

# OVERHEAD CONSOLE

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## GENERAL INFORMATION

### INTRODUCTION

There are two types of overhead consoles and two available Overhead Travel Information System (OTIS) electronic packages.

(1) Mini Console (Fig. 1) has:

- Overhead Travel Information System (OTIS) without Universal Transmitter (OTIS only)
- Two map/courtesy lamps

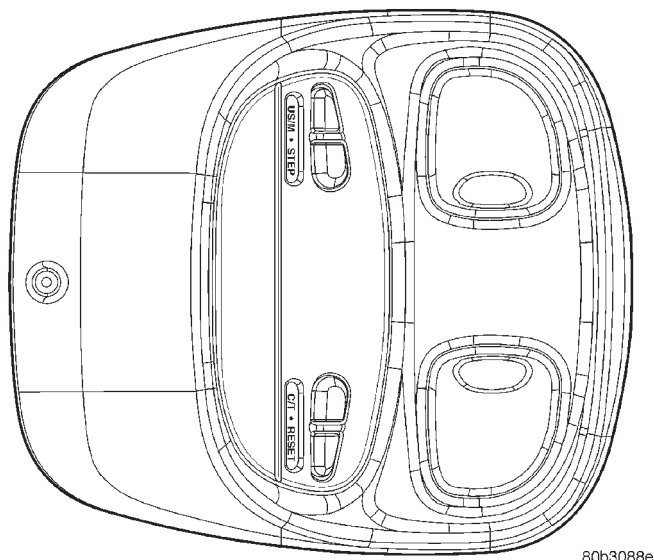


**Fig. 1 Mini Console Without Universal Transmitter**

(2) Mini Console (Fig. 2) has:

- Overhead Travel Information System (OTIS) with Universal Transmitter
- Two map/courtesy lamps
- Universal Transmitter

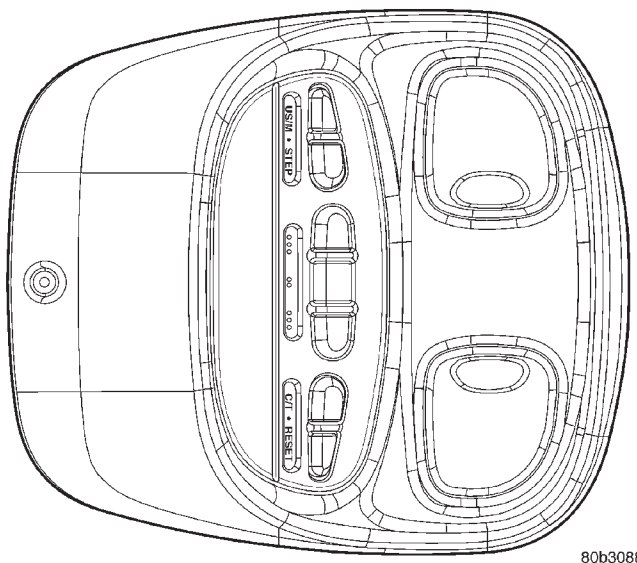
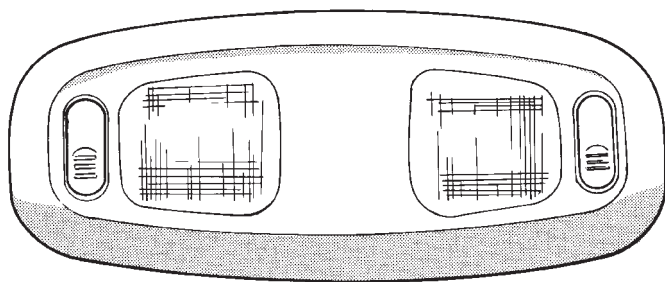


**Fig. 2 Mini Console With Universal Transmitter**

## GENERAL INFORMATION (Continued)

(3) Base unit (Fig. 3) has two map/courtesy lamps.



