

OVERHEAD CONSOLE

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GENERAL INFORMATION

An overhead console featuring an electronic compass and thermometer is an available option for XJ (Cherokee) models. Following are general descriptions of major components used in the overhead console. Refer to Group 8W - Wiring Diagrams for complete circuit descriptions and diagrams.

COMPASS

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). It does not display the headings in actual degrees. The display is turned on or off using the COMP/TEMP button to the left of the display.

The self-calibrating compass unit requires no adjusting in normal use. The only calibration that may prove necessary is to drive the vehicle in 3 complete circles, on level ground, in not less than 48 seconds. This will reorient the unit to its vehicle.

The unit also 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. Magnetic bit drivers used on the fasteners that hold the assembly to the roof header can also affect compass operation.

If the vehicle roof should become magnetized, the demagnetizing and calibration procedures may be required to restore proper operation.

THERMOMETER

The thermometer displays the outside ambient temperature. The temperature displayed can be changed from Fahrenheit to Celsius using the US/METRIC button. The displayed temperature is not an instant reading of conditions, but an average temperature. It may take the unit several minutes to react to a major temperature change such as driving out of a heated garage into winter temperatures.

When the ignition switch is turned OFF, the last

displayed temperature reading stays in memory. When the ignition switch is turned ON again, the thermometer will display the memory temperature for one minute; then update the display to the current average temperature reading within five minutes.

READING AND COURTESY LAMPS

All reading and courtesy lamps in the overhead console are activated by the door jamb switches. When all doors and the liftgate are closed, the lamps can be individually activated by depressing the corresponding lens. When a door and/or the liftgate is open, depressing the lamp lens switches will not turn the lamps off. Refer to Group 8L - Lamps, for diagnosis and service of these lamps.

KEYLESS ENTRY RECEIVER

The overhead console houses the keyless entry receiver. Refer to Group 8P - Power Locks, for diagnosis and service of this component.

REMOTE GARAGE DOOR OPENER STORAGE

A compartment in the overhead console is designed to hold most remote garage door opener transmitters. The transmitter is mounted within the compartment with an adhesive-backed hook and loop fastener patch. Then one to three pegs are selected and mounted on a post on the inside of the storage compartment door. The pegs may be stacked, if necessary. The peg(s) selected must be long enough to activate the button of the transmitter each time the storage compartment door is depressed.

SUNGLASSES STORAGE

A flocked storage compartment for sunglasses is included in the overhead console. This compartment features a push/push-type latch and a viscous dampening system for a fluid opening motion.

DIAGNOSIS

COMPASS/DISPLAY SELF-DIAGNOSTIC TEST

This self-diagnostic test is used to determine that the compass and all of its display segments are operating properly electrically. Initiate the self-diagnostic test as follows:

(1) With the ignition switch in the OFF position, simultaneously press and hold the COMP/TEMP button and the US/METRIC button.

(2) Turn ignition switch to the ON position.

(3) Continue to hold both buttons until the display performs a walking segment test. In this test all of the compass points are displayed, along with various number combinations. These combinations verify that all display segments are functional. If any segment should fail to light during the test, the unit is faulty and requires replacement. To repeat the test, momentarily depress and release the COMP/TEMP button one time.

(4) Momentarily depress and release the US/METRIC button one time and all segments will light simultaneously for about 2 seconds. If any segment should fail to light during the test, the unit is faulty and requires replacement. To repeat the test, momentarily depress and release the COMP/TEMP button one time.

(5) Momentarily depress and release the US/METRIC button one time or turn the ignition switch to OFF to exit the self-diagnostic mode and return to normal operation.

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

If the compass display has blanked out and only CAL appears, demagnetizing may be necessary to remove excessive residual magnetic fields from the vehicle. See Compass Demagnetizing, in this group.

THERMOMETER DIAGNOSIS

The thermometer function is supported by a temperature sensor, a wiring circuit and a portion of the overhead console display. The sensor is mounted at the center of the vehicle below the grille, behind the front bumper (Fig. 1).

If any portion of the circuit fails, it will self-diagnose as an open or short circuit. The system will display SC (short circuit) when the sensor is exposed to temperatures in excess of 55°C (131°F) or if the circuit is shorted. If the temperature is below -40°C (-40°F) or an open circuit exists, the system will display OC (open circuit).

