ELECTRICALLY HEATED SYSTEMS

CONTENTS

DEFOGGER SYSTEM

INDEX

GENERAL INFORMATION

INTRODUCTION

An electrically heated rear window defogger and electrically heated outside rear view mirrors are standard factory-installed equipment on this model. The defogger will only operate when the ignition switch is in the On position. When the defogger switch is in the On position, electric heater grids on the rear window glass and behind the outside rear view mirror glass are energized. These grids produce heat to help clear the rear window glass and outside rear view mirrors of ice, snow, or fog.

This defogger system is controlled by a switch located inboard of the steering column in the inboard switch pod on the instrument panel. A Light-Emitting Diode (LED) above the switch button in the switch pod will light to indicate when the defogger system is turned on. The Body Control Module (BCM), which contains the defogger system timer logic, monitors the state of the defogger switch through a hard-wired input. The BCM circuitry controls the defogger system through a hard-wired control output to the defogger relay.

The defogger system will be automatically turned off after a programmed time interval of about ten minutes. After the initial time interval has expired, if the defogger switch is turned on again during the same ignition cycle, the defogger system will automatically turn off after about five minutes.

The defogger system will automatically shut off if the ignition switch is turned to the Off position, or it can be turned off manually by depressing the instrument panel switch. Refer to the owner's manual for more information on the defogger system controls and operation.

Following are general descriptions of the major components in the defogger system. Refer to 8W-48 - Rear Window Defogger and 8W-62 - Power Mirrors in Group 8W - Wiring Diagrams for complete circuit descriptions and diagrams.

GENERAL INFORMATION (Continued)

NOTE: This group covers both Left-Hand Drive (LHD) and Right-Hand Drive (RHD) versions of this model. Whenever required and feasible, the RHD versions of affected vehicle components have been constructed as mirror-image of the LHD versions. While most of the illustrations used in this group represent only the LHD version, the diagnostic and service procedures outlined can generally be applied to either version. Exceptions to this rule have been clearly identified as LHD or RHD, if a special illustration or procedure is required.

DESCRIPTION AND OPERATION

REAR GLASS HEATING GRID

The heated rear window glass has two electrically conductive vertical bus bars and a series of horizontal grid lines made of a silver-ceramic material, which is baked on and bonded to the inside surface of the glass. The grid lines and bus bars comprise a parallel electrical circuit.

When the rear window defogger switch is placed in the On position, electrical current is directed to the rear window grid lines through the bus bars. The grid lines heat the rear window to clear the surface of fog or snow. Protection for the heated grid circuit is provided by a fuse in the junction block.

The grid lines and bus bars are highly resistant to abrasion. However, it is possible for an open circuit to occur in an individual grid line, resulting in no current flow through the line.

The grid lines can be damaged or scraped off with sharp instruments. Care should be taken when cleaning the glass or removing foreign materials, decals, or stickers from the glass. Normal glass cleaning solvents or hot water used with rags or toweling is recommended.

A repair kit is available to repair the grid lines and bus bars, or to reinstall the heated glass pigtail wires.

HEATED MIRROR

The heated mirrors are controlled by the rear window defogger switch. The heater elements in the mirror are activated only when the rear window defogger switch is in the On position. The heater elements in the mirrors cannot be repaired and, if faulty, the entire mirror unit must be replaced. Refer to Group 8T - Power Mirrors for the diagnosis and service of this component.

DEFOGGER SWITCH

The rear window defogger switch is mounted in the inboard instrument panel switch pod, inboard of the steering column. The momentary-type switch provides a hard-wired ground signal to the Body Control Module (BCM) each time it is depressed. The BCM rear window defogger timer and logic circuitry responds by energizing or de-energizing the rear window defogger relay.

Energizing the rear window defogger relay provides electrical current to the rear window defogger grid and the Light-Emitting Diode (LED) indicator in the switch, which lights to indicate that the defogger system is turned On. The defogger switch and LED cannot be repaired and, if faulty, the inboard switch pod unit must be replaced.

DEFOGGER RELAY

The rear window defogger relay is a International Standards Organization (ISO)-type relay. The rear window defogger relay is a electromechanical device that switches fused battery current to the rear glass heating grid and the Light-Emitting Diode (LED) indicator of the defogger switch, when the Body Control Module (BCM) rear window defogger timer and logic circuitry grounds the relay coil. See the Diagnosis and Testing section of this group for more information on the operation of the rear window defogger relay.

The rear window defogger relay is located in the junction block, on the right cowl side panel below the instrument panel in the passenger compartment.

The rear window defogger relay cannot be repaired and, if faulty or damaged, it must be replaced.

BODY CONTROL MODULE

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

The CCD data bus network allows the sharing of sensor information. This helps to reduce 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.

