DEFOGGER - REAR WINDOW
Article Text

1991 Chevrolet Caprice
For m m m m m

Monday, June 30, 2003 03:28PM

ARTICLE BEGINNING

1991-92 ACCESSORIES & SAFETY EQUIPMENT
General Motors Defoggers - Rear Window

Buick; Roadmaster
Chevrolet; Caprice
Oldsmobile; Custom Cruiser

DESCRIPTION

Rear window defogger uses a heating grid on the inside of the rear window. Heat is controlled by a control switch and a timer/relay. The timer/relay is located in the accessory relay panel. When defogger is on, an indicator light illuminates. Current feed to defogger is through a circuit breaker, and power to control switch is through a fuse in the fuse block.

OPERATION

Voltage is applied to the rear defogger through the defogger relay. With the ignition switch in RUN position, voltage is applied to one side of defogger relay coil. When rear defogger switch is activated, a ground signal is sent from heater-A/C control to the Central Control Module (CCM). Upon receiving this ground signal, and only if the engine is running, the CCM energizes the defogger relay by grounding the other side of the defogger relay coil. When energized, the normally open contacts in the defogger relay close, applying voltage to heat the rear defogger. The CCM energizes the defogger relay 10 minutes during the first activation of the rear defogger after ignition on (engine running) and 5 minutes each additional activation. This timing process resets each ignition cycle.

TROUBLE SHOOTING

Before performing system test:

* Check seats circuit breaker by operating seats and power door locks.
* Check body fuse by operating courtesy lights.
* Check ignition fuse by operating back-up lights.
* Check fuse to gauges by observing fuel gauge operation. If components appear okay, proceed to TESTING.

DEFOGGER GRID TEST

1) Start engine, and turn rear defogger control switch to ON position. Using a test light connected to ground, lightly touch each grid line. If test light shows full brilliance at both ends of all grid lines, check for loose ground wire. Test light brilliance should gradually change as test light probe is moved from left to right side of grid.

2) Contact each grid line a few inches on either side of glass center line to eliminate possibility of missing a break in grid line. If a problem on a grid line is detected, place test light probe

on grid line at left bus bar and move probe toward right bus bar until light goes out, indicating a break in grid line continuity. See Fig. 1.

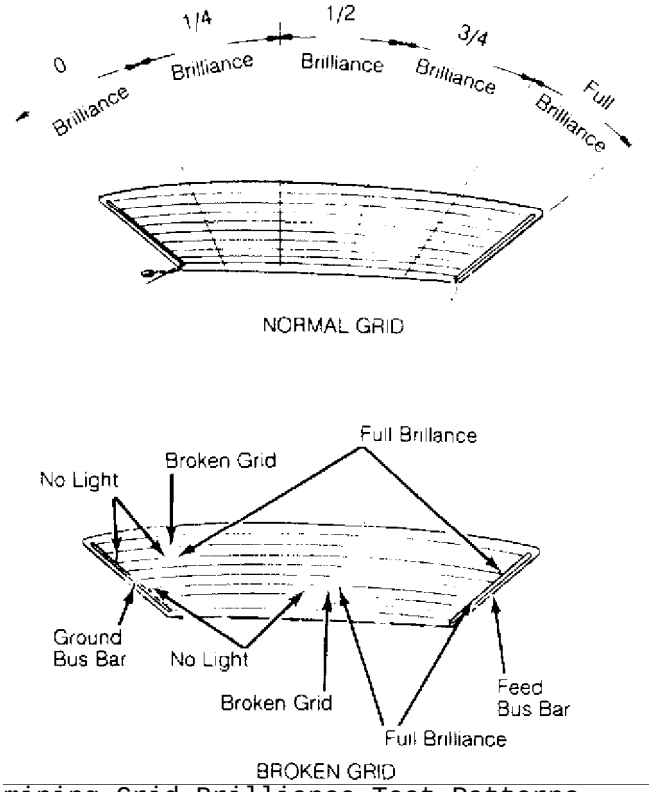

Fig. 1: Examining Grid Brilliance Test Patterns
Courtesy of General Motors Corp.

ON-VEHICLE SERVICE

GRID LINE REPAIR

NOTE: A conductive paint should be used to repair grid lines.

1) Clean area to be repaired with window cleaner. Wipe repair area with clean dry cloth to remove any lint. Mask repair area so conductive paint can be overlapped onto broken grid line or bus bar. Put masking tape along both sides of grid line.

