INSTRUMENT PANEL AND SYSTEMS

CONTENTS

GENERAL INFORMATION

ELECTRO/MECHANICAL INSTRUMENT CLUSTER

The mechanical instrument cluster is an electro-mechanical module which receives most of its information from the Body Control Module (BCM) via the CCD bus.

The cluster (Fig. 1) includes:

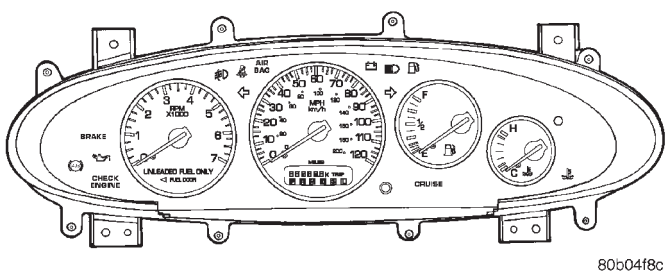

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Fig. 1 Cluster

- (120 MPH) 200 km/h speedometer
- Tachometer
- Odometer/trip odometer and transmission range indicator with automatic transmission
- Fuel gauge
- Temperature gauge
- Security alarm indicator (optional)

The warning and information indicators include the following:

- Check Engine
- Airbag
- Charging system
- Low oil pressure
- High temperature
- Low fuel
- Seat belt
- Cruise (optional)
- Brake/park brake
- Anti-lock brake system (optional)
- High beam
- Fog lamps (optional)
- Vehicle Theft Security System alarm LED indicator (optional)
- Turn signals

The gauges are the magnetic air-core type. When the ignition switch is OFF, the gauge pointers should rest at or below the low graduation.

DESCRIPTION AND OPERATION

AUTOSTICK

Vehicles with Autostick will have a unique Transmission Range Indicator display (Fig. 2). When in the Autostick mode, a box around the gear position will be displayed to inform the driver which transmission gear is currently engaged.

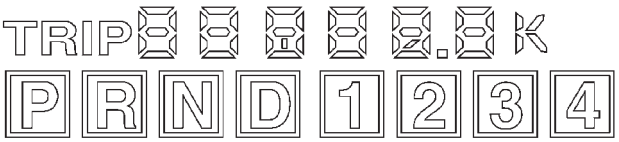

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Fig. 2 Autostick Odometer/Transmission Range Indicator

DATA LINK CONNECTOR

Data link connector is located on the left side kick panel just above hood release.

DIAGNOSIS AND TESTING

DIAGNOSTIC PROCEDURE

In order to diagnose the instrument cluster function, a DRB lll® scan tool and the proper Body Diagnostic Procedures Manual are required.

As a quick diagnosis, the cluster will perform a function check immediately after the ignition is switched to the RUN/START position. The electronic display, odometer and transmission range indicator and all warning lamps except:

- Cruise
- Fog lamps
- High beam
- Low fuel
- Turn signal

will illuminate for a brief period.

If the cluster is not receiving CCD bus messages, the cluster will appear nonfunctional except for the continuously illuminated AIRBAG, ABS, and CHECK ENGINE indicators and NO BUS message displayed.

If the cluster is not receiving CCD bus messages, refer to the pre-diagnostic test described in proper Body Diagnostic Procedures Manual or refer to the Instrument Cluster Self-Diagnostic Test below.

INSTRUMENT CLUSTER SELF- DIAGNOSTICS

Initiate instrument cluster self-diagnostic by depressing the odometer/trip reset button while turning the ignition key to the OFF/RUN/START position. This will cycle an electronic display segment check and illumination in sequence of all CCD bus activated cluster warning indicators. There are four Check (CHEC) functions:

(1) CHEC 1, checks the gauges.
(2) CHEC 2, checks the warning lamps.
(3) CHEC 3, checks the odometer/trip meter.
(4) CHEC 4, Transmission Range Indicator for the automatic transmission or the autostick transmission.

If the diagnostic procedure determines that a replacement of an instrument cluster component is required, refer to the proper component removal procedure.