One of the systems that the BCM supports and controls, is the rear window defogger system. In its role as the defogger system timer and controller, the BCM receives hard-wired inputs from the defogger switch and the ignition switch. The programming in the BCM allows it to process the information from these inputs and send a control output to energize or de-energize the defogger relay. The BCM also sends a defogger switch status message to the Driver Door Module (DDM) and Passenger Door Module (PDM) on the CCD data bus. The DDM and PDM respond

DESCRIPTION AND OPERATION (Continued)

by controlling the current feeds to their respective outside rear view mirror heating elements.

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

DIAGNOSIS AND TESTING

DEFOGGER SYSTEM

For circuit descriptions and diagrams, refer to 8W-48 - Rear Window Defogger in Group 8W - Wiring Diagrams. The operation of the electrically heated rear window defogger system can be confirmed in one of the following manners:

1. Turn the ignition switch to the On position. While monitoring the instrument panel voltmeter, set the defogger switch in the On position. When the defogger switch is turned On, a distinct voltmeter needle deflection should be noted.

2. Turn the ignition switch to the On position. Set the defogger switch in the On position. The rear window defogger operation can be checked by feeling the rear window or outside rear view mirror glass. A distinct difference in temperature between the grid lines and the adjacent clear glass or the mirror glass can be detected within three to four minutes of operation.

3. Using a 12-volt DC voltmeter, contact the rear glass heating grid terminal A (right side) with the negative lead, and terminal B (left side) with the positive lead (Fig. 1). The voltmeter should read battery voltage.

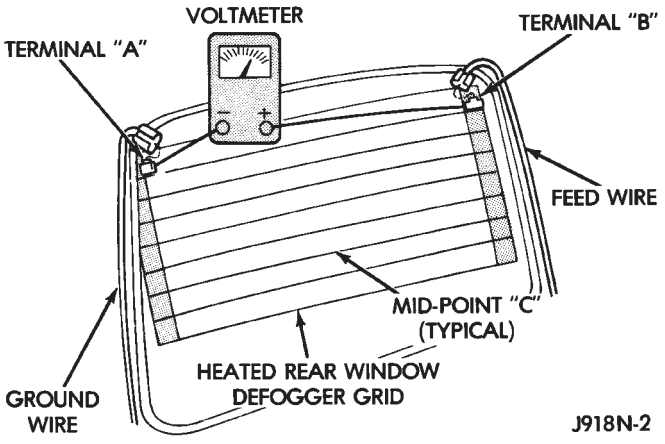


Fig. 1 Rear Window Glass Grid Test

The above checks will confirm system operation. Illumination of the defogger switch LED means that there is electrical current available at the output of the defogger relay, but does not confirm that the electrical current is reaching the rear glass heating grid lines.

If the defogger system does not operate, the problem should be isolated in the following manner:

(1) Confirm that the ignition switch is in the On position.

(2) Ensure that the rear glass heating grid feed and ground wires are connected to the glass. Confirm that the ground wire has continuity to ground.

(3) Check the fuses in the Power Distribution Center (PDC) and in the junction block. The fuses must be tight in their receptacles and all electrical connections must be secure.

When the above steps have been completed and the rear glass heating grid is still inoperative, one or more of the following is faulty:

- Defogger switch
- Defogger relay
- Body Control Module (BCM)
- Rear window grid lines (all grid lines would have to be broken or one of the feed wires disconnected for the entire system to be inoperative).

When the above steps have been completed and the heated mirror glass heating element is still inoperative, one or more of the following is faulty:

- Body Control Module (BCM)
- Chrysler Collision Detection (CCD) data bus
- Driver or passenger door module
- Outside rear view mirror heating elements.

If setting the defogger switch to the On position produces a severe voltmeter deflection, check for a short circuit between the defogger relay output and the rear glass heating grid.

REAR GLASS HEATING GRID

For circuit descriptions and diagrams, refer to 8W-48 - Rear Window Defogger in Group 8W - Wiring Diagrams. To detect breaks in the grid lines, the following procedure is required:

(1) Turn the ignition switch to the On position. Set the defogger switch in the On position. The indicator lamp should light. If OK, go to Step 2. If not OK, see the Defogger Relay diagnosis in this group.

(2) Using a 12-volt DC voltmeter, contact the vertical bus bar on the right side of the vehicle with the negative lead. With the positive lead, contact the vertical bus bar on the left side of the vehicle. The voltmeter should read battery voltage. If OK, go to Step 3. If not OK, repair the open circuit to the defogger relay as required.

(3) With the negative lead of the voltmeter, contact a good body ground point. The voltage reading should

DIAGNOSIS AND TESTING (Continued)

not change. If OK, go to Step 4. If not OK, repair the circuit to ground as required.