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**Fig. 3 Base Console**

## DESCRIPTION AND OPERATION

**MAP READING LAMPS**

The map lamps are actuated by pressing on the lens to turn ON the lamp and a second time turn OFF the lamp. The lamps also serve as courtesy lamps whenever:

- A door is opened
- The illuminated entry system is activated
- The headlamp dimmer switch is rotated up to the courtesy lamp detent.

**OVERHEAD TRAVEL INFORMATION SYSTEM (OTIS)**

Overhead Travel Information System (OTIS) is a module with six informational displays which can be displayed using the four outer buttons. When the vehicle is first turned ON:

- OTIS blanks the display for a half second
- Illuminates all segments of the vacuum fluorescent display (VFD) at full brightness for one and a half seconds
- Displays whatever was being viewed when the ignition was last turned OFF

OTIS may also be integrated with the Universal Transmitter. If so, your OTIS module will have three buttons centered together between the outer four buttons. Above the three buttons are corresponding dots to indicate which button you are using.

**THERE ARE 6 DISPLAYS:**

- Compass/Temperature
- Average fuel economy
- Distance to empty
- Instantaneous fuel economy
- Trip odometer
- Elapsed time

**THERE ARE 4 BUTTONS FOR OTIS OPERATIONS**

The buttons operate when the ignition is in the ON position. The VFD will display the last display before ignition was turned OFF. The four outer buttons operate:

- STEP
- C/T - Compass/Temperature
- US/M - English/Metric
- RESET

**STEP BUTTON**

Pressing the STEP button selects one of the following 5 displays:

- Average fuel economy
- Distance to empty
- Instantaneous fuel economy
- Trip odometer
- Elapsed time

**C/T (COMPASS/TEMPERATURE) BUTTON**

Pressing the C/T button selects the Compass/Temperature display.

**US/M (ENGLISH/METRIC MEASUREMENT) BUTTON**

Pressing the US/M button switches the display units between English and Metric readings.

**RESET BUTTON**

Pressing the RESET button resets the function on the display, provided that function can be reset. The functions which can be reset are Average fuel economy, Trip odometer and Elapsed time.

The RESET button is also used to set the variance and/or calibrate the compass. Refer to the Variance Procedure and Calibration Procedure in this section.

**UNIVERSAL TRANSMITTER**

The Universal Transmitter will operate most:

- Garage door opener (rolling code and non-rolling code)
- Gate opener
- Home/Office lighting and/or security system(s)

The transmitter is powered by the M1 circuit.

**THERE ARE THREE BUTTONS FOR UNIVERSAL TRANSMITTER OPERATIONS**

Each button controls an independent channel for transmitter operations. A house shaped icon will be illuminated along with the corresponding number of dots located at the bottom of the icon.

## DIAGNOSIS AND TESTING

### DISPLAY DIAGNOSTICS (OTIS)

#### TEMPERATURE

OTIS receives Programmable Communications Interface bus (PCI bus) messages from the Body Control Module (BCM) for all displayed information except the compass display. If a dash (-) is displayed, OTIS is not receiving a PCI bus message from the BCM. To check out the PCI bus line and the BCM use the scan tool (DRB) and proper Body Diagnostic Procedure manual.

If OTIS displays SC instead of a temperature reading, the PCI bus message is more than 83° C (181° F). Check for a short circuit between the temperature sensor and the BCM.

If OTIS displays OC instead of a temperature, the PCI bus message is less than -55° C (-67° F). Check for an open circuit between the temperature sensor and the BCM.

#### AVERAGE FUEL ECONOMY

OTIS receives average fuel economy information from the BCM over the PCI bus line. If OTIS displays -- instead of an average fuel economy value, it is not receiving a PCI bus message for the average fuel economy from the BCM. To check out the PCI bus line and the BCM use the DRB scan tool.

