If not OK, repair the open circuit as required.

SPEAKERS

For circuit descriptions and diagrams, refer to 8W-47 - Audio System in Group 8W - Wiring Diagrams.

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

DIAGNOSIS AND TESTING (Continued)

CAUTION: The speaker output of the radio is a "floating ground" system. Do not allow any speaker lead to short to ground, as damage to the radio may result.

(1) Turn the radio on. Adjust the balance and fader controls to check the performance of each individual speaker. Note the speaker locations that are not performing correctly. Go to Step 2.

(2) Turn the radio off. Disconnect and isolate the battery negative cable. Remove the instrument cluster bezel and remove the radio. If equipped with the Infinity Gold speaker package, also unplug the connectors at the amplifier. Check both the speaker feed (+) circuit and return (-) circuit cavities at the radio connectors for continuity to ground. In each case, there should be no continuity. If OK, go to Step 3. If not OK, repair the shorted speaker circuit(s) as required.

(3) If equipped with the Infinity Gold speaker package, go to Step 6. If equipped with the standard speaker system, check the resistance between the speaker feed (+) circuit and return (-) circuit cavities, for each speaker location. The meter should read between 3 and 8 ohms (speaker resistance). If OK, go to Step 4. If not OK, go to Step 5.

(4) Install a known good radio. Connect the battery negative cable. Turn on the radio and test the speaker operation. If OK, replace the faulty radio. If not OK, disconnect and isolate the battery negative cable, remove the test radio, and go to Step 5.

(5) Unplug the speaker wiring connector at the speaker. Check for continuity between the speaker feed (+) circuit cavities of the radio connector and the speaker connector. Repeat the check between the speaker return (-) circuit cavities of the radio connector and the speaker connector. In each case, there should be continuity. If OK, replace the faulty speaker. If not OK, repair the open circuit(s) as required.

(6) Check for continuity between the speaker feed (+) circuit cavities of the radio connector and the amplifier connector. Repeat the check between the speaker return (-) circuit cavities of the radio connector and the amplifier connector. In each case, there should be continuity. If OK, go to Step 7. If not OK, repair the open circuit as required.

(7) Check for continuity between the two ground circuit cavities of the amplifier connector and a good ground. There should be continuity. If OK, go to Step 8. If not OK, repair the open circuit(s) as required.

(8) Check the amplifier fuse in the junction block. If OK, go to Step 9. If not OK, replace the faulty fuse.

(9) Install the radio. Connect the battery negative cable. Check for battery voltage at the two fused B(+) circuit cavities of the amplifier connector. If OK, go to

Step 10. If not OK, repair the open circuit as required.

(10) Turn the ignition switch and radio switch to the On position. Check for battery voltage at the radio 12 volt output circuit cavity of the amplifier connector. If OK, go to Step 11. If not OK, repair the open circuit as required.

(11) Turn the radio switch and the ignition switch to the Off position. Check both the amplified feed (+) circuit and the amplified return (-) circuit cavities of the amplifier connectors for continuity to ground. In each case there should be no continuity. If OK, go to Step 12. If not OK, repair the short circuit as required.

(12) Check the resistance between the amplified feed (+) circuit and the amplified return (-) circuit cavities of the amplifier connectors, for each speaker position. The meter should read between 3 and 8 ohms (speaker resistance). If OK, replace the faulty amplifier. If not OK, go to Step 13.

(13) Unplug the speaker wiring connector at the speaker. Check for continuity between the speaker feed (+) circuit cavity of the speaker connector and the amplified feed (+) circuit cavity of the amplifier connector. Repeat the check for the return (-) circuit. In each case there should be continuity. If OK, replace the faulty speaker. If not OK, repair the open circuit as required.

ANTENNA

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

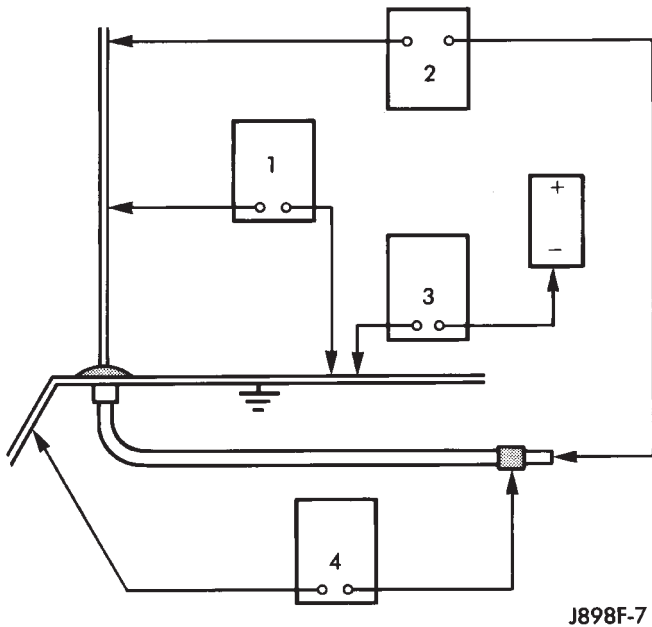
The following four tests are used to diagnose the antenna with an ohmmeter:

