

MESSAGE SYSTEMS

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OVERHEAD CONSOLE

DESCRIPTION

Three different overhead console units are available factory-installed options on this model, base, premium and premium with vehicle theft security. The base overhead console unit features a garage door opener storage bin, a sunglasses storage bin and two reading and courtesy lamps. The premium overhead console has all of the features of the base unit, but adds a compass mini-trip computer and/or vehicle theft security LED. See the owner's manual in the vehicle glove box for more information on the features, use and operation of all of the overhead console components and systems. Refer to **Overhead Console** in the Contents of Wiring Diagrams for complete circuit diagrams.

The premium overhead console (Fig. 1) includes two front-mounted reading and courtesy lamps, a garage door opener storage bin, and a sunglasses storage bin. The premium overhead console includes

a compass mini-trip computer. The base overhead console uses the same overhead console housing, but has a computer cover plug installed in place of the compass mini-trip computer display module lens and push buttons.

The rear of the overhead console is secured to two rear mounting holes in the inner roof panel by two plastic hook formations that are integral to the overhead console housing. The front of the overhead console is secured to the two front mounting holes of the inner roof panel by two plastic latches that are integral to the overhead console housing. A single electrical connection joins the overhead console wire harness to the roof wire harness for both the base and premium overhead console units.

Following are general descriptions of the major components used in the overhead console. See the owner's manual in the vehicle glove box for more information on the use and operation of the various overhead console features.

OVERHEAD CONSOLE (Continued)

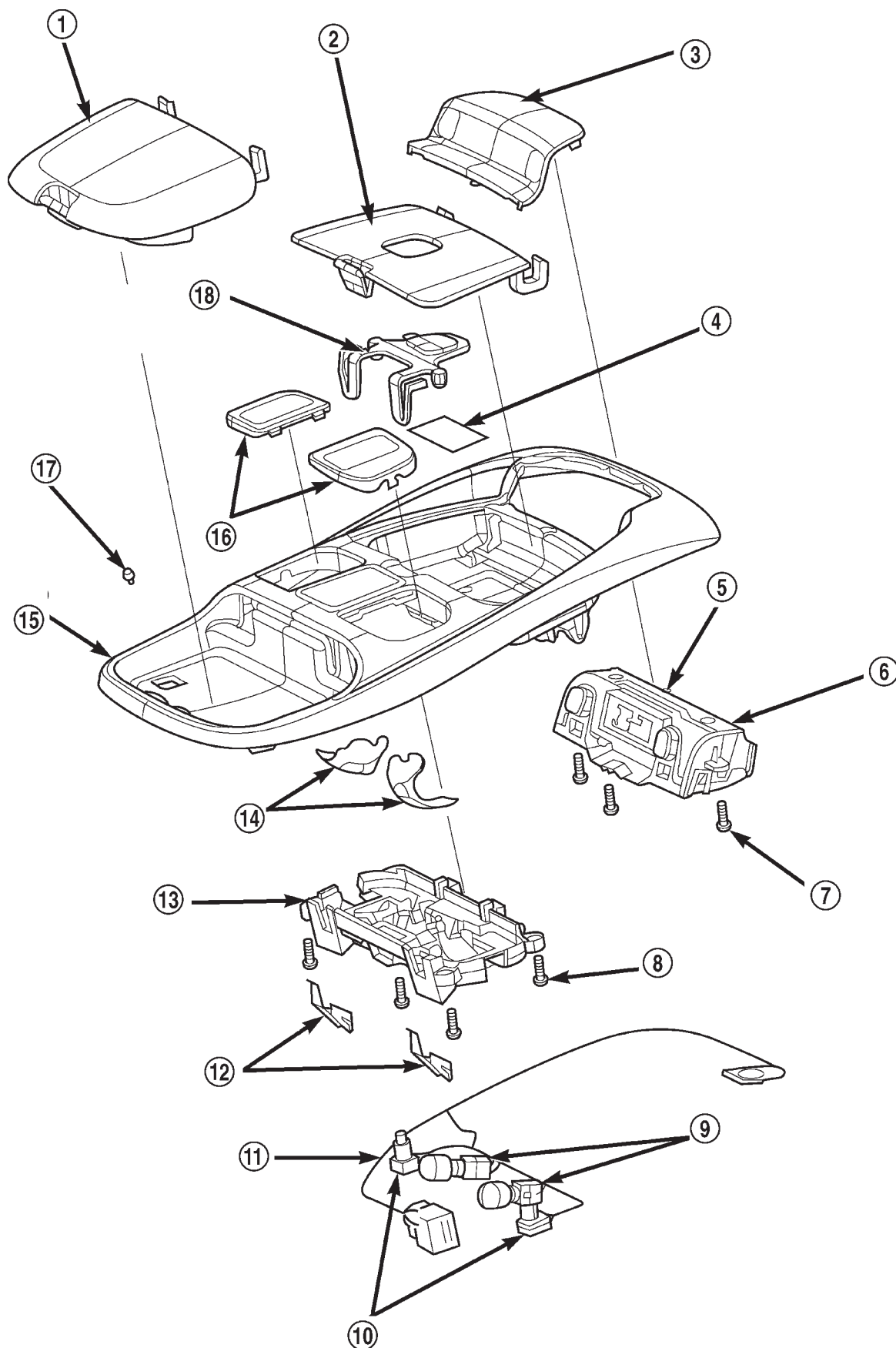


Fig. 1 Overhead Console

OVERHEAD CONSOLE (Continued)

- | | |
|---|--|
| 1 - SUNGLASSES STORAGE BIN | 10 - SWITCHES |
| 2 - GARAGE DOOR OPENER STORAGE BIN DOOR | 11 - WIRE HARNESS |
| 3 - COMPUTER LENS OR COVER PLUG | 12 - SPRINGS (2) |
| 4 - HOOK AND LOOP FASTENER | 13 - READING AND COURTESY LAMP HOUSING |
| 5 - SECURITY INDICATOR LAMP | 14 - REFLECTORS |
| 6 - COMPASS MINI-TRIP COMPUTER MODULE | 15 - OVERHEAD CONSOLE HOUSING |
| 7 - SCREW (3) | 16 - LENSES |
| 8 - SCREW (4) | 17 - BUMPER |
| 9 - BULB HOLDERS | 18 - GARAGE DOOR OPENER PUSH BUTTON |

GARAGE DOOR OPENER STORAGE BIN

A compartment near the front of the overhead console is designed to hold most garage door opener remote control transmitters. The transmitter is mounted within the compartment with an adhesive-backed hook and loop fastener patch and, when the compartment is closed, a push button in the center of the compartment door is depressed to actuate the transmitter.