(4) Connect the negative lead of the voltmeter to the right side bus bar and touch each grid line at midpoint C with the positive lead. A reading of approximately six volts indicates a line is good. A reading of zero volts indicates a break in the grid line between midpoint C and the left side bus bar. A reading of ten to fourteen volts indicates a break between midpoint C and the right side bus bar. Move the positive lead on the grid line towards the break and the voltage reading will change as soon as the break is crossed.

DEFOGGER SWITCH

For circuit descriptions and diagrams, refer to 8W-48 - Rear Window Defogger in Group 8W - Wiring Diagrams.

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

(1) Disconnect and isolate the battery negative cable. Remove the inboard instrument panel switch pod and unplug the switch pod 10-way wire harness connector.

(2) Check for continuity between the ground circuit cavity of the switch pod 10-way wire harness connector and a good ground. There should be continuity. If OK, go to Step 3. If not OK, repair the open circuit as required.

(3) Connect two jumper wires to the inboard switch pod as follows. Connect the ground circuit terminal in the 10-way wire harness connector receptacle on the back of the inboard switch pod housing to a good ground. Connect the fused rear window defogger relay output circuit terminal of the 10-way wire harness connector receptacle to a 12-volt battery feed. The defogger switch LED indicator should light. If OK, go to Step 4. If not OK, replace the faulty inboard switch pod.

(4) Check for continuity between the ground circuit and rear window defogger switch sense circuit terminals of the 10-way wire harness connector receptacle on the back of the inboard switch pod housing. There should be momentary continuity as the defogger switch button is depressed, and then no continuity. If OK, go to Step 5. If not OK, replace the faulty inboard switch pod.

(5) Unplug the white 24-way wire harness connector from the Body Control Module (BCM). Check for continuity between the rear window defogger switch sense circuit cavity of the inboard switch pod 10-way wire harness connector and a good ground. There should be no continuity. If OK, go to Step 6. If not OK, repair the short circuit as required.

(6) Check for continuity between the rear window defogger switch sense circuit cavities of the inboard switch pod 10-way wire harness connector and the BCM white 24-way wire harness connector. There should be continuity. If OK, see the Defogger Relay diagnosis in this group. If not OK, repair the open circuit as required.

DEFOGGER RELAY

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

RELAY TEST

The defogger relay is located in the junction block, on the right cowl side panel below the instrument panel in the passenger compartment. Remove the defogger relay from the junction block as described in this group to perform the following tests:

(1) A relay in the de-energized position should have continuity between terminals 87A and 30, and no continuity between terminals 87 and 30. If OK, go to Step 2. If not OK, replace the faulty relay.

(2) Resistance between terminals 85 and 86 (electromagnet) should be 75 ± 10 ohms. If OK, go to Step 3. If not OK, replace the faulty relay.

(3) Connect a battery to terminals 85 and 86. There should now be continuity between terminals 30 and 87, and no continuity between terminals 87A and 30. If OK, see the Relay Circuit Test in this group. If not OK, replace the faulty relay.

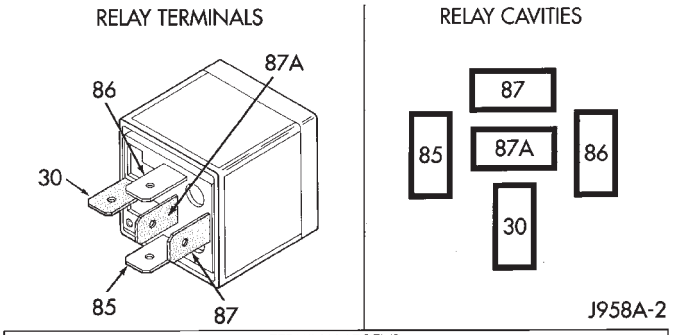
RELAY CIRCUIT TEST

(1) The relay common feed terminal cavity (30) is connected to battery voltage and should be hot at all times. If OK, go to Step 2. If not OK, repair the open circuit to the PDC fuse as required.

(2) The relay normally closed terminal (87A) is connected to terminal 30 in the de-energized position, but is not used for this application. Go to Step 3.

(3) The relay normally open terminal (87) is connected to the common feed terminal (30) in the ener-

DIAGNOSIS AND TESTING (Continued)



TERMINAL LEGEND	
NUMBER	IDENTIFICATION
30	COMMON FEED
85	COIL GROUND
86	COIL BATTERY
87	NORMALLY OPEN
87A	NORMALLY CLOSED

Defogger Relay

gized position. This terminal supplies battery voltage to the fuse in the junction block that feeds the rear glass heating grid and the defogger switch LED indicator. There should be continuity between the cavity for relay terminal 87 and the rear glass heating grid and defogger switch LED indicator at all times. If OK, go to Step 4. If not OK, repair the open circuit as required.