2) Apply conductive paint to repair area 3 times in 15-minute intervals, overlapping onto existing grid line by approximately 3/4".

3) Carefully remove masking tape from repair area. Allow conductive paint to cure for 24 hours at room temperature or use heat gun with heat range of 500-700 F (260-371 C) for 15 minutes.

CAUTION: DO NOT allow glass surface to exceed 400 F (204 C), or glass may fracture.

4) Hold heat gun approximately 10" from repair area. After

repair compound has properly cured, check operation of rear defogger.

SYSTEM CHECK

NOTE: For appropriate "B" body wiring schematic, see Figs. 8 and 9.

WITH MANUAL A/C (WITHOUT HEATED MIRRORS)

1) If rear defogger grid is inoperative, see Fig. 2. If indicator is inoperative but rear defogger is okay, replace rear defogger switch.
2) If rear defogger and indicator will not cycle on or off for 10 minutes on first use and 5 minutes for subsequent use or if rear defogger switch does not return to REST position, replace rear defogger switch.

WITH MANUAL A/C (WITH HEATED MIRRORS)

1) If rear defogger and mirror defoggers are inoperative, see Fig. 3. If both mirror defoggers are inoperative and rear defogger is okay, see Fig. 4.
2) If one mirror defogger is inoperative and other mirror defogger is okay or if rear defogger is inoperative and mirror defoggers are okay, see Figs. 5 and 6. If indicator is inoperative but rear defogger and mirror defoggers are okay, replace rear defogger switch.
3) If rear defogger and indicator will not cycle on or off for 10 minutes on first use and 5 minutes for subsequent use or if rear defogger switch does not return to REST position, replace rear defogger switch.

WITH AUTOMATIC A/C

1) If both mirror defoggers are inoperative but rear defogger is okay, see Fig. 4. If one mirror defogger is inoperative and other mirror defogger is operative or if rear defogger is inoperative and mirror defoggers are okay, see Figs. 5 and 6. If rear defogger and mirror defoggers (if equipped) are inoperative, see Fig. 7.
2) If indicator is inoperative but rear defogger grid and mirror defoggers are okay, replace electric A/C control head. If rear defogger grid and indicator will not cycle on or off for 10 minutes on first use and 5 minutes for subsequent use, replace electric A/C control head.