CHEC 1 - GAUGE DISPLAY

TACHOMETER ...6000 rpm SPEEDOMETER ...100mph (220 kmh) FUEL GAUGE pointer ON ...F TEMPERATURE GAUGE pointer ON ...H
TACHOMETER ...3000 rpm SPEEDOMETER ...75mph (120 kmh) FUEL GAUGE pointer ON ...1/2 TEMPERATURE GAUGE pointer ON ...midscale
TACHOMETER ...3000 rpm SPEEDOMETER ...55mph (100 kmh) FUEL GAUGE pointer ON ...1/2 TEMPERATURE GAUGE pointer ON ...midscale
TACHOMETER ...1000 rpm SPEEDOMETER ...20mph (40 kmh) FUEL GAUGE pointer ON ...E TEMPERATURE GAUGE pointer ON ...C

CHEC 1

(1) If all gauges fail to move, replace Cluster Printed Circuit (PC) Board.
(2) If any gauge fails to move, replace the gauge assembly.
(3) If any gauge(s) is not in the proper position, replace Cluster Printed Circuit Board.

CHEC 2

(1) If any lamp does not light, check lamp.
(2) If lamp is not OK, replace lamp.
(3) If lamp is OK, replace Cluster Printed Circuit Board.

DIAGNOSIS AND TESTING (Continued)

CHEC 2 - WARNING LAMP DISPLAY

CHECK ENGINE
SEAT BELT
AIRBAG
CHARGING SYSTEM
LOW FUEL
HIGH BEAM INDICATOR
ENGINE TEMPERATURE
CRUISE

CHEC 3 - VACUUM FLORESCENT (VF) DISPLAY

TRIP
ODOMETER CENTER
ODOMETER LOWER RIGHT
ODOMETER BOTTOM
ODOMETER LOWER LEFT
ODOMETER UPPER LEFT
ODOMETER TOP
ODOMETER UPPER RIGHT
ALL ODOMETER V/F DISPLAY DIGIT SEGMENTS ON

CHEC 3

If any V/F segment does not light, replace Odometer/Transmission Range Indication.

CHEC 4 - TRANSMISSION RANGE (VF) DISPLAY - AUTOMATIC TRANSMISSION

PRND3L
PRND3L AND BOX AROUND P
PRND3L AND BOX AROUND R
PRND3L AND BOX AROUND N
PRND3L AND BOX AROUND D
PRND3L AND BOX AROUND 3
PRND3L AND BOX AROUND L
PRND3L AND ALL BOXES
END

CHEC 4 - AUTOMATIC TRANSMISSION

If any V/F segment does not light, replace Odometer/Transmission Range Indication.

TRANSMISSION RANGE (VF) DISPLAY - AUTOSTICK

PRND1234
PRND1234 AND BOX AROUND 1
PRND1234 AND BOX AROUND 2
PRND1234 AND BOX AROUND 3
PRND1234 AND BOX AROUND 4
PRND1234 AND BOX AROUND P
PRND1234 AND BOX AROUND R
PRND1234 AND BOX AROUND N
PRND1234 AND BOX AROUND D
PRND1234 AND ALL BOXES
END

CHEC 4 - AUTOMATIC TRANSMISSION

If any V/F segment does not light, replace Odometer/Transmission Range Indication.

REMOVAL AND INSTALLATION

BODY CONTROL MODULE (BCM)

REMOVAL

The Junction Block and Body Control Module (BCM) are attached to each other. After removal they can be separated.

(1) Remove Junction Block / Body Control Module from vehicle. Refer to Group 8O, Power Distribution Systems for Removal and Installation.

(2) With the Junction Block/BCM removed from the vehicle, separate the BCM from the Junction Block.

(3) Remove the two BCM attaching screws and release the two BCM locking latches from the Junction Block.

(4) Disconnect BCM from the Junction Block.

NOTE: The Remote Keyless Entry (RKE) module is attached to the BCM with three screws. This must be transferred (if equipped) to the new BCM if being replaced.

NOTE: If BCM is replaced, the VTSS must be enabled in the new BCM via the DRB III® in order to start the vehicle.

REMOVAL AND INSTALLATION (Continued)

INSTALLATION

For installation, reverse the above procedures.

CENTER BEZEL

REMOVAL

Pull center bezel straight rearward along the sides of the radio and A/C control openings to disengage four clips (Fig. 3).

INSTALLATION

For installation, reverse the above procedures.