(4) The coil battery terminal (86) is connected to the electromagnet in the relay. It is connected to battery voltage and should be hot at all times. Check for battery voltage at the cavity for relay terminal 86. If OK, go to Step 5. If not OK, repair the open circuit to the PDC fuse as required.

(5) The coil ground terminal (85) is connected to the electromagnet in the relay. This terminal is provided with ground by the Body Control Module (BCM) rear window defogger timer and logic circuitry to energize the defogger relay. There should be continuity to the rear window defogger relay control circuit cavity of the white 24-way BCM wire harness connector. If OK, use a DRB scan tool and the proper Diagnostic Procedures manual to test the BCM. If not OK, repair the open circuit as required.

SERVICE PROCEDURES

REAR GLASS HEATING GRID REPAIR

Repair of the grid lines, bus bars, or pigtail wires can be accomplished using a Mopar Rear Window Defogger Repair Kit (P/N 4267922) or equivalent.

WARNING: MATERIALS CONTAINED IN THE REPAIR KIT MAY CAUSE SKIN OR EYE IRRITATION. THE KIT CONTAINS EPOXY RESIN AND AMINE TYPE HARDENER, WHICH ARE HARMFUL IF SWALLOWED. AVOID CONTACT WITH THE SKIN AND EYES. FOR SKIN CONTACT, WASH THE AFFECTED AREAS WITH SOAP AND WATER. FOR CONTACT WITH THE EYES, FLUSH WITH PLENTY OF WATER. DO NOT TAKE INTERNALLY. IF TAKEN INTERNALLY, INDUCE VOMITING AND CALL A PHYSICIAN IMMEDIATELY. USE WITH ADEQUATE VENTILATION. DO NOT USE NEAR FIRE OR FLAME. CONTAINS FLAMMABLE SOLVENTS. KEEP OUT OF THE REACH OF CHILDREN.

(1) Mask the repair area so that the conductive epoxy can be applied neatly. Extend the epoxy application onto the grid line or the bus bar on each side of the break (Fig. 2).

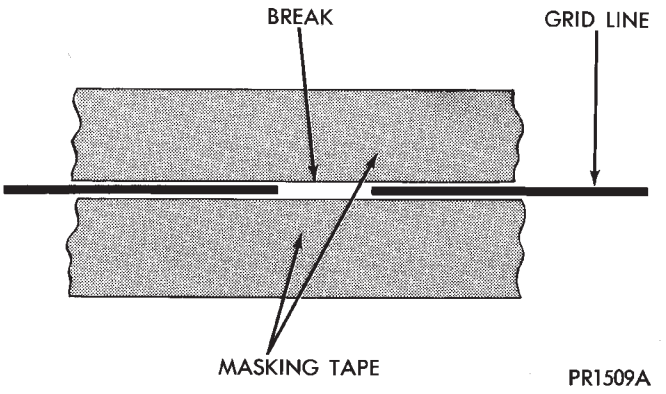


Fig. 2 Grid Line Repair - Typical

(2) Follow the instructions in the repair kit for preparing the damaged area.

(3) Remove the package separator clamp and mix the two conductive epoxy components thoroughly within the packaging. Fold the package in half and cut the center corner to dispense the epoxy.

(4) For grid line repairs, mask the area to be repaired with masking tape or a template.

(5) Apply the epoxy through the slit in the masking tape or template. Overlap both ends of the break by at least 19 mm (0.75 in.).

(6) For a terminal or pigtail wire replacement, mask the adjacent areas so the epoxy can be extended onto the adjacent grid line as well as the bus bar. Apply a thin layer of epoxy to the area where the terminal or pigtail wire was fastened and onto the adjacent grid line.

(7) Apply a thin layer of conductive epoxy to the terminal or bare wire end of the pigtail and place it in the proper location on the bus bar. To prevent the terminal or pigtail wire from moving while the epoxy is curing, it must be wedged or clamped.

(8) Carefully remove the masking tape or template.

CAUTION: Do not allow the glass surface to exceed 204° C (400° F) or the glass may fracture.

SERVICE PROCEDURES (Continued)

(9) Allow the epoxy to cure 24 hours at room temperature, or use a heat gun with a 260° to 371° C (500° to 700° F) range for fifteen minutes. Hold the heat gun approximately 254 mm (10 in.) from the repair.

(10) After the conductive epoxy is properly cured, remove the wedge or clamp from the terminal or pigtail wire. Do not attach the wire harness connectors until the curing process is complete.