A transmitter mounting kit including the adhesive-backed hook and loop fastener material is available for service. The garage door opener storage bin door and the push button with three assorted length adapter pegs are also available for service replacement.

The garage door opener storage compartment door is opened by pressing the integral latch towards the front of the vehicle. When the compartment door is opened, the push button unit is removed from the compartment by squeezing the latch tabs and pulling the unit downward. With the push button removed, the garage door opener can be installed in the compartment using the adhesive-backed hook and loop fastener material provided.

With the transmitter mounted in the storage bin, adapter pegs located on the garage door opener push button unit are selected and mounted on one of two posts on the back side of the push button. The combination of the adapter peg length and the push button post location must be suitable to depress the button of the transmitter when the push button in the center of the garage door opener storage bin door is depressed. When the proper combination has been selected, the push button is reinstalled in the compartment and the compartment door is closed.

SUNGLASS STORAGE BIN

A sunglasses storage bin is included in the overhead console. The storage bin is located near the rear of the overhead console and is held in the closed position by a latch that is integral to the storage bin door. The interior of the bin is lined with a foam rubber padding material to protect the sunglasses from being scratched. Dampening springs that are located on the back of the overhead console reading and

courtesy lamp housing contact the hinges of the sunglasses storage bin for a smooth opening action.

The sunglasses storage bin and door unit is available for service replacement. The hinge dampening springs are serviced as a unit with the overhead console reading and courtesy lamp housing.

The sunglasses storage bin is opened by pressing the latch on the rear edge of the door towards the front of the vehicle, then pulling the bin downward to the open position. The integral latch on the sunglasses bin door will automatically engage when the bin is closed. See the owner's manual in the vehicle glove box for more information on the use and operation of the sunglasses storage bin.

COMPASS

While in the compass/temperature mode, the compass will display the direction in which the vehicle is pointed using the eight major compass headings (Examples: north is N, northeast is NE), along with the outside ambient temperature. When the compass unit is placed in the compass/compass in degrees mode, the compass will display the direction the vehicle is heading using the eight major compass headings and in degrees (0 to 359 degrees). North is 0 degrees, East is 90 degrees, South is 180 degrees and West is 270 degrees. It will not display the headings in minutes or seconds.

The self-calibrating compass unit requires no adjusting in normal use. The compass unit will compensate for magnetism the body of the vehicle may acquire during normal use. However, avoid placing anything magnetic directly on the roof of the vehicle. Magnetic mounts for an antenna, a repair order hat, or a funeral procession flag can exceed the compensating ability of the compass unit if placed on the roof panel. If the vehicle roof should become magnetized, the demagnetizing and calibration procedures found in this group may be required to restore proper compass operation.

THERMOMETER

The thermometer displays the outside ambient temperature in whole degrees. The temperature display can be changed from Fahrenheit to Celsius

OVERHEAD CONSOLE (Continued)

using the U.S./Metric push button. The displayed temperature is not an instant reading of conditions, but an average temperature. It may take the thermometer display several minutes to respond to a major temperature change, such as driving out of a heated garage into winter temperatures.

When the ignition switch is turned to the Off position, the last displayed temperature reading stays in the thermometer unit memory. When the ignition switch is turned to the On position again, the thermometer will display the memory temperature if the engine coolant temperature is above about 43° C (109° F). If the engine coolant temperature is below about 43° C (109° F), the thermometer will display the actual temperature sensed by the ambient temperature sensor. The thermometer temperature display update interval varies with the vehicle speed; therefore, if the temperature reading seems inaccurate, drive the vehicle for at least three minutes while maintaining a speed of 48 kilometers-per-hour (30 miles-per-hour) or higher.

The thermometer function is supported by an ambient temperature sensor. The sensor is mounted outside the passenger compartment near the front and center of the vehicle, and is hard wired to the module. The ambient temperature sensor is available as a separate service item.

STANDARD PROCEDURE

STANDARD PROCEDURE - COMPASS CALIBRATION

CAUTION: Do not place any external magnets, such as magnetic roof mount antennas, in the vicinity of the compass. Do not use magnetic tools when servicing the overhead console.

The electronic compass unit features a self-calibrating design, which simplifies the calibration procedure. This feature automatically updates the compass calibration while the vehicle is being driven. This allows the compass unit to compensate for small changes in the residual magnetism that the vehicle may acquire during normal use. If the compass readings appear to be erratic or out of calibration, perform the following calibration procedure. Also, new service replacement compass mini-trip computer modules must have their compass calibrated using this procedure. Do not attempt to calibrate the compass near large metal objects such as other vehicles, large buildings, or bridges; or, near overhead or underground power lines.

(1) Start the engine. If the compass/temperature data is not currently being displayed, momentarily depress and release the Step push button to step

through the display options until you have reached the compass/temperature display.

(2) Depress both the U.S./Metric and the Step push buttons at the same time for more than six seconds, until "CAL" appears in the display, then release both push buttons. The "CAL" in the display indicates that the compass is in the calibration mode.

(3) Drive the vehicle on a level surface, at least fifty feet away from large metal objects and power lines, in all four compass directions, such as driving around a city block several times or driving in two to three complete circles at a slow to medium speed.

(4) When the calibration is successfully completed, "CAL" will disappear from the display and normal compass mini-trip computer operation will resume.

NOTE: If the "CAL" message remains in the display, either there is excessive magnetism near the compass, or the unit is faulty. Repeat the calibration procedure at least one more time.

NOTE: If the wrong direction is still indicated in the compass display, the area selected for calibration may be too close to a strong magnetic field. Repeat the calibration procedure in another location.

STANDARD PROCEDURE - COMPASS VARIATION ADJUSTMENT

Compass variance, also known as magnetic declination, is the difference in angle between magnetic north and true geographic north. In some geographic locations, the difference between magnetic and geographic north is great enough to cause the compass to give false readings. If this problem occurs, the compass variance must be set. There are two methods that can be used to enter this information into the compass mini-trip computer module. They are the zone method and the direct method.

