

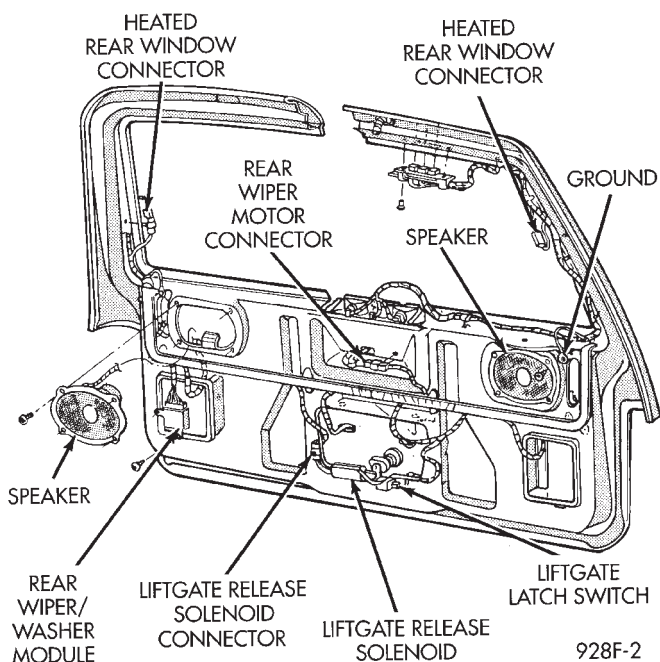
# REAR WINDOW DEFOGGER

## CONTENTS

	page		page
ACCESSORY SWITCH CARRIER TEST .....	2	REPAIR GRID LINES, TERMINALS	
ACCESSORY SWITCH CARRIER .....	1	AND PIGTAILS .....	3
GENERAL INFORMATION .....	1	SYSTEM TEST .....	1
REAR WINDOW GRID LINES TEST .....	2		

### GENERAL INFORMATION

The electrically heated rear window defogger (Fig. 1) is available on single rear door wagons and vans.



**Fig. 1 Rear Window Defogger Wiring**

The system consists of two vertical bus bars and a series of electrically connected grid lines on the inside surface of the rear window.

When the switch is turned to the ON position, current is directed to the rear window grid lines. The heated grid lines in turn heat the rear window to clear the outside surface of the glass.

**CAUTION:** Since grid lines can be damaged or scraped off with sharp instruments, care should be taken in cleaning the glass or removing foreign materials, decals or stickers. Normal glass cleaning solvents or hot water used with rags or toweling is recommended.

### ACCESSORY SWITCH CARRIER

The accessory switch carrier is integrated into a the accessory switch carrier assembly. An indicator lamp illuminates when the switch is activated. Actuating the switch energizes the electronic timing circuit which allows current to flow through the grid system for approximately 10 minutes, or until either the control switch or ignition is turned off. If the liftgate release switch is actuated, the power to control switch is momentarily opened until liftgate switch is released, but the indicator lamp will stay illuminated.

### SYSTEM TEST

Electrically heated rear window defogger operation can be checked on the vehicle in the following manner:

- (1) Turn the ignition ON.
- (2) Turn rear window defogger control switch ON.
- (3) Using a ammeter on the battery, turn the Defogger control switch to the ON position, a distinct increase in amperage draw should be noted.
- (4) The rear window defogger operation can be checked by feeling the glass. A distinct difference in temperature between the grid lines and adjacent clear glass can be detected in 3 to 4 minutes of operation.
- (5) Using a DC voltmeter (Fig. 2) contact terminal B with the negative lead, and terminal A with the positive lead. The voltmeter should read 10-14 volts.
- (6) Only steps (3) and (4) or (5) above will confirm system operation. Indicator light illumination means that there is power available at the output of the relay only, and does not necessarily verify system operation.
- (7) If turning the switch ON produced no distinct current draw on the ammeter the problem should be isolated in the following manner:
  - (a) Confirm that ignition switch is ON.
  - (b) Ensure that the heated rear window feed pigtail is connected to the wiring harness and that the ground pigtail is in fact grounded.
  - (c) Ensure that the fusible link or circuit breaker is operational.

(8) When the above steps have been completed and the system is still inoperative, one or more of the following is defective:

(a) Accessory Switch Carrier

(b) Check for loose connector or a wire pushed out of connector.

(c) Rear window grid lines (all grid lines would have to be broken, or one of the feed pigtails not connected to the bus bar, for no ammeter deflection).

(9) If turning the switch ON produces severe voltmeter deflection, the circuit should be closely checked for a shorting condition.

(10) If the system operation has been verified but indicator LED does not light, replace switch.