- **Test 1** - Mast to ground test
- **Test 2** - Tip-of-mast to tip-of-conductor test
- **Test 3** - Body ground to battery ground test
- **Test 4** - Body ground to coaxial shield test.

The ohmmeter test lead connections for each test are shown in Antenna Tests (Fig. 1).

NOTE: This model has a two-piece antenna cable. Tests 2 and 4 must be conducted in two steps to isolate a coaxial cable problem; from the coaxial cable connection under the right end of the instrument panel near the right cowl side panel to the antenna base, and then from the coaxial cable connection to the radio chassis connection.

DIAGNOSIS AND TESTING (Continued)

**Fig. 1 Antenna Tests****TEST 1**

Test 1 determines if the antenna mast is insulated from the base. Proceed as follows:

- (1) Disconnect the antenna cable lead from the radio chassis and isolate.
- (2) Connect one ohmmeter lead to the tip of the antenna mast and the other lead to the antenna base. Check for continuity.
- (3) There should be no continuity. If continuity is found, replace the faulty or damaged antenna base and cable assembly.

TEST 2

Test 2 checks the antenna for an open circuit as follows:

- (1) Disconnect the antenna cable lead from the radio chassis.
- (2) Connect one ohmmeter test lead to the tip of the antenna mast. Connect the remaining lead to the tip of the antenna cable lead (the part inserted into the radio).
- (3) Continuity should exist (the ohmmeter should only register a fraction of an ohm). High or infinite resistance indicates damage to the base and cable assembly. Replace the faulty base and cable, if required.

TEST 3

Test 3 checks the condition of the vehicle body ground connection. This test should be performed with the battery positive cable removed from the battery. Disconnect both battery cables, the negative cable first. Reconnect the negative cable and perform the test as follows:

(1) Connect one ohmmeter test lead to the vehicle fender and the other lead to the battery negative post.

(2) The resistance should be less than one ohm.

(3) If the resistance is more than one ohm, check the braided ground strap connected to the engine and the vehicle body for being loose, corroded, or damaged. Repair the ground strap connection, if required.

TEST 4

Test 4 checks the condition of the ground between the antenna base and the vehicle body as follows:

(1) Connect one ohmmeter test lead to the fender and the other lead to the crimp on the coaxial antenna cable shield.

(2) The resistance should be less than one ohm.

(3) If the resistance is more than one ohm, clean and/or tighten antenna base to fender mounting hardware.

RADIO FREQUENCY INTERFERENCE

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING 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.

Inspect the ground connections at the following:

- Blower motor
- Electric fuel pump
- Generator
- Ignition module
- Wiper motor
- Antenna coaxial ground
- Radio ground
- Body-to-engine braided ground strap (if equipped).

Clean, tighten or repair the connections as required.

Also inspect the following secondary ignition system components:

- Spark plug wire routing and condition
- Distributor cap and rotor
- Ignition coil
- Spark plugs.

Reroute the spark plug wires or replace the faulty components as required.

REMOVAL AND INSTALLATION

RADIO

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING 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) Using a trim stick or other suitable wide flat-bladed tool, pry gently around the edges of the switch pod bezels and remove both bezels.
- (3) Remove the nine screws securing the cluster bezel to the instrument panel (Fig. 2).

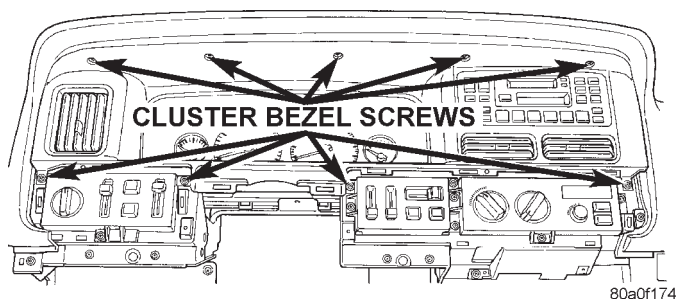


Fig. 2 Cluster Bezel Screws Remove/Install

- (4) Pull the cluster bezel rearward and move it to the left of the steering wheel to remove it from the vehicle.
- (5) Remove the two radio mounting screws from the front of the radio (Fig. 3).