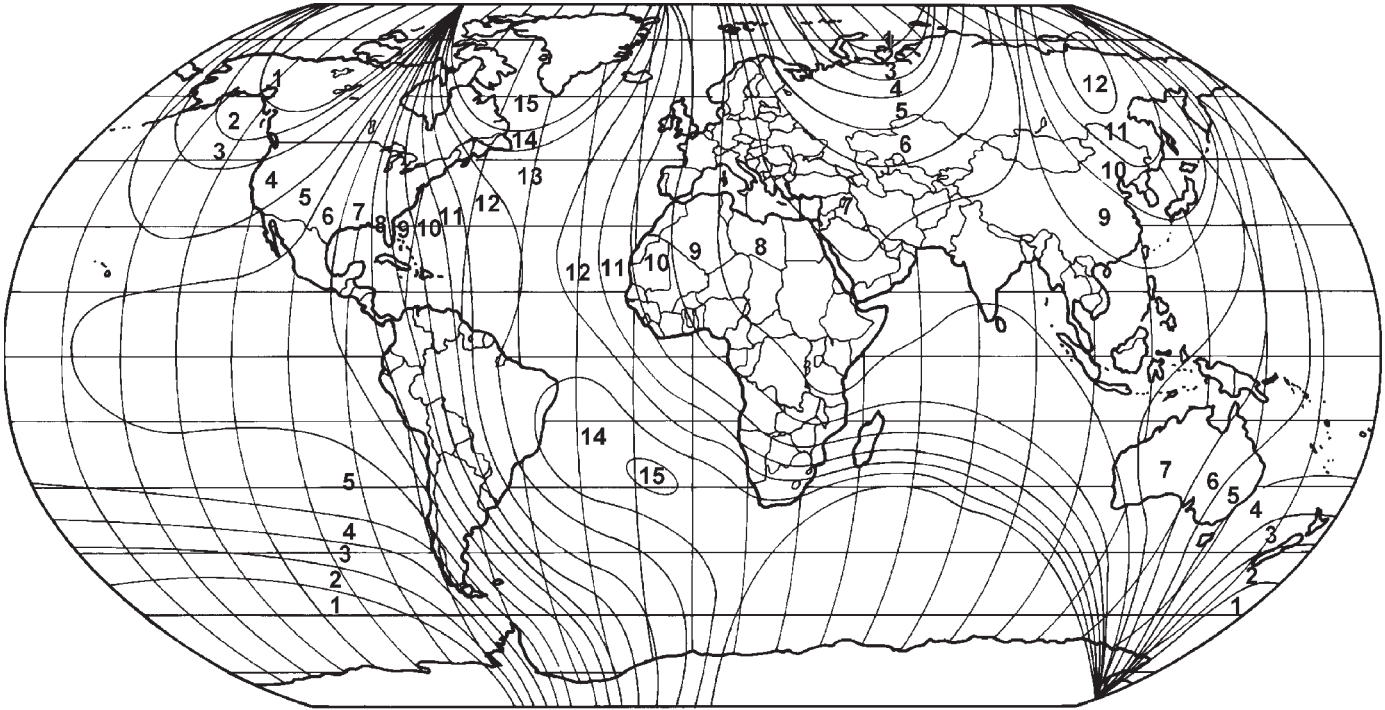
ZONE METHOD

(1) Using the Variance Settings map, find your geographic location and note the zone number (Fig. 2).

(2) Turn the ignition switch to the On position. If the compass/temperature data is not currently being displayed, momentarily depress and release the Step push button to step through the display options until you have reached the compass/temperature display.

(3) Depress both the U.S./Metric and the Step push buttons at the same time and hold them down for more than 100 milliseconds, but not more than one second. The compass mini-trip computer will enter the variation adjustment mode and "VAR" along with the current variance zone will appear in the display.

OVERHEAD CONSOLE (Continued)



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Fig. 2 Variance Settings

(4) Momentarily depress and release the Step push button to step through the zone numbers, until the zone number for your geographic location appears in the display.

(5) After five seconds, the displayed zone will automatically be set in the compass mini-trip computer module memory and normal operation will resume.

(6) Confirm that the correct directions are now indicated by the compass.

DIRECT METHOD

(1) Turn the vehicle so it is headed in either the north or south direction. The vehicle must be headed within 45 degrees of north or south for this procedure to work. The vehicle may be moving or stationary.

(2) Turn the ignition switch to the On position. If the compass/temperature data is not currently being displayed, momentarily depress and release the Step push button to step through the display options until you have reached the compass/temperature display.

(3) Depress both the U.S./Metric and the Step push buttons at the same time and hold them down for more than 100 milliseconds, but not more than one second. The compass mini-trip computer will enter the variation adjustment mode and "VAR" along with the current variance zone will appear in the display.

(4) Within the next five seconds, momentarily depress and release the U.S./Metric push button. The variance zone will automatically be set in the com-

pass mini-trip computer module memory and normal operation will resume.

(5) If the "VAR" in the display flashes twice before the compass mini-trip computer module resumes normal operation, the new variance zone setting was not accepted. Reorient the vehicle so it is headed within 45 degrees of north or south and repeat this procedure.

STANDARD PROCEDURE - COMPASS DEMAGNETIZING

A degaussing tool (Special Tool 6029) is used to demagnetize, or degauss, the overhead console forward mounting screw and the roof panel above the overhead console. Equivalent units must be rated as continuous duty for 110/115 volts and 60 Hz. They must also have a field strength of over 350 gauss at 7 millimeters (0.25 inch) beyond the tip of the probe.

To demagnetize the roof panel and the overhead console forward mounting screw, proceed as follows:

(1) Be certain that the ignition switch is in the Off position, before you begin the demagnetizing procedure.

(2) Connect the degaussing tool to an electrical outlet, while keeping the tool at least 61 centimeters (2 feet) away from the compass unit.