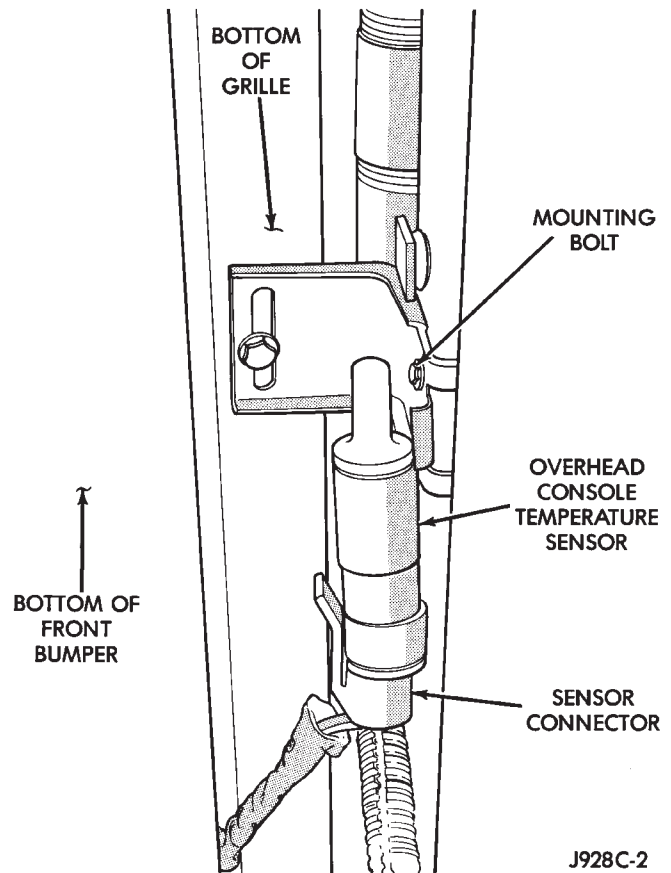


Fig. 1 Temperature Sensor

To diagnose the temperature sensor, perform the following procedures. If the sensor and circuit are OK, then the electronic module is faulty and should be replaced.

SENSOR TEST

(1) Turn the ignition switch to OFF. Unplug sensor connector.

(2) Measure resistance of sensor. At -40°F the resistance is 336K ohms. At 140°F the resistance is 2.488K ohms. Sensor resistance should read between these two values. If OK, go to Sensor Circuit Test. If not OK, replace the sensor.

SENSOR CIRCUIT TEST

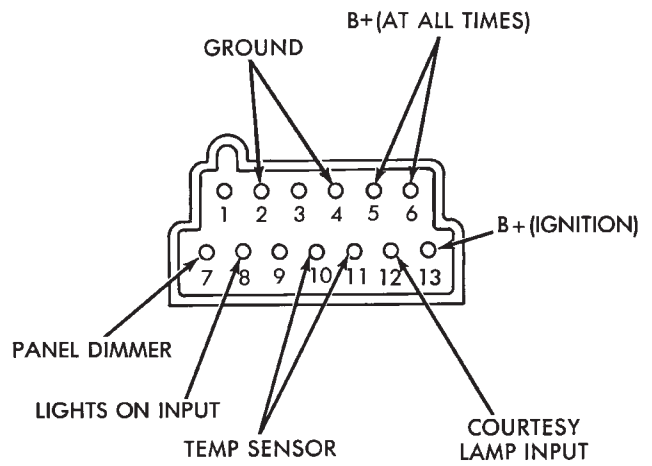
(1) Turn ignition switch to OFF. Unplug sensor connector.

(2) Short the pins on the body half of connector using a jumper wire.

(3) Remove the overhead console as described in Service Procedures.

(4) Check continuity between cavities 10 and 11 of overhead console harness connector (Fig. 2). There should be continuity. If OK, go to next step. If not OK, repair open circuit as required.

(5) Remove jumper wire from temperature sensor harness connector. Check continuity between cavities 10 and 11 of overhead console harness connector and a good ground (Fig. 2). There should be no continuity. If OK, replace electronic module. If not OK, repair short circuit as required.