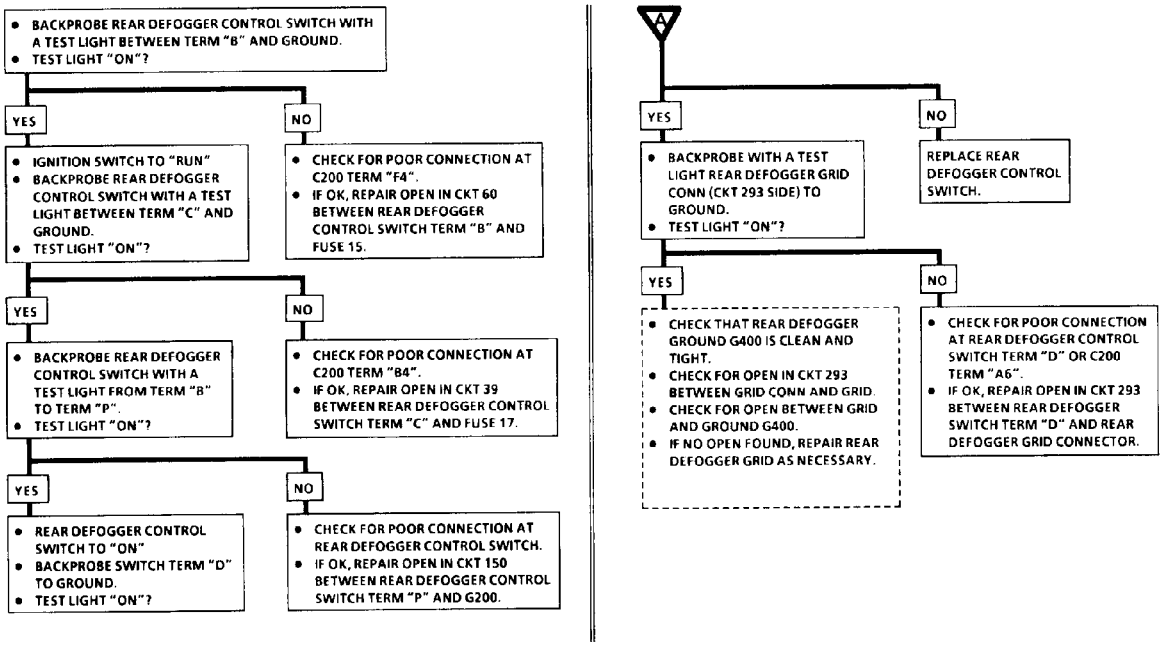

Fig. 2: "B" Body System Diagnosis (Chart 1 of 6)
Courtesy of General Motors Corp.

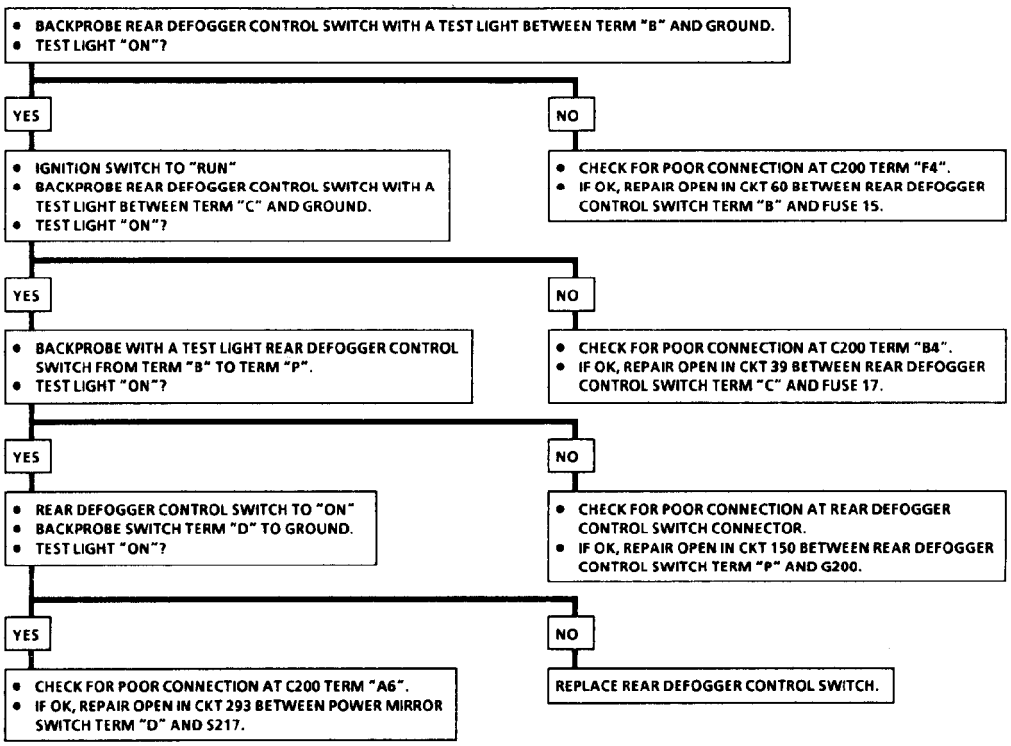

Fig. 3: "B" Body System Diagnosis (Chart 2 of 6)
Courtesy of General Motors Corp.