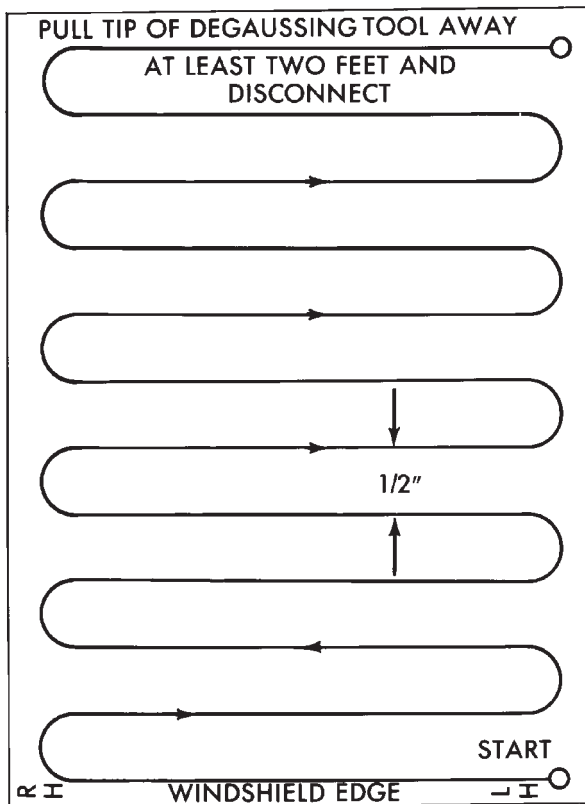
(3) Slowly approach the head of the overhead console forward mounting screw with the degaussing tool connected.

OVERHEAD CONSOLE (Continued)

(4) Contact the head of the screw with the plastic coated tip of the degaussing tool for about two seconds.

(5) With the degaussing tool still energized, slowly back it away from the screw. When the tip of the tool is at least 61 centimeters (2 feet) from the screw head, disconnect the tool.

(6) Place a piece of paper approximately 22 by 28 centimeters (8.5 by 11 inches), oriented on the vehicle lengthwise from front to rear, on the center line of the roof at the windshield header (Fig. 3). The purpose of the paper is to protect the roof panel from scratches, and to define the area to be demagnetized.



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Fig. 3 Roof Demagnetizing Pattern

(7) Connect the degaussing tool to an electrical outlet, while keeping the tool at least 61 centimeters (2 feet) away from the compass unit.

(8) Slowly approach the center line of the roof panel at the windshield header, with the degaussing tool connected.

(9) Contact the roof panel with the plastic coated tip of the degaussing tool. Be sure that the template is in place to avoid scratching the roof panel. Using a slow, back-and-forth sweeping motion, and allowing 13 millimeters (0.50 inch) between passes, move the tool at least 11 centimeters (4 inches) to each side of

the roof center line, and 28 centimeters (11 inches) back from the windshield header.

(10) With the degaussing tool still energized, slowly back it away from the roof panel. When the tip of the tool is at least 61 centimeters (2 feet) from the roof panel, disconnect the tool.

(11) Calibrate the compass and adjust the compass variance (Refer to 8 - ELECTRICAL/OVERHEAD CONSOLE - STANDARD PROCEDURE).

REMOVAL

OVERHEAD CONSOLE REMOVAL

(1) Disconnect and isolate the battery negative cable.

(2) Open the garage door opener storage bin door and locate the two overhead console latch tabs near the front of the bin (Fig. 4).

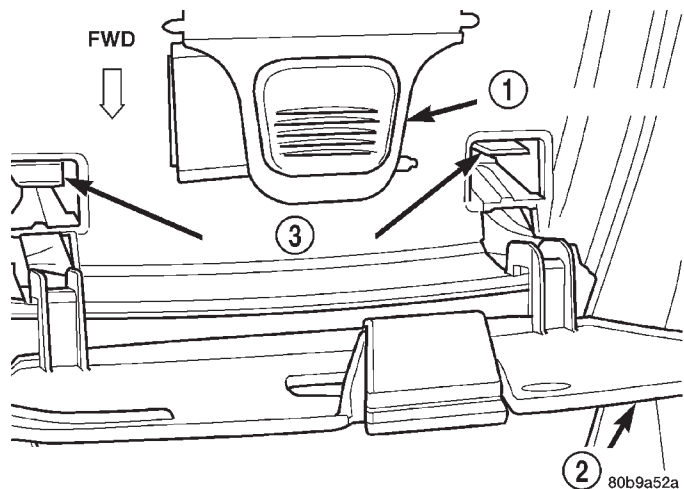


Fig. 4 Overhead Console Latch Tabs

- 1 - PUSH BUTTON
- 2 - GARAGE DOOR OPENER STORAGE BIN DOOR
- 3 - LATCH TABS

(3) While pulling gently downward on the front of the overhead console, push the latch tabs forward until each latch is disengaged from its receptacle in the inner roof panel.

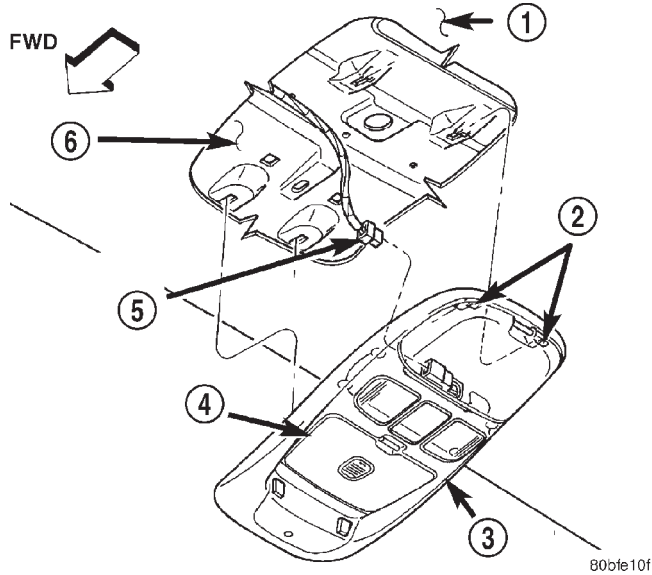
(4) Slide the overhead console rearward far enough to disengage the two mounting hooks on the rear of the housing from the mounting holes in the inner roof panel (Fig. 5).

(5) Lower the overhead console from the headliner far enough to access the wire harness connector.

(6) Disconnect the roof wire harness connector from the overhead console wire harness connector.

(7) Remove the overhead console from the vehicle.