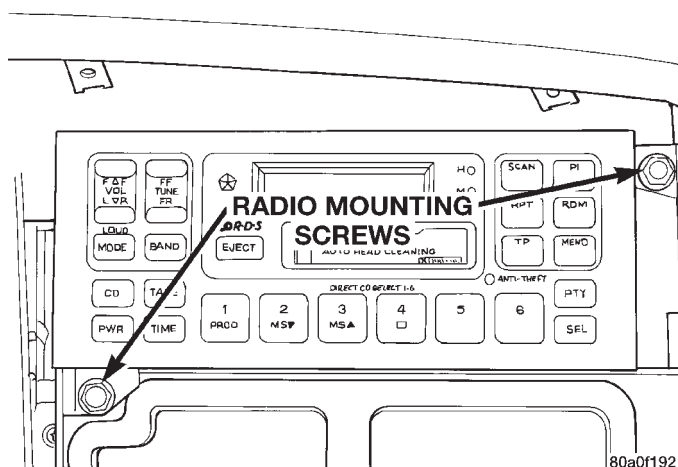


Fig. 3 Radio Remove/Install

- (6) Pull the radio out from the instrument panel far enough to unplug the wiring connectors and the antenna coaxial cable (Fig. 4).

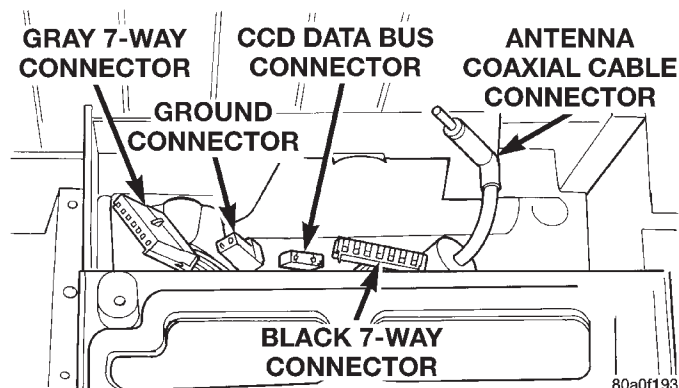


Fig. 4 Radio Connectors

- (7) Remove the radio from the instrument panel.
- (8) Reverse the removal procedures to install.

REMOTE RADIO SWITCHES

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING 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 three screws securing the driver's airbag module to the steering wheel (Fig. 5).

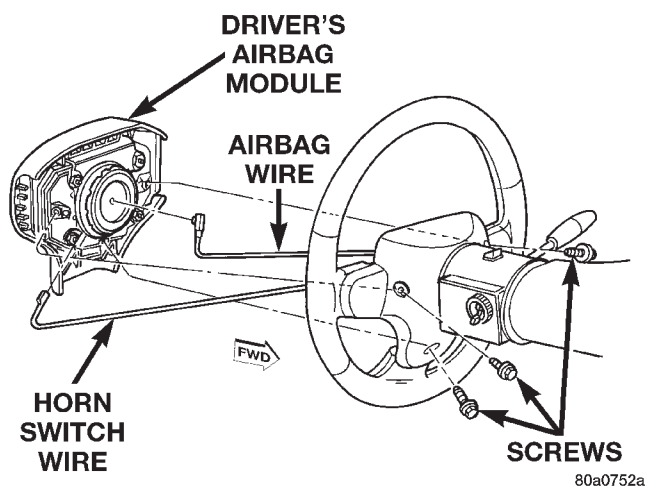


Fig. 5 Driver's Airbag Module Remove/Install

REMOVAL AND INSTALLATION (Continued)

(3) Unplug the airbag and horn switch wiring connectors and remove the airbag module from the steering wheel.

(4) Remove the screws securing the speed control switches to the steering wheel, and lower the switches from the steering wheel spokes (Fig. 6).