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Fig. 2 Overhead Console Harness Connector

COMPASS/THERMOMETER DIAGNOSIS

CONDITION	POSSIBLE CAUSES	CORRECTION
OVERHEAD CONSOLE DISPLAY COMPLETELY DARK	<ol style="list-style-type: none"> 1. Display has been switched off. 2. Faulty fuse or headlamp delay module. 3. Faulty wiring. 4. Faulty compass/thermometer display module. 	<ol style="list-style-type: none"> 1. Depress COMP/TEMP button to switch unit to compass or thermometer display option. 2. Refer to Group 8L — Lamps, for diagnosis and service of this circuit. 3. Refer to Group 8W — Wiring Diagrams, for circuit diagrams. Check and repair wiring, if required. 4. Replace compass/thermometer display module, if required.
OVERHEAD CONSOLE DISPLAY SEGMENTS MISSING	<ol style="list-style-type: none"> 1. Faulty compass/thermometer display module. 	<ol style="list-style-type: none"> 1. See Self-Diagnostic Test, in this group. Replace compass/thermometer display module, if required.
ERRATIC COMPASS OPERATION	<ol style="list-style-type: none"> 1. Magnet or strong magnetic field near compass module. 2. Variance setting incorrect. 3. Calibration incorrect. 4. Faulty compass/thermometer display module. 	<ol style="list-style-type: none"> 1. Remove magnet and perform Demagnetizing Procedure, in this group. 2. See Variation Adjustment Procedure in this group. 3. See Calibration Procedure, in this group. 4. Replace compass/thermometer display module, if required.
ERRATIC THERMOMETER OPERATION	<ol style="list-style-type: none"> 1. Faulty sensor wiring. 2. Faulty sensor. 3. Faulty compass/thermometer display module. 	<ol style="list-style-type: none"> 1. See Sensor Circuit Test, in this group. Repair wiring, if required. 2. See Sensor Test, in this group. Replace sensor, if required. 3. Replace compass/thermometer display module, if required.

SERVICE PROCEDURES

COMPASS VARIATION ADJUSTMENT

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.

To set the variance:

(1) Using the map in Fig. 3, find your geographic location and note the zone number.

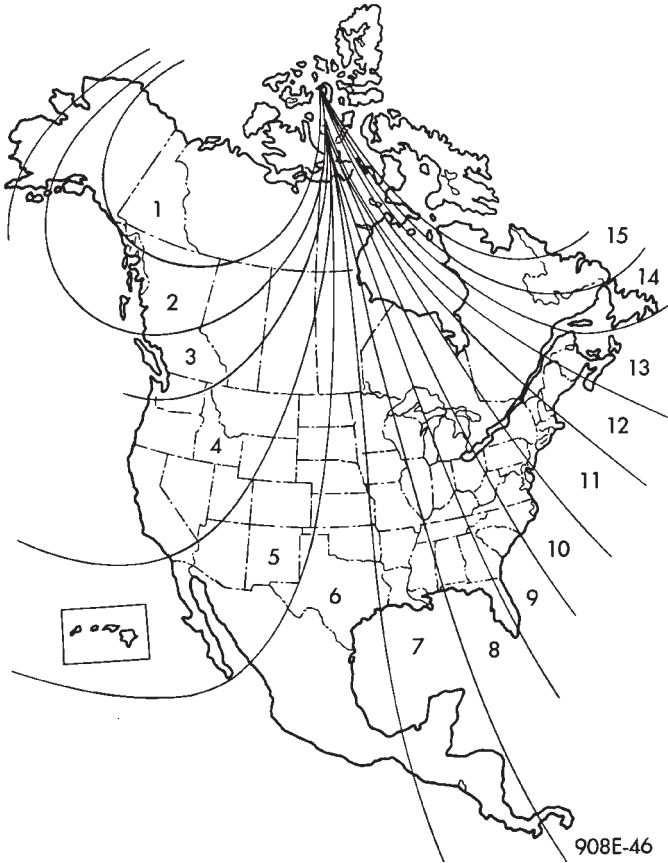


Fig. 3 Variance Settings

- (2) Turn ignition switch to the ON position.
- (3) Depress both the US/METRIC and COMP/TEMP buttons. Hold down until VAR is displayed. This takes about 5 seconds.
- (4) Release both buttons.
- (5) Press the US/METRIC button to step through the numbers until the zone number for your area appears in the display.
- (6) Press the COMP/TEMP button to enter this zone number into compass unit memory.
- (7) Confirm correct directions are indicated.