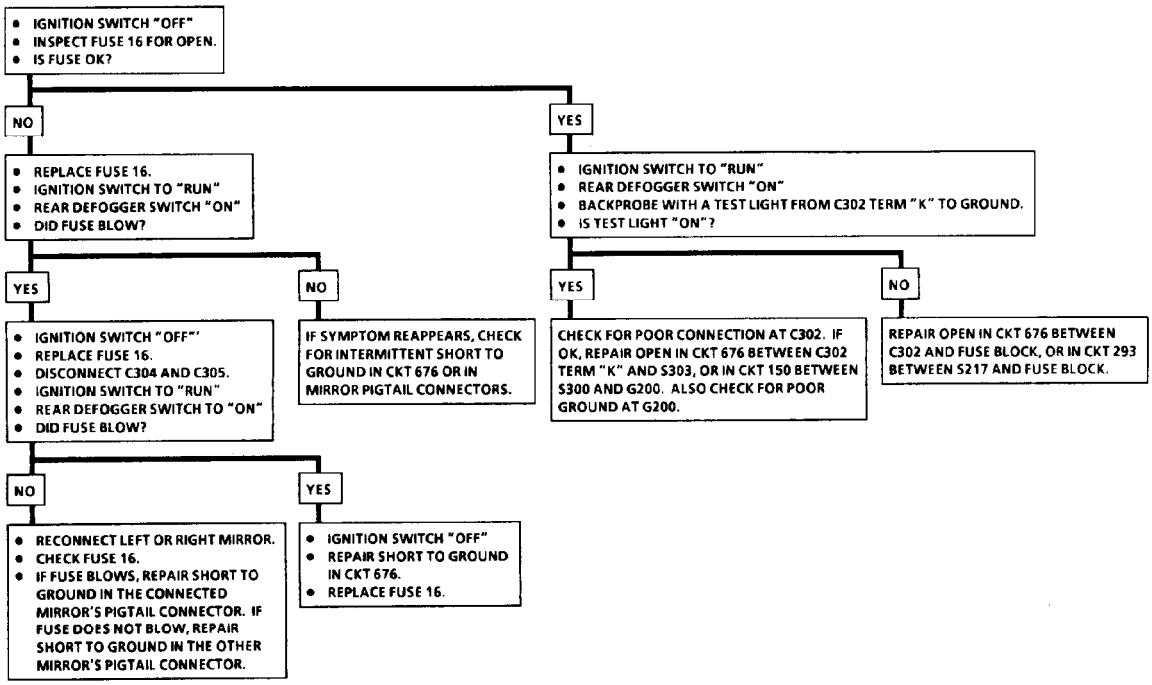

Fig. 4: "B" Body System Diagnosis (Chart 3 of 6)
Courtesy of General Motors Corp.

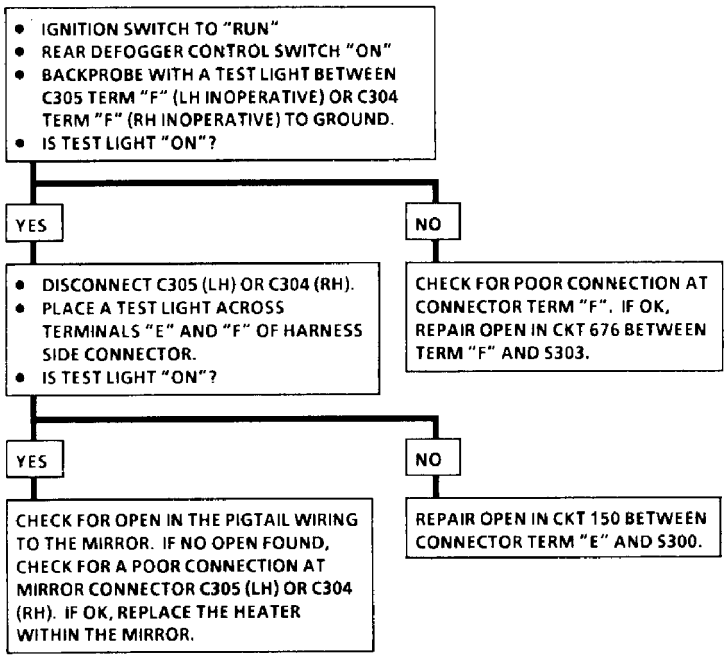

Fig. 5: "B" Body System Diagnosis (Chart 4 of 6)
Courtesy of General Motors Corp.

