Component Procedures: Heated Glass Element

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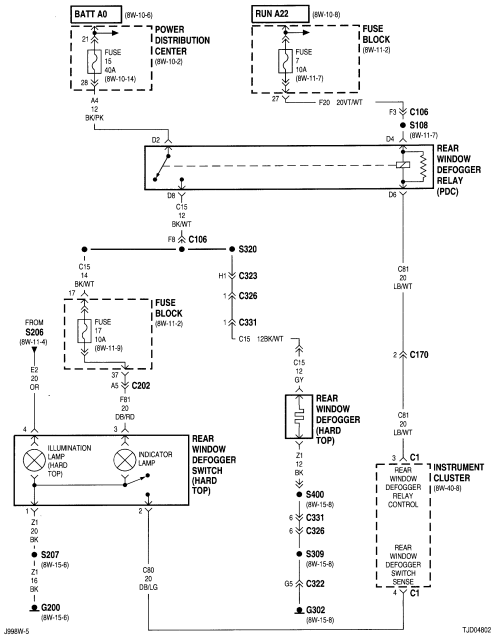
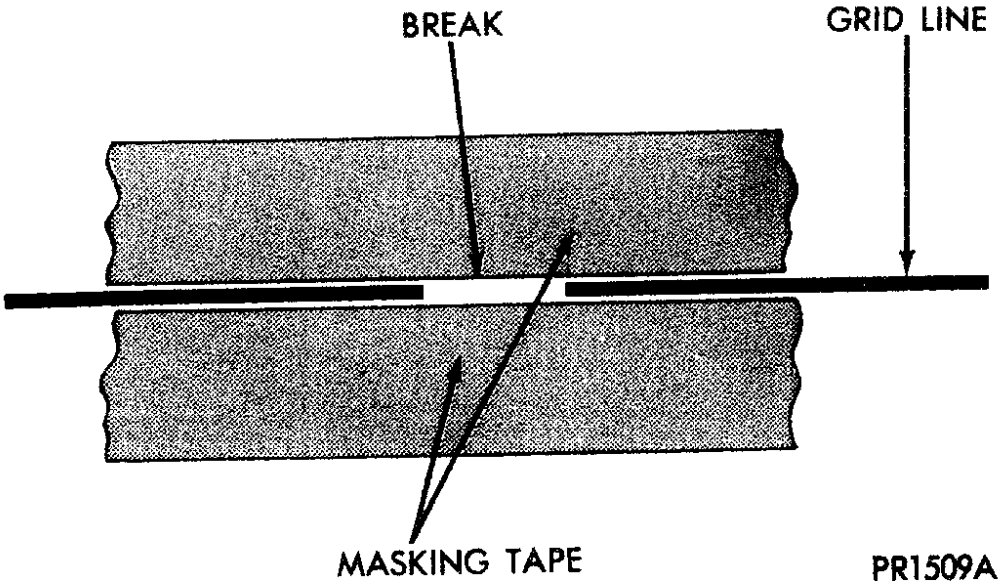
Rear Window Defogger Operation (Article 2035032)

INTRODUCTION
An electrically
heated rear window
defogger
is available as factory-installed equipment on models equipped with the hardtop option. The defogger will only operate when the ignition switch is in the On position. When the
defogger switch
is in the On position, an electric heater grid on the
rear window glass
is energized. This grid produces heat to help clear the
rear window
glass of ice, snow, or fog.
The defogger system is controlled by a switch located in the accessory switch bezel, which is near the bottom of the instrument panel center bezel and next to the ash receiver. An amber indicator lamp in the switch button will light to indicate when the defogger system is turned on. The instrument cluster circuitry, which contains the defogger system timer logic, monitors the state of the defogger switch through a hard-wired input. The instrument cluster 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.
SYSTEM 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 Power Distribution Center
(PDC)
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 Rear Window Wiring Circuit (Article 2035838)



Procedures (itype_376)



Technician Safety Information (itype_15)

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 WATE 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

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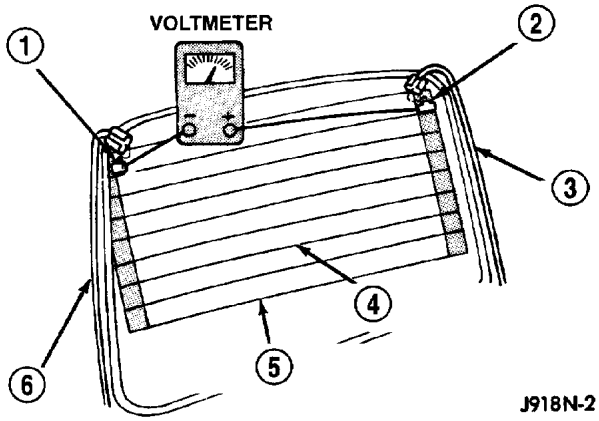
Detecting Breaks in Rear Window Defogger Grid (Article 2035013)

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
Defogger

Switch in the Diagnosis and Testing.
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 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 System Testing (Article 2035010)



1 – TERMINAL "A"
2 – TERMINAL "B"
3 – FEED WIRE
4 – MID-POINT "C" (TYPICAL)
5 – HEATED REAR WINDOW DEFOGGER GRID
6 – GROUND WIRE