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 compass features a self-calibrating design, which simplifies the calibration procedure. This feature automatically updates the compass calibration while the vehicle is being driven. This takes into account small changes in residual magnetism the vehicle may acquire during normal use. Do not attempt to calibrate the compass near large metal objects such as other vehicles, large buildings or bridges.

Whenever the compass is calibrated manually, the variation number must also be reset. See Variation Adjustment Procedure, in this group.

Calibrate the compass manually as follows:

- (1) Start the engine.
- (2) Depress both the US/METRIC and COMP/TEMP buttons. Hold down until CAL is displayed. This takes about 10 seconds and appears about 5 seconds after VAR is displayed.
- (3) Release both buttons.
- (4) Drive vehicle on a level surface that is away from large metal objects through 3 or more complete circles in not less than 48 seconds. The CAL message will disappear to indicate that the compass is now calibrated.

If CAL message remains in display, either there is excessive magnetism near the compass or the unit is faulty. Repeat the demagnetizing and calibration procedures at least one more time.

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

COMPASS DEMAGNETIZING

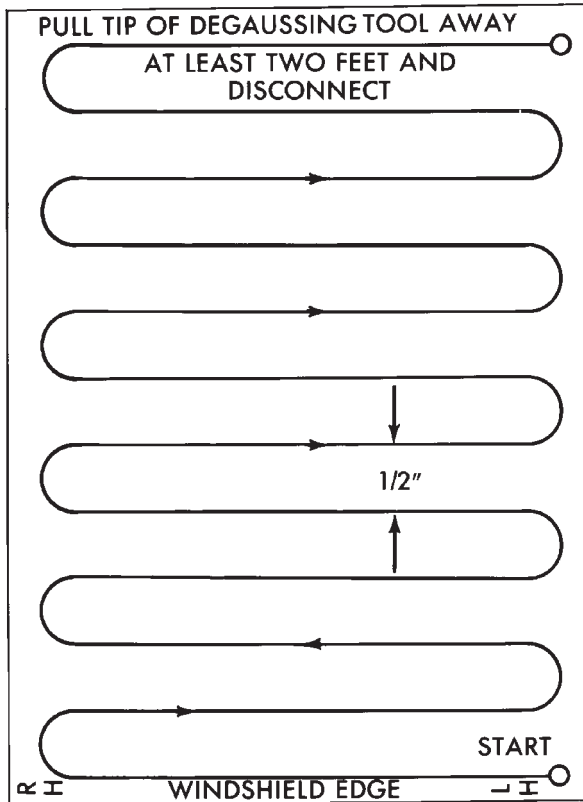
The tool used to degauss or demagnetize the forward console attaching screw and roof panel is the Miller Tool 6029. Equivalent units must be rated as continuous duty for 110/115 volts and 60Hz. They must also have a field strength of over 350 gauss at 1/4-inch beyond the tip of the probe.

The degaussing tool is used to demagnetize both the roof panel and the console forward mounting screw, as follows:

- (1) Be sure the ignition switch is in the OFF position before you begin the demagnetizing procedure.
- (2) Plug in the degaussing tool, while keeping the tool at least 2 feet away from the compass unit.
- (3) Slowly approach the head of the forward mounting screw with the plastic coated tip of the degaussing tool. Contact the head of the screw for about 2 seconds.

(4) With the degaussing tool still energized, slowly back it away from the screw until the tool is at least 2 feet from the screw head, then unplug the tool.

(5) Place an 8-1/2 X 11 inch piece of paper, oriented lengthwise from front to rear, on the center line of the roof at the windshield header (Fig. 4). The purpose of the paper is to protect the roof panel from scratches and define the area to be demagnetized.



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Fig. 4 Roof Demagnetizing Pattern

(6) Plug in the degaussing tool, while keeping the tool at least 2 feet away from the compass unit.

(7) Slowly approach the center line of the roof panel at the windshield header with the degaussing tool plugged in.