#### DISTANCE TO EMPTY

OTIS receives distance to empty information from the BCM over the PCI bus line. If OTIS displays a dash (-) instead of a distance to empty value, it is not receiving a PCI bus message for the distance to empty from the BCM. To check out the PCI bus line and the BCM use the DRB scan tool.

#### INSTANTANEOUS FUEL ECONOMY

OTIS receives instantaneous fuel economy information from the BCM over the PCI bus line. If OTIS displays a dash (-) instead of an instantaneous fuel economy value, it is not receiving a PCI bus message for the instantaneous fuel economy from the BCM. To check out the PCI bus line and the BCM use the DRB scan tool.

#### TRIP ODOMETER

OTIS receives trip odometer information from the BCM over the PCI bus line. If OTIS displays dashes -- instead of the trip odometer value, it is not receiving a PCI bus message for the trip odometer from the BCM. To check out the PCI bus line and the BCM, use the DRB scan tool.

#### ELAPSED TIME

OTIS receives a PCI bus message containing elapsed time information. If OTIS displays dashes -- instead of the elapsed time, it is not receiving a PCI bus message for the elapsed time from the BCM. To check out the PCI bus line and the BCM, use the DRB scan tool.

#### COMPASS DISPLAY

To display the vehicle direction, the OTIS processes information from a sensor internal to the module. The OTIS is self-calibrating and requires only variance adjustments dependent upon location. The OTIS displays the label CAL whenever the compass is in the fast calibration mode.

If all three of the following conditions listed below occur, the vehicle must be demagnetized.

- Compass portion of the display is blank
- Temperature portion of the display is OK
- The label CAL is illuminated

If demagnetizing the vehicle is needed, refer to the demagnetizing procedure in this section. After demagnetizing, to calibrate the compass refer to Calibration Procedure and to set the variance refer to Variance Procedure, both within this section. If the compass portion of the display is still blank, replace the OTIS.

### SELF-DIAGNOSTIC TEST

(1) With the ignition switch in the OFF position simultaneously press the C/T and STEP buttons and hold.

(2) Turn ignition switch ON, then release C/T and STEP buttons.

(3) OTIS lights all segments on the VFD for 2-4 seconds. Check for segments that are not illuminated.

(4) If OTIS displays PASS, the module is OK.

(5) If OTIS displays FAIL, replace the module.

(6) If OTIS displays PCI, check for an open or a short in the PCI bus communication wire.

(7) Press the C/T or the STEP button to exit self-test.

### UNIVERSAL TRANSMITTER

(1) Check the battery voltage to the universal transmitter by pressing transmitter button and seeing if the house shaped icon and corresponding number of dots light up. If OK, go to .

(2) Check M1 fuse. If fuse is OK, go to Step 4. If not OK, replace fuse.

(3) Check the OTIS w/universal transmitter connector M1 battery circuit for voltage (9-16 volts). If voltage is OK, proceed to Step 5. If no voltage, repair wire as necessary.

(4) Test the Z2 circuit for ground at the OTIS, (with universal transmitter), connector. If ground is

## DIAGNOSIS AND TESTING (Continued)

OK, replace OTIS with universal transmitter module. If no ground, repair as necessary.

(5) Check the instructions in the Owner's Manual and retrain the module. If the module cannot be trained, replace the OTIS w/universal transmitter.

## SERVICE PROCEDURES

### COMPASS CALIBRATION

Do not attempt to calibrate the compass near large metal objects such as other vehicles, large buildings or bridges. Remove all magnetic devices from roof panel. This compass is equipped with an auto-calibration feature which eliminates the need to manually set compass calibration. For a short time when the vehicle is new, the compass may appear erratic and the CAL symbol will be lit. After completing 3 complete 360 degree turns at 5 mph, in an area free of metal objects and on level ground, the CAL symbol will turn off and the compass will perform normally.

If at any time the compass should become inaccurate it can be put in auto-calibration mode by using the following procedure.