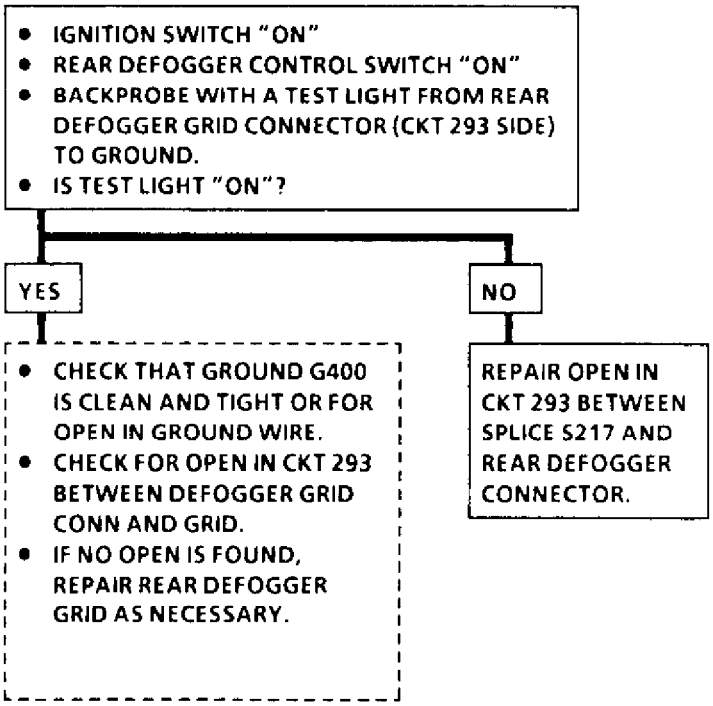

Fig. 6: "B" Body System Diagnosis (Chart 5 of 6)
Courtesy of General Motors Corp.

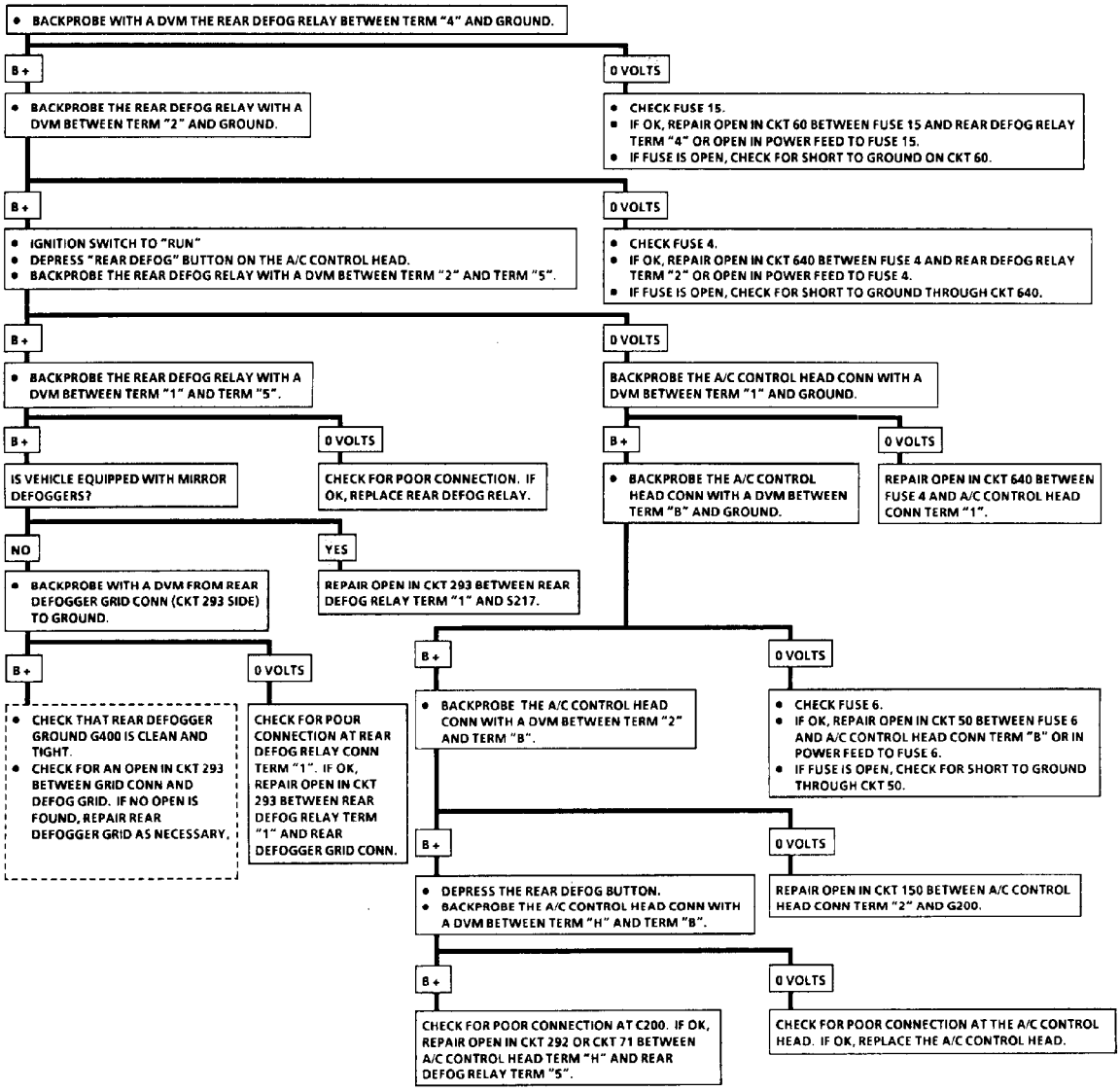

Fig. 7: "B" Body System Diagnosis (Chart 6 of 6)
Courtesy of General Motors Corp.