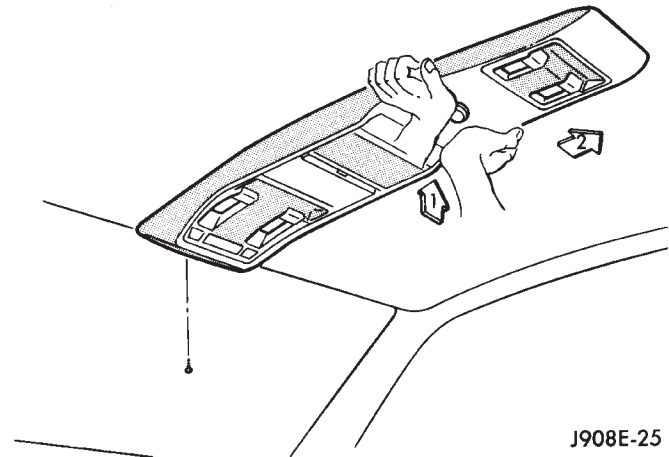
(8) Contact the roof panel with the tip of the tool. Be sure template is in place to avoid scratching the roof panel. Using a slow, back and forth sweeping motion and allowing 1/2-inch between passes (Fig. 4), move the tool at least 4 inches either side of the roof center line and 11 inches back from the windshield header.

(9) With the degaussing tool still energized, slowly back it away from the roof panel until the tip is at least 2 feet from the roof. Then unplug the tool.

(10) Calibrate the compass and adjust variance as described in this group.

OVERHEAD CONSOLE REMOVE/INSTALL

(1) Remove screw forward of the compass unit (Fig. 5).



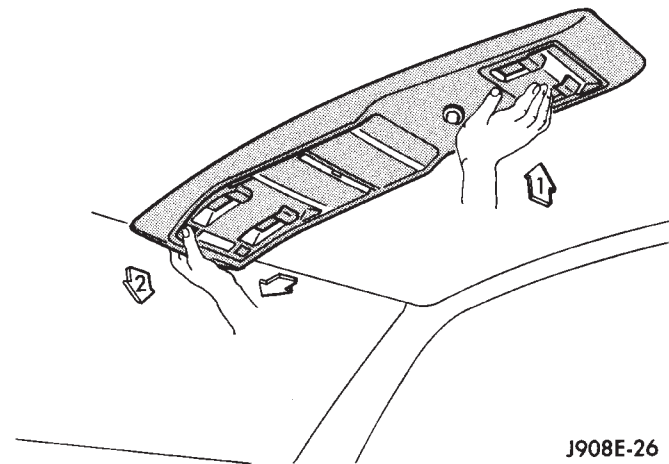
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Fig. 5 Remove/Install Overhead Console

(2) Flex housing outward while pressing upward to disengage the housing from the rear bracket (Arrow 1 in Fig. 5).

(3) Slide console rearward until the console detaches from the front mounting bracket (Arrow 2 in Fig. 5).

(4) While pressing up on rear of console (Arrow 1 in Fig. 5), slide console forward, holding front away from headliner (Arrow 2 in Fig. 5). Move console forward until the rear detaches from headliner and becomes free (Fig. 6).

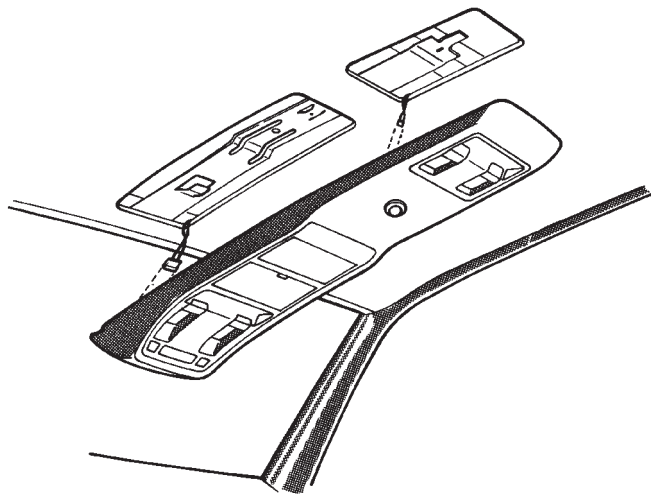


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Fig. 6 Remove/Install Overhead Console