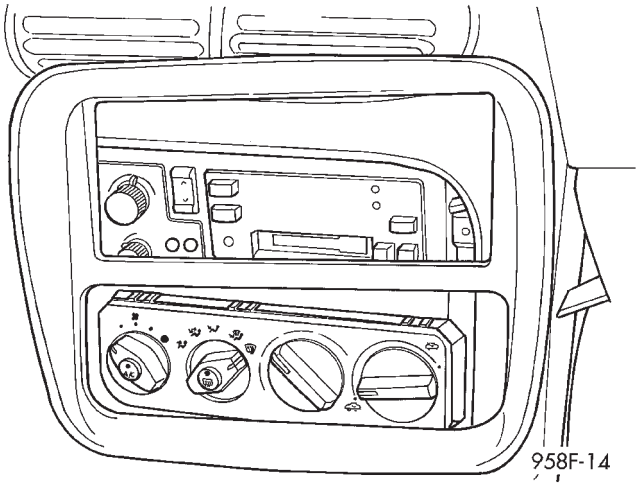

Fig. 3 Center Bezel

CIGAR LIGHTER / POWER OUTLET

REMOVAL

(1) Remove cubby bin. Refer to Cubby Bin / Lamp Removal and Installation in this section.

(2) Disconnect the two power outlet wiring connectors from power outlet. Unscrew shell and clamp assembly to replace power outlet.

INSTALLATION

For installation, reverse the above procedures. The clamp has a locating feature. The cubby bin must engage the console at its forward edge prior to installing the mounting screws.

CLUSTER HOOD

REMOVAL

(1) Remove instrument panel left end cap.

(2) Tilt steering column down to its lowest position.

(3) Remove instrument panel center bezel by disengaging the four clips (Fig. 3).

(4) Remove instrument cluster hood (Fig. 4).

(a) Remove three attaching screws under the center bezel.

(b) Remove screw at left end of panel.

(c) Pull hood straight back to disengage the eight clips. If equipped with a Compass/Temperature Mini Trip Computer pull rearward about 3 inches and stop. Reach through the radio opening in the cluster hood and disconnect the CMTC wire connector.

(d) Remove the cluster hood.

INSTALLATION

For installation, reverse the above procedures. Keep the forward edge of the hood down on the instrument panel while sliding the hood forward to engage the retaining clips.

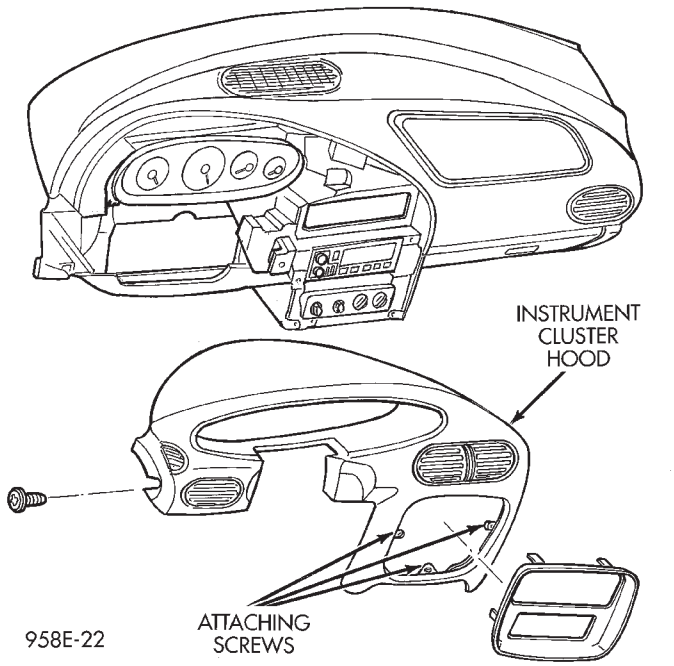

Fig. 4 Instrument Cluster Hood

CLUSTER LAMP

Refer to (Fig. 5) for appropriate lamp locations. Replace fog lamp indicator lamp, ABS indicator lamp and security LED socket assembly only if equipped.

CLUSTER PRINTED CIRCUIT BOARD

REMOVAL

(1) Remove six cluster back cover retaining screws and remove the cover.

(2) Disconnect odometer/transmission range indicator connector from the printed circuit board.

(3) Remove nine printed circuit board attaching screws and remove. There are two screws located at the base of each connector (Fig. 6).

INSTALLATION

For installation, reverse the above procedures.