DEFOGGER

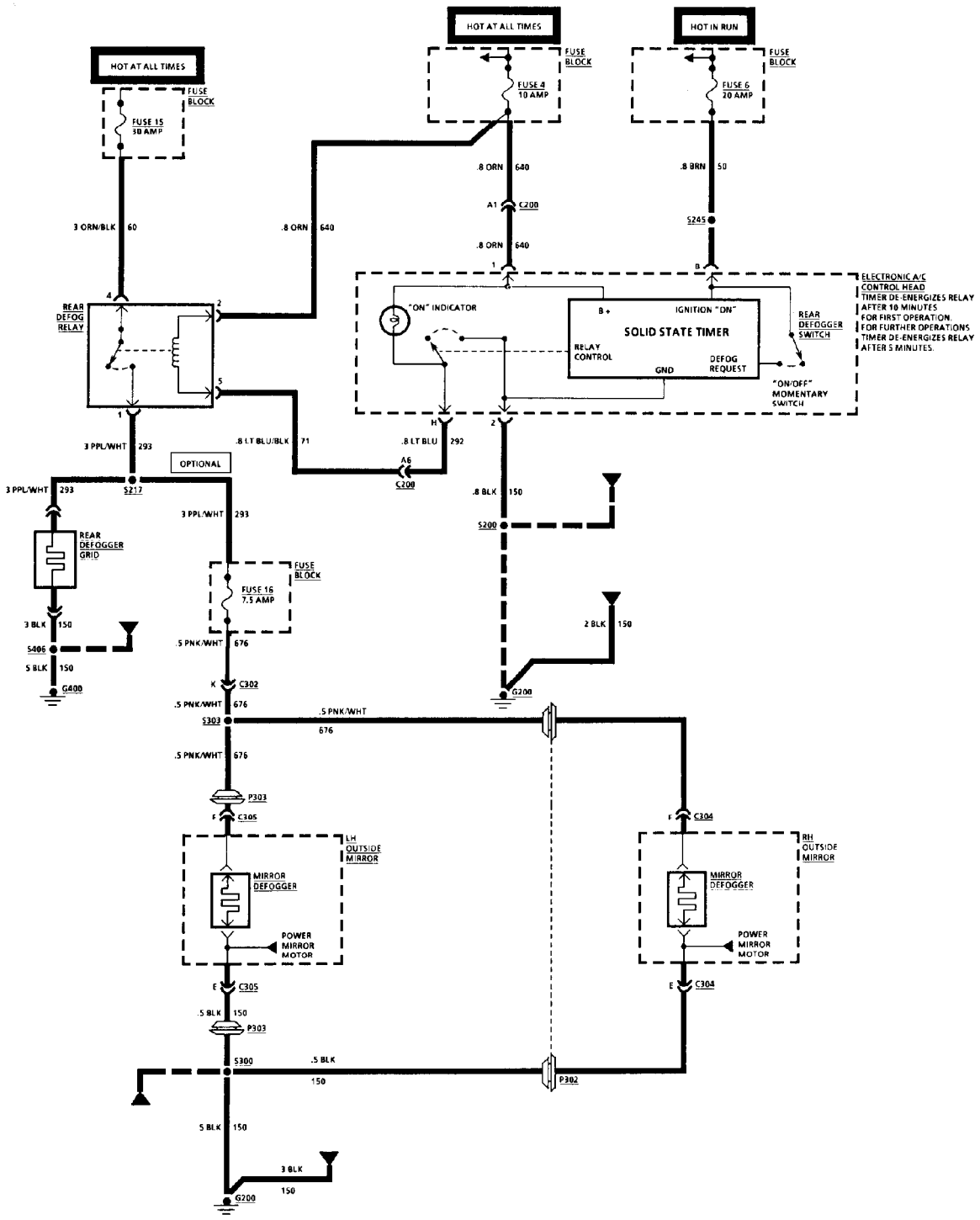

Fig. 8: "B" Body Defogger Wiring Schematic (With Automatic A/C)
Courtesy of General Motors Corp.