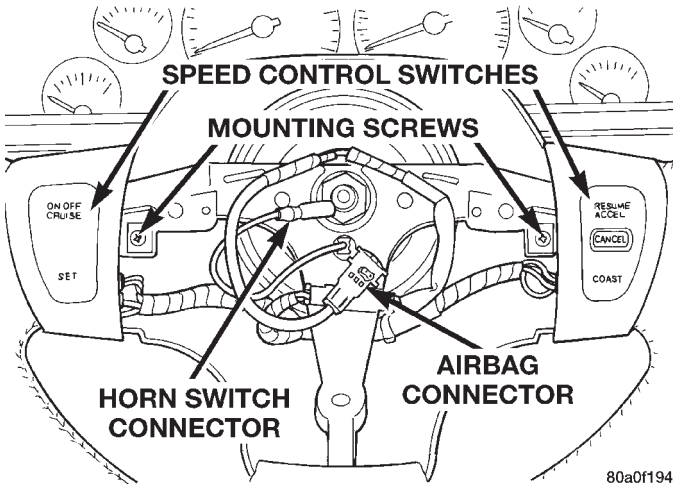


Fig. 6 Speed Control Switches Remove/Install

(5) Remove the two screws securing each of the remote radio switches to the steering wheel, unplug the wiring connector from the switch, and remove the switch (Fig. 7).

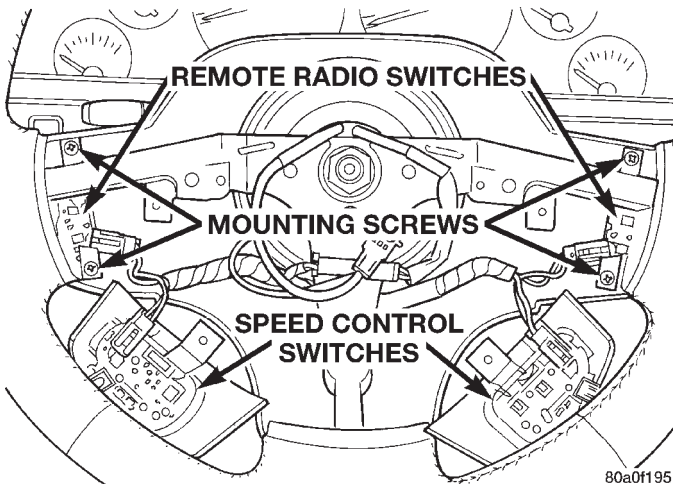


Fig. 7 Remote Radio Switches Remove/Install

(6) Reverse the removal procedures to install. Tighten the airbag module mounting screws to 10.2 N·m (90 in. lbs.).

AMPLIFIER

(1) Disconnect and isolate the battery negative cable.

(2) Disengage the left rear seat cushion latch by pulling upward on the release strap. Tilt the seat cushion forward.

(3) Lift the carpeting in the underseat area as required to access the amplifier.

(4) Unplug the two wiring connectors from the amplifier (Fig. 8).

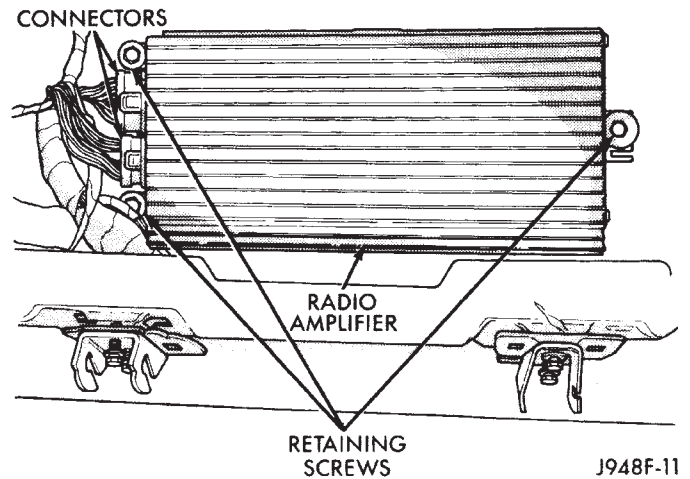


Fig. 8 Amplifier Remove/Install

(5) Remove the three amplifier mounting screws.

(6) Remove the amplifier.

(7) Reverse the removal procedures to install. Tighten the amplifier mounting screws to 2.8 N·m (25 in. lbs.).

SPEAKERS**INSTRUMENT PANEL**

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING 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) Using a wide flat-bladed tool such as a trim stick, pry the cowl top trim panel off of the instrument panel top pad (Fig. 9).