(11) Check the operation of the rear window defogger rear glass heating grid.

REMOVAL AND INSTALLATION

DEFOGGER SWITCH

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

(1) Disconnect and isolate the battery negative cable.

(2) Using a trim stick or another suitable wide flat-bladed tool, pry gently around the edges of the inboard switch pod bezel and remove the bezel.

(3) Remove the three screws that secure the inboard switch pod to the instrument panel (Fig. 3).

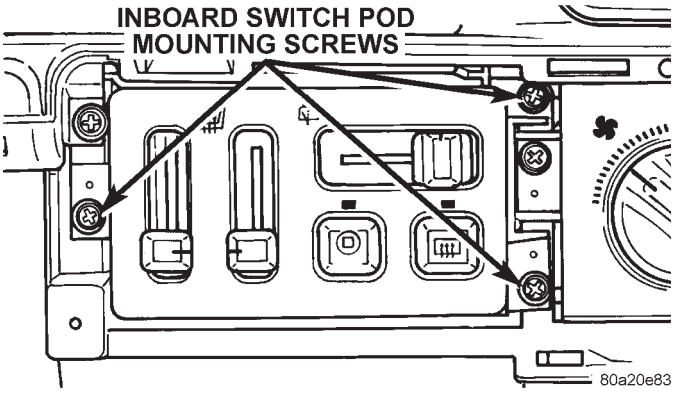


Fig. 3 Inboard Switch Pod Remove/Install

(4) Pull the inboard switch pod out from the instrument panel far enough to access the wire harness connectors.

(5) Unplug the wire harness connectors from the inboard switch pod.

(6) Remove the inboard switch pod from the instrument panel.

(7) Reverse the removal procedures to install.

DEFOGGER RELAY

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

(1) Disconnect and isolate the battery negative cable.

(2) Remove the fuse access panel by unsnapping it from the right cowl side trim panel.

(3) Remove the push nut that secures the right cowl side trim to the junction block stud (Fig. 4).

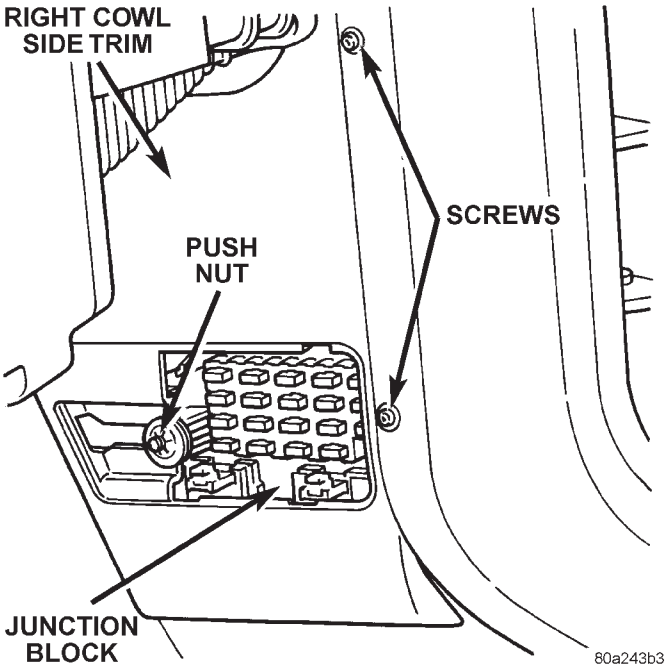


Fig. 4 Right Cowl Side Trim Panel Remove/Install

(4) Remove the two screws that secure the right cowl side trim panel to the right front door opening trim.

(5) Remove the right cowl side trim panel.

(6) Unplug the defogger relay from the junction block.

(7) Install the defogger relay by aligning the relay terminals with the cavities in the junction block and pushing the relay firmly into place.

(8) Connect the battery negative cable.

(9) Test the relay operation.

(10) Install the right cowl side trim panel and the fuse access panel.

HEATED SEATS

INDEX

GENERAL INFORMATION

INTRODUCTION

Individually controlled electrically heated front seats are available factory-installed optional equipment on this model. The seat heaters will only operate when the ignition switch is in the On position, and the surface temperature at the front seat heating element sensors is below the designed temperature set points of the system. The heated seat system will not operate in ambient temperatures greater than about 32°C (90°F).

There are separate three-position switches for each front seat located in the inboard instrument panel switch pod, just inboard of the steering column. An Off, Low, or High position can be selected with each switch, and Light-Emitting Diodes (LED) for each switch illuminate to give a visual indication that the system is turned on. The Low heat position set point is about 32°C (90°F), and the High heat position set point is about 38°C (100°F). Each switch controls a Heated Seat Control Module (HSCM) mounted to the seat cushion frame under each front seat.