OVERHEAD CONSOLE (Continued)

**Fig. 5 Overhead Console Remove/Install**

- 1 - HEADLINER
- 2 - MOUNTING HOOKS
- 3 - OVERHEAD CONSOLE
- 4 - GARAGE DOOR OPENER STORAGE BIN DOOR
- 5 - WIRE HARNESS CONNECTOR
- 6 - INNER ROOF PANEL

DISASSEMBLY

OVERHEAD CONSOLE DISASSEMBLY

GARAGE DOOR OPENER STORAGE BIN

REMOVAL

(1) Disconnect and isolate the battery negative cable.

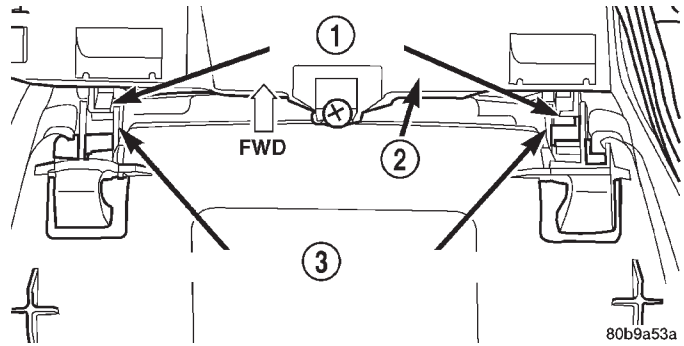
(2) Remove the overhead console from the headliner (Refer to 8 - ELECTRICAL/OVERHEAD CONSOLE - REMOVAL).

(3) If the vehicle is so equipped, remove the three screws that secure the compass mini-trip computer module to the back side of the overhead console housing. Move the module aside as needed for access to the pivot latches that are integral to the overhead console housing for the garage door opener storage bin door pivot pins.

(4) Open the garage door opener storage bin door.

(5) From the back side of the of the overhead console housing, gently pry one of the pivot latches (Fig. 6) forward while pulling the garage door opener storage bin door pivot arm rearward until the pivot pin is disengaged from the latch. Repeat this step to disengage the second pivot pin from its pivot latch.

(6) From the face side of the overhead console housing, remove the garage door opener storage bin door from the storage bin.

**Fig. 6 Garage Door Opener Storage Bin Door Pivot Latches**

- 1 - PIVOT LATCHES
- 2 - COMPASS MINI-TRIP COMPUTER MODULE
- 3 - GARAGE DOOR OPENER STORAGE BIN DOOR PIVOT ARMS

SUNGLASS STORAGE BIN

REMOVAL

(1) Remove the overhead console from the headliner (Refer to 8 - ELECTRICAL/OVERHEAD CONSOLE - REMOVAL).

(2) Remove the four screws that secure the reading and courtesy lamp housing to the back side of the overhead console housing. Move the lamp housing aside as needed for access to the pivot latches that are integral to the overhead console housing for the sunglasses storage bin pivot pins.

(3) Open the sunglasses storage bin.

(4) From the back side of the of the overhead console housing, gently pry one of the pivot latches forward while pulling the sunglasses storage bin pivot arm rearward until the pivot pin is disengaged from the latch. Repeat this step to disengage the second pivot pin from its pivot latch.

(5) From the face side of the overhead console housing, remove the sunglasses storage bin from the overhead console.

COMPASS MINI-TRIP LENS

REMOVAL

Overhead consoles equipped with the optional compass mini-trip computer have a lens installed in the front of the overhead console housing through which the Vacuum-Fluorescent Display can be viewed. If the overhead console is not equipped with the compass mini-trip computer option, a plastic cover plug is installed in the front of the overhead console housing in place of the lens.

(1) Remove the overhead console from the headliner (Refer to 8 - ELECTRICAL/OVERHEAD CONSOLE - REMOVAL).

OVERHEAD CONSOLE (Continued)

(2) If the vehicle is so equipped, remove the compass mini-trip computer module from the overhead console (Refer to 8 - ELECTRICAL/OVERHEAD CONSOLE/COMPASS/MINI-TRIP COMPUTER - REMOVAL).

(3) From the back side of the overhead console, push downward firmly and evenly on the rear of the trip computer lens to disengage the rear mounting boss, or the snap features of the cover plug from the overhead console housing.

(4) From the face of the overhead console, pull the trip computer lens or the cover plug rearward far enough to disengage the four forward mounting tabs from the overhead console housing.

(5) Remove the trip computer lens or the cover plug from the overhead console housing.

ASSEMBLY**OVERHEAD CONSOLE ASSEMBLY****GARAGE DOOR OPENER STORAGE BIN****INSTALLATION**

(1) From the face side of the overhead console housing, position the garage door opener storage bin door pivot arms through the openings in the front of the storage bin.

(2) From the back side of the of the overhead console housing, align one of the pivot pins of the garage door opener storage bin door with the pivot latch integral to the overhead console housing. Press the pivot arm forward until the pivot pin is engaged in the latch. Repeat this step to engage the second pivot pin with its pivot latch.

(3) Close the garage door opener storage bin door.

(4) If the vehicle is so equipped, position the compass mini-trip computer module to the back side of the overhead console housing. Install and tighten the three screws that secure the module to the housing. Tighten the screws to 2.2 N·m (20 in. lbs.).

(5) Install the overhead console onto the headliner (Refer to 8 - ELECTRICAL/OVERHEAD CONSOLE - INSTALLATION).

SUNGLASS STORAGE BIN**INSTALLATION**

(1) From the face side of the overhead console housing, position the sunglasses storage bin pivot arms through the openings in the front of the storage bin housing in the overhead console.

(2) From the back side of the of the overhead console housing, align one of the pivot pins of the sunglasses storage bin with the pivot latch integral to the overhead console housing. Press the pivot arm

forward until the pivot pin is engaged in the latch. Repeat this step to engage the second pivot pin with its pivot latch.

(3) Close the sunglasses storage bin.

(4) Position the reading and courtesy lamp housing to the back side of the overhead console housing. Install and tighten the four screws that secure the lamp housing to the back of the overhead console housing. Tighten the screws to 2.2 N·m (20 in. lbs.).

(5) Install the overhead console onto the headliner (Refer to 8 - ELECTRICAL/OVERHEAD CONSOLE - INSTALLATION).