REMOVAL AND INSTALLATION (Continued)

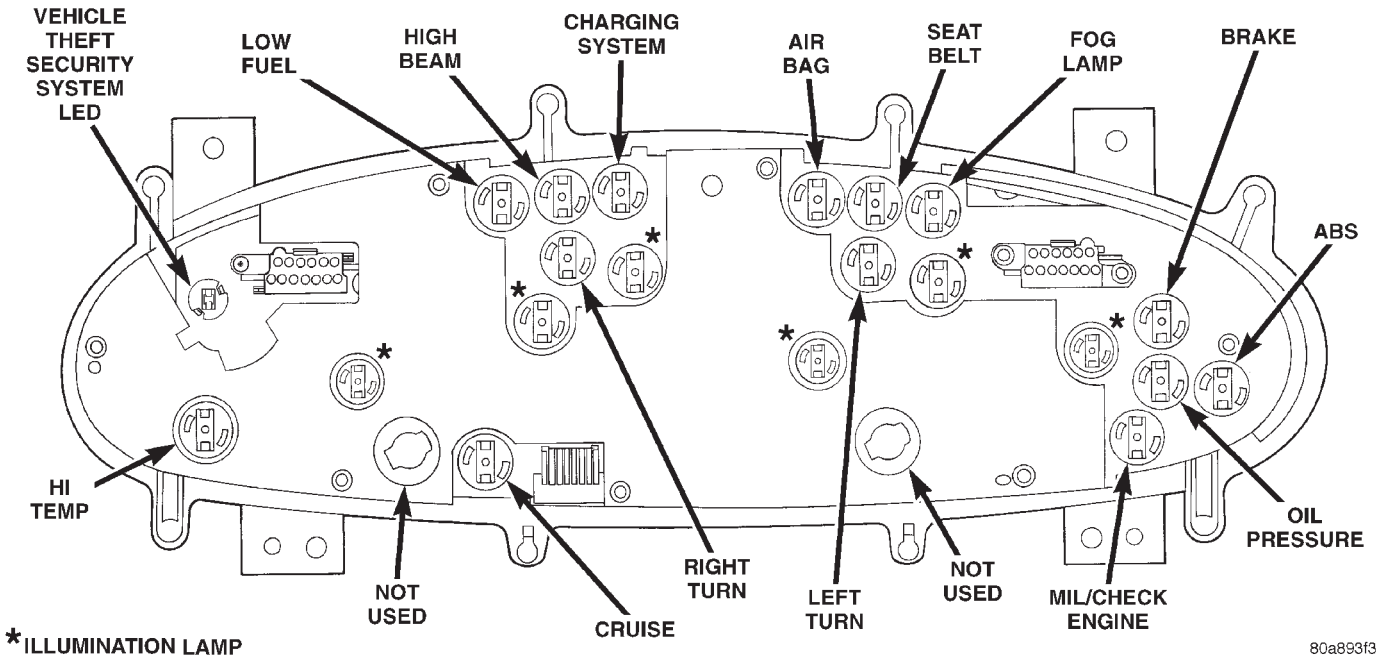

Fig. 5 Lamp Location

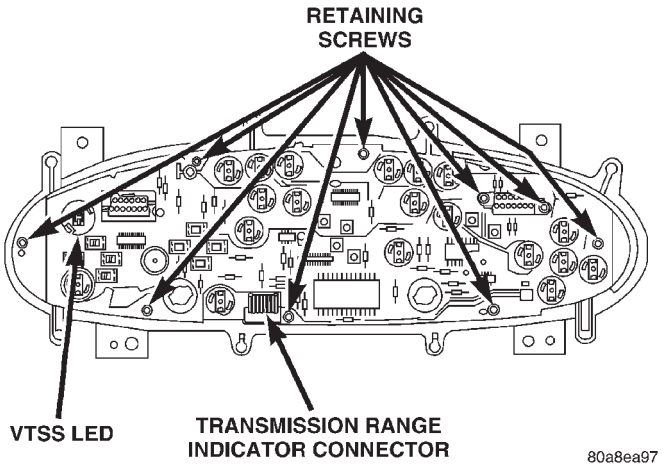

Fig. 6 Printed Circuit Board

CUBBY BIN/LAMP

REMOVAL

(1) Remove center bezel.
(2) Remove instrument cluster hood screws.
(a) Remove two screws adjacent radio.
(b) Remove screw below HVAC control in the center.
(c) Remove screw at left end of panel.
(d) Flex instrument cluster hood slightly to give access to the cubby bin screws.
(3) Remove the cubby bin mounting screws and remove bin.

INSTALLATION

For installation, reverse the above procedures. The cubby bin must engage the console at its forward edge prior to installing the mounting screws.