When a seat heater is turned on, a sensor located near the seat cushion electric heater element provides the HSCM with an input indicating the surface temperature of the seat cushion. If the surface temperature input is below the temperature set point for the selected Low or High switch position, a relay within the HSCM energizes the heating elements in the seat cushion and back. When the sensor input indicates the correct temperature set point has been achieved, the HSCM de-energizes the relay. The HSCM will continue to cycle the relay as needed to maintain the temperature set point.

The HSCM will automatically turn off the heating elements if it detects an open in the sensor circuit, or a short in the heating element circuit causing an excessive current draw. The system is also turned off automatically when the ignition switch is turned to the Off position. The control circuit operates on ignition switched battery feed through a fuse in the junction block. The heating elements operate on battery feed supplied through the power seat circuit breaker in the junction block.

Following are general descriptions of the major components in the heated seat system. Refer to 8W-63 - Power Seat With Heated Seats in Group 8W - Wiring Diagrams for complete circuit descriptions and diagrams.

NOTE: This group covers both Left-Hand Drive (LHD) and Right-Hand Drive (RHD) versions of this model. Whenever required and feasible, the RHD versions of affected vehicle components have been constructed as mirror-image of the LHD versions. While most of the illustrations used in this group represent only the LHD version, the diagnostic and service procedures outlined can generally be applied to either version. Exceptions to this rule have been clearly identified as LHD or RHD, if a special illustration or procedure is required.

DESCRIPTION AND OPERATION

HEATED SEAT SWITCH

The heated seat switch is integral to the inboard switch pod, which is mounted in the instrument panel just inboard of the steering column. The two three-position sliding-type switches, one switch for each front seat, provide a resistor multiplexed signal to their respective Heated Seat Control Module (HSCM). Each switch has an Off, Low, and High position so that both the driver and the front seat passenger can select a preferred seat heating mode.

Each switch has a Light-Emitting Diode (LED), which lights to indicate that the seat heater that the switch controls is turned on. The heated seat

DESCRIPTION AND OPERATION (Continued)

switches and their LED cannot be repaired. If either switch or LED is faulty, the inboard switch pod unit must be replaced.

HEATED SEAT CONTROL MODULE

The Heated Seat Control Module (HSCM) is an electronic thermostatic module designed to operate the electric seat heater elements. Two modules are used in the vehicle, one for each front seat. The HSCM for each seat is mounted to a bracket under the seat cushion spring. The bracket is secured to the inside surface of the outboard seat cushion frame with a single screw driven through the frame from the outside.

Inputs to the module include the multiplex resistor instrument panel switch signals (which includes the seat cushion temperature sensor circuits), an ignition-switched battery feed, a non-switched battery feed, and a ground. The only HSCM output is the feed for the seat heating elements.

The HSCM cannot be repaired and, if faulty, it must be replaced.

HEATED SEAT ELEMENT AND SENSOR

Two heated seat heating elements are used in each front seat, one for the seat cushion and the other for the seat back. The two elements for each seat are connected in series with the HSCM.

The temperature sensor is a Negative Temperature Coefficient (NTC) thermistor. One temperature sensor is used for each seat, and it is integrated into the seat cushion heating element.

The heating elements are sewn into the seat cushion cover and seat back cover assemblies, which are serviced individually. The heating elements and temperature sensor cannot be repaired and, if faulty, the affected seat cover assembly must be replaced. Refer to Group 23 - Body for the seat cover service procedures.

DIAGNOSIS AND TESTING

HEATED SEAT SYSTEM

For circuit descriptions and diagrams, refer to 8W-63 - Power Seat With Heated Seats in Group 8W - Wiring Diagrams.

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

Before testing the individual components in the heated seat system, check the following:

- If the heated seat switch LED doesn't light with the ignition switch in the On position and the heated seat switch in the Low or High position, check the fuse in the junction block. If the fuse is OK, test the heated seat switch as described in this group.
- If the heated seat switch LED lights, but the heating elements don't heat, check the circuit breaker in the junction block. If the circuit breaker is OK, test the heated seat elements as described in this group.

HEATED SEAT SWITCH

For circuit descriptions and diagrams, refer to 8W-63 - Power Seat With Heated Seats in Group 8W - Wiring Diagrams.

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

(1) Disconnect and isolate the battery negative cable.

(2) Remove the inboard switch pod as described in this group. Unplug the 10-way wire harness connector from the switch pod. Check for continuity between the ground circuit cavity of the 10-way switch pod wire harness connector and a good ground. There should be continuity. If OK, go to Step 3. If not OK, repair the open circuit as required.