- (1) Turn key to the ON position.
- (2) Press C/T button to select the Compass/Temperature display.
- (3) Press and hold RESET button for 5 seconds. The VAR symbol will light. While continuing to hold the RESET button for about 10 seconds, the CAL symbol will light.
- (4) Drive the vehicle through 3 complete 360 degree turns, in an area free of metal objects and in no less than 48 seconds, the compass will be calibrated.
- (5) The OTIS will extinguish the CAL label.
- (6) Reset compass variance. The calibration procedure automatically sets the variance to 8. If you are in an area with a variance number other than 8 you must reset the variance.

### DEMAGNETIZING PROCEDURE

Do not attach magnetic devices such as magnetic CB antennas to the vehicle roof. They can cause the compass to give false readings.

Every vehicle has its own magnetic field. This magnetic field is created by the various processes a steel roof goes through when the vehicle is built. A magnetic field can also be created if the roof is subjected to a magnet, example magnetic CB antenna, magnetic tipped screwdriver, etc. If the roof becomes magnetized use a demagnetizing Tool 6029 to demagnetize the roof.

In this demagnetizing procedure you will use the demagnetizing tool to demagnetize the roof. It is important that you follow the instructions below exactly.

(1) Be sure the ignition switch is in the OFF position before you begin the demagnetizing procedure.

(2) Place an 8 1/2 in. X 11 in. piece of paper lengthwise on the roof of vehicle directly above compass. The purpose of the paper is to protect the roof panel from scratches and define the area to be demagnetized.

(3) Plug in the demagnetizing tool, keeping it at least two feet away from the OTIS.

(4) Slowly approach the center of the roof panel at the windshield with the demagnetizing tool plugged in.

- Contact the roof panel with the tip of the tool.
- Use slow sweeping motions of 1/2 inch between sweeps.
- Move the tool about four inches either side of the centerline, and at least 11 inches back from the windshield.

(5) With the demagnetizing tool still energized, slowly back away from the roof panel until the tip is at least two feet from the roof before unplugging the tool.

(6) Recalibrate compass and set variance.

### VARIANCE SETTING PROCEDURE

Variance is the difference between magnetic North and geographic North. In some areas the difference between magnetic and geographic north is great enough to cause the compass to give false readings. If this occurs, the variance must be set (Fig. 4).

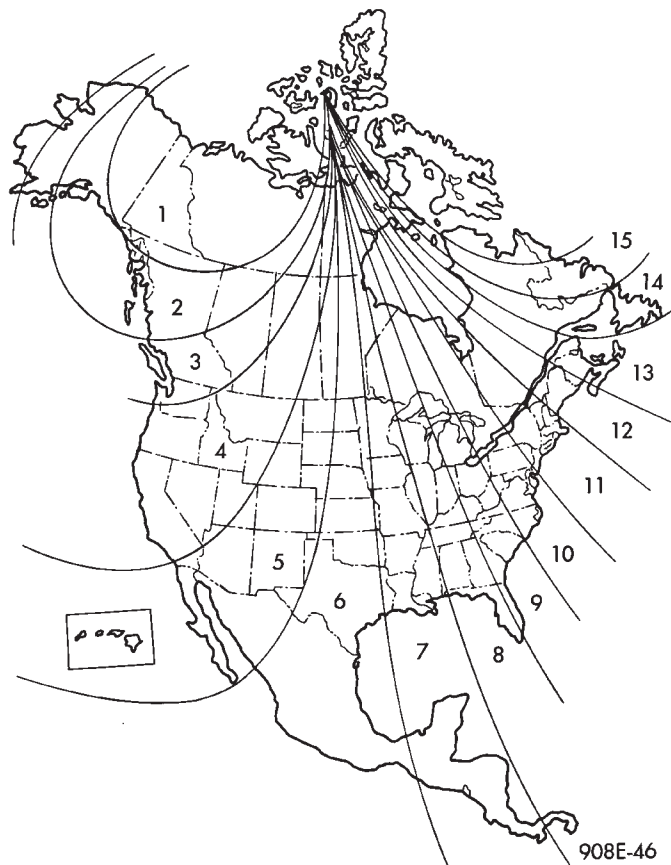


Fig. 4 Variance Zone Map

## SERVICE PROCEDURES (Continued)

To set the variance:

- Turn ignition key ON
- Press the C/T button to select the Compass/Temperature display
- Press and hold RESET button; the VAR symbol should come on in about 5 seconds.
- The OTIS will display the variance zone and the word VAR.
- Press STEP button to select the desired zone.
- Press RESET button to set the new variance zone and resume normal operation.

### TRAINING THE UNIVERSAL TRANSMITTER

To train the universal transmitter, refer to procedures outlined in the Owner's Manual or proper Body Diagnostics Procedures Manual.

### UNIVERSAL TRANSMITTER CHANNEL STATUS

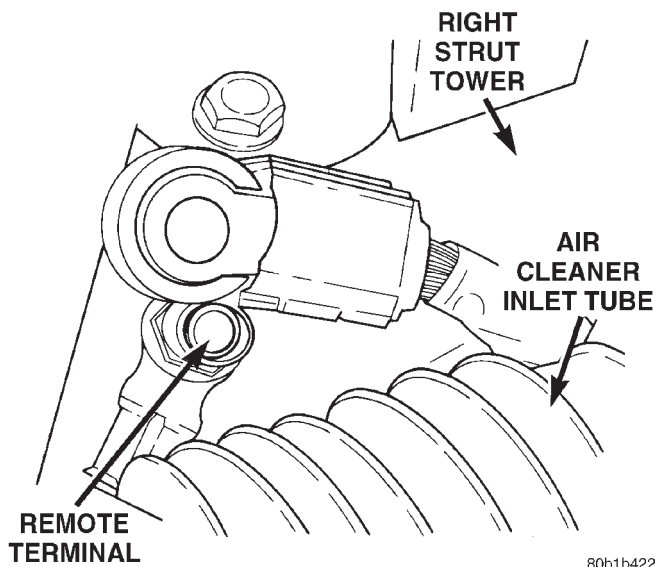
The Universal Transmitter feature has three independent RF channels. The DRB can be used to check each channel. For the necessary message set to check the universal transmitter, use DRB scan tool and proper Body Diagnostic Procedures Manual.

## REMOVAL AND INSTALLATION

### AMBIENT TEMPERATURE SENSOR

#### REMOVAL

- (1) Open hood, disconnect and isolate the negative battery cable remote terminal from the remote battery post (Fig. 5).

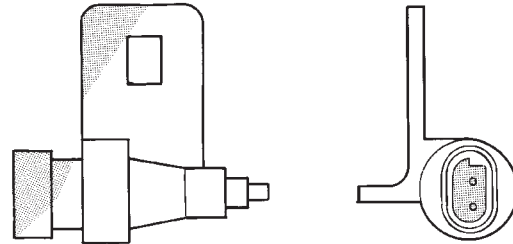


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**Fig. 5 Negative Battery Cable Remote Terminal**

- (2) Raise and support vehicle on safety stands.

- (3) From behind front bumper fascia, remove screw attaching sensor to radiator closure panel (Fig. 6).



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**Fig. 6 Ambient Temperature Sensor**

#### INSTALLATION

For installation, reverse the above procedures.

### BASE UNIT

#### REMOVAL

- (1) Open hood, disconnect and isolate the negative battery cable remote terminal from the remote battery post (Fig. 5).
- (2) Grasp the both outer sides and pull downward to disconnect the retaining clips.
- (3) Disconnect wire connector and lower the unit.
- (4) Remove console from vehicle.

#### INSTALLATION

For installation, reverse the above procedures.