MINI-TRIP COMPUTER LENS**INSTALLATION**

Overhead consoles equipped with the optional compass mini-trip computer have a lens installed in the front of the overhead console housing through which the Vacuum-Fluorescent Display can be viewed. If the overhead console is not equipped with the compass mini-trip computer option, a plastic cover plug is installed in the front of the overhead console housing in place of the lens.

(1) Remove the trip computer lens or the cover plug onto the overhead console housing.

(2) From the face of the overhead console, push the trip computer lens or the cover plug forward far enough to engage the four forward mounting tabs in the overhead console unit.

(3) From the face of the overhead console, align the rear mounting boss of the trip computer lens or the alignment pin of the cover plug with the receptacle in the overhead console housing.

(4) Press firmly and evenly on the rear edge of the trip computer lens or the cover plug until the rear mounting boss is fully seated in the receptacle, or the snap features of the cover plug are fully engaged in the overhead console housing.

(5) Install the compass mini-trip computer module onto the overhead console (Refer to 8 - ELECTRICAL/OVERHEAD CONSOLE/COMPASS/MINI-TRIP COMPUTER - INSTALLATION).

(6) Install the overhead console onto the headliner (Refer to 8 - ELECTRICAL/OVERHEAD CONSOLE - INSTALLATION).

INSTALLATION**OVERHEAD CONSOLE INSTALLATION**

(1) Position the overhead console near the mounting location on the headliner in the vehicle.

(2) Reconnect the roof wire harness connector to the overhead console wire harness connector.

OVERHEAD CONSOLE (Continued)

(3) Engage the two mounting hooks on the rear of the overhead console housing in the mounting holes in the inner roof panel.

(4) Slide the overhead console forward far enough to align the two latches on the front of the housing with their receptacles in the inner roof panel.

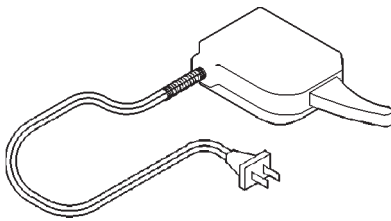
(5) Push upward firmly and evenly on the front of the overhead console until each of the two latches is fully engaged in its receptacle in the inner roof panel.

(6) Close the garage door opener storage bin door.

(7) Reconnect the battery negative cable.

SPECIAL TOOLS

OVERHEAD CONSOLE SPECIAL TOOL



Degaussing Tool 6029

COMPASS/MINI-TRIP COMPUTER

DESCRIPTION

The compass mini-trip computer is located in the premium overhead console on models equipped with this option. Two compass mini-trip computer units are available. One unit is used on vehicles not equipped with the Vehicle Theft Security System (VTSS) option, and the other is used on vehicles with the VTSS option. Both compass mini-trip computer units include the electronic control module, a Vacuum-Fluorescent Display (VFD), a compass flux-gate unit and two push button function switches.

Compass mini-trip computer units for vehicles equipped with the VTSS include a red Light-Emitting Diode (LED) on their electronic circuit board. This LED protrudes through the bottom of the lens on the front of the overhead console unit, and serves as the security indicator lamp. Refer to **Security Indicator Lamp** in Vehicle Theft/Security Systems for more information on this feature.

The compass mini-trip computer module contains a central processing unit and interfaces with other electronic 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 wire 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.

The compass mini-trip computer provides several electronic functions and features. Some of the functions and features that the compass mini-trip computer module supports and/or controls, include the following display options:

- **Compass and temperature** - provides the outside temperature and one of eight compass readings to indicate the direction the vehicle is facing.

- **Compass and compass in degrees** - provides one of eight compass readings to indicate the direction the vehicle is facing and provides the compass direction in degrees.

- **Trip odometer (ODO)** - shows the distance travelled since the last trip computer reset.

- **Average fuel economy (AVG ECO)** - shows the average fuel economy since the last trip computer reset.

- **Instant fuel economy (ECO)** - shows the present fuel economy based upon the current vehicle distance and fuel used information.

- **Distance to empty (DTE)** - shows the estimated distance that can be travelled with the fuel remaining in the fuel tank. This estimated distance is computed using the average miles-per-gallon from the last 30 gallons of fuel used.

- **Elapsed time (ET)** - shows the accumulated ignition-on time since the last trip computer reset.

- **Blank screen** - the compass mini-trip VFD is turned off.

The ambient temperature sensor is hard wired to the compass mini-trip computer module. Data input for all other compass mini-trip computer functions, including VFD dimming level, is received through CCD data bus messages. The compass mini-trip computer uses its internal programming and all of these inputs to calculate and display the requested data. If the data displayed is incorrect, perform the self-diagnostic tests as described in this group. If these tests prove inconclusive, the use of a DRBIII® scan tool and the proper Diagnostic Procedures manual are recommended for further testing of the compass mini-trip computer module and the CCD data bus.

The compass mini-trip computer module cannot be repaired, and is available for service only as a unit. If faulty or damaged, the complete module must be replaced.

OPERATION

The compass mini-trip computer only operates with the ignition switch in the On position. When the ignition switch is turned to the On position, all of the segments in the compass mini-trip computer VFD will be turned on for one second, then the display

COMPASS/MINI-TRIP COMPUTER (Continued)

will return to the last function being displayed before the ignition was turned to the Off position. With the ignition switch in the On position, momentarily depressing and releasing the Step push button switch will cause the compass-mini-trip computer to change its mode of operation, and momentarily depressing and releasing the U.S./Metric push button will cause the unit to toggle between U.S. and Metric measurements. While in either compass mode, depressing the U.S./Metric push button for more than ten seconds will toggle the display between the compass/temperature and the compass/compass in degrees modes.

This compass mini-trip computer features several functions that can be reset. If both the Step and U.S./Metric push buttons are depressed at the same time with the ignition switch in the On position, the trip computer information that can be reset is reset. Depressing and releasing the Step and U.S./Metric push buttons at the same time for more than 100 milliseconds, but not more than one second while in any display mode (except the compass/temperature mode) will cause a local reset. A local reset affects only the function currently displayed. See the Reset Chart below for more information on this feature. Performing a local reset while in the compass/temperature mode enters the module into the compass variance setting mode.

Depressing and releasing the Step and U.S./Metric push buttons at the same time for more than two seconds while in any display mode (except the compass/temperature mode) will cause a global reset. A global reset changes all of the trip computer functions that can be reset.