(3) Connect the battery negative cable. Turn the ignition switch to the On position. Check for battery voltage at the fused ignition switch output circuit cavity of the 10-way switch pod wire harness connector. If OK, go to Step 4. If not OK, repair the open circuit as required.

(4) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Unplug the remaining inboard switch pod wire harness connectors and remove the inboard switch pod from the instrument panel.

(5) With both heated seat switches in the Off position, check for continuity between the fused ignition switch output circuit terminal and the driver heated seat switch output circuit terminal in the 10-way connector receptacle on the back of the inboard switch pod. Repeat this check between the fused ignition switch output circuit terminal and the passenger heated seat switch output circuit terminal. In each

DIAGNOSIS AND TESTING (Continued)

case, there should be no continuity. If OK, go to Step 6. If not OK, replace the faulty inboard switch pod.

(6) Move both heated seat switches to the Low position. Using an ohmmeter, check the resistance between the fused ignition switch output circuit terminal and the driver heated seat switch output circuit terminal in the 10-way connector receptacle on the back of the inboard switch pod. Repeat this check between the fused ignition switch output circuit terminal and the passenger heated seat switch output circuit terminal. In each case, the resistance reading should be about 11.5 kilohms. If OK, go to Step 7. If not OK, replace the faulty inboard switch pod.

(7) Move both heated seat switches to the High position. Using an ohmmeter, check the resistance between the fused ignition switch output circuit terminal and the driver heated seat switch output circuit terminal in the 10-way connector receptacle on the back of the inboard switch pod. Repeat this check between the fused ignition switch output circuit terminal and the passenger heated seat switch output circuit terminal. In each case, the resistance reading should be about 6.5 kilohms. If not OK, replace the faulty inboard switch pod.

HEATED SEAT CONTROL MODULE

Before testing the heated seat control module, test the heated seat switch, the heated seat elements, and the heated seat sensor as described in this group. If testing of the heated seat switch, elements, and sensor reveals no problems, replace the heated seat control module with a known good unit and test the operation of the heated seats. If OK, discard the faulty heated seat control module. If not OK, test the circuits from the heated seat switch, elements, and sensor to the heated seat control module. Repair any short or open circuits as required. For circuit descriptions and diagrams, refer to 8W-63 - Power Seat With Heated Seats in Group 8W - Wiring Diagrams.

HEATED SEAT ELEMENT

The wire harness connectors for the seat cushion and seat back heating elements are located under the seat, near the rear edge of the seat cushion frame. For circuit descriptions and diagrams, refer to 8W-63 - Power Seat With Heated Seats in Group 8W - Wiring Diagrams.

SEAT CUSHION

(1) Disconnect and isolate the battery negative cable. Unplug the 4-way heated seat cushion wire harness connector.

(2) Check for continuity between the two heated seat driver circuit cavities of the seat cover half of the heated seat cushion wire harness connector. There should be continuity. If OK, go to Step 3. If not OK, replace the faulty seat cushion cover.

(3) Check for continuity between one of the heated seat driver circuit cavities of the seat cover half of the heated seat cushion wire harness connector and the seat cushion frame. There should be no continuity. If OK, test the seat back element. If not OK, replace the faulty seat cushion cover.

SEAT BACK

(1) Disconnect and isolate the battery negative cable. Unplug the 2-way heated seat back wire harness connector.

(2) Check for continuity between the heated seat driver circuit cavity and the ground circuit cavity of the seat cover half of the heated seat back wire harness connector. There should be continuity. If OK, go to Step 3. If not OK, replace the faulty seat back cover.

(3) Check for continuity between the heated seat driver circuit cavity of the seat cover half of the heated seat back wire harness connector and the seat back frame. There should be no continuity. If OK, test the heated seat sensor as described in this group. If not OK, replace the faulty seat back cover.

HEATED SEAT SENSOR

The wire harness connector for the seat cushion heating element and sensor are located under the seat, near the rear edge of the seat cushion frame. For circuit descriptions and diagrams, refer to 8W-63 - Power Seat With Heated Seats in Group 8W - Wiring Diagrams.

(1) Disconnect and isolate the battery negative cable. Unplug the 4-way heated seat cushion wire harness connector.

(2) Using an ohmmeter, check the resistance between the heated seat switch output circuit cavity and the ground circuit cavity of the seat cover half of the heated seat cushion wire harness connector. The sensor resistance should be between 2 kilohms and 200 kilohms. If OK, test the heated seat control module as described in this group. If not OK, replace the faulty seat cushion cover.

REMOVAL AND INSTALLATION

HEATED SEAT SWITCH

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

REMOVAL AND INSTALLATION (Continued)

(1) Disconnect and isolate the battery negative cable.

(2) Using a trim stick or other suitable wide flat-bladed tool, pry gently around the edges of the inboard switch pod bezel and remove the bezel.