FUEL GAUGE AND TEMPERATURE GAUGE

REMOVAL

(1) Remove mask/lens retaining screws and remove mask/lens (Fig. 7).
(2) Disconnect odometer/transmission range indicator connector from the printed circuit board (Fig. 8).
(3) Remove screws attaching speedometer/tachometer to housing and remove (Fig. 9).
(4) Remove the fuel/temperature gauge attaching screws from the housing and remove (Fig. 10).

INSTALLATION

For installation, reverse the above procedures.

GLOVE BOX DOOR HANDLE

REMOVAL

(1) Open glove door.
(2) Remove four door handle attaching screws.
(3) Remove handle.

INSTALLATION

For installation, reverse the above procedures.

REMOVAL AND INSTALLATION (Continued)

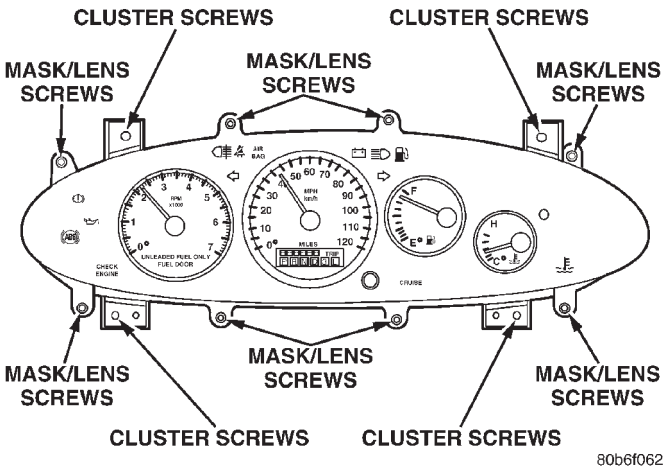

Fig. 7 Mask/Lens Retaining Screws

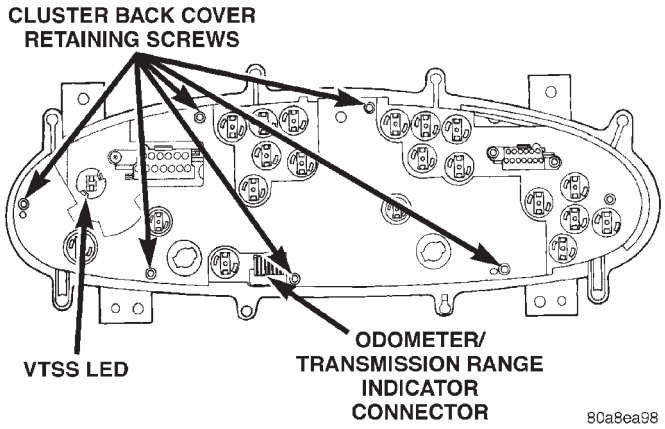

Fig. 8 Back Cover Retaining Screws

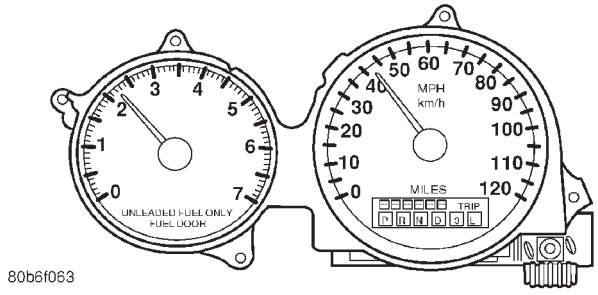

Fig. 9 Speedometer/Tachometer

GLOVE BOX DOOR LOCK

REMOVAL

(1) Remove glove box door handle.

(2) Insert the proper key in lock cylinder, depress the gray locking key on back side housing at the 3 O'clock position.

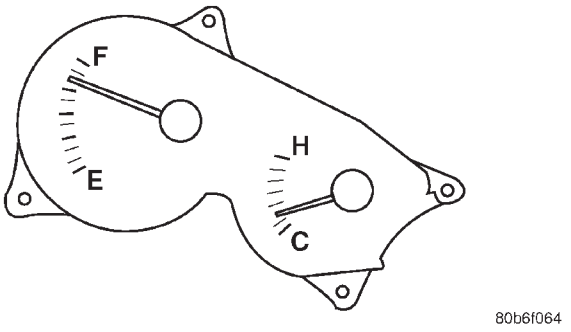

Fig. 10 Fuel Gauge and Temperature Gauge

(3) Rotate the key clockwise to disengage cylinder from housing.

INSTALLATION

For installation, reverse the above procedures.

HVAC CONTROL

REMOVAL

(1) Remove center bezel by pulling rearward to disengage four clips and remove attaching screws from cubby bin (Fig. 3).