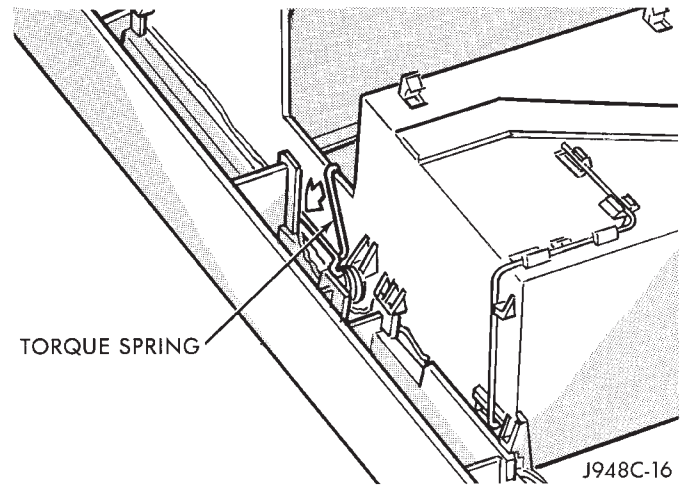
(5) Disconnect wire harnesses from keyless entry and compass/thermometer modules (Figs. 7 and 8).

(6) Reverse removal procedures to install. Be sure to flex housing outward near the keyless entry receiver until the console snaps onto the rear mounting bracket.



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Fig. 7 Disconnect Wire Harnesses

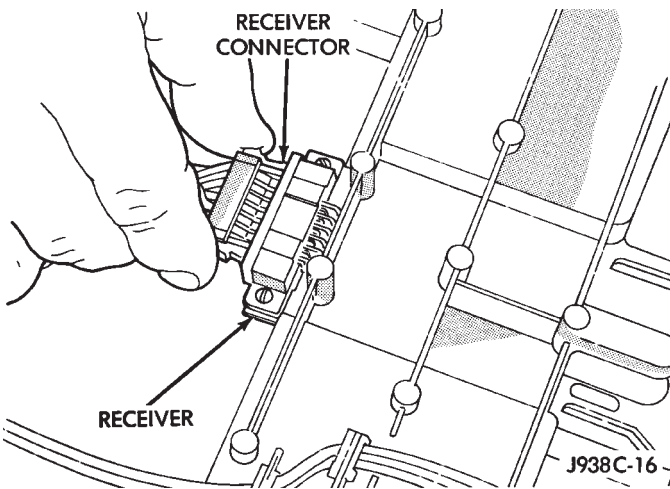


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Fig. 10 Release Torque Spring

(3) Unhook torque spring from wall and put in down position as shown by arrow in Fig. 10.

(4) Remove sunglasses storage bin door by flexing the center panel. Then remove the side of the door with the gear first (Fig. 11). The gear side of the door has a short pivot rod. Slide door out of the compartment.

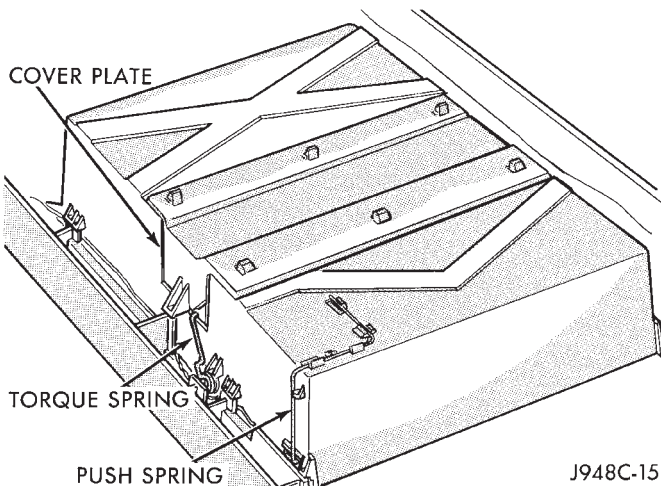


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Fig. 8 Keyless Entry Connector