(3) Remove the three screws that secure the inboard switch pod to the instrument panel (Fig. 1).

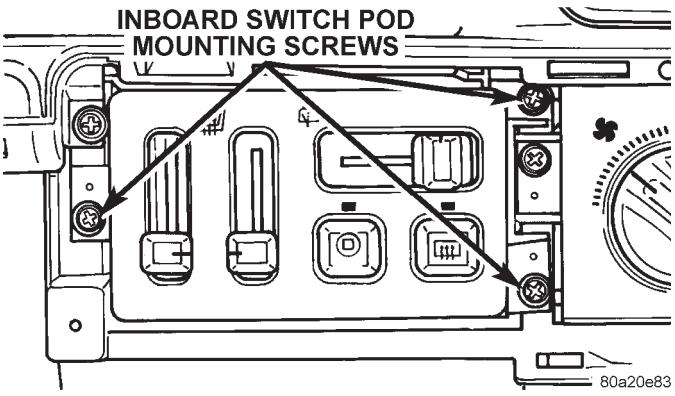


Fig. 1 Inboard Switch Pod Remove/Install

(4) Pull the inboard switch pod out from the instrument panel far enough to unplug the wire harness connectors.

(5) Remove the inboard switch pod from the instrument panel.

(6) Reverse the removal procedures to install.

HEATED SEAT CONTROL MODULE

(1) Move the power seat adjuster to its full up and full forward stop positions.

(2) Remove the three screws that secure the seat side shield to the seat cushion frame.

(3) Pull the seat side shield away from the seat far enough so that the power recliner adjuster lower bracket can be seen.

(4) Adjust the seat back with the power recliner switch so that both of the two bolts in the power recliner adjuster lower bracket can be accessed.

(5) Disconnect and isolate the battery negative cable.

(6) Remove the two bolts that secure the power recliner adjuster lower bracket to the seat cushion frame.

(7) Gently pry the power recliner adjuster lower bracket upwards to access the heated seat control module mounting screw (Fig. 2).

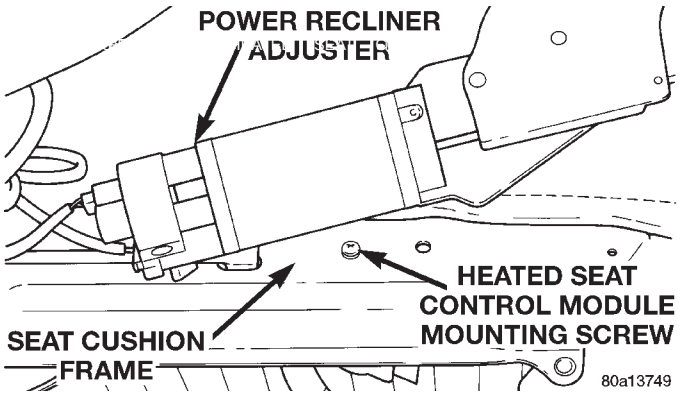


Fig. 2 Heated Seat Control Module Remove/Install

(8) Remove the heated seat control module mounting screw from the seat cushion frame.

(9) Reach under the rear of the seat cushion to lower the heated seat control module and mounting bracket unit from the inside of the seat cushion frame (Fig. 3).

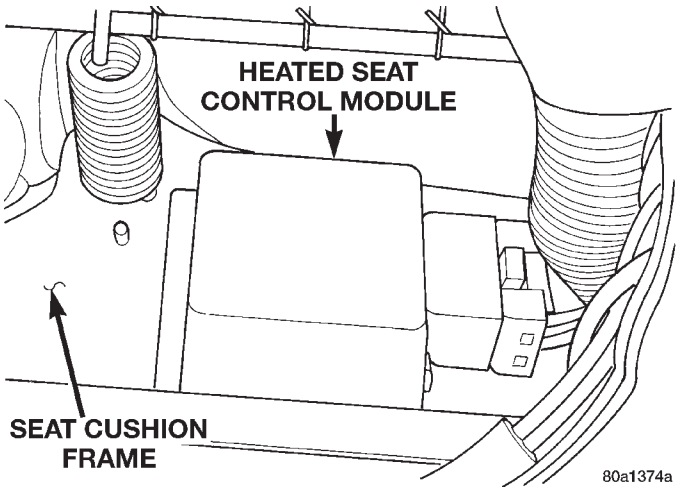


Fig. 3 Heated Seat Control Module

(10) Unplug the heated seat control module wire harness connector and remove the module from under the seat.

(11) Reverse the removal procedures to install. Tighten the power recliner adjuster lower bracket bolts to 28 N·m (20 ft. lbs.).