For more information on the features and control functions of the compass mini-trip computer, see the owner's manual in the vehicle glove box.

DIAGNOSIS AND TESTING - COMPASS MINI-TRIP COMPUTER

If the problem with the compass mini-trip computer module is an inoperative security indicator lamp, refer to **Security Indicator Lamp** in Vehicle Theft/Security Systems. If the problem with the compass mini-trip computer module is an "OC" or "SC" in the compass/thermometer display, refer to **Ambient Temperature Sensor** in this section. If the problem with the compass mini-trip computer module is an inaccurate or scrambled display, refer to **CMTC Self-Diagnostic Test** in this section. If the problem with the compass mini-trip computer module is incorrect Vacuum Fluorescent Display (VFD) dimming levels, use a DRB® scan tool and the proper Diagnostic Procedures manual to test for the correct dimming message inputs being received from the instrument cluster over the Chrysler Collision Detection (CCD) data bus. If the problem is a no-display condition,

use the following procedures. For complete circuit diagrams, refer to **Overhead Console** in the Contents of Wiring Diagrams.

(1) Check the fused B(+) fuse in the junction block. If OK, go to Step 2. If not OK, repair the shorted circuit or component as required and replace the faulty fuse.

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

(3) Check the fused ignition switch output (run/start) fuse in the junction block. If OK, go to Step 4. If not OK, repair the shorted circuit or component as required and replace the faulty fuse.

(4) Turn the ignition switch to the On position. Check for battery voltage at the fused ignition switch output (run/start) fuse in the junction block. If OK, go to Step 5. If not OK, repair the open fused ignition switch output (run/start) circuit to the ignition switch as required.

(5) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Remove the overhead console. Check for continuity between the ground circuit cavities of the roof wire harness connector for the overhead console and a good ground. There should be continuity. If OK, go to Step 6. If not OK, repair the open ground circuit to ground as required.

(6) Connect the battery negative cable. Check for battery voltage at the fused B(+) circuit cavity of the roof wire harness connector for the overhead console. If OK, go to Step 7. If not OK, repair the open fused B(+) circuit to the junction block fuse as required.

(7) Turn the ignition switch to the On position. Check for battery voltage at the fused ignition switch output (run/start) circuit cavity of the roof wire harness connector for the overhead console. If OK, refer to **Self-Diagnostic Test** in the Diagnosis and Testing section of this group for further diagnosis of the compass mini-trip computer module and the CCD data bus. If not OK, repair the open fused ignition switch output (run/start) circuit to the junction block fuse as required.

CMTC SELF-DIAGNOSTIC TEST

A self-diagnostic test is used to determine that the compass mini-trip computer module is operating properly electrically. Initiate the self-diagnostic test as follows:

(1) With the ignition switch in the Off position, simultaneously depress and hold the Step button and the U.S./Metric button.

(2) Turn the ignition switch to the On position.

(3) Continue to hold both buttons depressed until the compass mini-trip computer module enters the

COMPASS/MINI-TRIP COMPUTER (Continued)

display segment test. In this test, all of the Vacuum Fluorescent Display (VFD) segments are lighted while the compass mini-trip computer module performs the following checks:

- Microprocessor RAM read/write test
- Non-volatile memory read/write test
- Microprocessor ROM verification test
- CCD communications test.

(4) Following completion of these tests, the compass mini-trip computer will display one of three messages: "PASS," "FAIL," or "CCd." Respond to the respective test results as follows:

- If the "PASS" message is displayed, but compass mini-trip computer operation is still improper, the use of a DRB scan tool and the proper Diagnostic Procedures manual are required for further diagnosis.

- If the "FAIL" message is displayed, the compass mini-trip computer module is faulty and must be replaced.

- If the "CCd" message is displayed, the use of a DRB® scan tool and the proper Diagnostic Procedures manual are required for further diagnosis.

- If any VFD segment should fail to light during the display segment test, the compass mini-trip computer module is faulty and must be replaced.

(5) If all tests are passed, or if the ignition switch is turned to the Off position, the compass mini-trip computer module will automatically return to normal operation.

NOTE: If the compass functions, but accuracy is suspect, it may be necessary to perform a variation adjustment. This procedure allows the compass unit to accommodate variations in the earth's magnetic field strength, based on geographic location. Refer to Compass Variation Adjustment in the Service Procedures section of this group.

NOTE: If the compass reading has blanked out, and only "CAL" appears in the display, demagnetizing may be necessary to remove excessive residual magnetic fields from the vehicle. Refer to Compass Demagnetizing in the Service Procedures section of this group.

REMOVAL

(1) Disconnect and isolate the battery negative cable.

(2) Remove the overhead console from the headliner (Refer to 8 - ELECTRICAL/OVERHEAD CONSOLE - REMOVAL).

(3) Remove the three screws that secure the compass mini-trip computer module to the overhead console housing (Fig. 7).

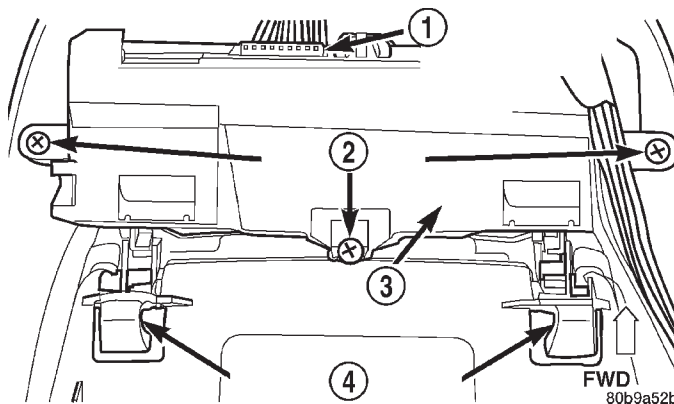


Fig. 7 Overhead Console Compass Mini-Trip Computer

- 1 - WIRE HARNESS CONNECTOR
- 2 - SCREWS (3)
- 3 - COMPASS MINI-TRIP COMPUTER MODULE
- 4 - FRONT LATCHES

(4) Pull the compass mini-trip computer module away from the overhead console far enough to access the wire harness connector.

(5) Disconnect the overhead console wire harness connector from the compass mini-trip computer module connector receptacle.