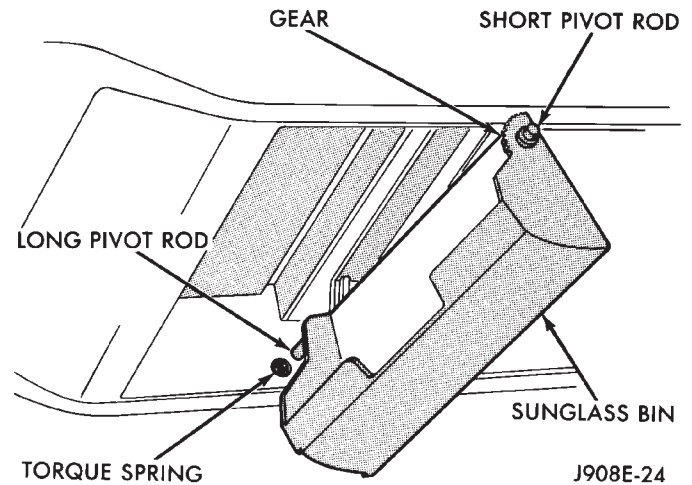
SUNGLASSES STORAGE BIN REMOVE/INSTALL

- (1) Open sunglasses storage bin door.
- (2) Remove cover plate (Fig. 9).



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Fig. 9 Remove Sunglasses Storage Bin Cover Plate



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Fig. 11 Remove Sunglasses Storage Bin

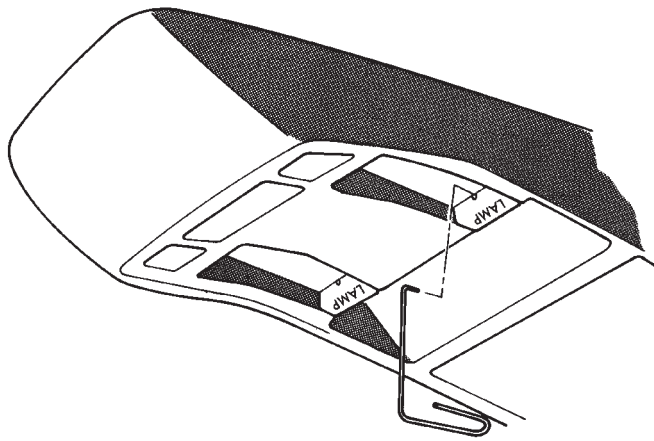
- (5) Remove and discard latch spring (Fig. 9).
- (6) Install new latch spring as shown. This may require flexing the housing in that area for clearance.
- (7) Install new sunglasses storage bin door in the open position as follows:

- (a) Make sure the torque spring lines up with the slot in the longer pivot rod, then insert the longer pivot rod (Fig. 11).
- (b) Flex the center panel and snap in the short pivot rod.
- (c) Hook torque spring back over the wall (Fig. 10).
- (d) Cycle door several times to ensure that the door functions properly.

(8) Snap cover plate back in position as shown in Fig. 9. Some pressure from the inside of the bin may be required to engage all 6 snaps.

READING/COURTESY LAMP BULB REMOVE/ INSTALL

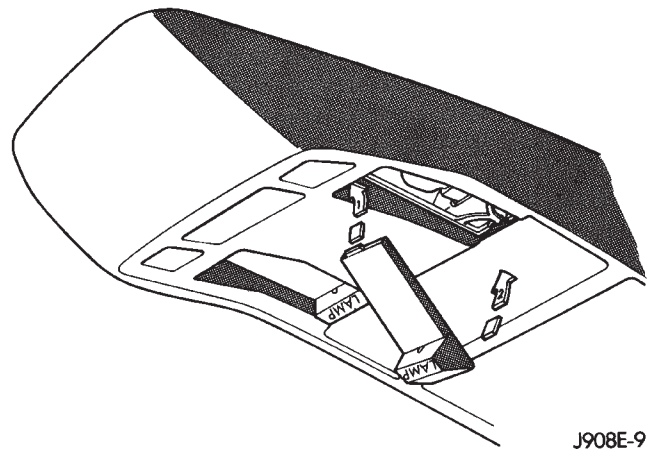
(1) Make a hook in the end of a large paper clip or wire (approximately 0.06 in. diam.). Insert into the hole in the lens and pull downward (Fig. 12).



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Fig. 12 Remove Reading/Courtesy Lamp Lens

(2) Set lens aside and replace bulb.
 (3) Replace lens by inserting tab on thin portion of lens into mating slot on console and push upwards on opposite end of lens (Fig. 13).



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Fig. 13 Install Reading/Courtesy Lamp Lens