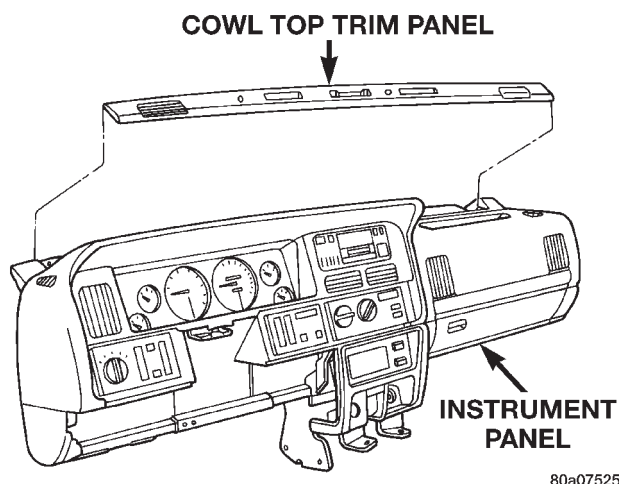
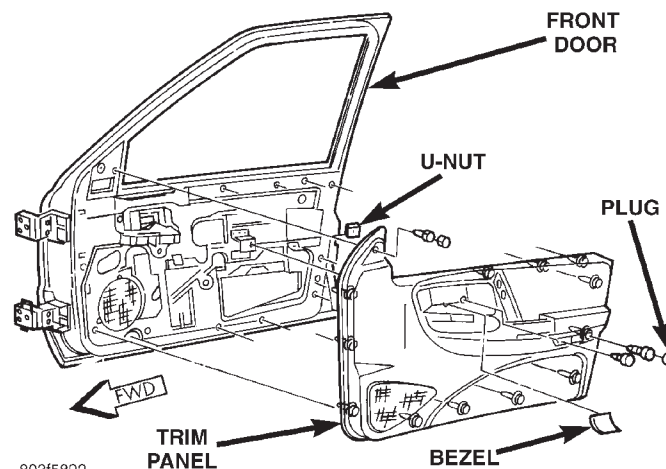
(3) Pull the panel up far enough to unplug the wiring connector for the solar sensor, or to remove the solar sensor from the cowl top trim between the right and center defroster outlets, if so equipped.

(4) Remove the cowl top trim panel from the vehicle.

(5) Unplug the speaker wiring connector.

(6) Remove the two screws securing the speaker to the instrument panel (Fig. 10).

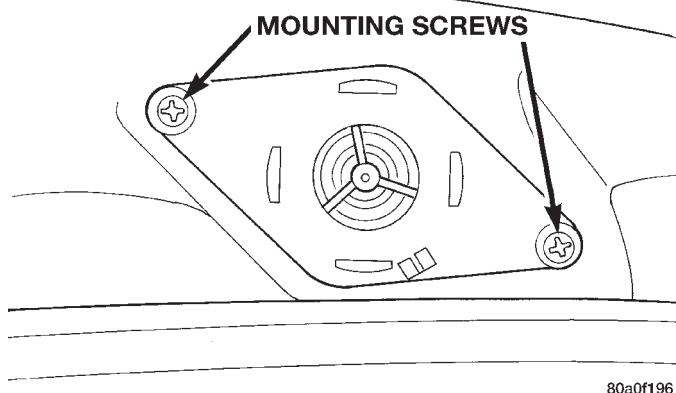
REMOVAL AND INSTALLATION (Continued)

**Fig. 9 Cowl Top Trim Remove/Install****Fig. 11 Front Door Trim Panel Remove/Install**

NOTE: To aid in the removal of the trim panel, start at the bottom of the panel.

(8) Unplug the wiring connectors from the door module and the door courtesy lamp, if so equipped.

(9) Remove the three screws holding the speaker to the lower front corner of the inner door panel (Fig. 12).

**Fig. 10 Instrument Panel Speaker Remove/Install**

(7) Remove the speaker from the instrument panel.

(8) Reverse the removal procedures to install.

FRONT DOOR

(1) Disconnect and isolate the battery negative cable.

(2) Remove the bezel near the inside door latch release handle by inserting a straight-bladed screwdriver in the notched end and prying gently upwards.