(6) Remove the compass mini-trip computer module from the overhead console housing.

INSTALLATION

(1) Position the compass mini-trip computer module onto the overhead console housing.

(2) Reconnect the overhead console wire harness connector to the compass mini-trip computer module connector receptacle.

(3) Install and tighten the three screws that secure the compass mini-trip computer module to the overhead console housing. Tighten the screws to 2.2 N·m (20 in. lbs.).

(4) Install the overhead console onto the headliner (Refer to 8 - ELECTRICAL/OVERHEAD CONSOLE - INSTALLATION).

(5) Reconnect the battery negative cable.

NOTE: If a new compass mini-trip computer has been installed, the compass will have to be calibrated and the variance set. Refer to Compass Variation Adjustment and Compass Calibration in the Service Procedures section of this group for the procedures.

AMBIENT TEMP SENSOR

DESCRIPTION

Ambient air temperature is monitored by the compass mini-trip computer module through the ambient temperature sensor. The ambient temperature sensor is a variable resistor mounted to a bracket that is secured with a screw to the underside of the hood panel near the hood latch striker in the engine compartment (Fig. 8).

For complete circuit diagrams, refer to **Overhead Console** in the Contents of Wiring Diagrams. The ambient temperature sensor cannot be adjusted or repaired and, if faulty or damaged, it must be replaced.

OPERATION

The ambient temperature sensor is a variable resistor that operates on a five-volt reference signal sent to it by the compass mini-trip computer module. The resistance in the sensor changes as temperature changes, changing the return circuit voltage to the compass mini-trip computer module. Based upon the resistance in the sensor, the compass mini-trip computer module senses a specific voltage on the return circuit, which it is programmed to correspond to a specific temperature.

DIAGNOSIS AND TESTING - AMBIENT TEMPERATURE SENSOR

The thermometer function is supported by the ambient temperature sensor, a wiring circuit, and a portion of the compass mini-trip computer module. If any portion of the ambient temperature sensor circuit fails, the compass/thermometer display function will self-diagnose the circuit. If 55° C (131° F) appears in the display, the sensor is being exposed to temperatures above 55° C (131° F), or the sensor circuit is shorted. If -40° C (-40° F) appears in the display, the sensor is being exposed to temperatures below -40° C (-40° F), or the sensor circuit is open.

The ambient temperature sensor circuit can also be diagnosed using the following Sensor Test, and Sensor Circuit Test. If the temperature sensor and circuit are confirmed to be OK, but the temperature display is inoperative or incorrect, refer to **Diagnosis and Testing the Compass Mini-Trip Computer**. For complete circuit diagrams, refer to **Wiring Diagrams**.

SENSOR TEST

(1) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Disconnect the ambient temperature sensor wire harness connector.

(2) Measure the resistance of the ambient temperature sensor. At -40° C (-40° F), the sensor resistance is 336 kilohms. At 55° C (131° F), the sensor resistance is 2.488 kilohms. The sensor resistance should read between these two values. If OK, refer to the **Sensor Circuit Test below**. If not OK, replace the faulty ambient temperature sensor.

SENSOR CIRCUIT TEST

(1) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Disconnect the ambient temperature sensor wire harness connector and the overhead console wire harness connector.

(2) Connect a jumper wire between the two terminals in the body half of the ambient temperature sensor wire harness connector.

(3) Check for continuity between the sensor return circuit and the ambient temperature sensor signal circuit cavities of the roof wire harness overhead console connector. There should be continuity. If OK, go to Step 4. If not OK, repair the open sensor return circuit or ambient temperature sensor signal circuit to the ambient temperature sensor as required.

(4) Remove the jumper wire from the body half of the ambient temperature sensor wire harness connector. Check for continuity between the sensor return circuit cavity of the roof wire harness overhead console connector and a good ground. There should be no continuity. If OK, go to Step 5. If not OK, repair the shorted sensor return circuit as required.

(5) Check for continuity between the ambient temperature sensor signal circuit cavity of the roof wire harness overhead console connector and a good ground. There should be no continuity. If OK, refer to **Diagnosis and Testing the Compass Mini-Trip Computer** in this section. If not OK, repair the shorted ambient temperature sensor signal circuit as required.

REMOVAL

(1) Disconnect and isolate the battery negative cable.

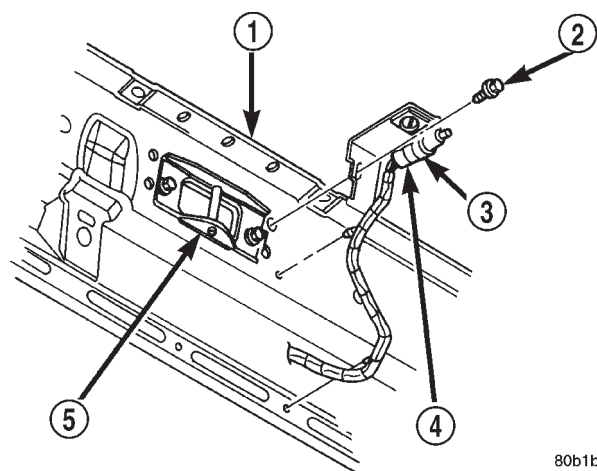
(2) Locate the ambient temperature sensor, on the underside of the hood near the hood latch striker (Fig. 8).

(3) Disconnect the wire harness connector from the ambient temperature sensor connector receptacle.

(4) Remove the one screw that secures the ambient temperature sensor bracket to the inner hood reinforcement.

(5) Remove the ambient temperature sensor from the inner hood reinforcement.

AMBIENT TEMP SENSOR (Continued)



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INSTALLATION

(1) Position the ambient temperature sensor onto the inner hood reinforcement.

(2) Install and tighten the one screw that secures the ambient temperature sensor bracket to the inner hood reinforcement. Tighten the screw to 5.6 N·m (50 in. lbs.).

(3) Reconnect the wire harness connector to the ambient temperature sensor connector receptacle.

(4) Reconnect the battery negative cable.

Fig. 8 Ambient Temperature Sensor Remove/Install

- 1 - HOOD
- 2 - SCREW
- 3 - SENSOR AND BRACKET
- 4 - WIRE HARNESS CONNECTOR
- 5 - HOOD LATCH STRIKER