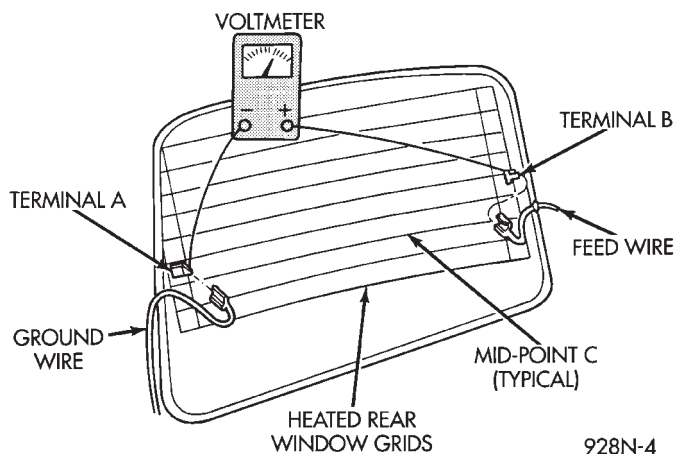
(11) For detailed wiring information, refer to Group 8W, Wiring Diagrams.

### REAR WINDOW GRID LINES TEST

The horizontal grid lines and vertical bus bar lines printed and baked on inside surface of rear window glass makes up an electrical parallel circuit. The electrically conductive lines are composed of a silver ceramic material which when baked on glass becomes bonded to the glass and is highly resistant to abrasion. It is possible, however, that a break may exist or occur in an individual grid line resulting in no current flow through the line. To detect breaks in grid lines, the following procedure is required:

(1) Turn ignition and rear window defogger control switch ON. The indicator light should come on.

(2) Using a DC voltmeter with 0-15 volt range, contact vertical bus bar connecting grid lines on passenger side of vehicle at terminal A (Fig. 2) with negative lead of voltmeter. With positive lead of voltmeter, contact vertical bus bar on driver side of vehicle at terminal B (Fig. 2). The voltmeter should read 10-14 volts.



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**Fig. 2 Grid Line Test**

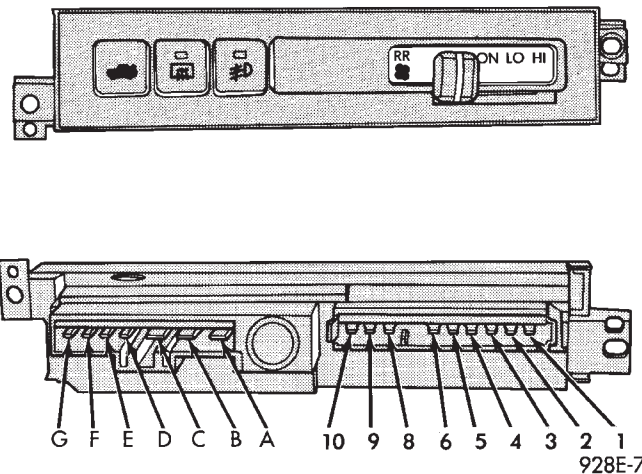
(3) With negative lead of voltmeter, contact a good body ground point. The voltage reading should not change. A different reading indicates a poor ground connection.

(4) Connect negative lead of voltmeter to terminal A on passenger side bus bar and touch each grid line at Mid-Point with positive lead. A reading of approximately 6 volts indicates a line is good. A reading of 0 volts indicates a break in line between Mid-Point C and terminal B. A reading of 10-14 volts indicates a break between Mid-Point C and ground terminal A. Move toward break and voltage will change as soon as break is crossed.

### ACCESSORY SWITCH CARRIER TEST

Accessory switch carrier may be tested in-vehicle or bench tested. In vehicle testing is accomplished in the following manner:

(1) Remove the accessory switch carrier assembly from the instrument panel or console, see Group 8E, Instrument Panel and leave the switch connector plugged in (Fig. 3).

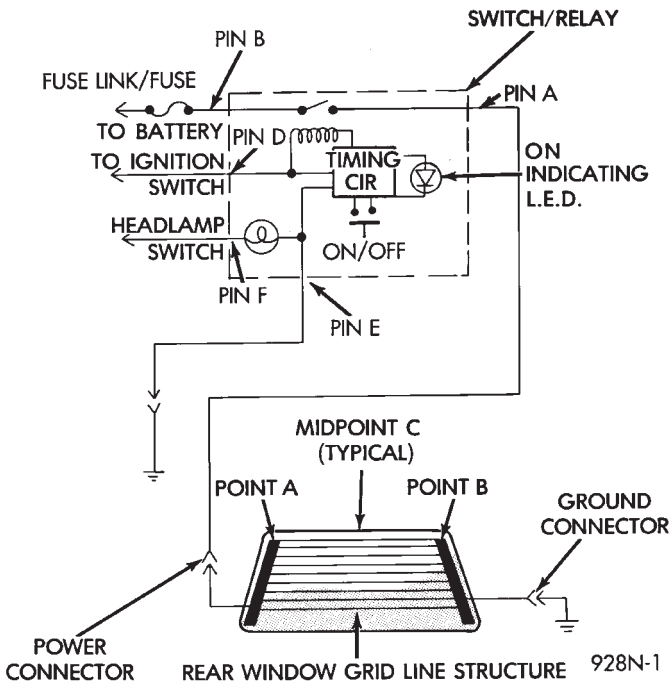


**Fig. 3 Accessory Switch Carrier**

(2) Turn ignition ON.