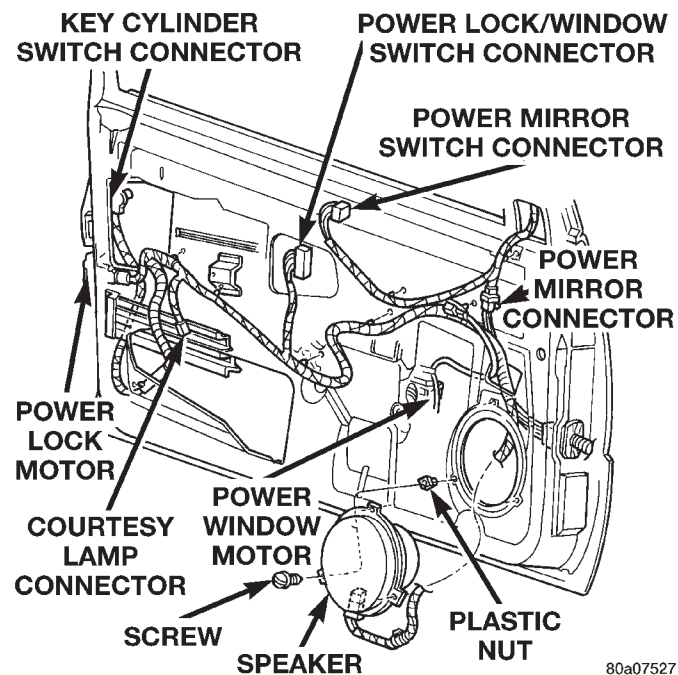
(3) Remove the door trim panel mounting screw located in the bezel opening near the inside door latch release handle (Fig. 11).

(4) Remove the trim cap and screw near the rear of the door armrest.

(5) Remove the trim cap and screw at the upper front corner of the trim panel.

(6) Remove the screw located above the front door speaker grille.

(7) Using a wide flat-bladed tool such as a trim stick, pry the trim panel away from the door around the perimeter and remove the trim panel.

**Fig. 12 Front Door Speaker Remove/Install**

(10) Disconnect the speaker wiring connector and remove the speaker.

(11) Reverse the removal procedures to install. Tighten the hardware as follows:

- speaker mounting screws - 1.1 N·m (10 in. lbs.)
- trim panel mounting screws - 1.3 N·m (12 in. lbs.).

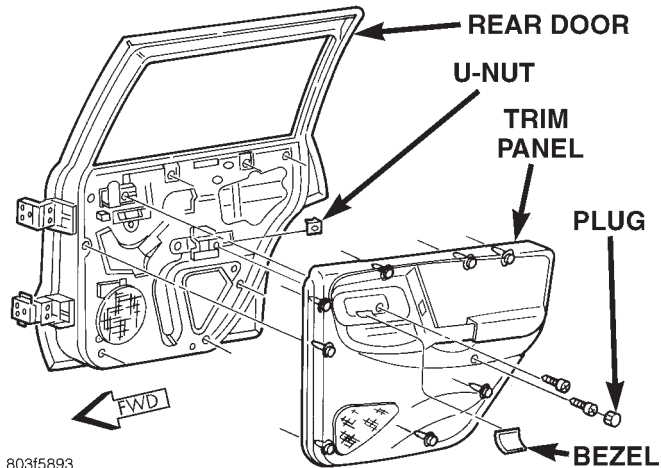
REMOVAL AND INSTALLATION (Continued)

REAR DOOR

(1) Disconnect and isolate the battery negative cable.

(2) Remove the bezel near the inside door latch release handle by inserting a straight-bladed screwdriver in the notched end and prying gently upwards.

(3) Remove the door trim panel mounting screw located in the bezel opening near the inside door latch release handle (Fig. 13).



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Fig. 13 Rear Door Trim Panel Remove/Install

(4) Remove the trim cap and screw near the rear of the door armrest.

(5) Using a wide flat-bladed tool such as a trim stick, pry the trim panel away from the door around the perimeter and remove the trim panel.

NOTE: To aid in the removal of the trim panel, start at the bottom of the panel.

(6) Unplug the wiring connector from the power window switch.

(7) Remove the three screws holding the speaker to the lower front corner of the inner door panel (Fig. 14).