(2) Remove the HVAC control attaching screws. Pull the control out to disconnect two electrical connectors and two control cables. Remove HVAC control.

INSTALLATION

For installation, reverse the above procedures. The forward edge of bin must engage the forward console.

INSTRUMENT CLUSTER

REMOVAL

To service any instrument cluster component, the instrument cluster must be removed from the instrument panel.

(1) Remove instrument cluster hood, refer to Cluster Hood Removal and Installation procedures.

(2) Remove the four cluster attaching screws (Fig. 7).

(3) Remove instrument cluster and disconnect wire connectors from instrument panel by pulling cluster rearward.

INSTALLATION

For installation, reverse the above procedures.

REMOVAL AND INSTALLATION (Continued)

INSTRUMENT PANEL

WARNING: DISCONNECT AND ISOLATE THE BATTERY NEGATIVE (GROUND) CABLE BEFORE BEGINNING ANY AIRBAG SYSTEM COMPONENT REMOVAL OR INSTALLATION PROCEDURE. THIS WILL DISABLE THE AIRBAG SYSTEM.

FAILURE TO DISCONNECT BATTERY COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

ALLOW SYSTEM CAPACITOR TO DISCHARGE FOR 2 MINUTES BEFORE REMOVING ANY AIRBAG COMPONENTS.

REMOVAL

When removing a passenger airbag module refer to Group 8M, Restraint Systems for Passenger Air Bag Module Removal.

(1) Disconnect and isolate the battery negative remote cable.

(2) Open both vehicle front doors. Remove left end cover by pulling outboard. Remove right end cover by pulling rearward (Fig. 11).

(3) Remove transmission range indicator bezel from floor console. Use care not to mar the bezel or console.

(4) Remove floor center console. Remove two mounting screws in the front and two mounting screws under the decorative caps in the rear.

(5) Disconnect Airbag Control Module (ACM).

(6) Using a trim stick (special tool #C-4755), gently pry out on center instrument panel trim bezel and remove.

(7) Remove instrument cluster hood.

(a) Remove two screws adjacent radio.

(b) Remove the screw below HVAC control.

(c) Remove screw at left end of panel.

(d) Pull on hood to disengage the eight clips.

(8) Remove two cubby bin screws and remove.

(9) Remove five knee bolster mounting screws.

(10) Open glove box door and press sidewalls inboard while pulling the back panel rearward to lower door from panel to access forward floor console.

(11) Remove forward floor console nine attaching screws and one push pin at forward driver's side.

(12) Pull the driver's under panel silencer outboard off the distribution duct.

(13) Remove left and right A-pillar moldings, starting from the top edge and pulling them out.

(14) Remove instrument panel top cover attaching screw on passenger side.

(a) Lift the right rear edge of top cover to disengage the vertical clips along the rear edge. Proceeding from right to the left side. Do not use a nylon trim stick, to avoid marring cover or panel.

(b) Lift rear edge and slide top cover rearward disengaging angular clips and remove cover.

(15) Remove HVAC control attaching screws.

(16) Remove center distribution duct screws from behind radio and duct.

(17) Remove radio. Access and remove the three HVAC attaching screws to duct and panel. Remove the three HVAC attaching bolts from the cross-car beam.

(18) Close glove box door.

(19) Remove five screws attaching panel retainer to plenum.

(20) Remove steering column intermediate shaft attaching bolt.

(21) Disconnect engine and body wire harness from Junction Block/BCM.

(22) Remove fasteners:

- Four at left end and three at the right end of the cross car beam
- Two at steering column plenum
- One at glove box hinge to cowl
- Two at center support to the floor pan bracket

(23) Remove attaching screw at the rear of HVAC to the center support bracket.

(24) Lift up instrument panel and move rearward to remove.

INSTALLATION

For installation, reverse the above procedures. DO NOT CONNECT battery negative remote cable. Refer to Group 8M, Restraint Systems for Air Bag System test.

INSTRUMENT PANEL END COVERS – LEFT AND RIGHT

REMOVAL

(1) Open the left door and pull on the access handle and pivoting around A-pillar to disengage end cover clips. Fuse Puller, Spare Fuses And Fuse Diagram Are Located On Left End Cover. Fuse Access Is Under Left End Cover (Fig. 11).

(2) Open right door and glove box door.

(3) Remove right end cover by pulling rearward to disengage clips.