(3) Using a DC voltmeter, with 0-15 range, check voltage at terminals B, D and A. (Figs. 3 and 4). Terminals B and D should confirm a voltage of 10 to 14 volts to ground. Terminal A should confirm voltage to ground. When terminals B and D show no voltage, trace circuit upstream of accessory switch carrier for problem, example; wiring cut, fusible link or circuit breaker inoperative, bulkhead connector not operative, etc.. If terminal A indicates voltage, place switch in Off position. If voltage at terminal A is still indicated or indicator lamp remains on, the accessory switch carrier should be replaced.

(4) If the relay checks out to this point, momentarily operate switch to ON position. The indicator lamp should come on and remain on for approximately 10 minutes. Terminal A should confirm volt-



**Fig. 4 Rear Window Defogger Circuit—Typical**

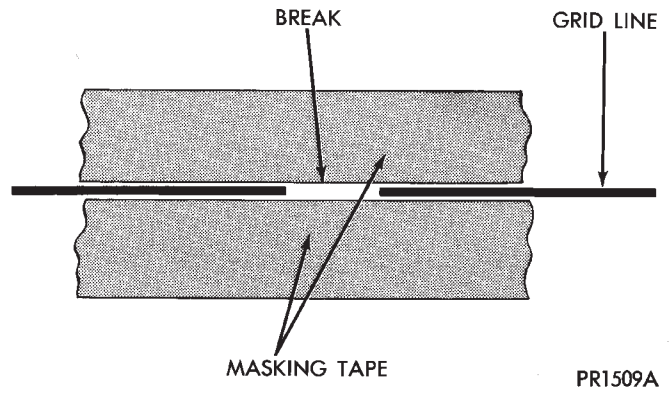
age. If the indicator lamp fails to light or voltage at terminal A is not confirmed replace accessory switch carrier.

Bench checking of the relay may be accomplished in the following manner. By following the in-vehicle procedure except Step 2: With a DC power supply, apply 12 volts to terminal B and 4 and ground terminal E.

**REPAIR GRID LINES, TERMINALS AND PIGTAILS**

The repair of grid lines and replacement of the terminal is possible using the Mopar Repair Package or equivalent.

- (1) Clean area surrounding grid line or terminal by gently rubbing area with steel wool.
- (2) Wipe area with clean cloth soaked in alcohol or similar solvent. It is necessary that all contaminants be removed from repair area.
- (3) Remove package separator clamp and mix plastic conductive epoxy thoroughly.
- (4) For grid line, mark off area to be repaired with masking tape (Fig.5).
- (5) Apply conductive epoxy through slit in masking tape. Overlap both ends of the break.



**Fig. 5 Grid Line Repair—Typical**

- (6) For a terminal replacement, apply a thin layer of epoxy to area where terminal was fastened.
- (7) Apply a thin layer of epoxy on terminal and place terminal on desired location. To prevent terminal from falling off use a wooden wedge to secure it.
- (8) Carefully remove masking tape from grid line.

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

- (9) Allow epoxy to cure 24 hours at room temperature or use heat gun with a 260°-371°C (500°-700°F) range for 15 minutes. Hold gun approximately 254mm (10 inches) from repaired area.

- (10) After epoxy is properly cured remove wedge from terminal and check the operation of the rear window defogger.

**WARNING: REPAIR KIT MAY CAUSE SKIN OR EYE IRRITATION. CONTAINS EPOXY RESIN AND AMINE TYPE HARDENER, HARMFUL IF SWALLOWED. AVOID CONTACT WITH SKIN AND EYES. FOR SKIN, WASH AFFECTED AREAS WITH SOAP AND WATER. DO NOT TAKE INTERNALLY. IF TAKEN INTERNALLY, INDUCE VOMITING; CALL A PHYSICIAN IMMEDIATELY. IF IN CONTACT WITH EYES, FLUSH WITH PLENTY OF WATER. USE WITH ADEQUATE VENTILATION. DO NOT USE NEAR FIRE OR FLAME. CONTENTS CONTAINS 3**

**FLAMMABLE SOLVENTS.**

**WARNING: KEEP OUT OF REACH OF CHILDREN.**