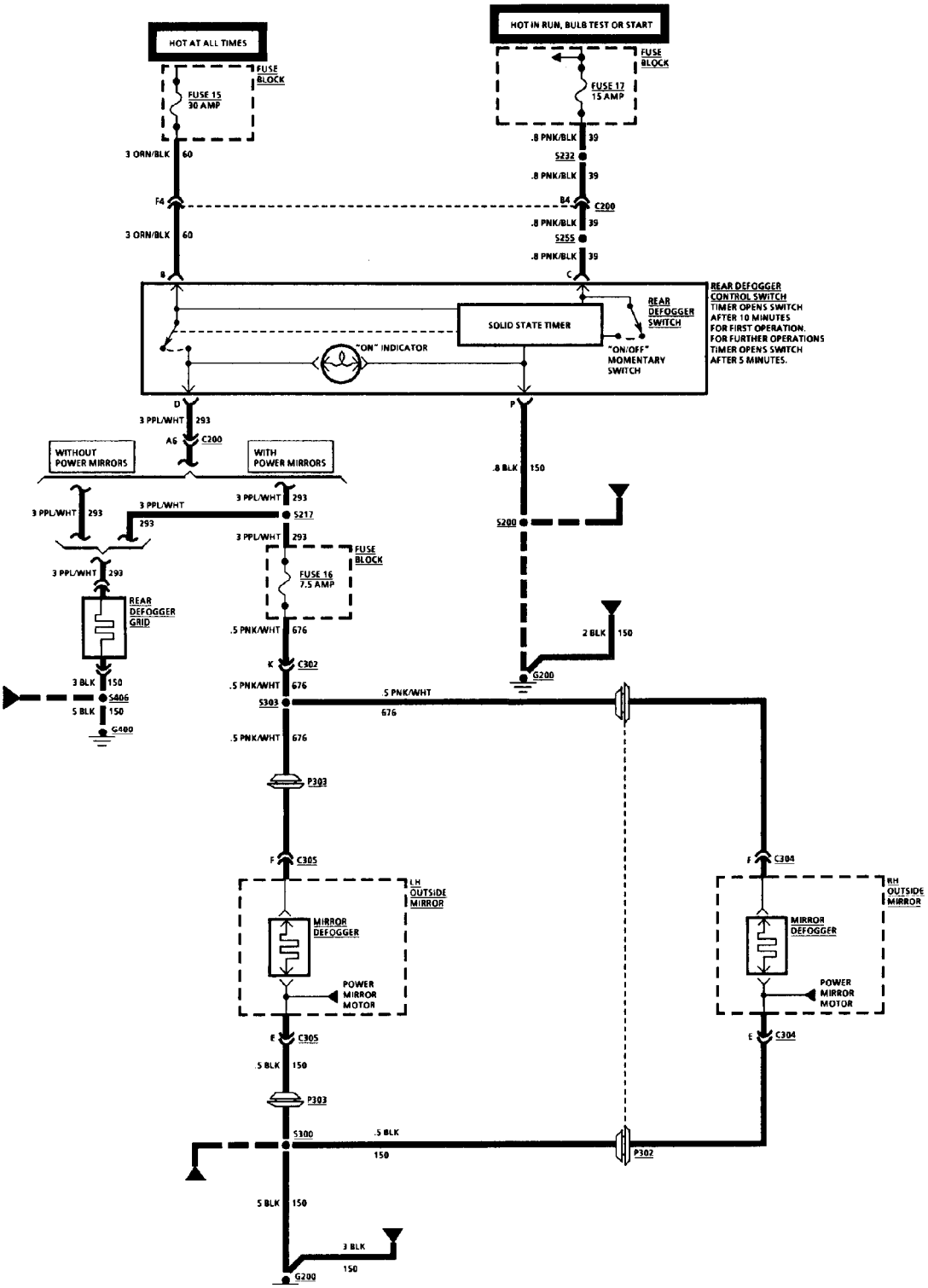

Fig. 9: "B" Body Defogger Wiring Schematic (With Manual A/C)
Courtesy of General Motors Corp.

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