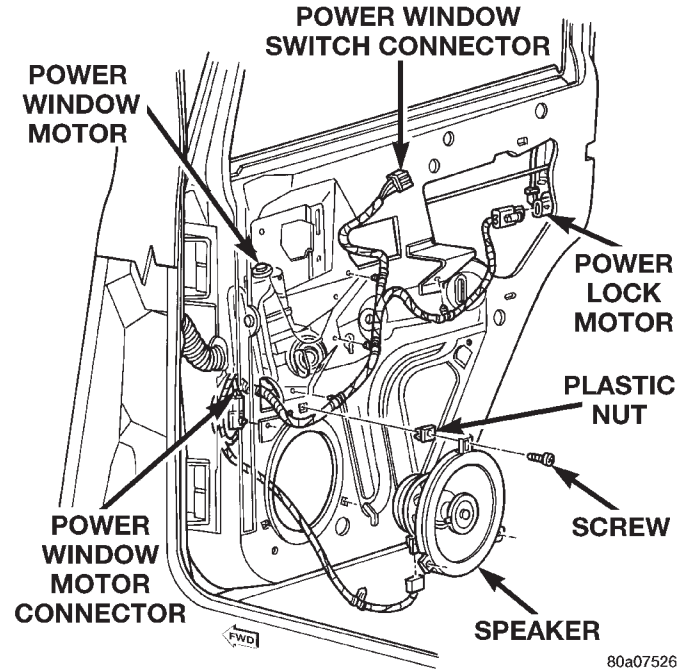
(8) Disconnect the speaker wiring connector and remove the speaker.

(9) Reverse the removal procedures to install. Tighten the hardware as follows:

- speaker mounting screws - 1.1 N·m (10 in. lbs.)
- trim panel mounting screws - 1.3 N·m (12 in. lbs.).

ANTENNA

WARNING: ON VEHICLES EQUIPPED WITH AIR-BAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRE-



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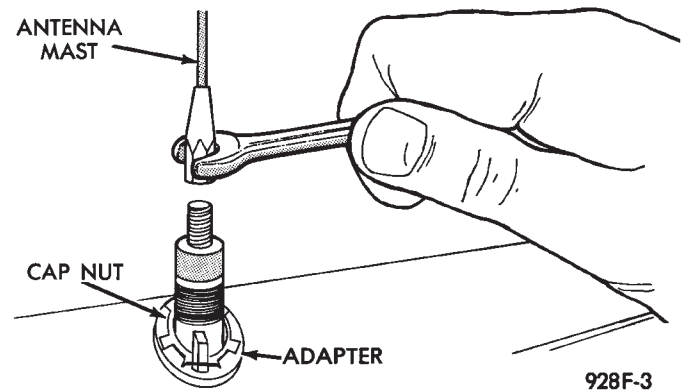
Fig. 14 Rear Door Speaker Remove/Install

CAUTIONS COULD RESULT IN ACCIDENTAL AIR-BAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

(1) Disconnect and isolate the battery negative cable.

(2) Remove the right front inner fender liner. Refer to Group 23 - Body Components for the procedures.

(3) Unscrew the antenna mast from the antenna body (Fig. 15).



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Fig. 15 Antenna Mast Remove/Install - Typical

REMOVAL AND INSTALLATION (Continued)

(4) Remove the antenna cap nut using an antenna nut wrench (Special Tool C-4816) (Fig. 16).

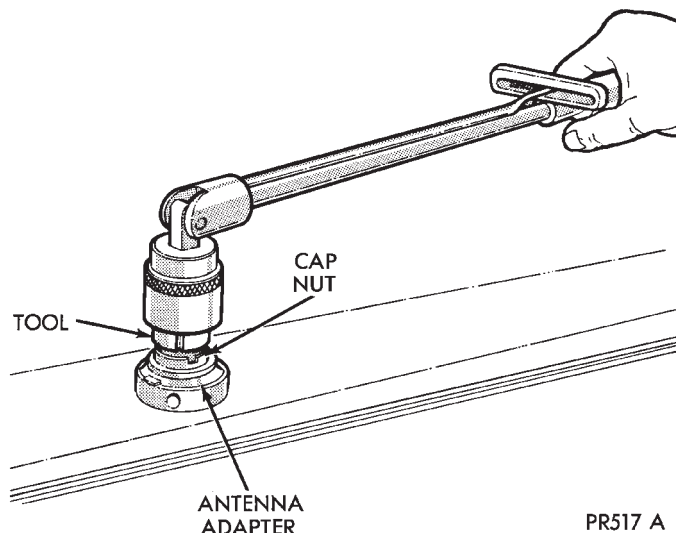


Fig. 16 Cap Nut and Adapter Remove/Install - Typical

(5) Lower the antenna assembly through the fender far enough to gain access to the antenna body (Fig. 17).