INSTALLATION

For installation, reverse the above procedures. Ensure spare fuses are seated to left end cover.

INSTRUMENT PANEL SPEAKERS

REMOVAL

(1) Remove instrument panel top cover, refer to Instrument Panel Top Cover Removal procedures.

REMOVAL AND INSTALLATION (Continued)

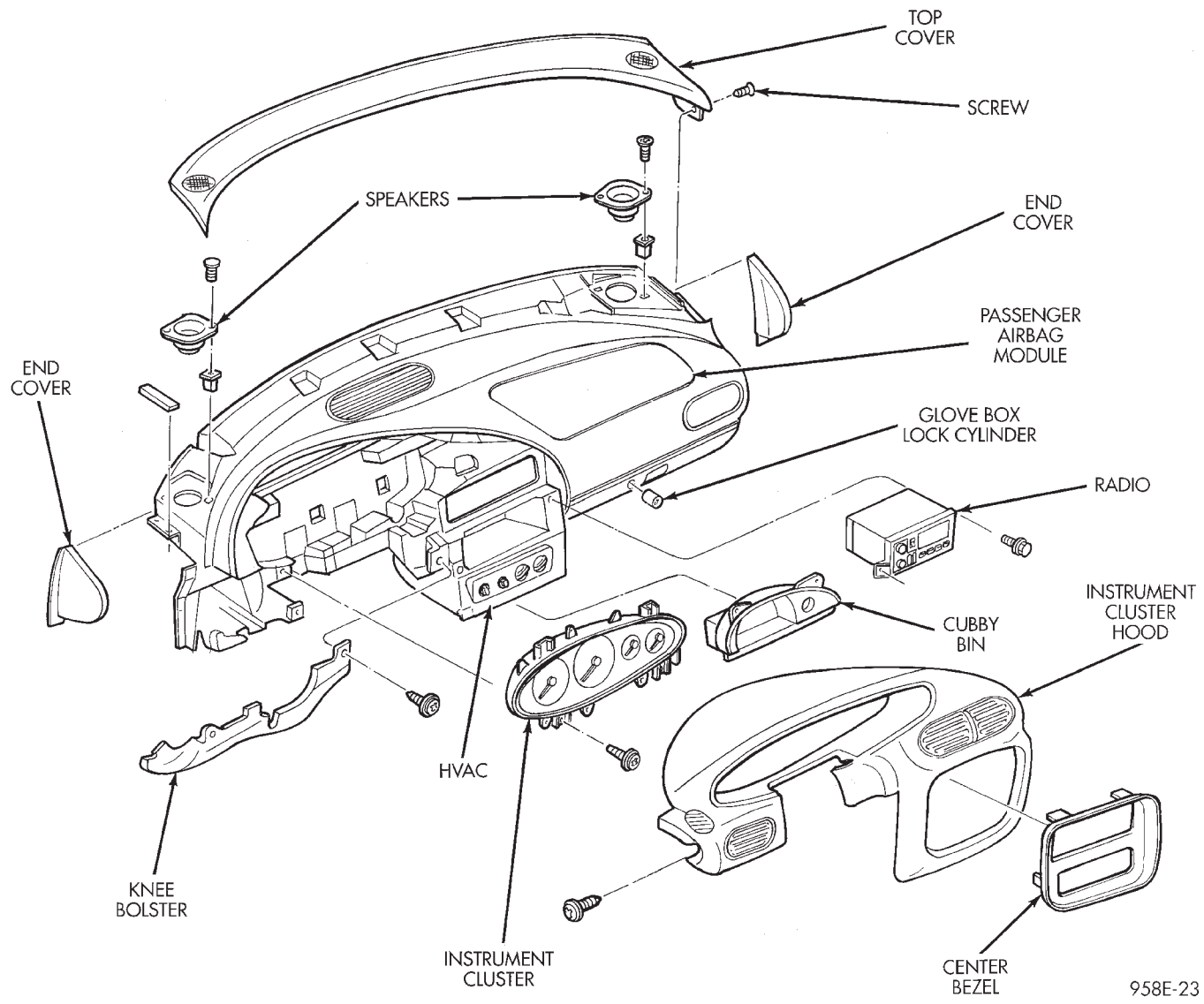

Fig. 11 Instrument Panel Breakdown

(2) Remove two screws on each speaker and lift up, disconnect wiring connector and remove speaker.

INSTALLATION

For installation, reverse the above procedures

INSTRUMENT PANEL TOP COVER

REMOVAL

(1) Open glove box door.