### MAP LAMP

#### REMOVAL

- (1) Open hood, disconnect and isolate the negative battery cable remote terminal from the remote battery post (Fig. 5).
- (2) Remove overhead console, refer to Console Removal and Installation procedures in this section.
- (3) Remove lamp socket from mounting.
- (4) Remove lamp(s). Replace as necessary.

#### INSTALLATION

For installation, reverse the above procedures.

### MINI CONSOLE

#### REMOVAL

- (1) Remove screw from windshield side of console.
- (2) Grasp the front of console and pull downward to disconnect the retaining clips.
- (3) Disconnect wire connectors and lower the console.

## REMOVAL AND INSTALLATION (Continued)

**INSTALLATION**

For installation, reverse the above procedures.

**OTIS****REMOVAL**

- (1) Remove overhead console, refer to Console Removal and Installation procedures in this section.
- (2) Remove mounting screws and release the map lamp wire connector from the OTIS (Fig. 7).

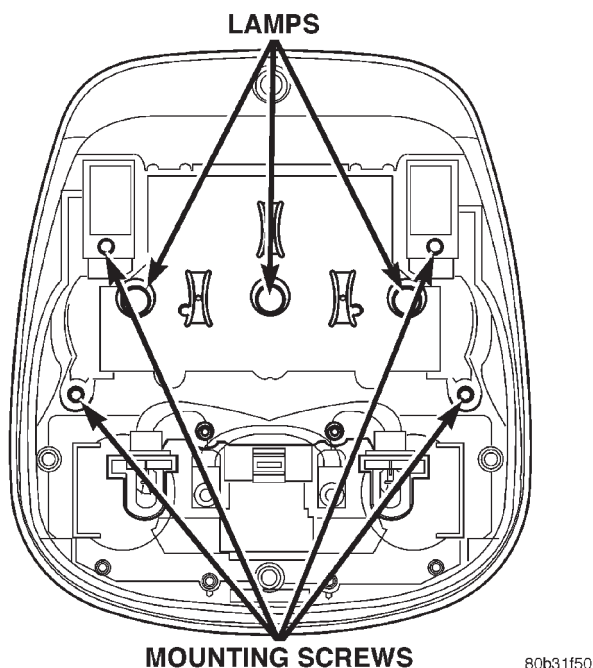


**Fig. 7 OTIS Removal**

- (3) Remove the OTIS from overhead console.

**INSTALLATION**

For installation, reverse the above procedures. Align the OTIS guides on the housing with the grooves of the console.

**OVERHEAD TRAVEL INFORMATION SYSTEM (OTIS) LAMP****REMOVAL**

- (1) Remove overhead console, refer to Console Removal and Installation procedures in this section.
- (2) Using a flat blade screwdriver twist out socket/lamp.
- (3) Replace lamp(s) as necessary.

**INSTALLATION**

For installation, reverse the above procedures.

**OVERHEAD CONSOLE BASE PLATE****REMOVAL**

- (1) Remove overhead console. Refer to Overhead Console Removal and Installation procedures in this section.
- (2) Remove head liner. Refer to Group 23, Body for Removal and Installation procedures.
- (3) Using an trim stick, remove console base by disengaging the body clips (Fig. 8).
- (4) Remove base from vehicle.

**INSTALLATION**

For installation, reverse the above procedures.

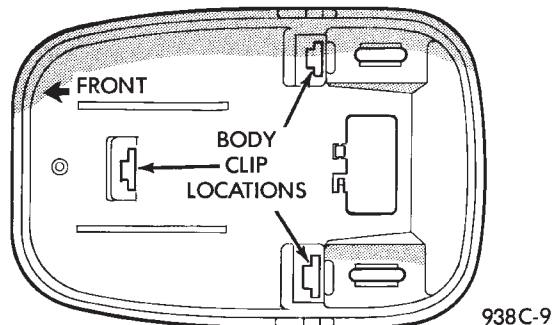


**Fig. 8 Mini Console Base Removal**