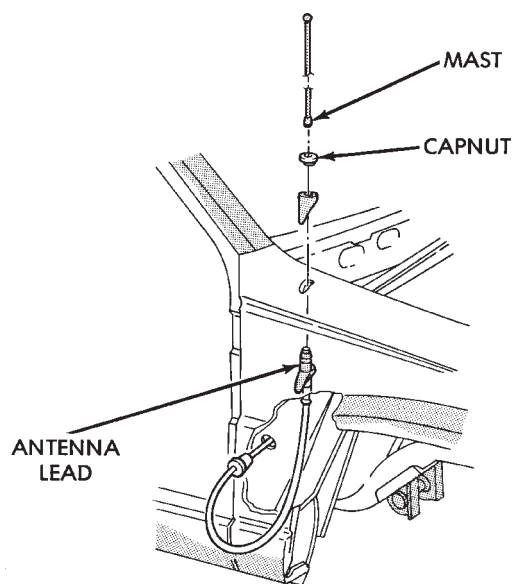


Fig. 17 Antenna Body and Cable Remove/Install

(6) Remove the fuse access panel in the right cowl side trim panel, and remove the nut securing the trim to the junction block (Fig. 18).

(7) Remove the two screws securing the right cowl side trim panel to the front door opening trim and remove the cowl side kick panel trim.

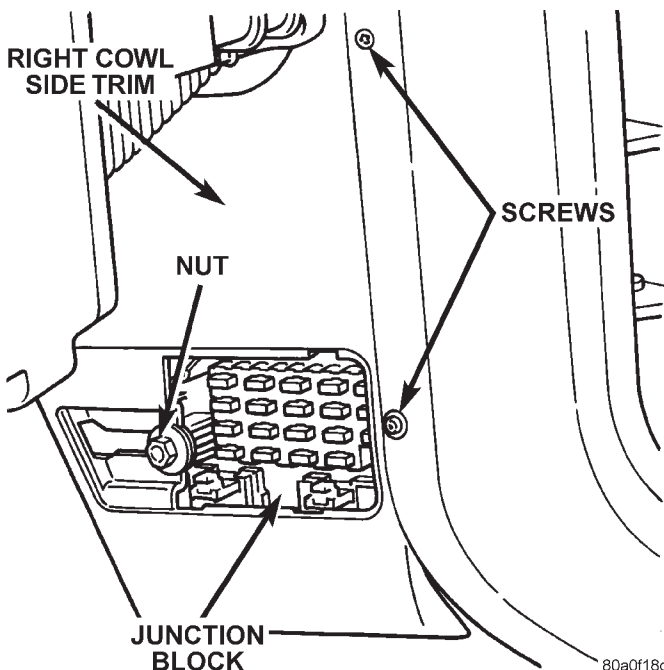


Fig. 18 Right Cowl Side Trim Remove/Install

(8) Locate the antenna coaxial cable lead connector near the junction block at the right cowl side panel. Unplug the connector by pulling it apart while twisting the metal connector halves (Fig. 19). Do not pull on the cable.

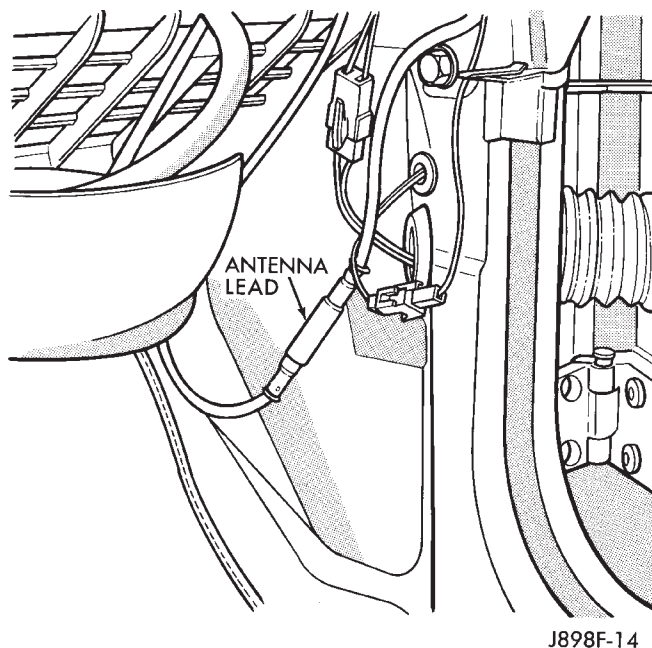


Fig. 19 Antenna Cable Connector - Typical

(9) Remove the antenna body and cable by pulling the cable and grommet out of the cowl side panel from inside the right front fender wheel housing.

(10) Reverse the removal procedures to install. Tighten the antenna cap nut to 7.9 N·m (70 in. lbs.).