(2) Remove right end cap and remove screw at right end.

(3) Remove left and right A-pillar moldings by disengaging the top christmas tree fasteners and then pulling the moldings out vertically.

(4) Lift the right rear edge of top cover to disengage the clips along the rear edge. Proceeding from right to the left side. Do not use a nylon trim stick, to avoid potential damage (Fig. 12).

(5) Lift rear edge and slide top cover rearward disengaging angular clips and remove cover.

INSTALLATION

For installation, reverse the above procedures. Ensure the two center clips are engaged first. Place thumb in VIN opening and pull towards pad to ensure VIN alignment. If a gap exist between the top cover and pad after installation check for a damaged clip. The clip must be removed and replaced.

REMOVAL AND INSTALLATION (Continued)

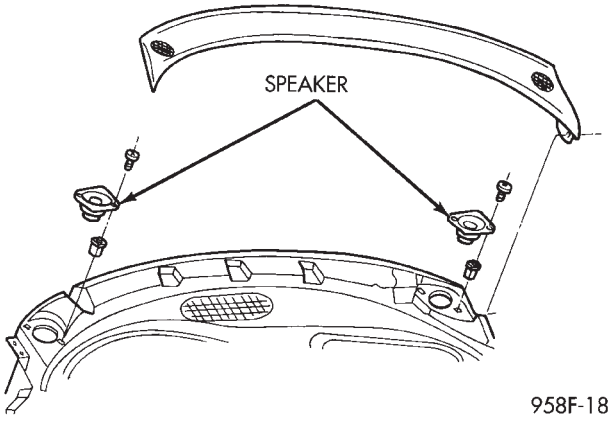

Fig. 12 Top Cover

LEFT UNDER INSTRUMENT PANEL SILENCER/ DUCT

REMOVAL

(1) Remove two lower knee bolster screws and slip silencer off outboard attaching formation.

(2) Maneuver part off of center floor distribution duct to remove.

INSTALLATION

For installation, reverse the above procedures. Install prior to knee bolster.

MASK/LENS

REMOVAL

Remove mask/lens retaining screws and remove mask/lens (Fig. 7).

INSTALLATION

For installation, reverse the above procedures.

ODOMETER/TRANSMISSION RANGE INDICATOR

REMOVAL

(1) Remove speedometer/tachometer, refer to Speedometer/Tachometer and Odometer Transmission Range Indicator Removal and Installation

(2) Remove screws attaching from the back of speedometer and remove the odometer/transmission range indicator display (Fig. 13).

INSTALLATION

For installation, reverse the above procedures.

RADIO

For Radio removal procedures, Refer to Group 8F, Audio Systems.

RIGHT UNDER INSTRUMENT PANEL SILENCER/DUCT

REMOVAL

(1) Remove push-in fastener under right end of instrument panel.

(2) Maneuver part off center floor distribution duct to remove.

INSTALLATION

For installation, reverse the above procedures.

SPEEDOMETER/TACHOMETER AND ODOMETER TRANSMISSION RANGE INDICATOR

REMOVAL

(1) Remove mask/lens retaining screws and remove mask/lens (Fig. 7).

(2) Disconnect odometer/transmission range indicator connector from the printed circuit board (Fig. 8).

(3) Remove screws attaching speedometer/tachometer to housing and remove (Fig. 9).

(4) Remove screws attaching from the back of speedometer and remove the odometer/transmission range indicator display (Fig. 13).

INSTALLATION

For installation, reverse the above procedures.

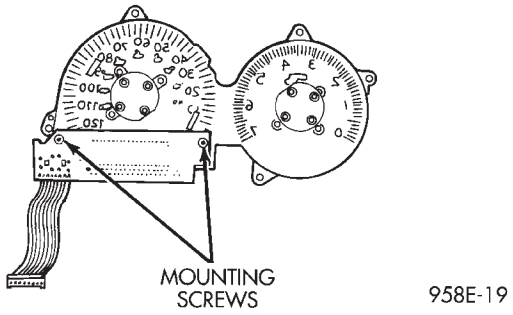

Fig. 13 Odometer/Transmission Range Indicator

VEHICLE THEFT SECURITY SYSTEM LED

REMOVAL

(1) Disconnect Vehicle Theft Security System LED socket assembly indicator from the printed circuit board (Fig. 5).

(2) Rotate LED socket counter clockwise and remove from printed circuit board (Fig. 8).

INSTALLATION

For installation, reverse the above procedures.