

Bulletin No.: 04-08-48-001B

Date: June 28, 2005

## INFORMATION

### Subject:

Rear Window Defogger - Broken Heating Grid Detection Method

### Models:

2006 and Prior Passenger Cars and Light Duty Trucks (Including Saturn)

2003-2006 HUMMER H2

2006 HUMMER H3

### Supersede:

This bulletin is being revised to add the 2006 model year and additional models. Please discard Corporate Bulletin Number 04-08-48-001A (Section 08 - Body and Accessories).

The addition of vertical grid lines to the heated back window defogger circuits has made it difficult to detect broken defogger grid lines. In the past, it was a simple matter to use a voltmeter to check the continuity of each grid line in order to locate a non-functional line. Some new design back windows have two vertical grid lines that connect all of the horizontal grid lines together, thereby providing alternate routes for the electrical current to follow. This makes the old test method ineffective. If the vehicle does not have the vertical lines, the old (line-by-line) test methods can be used.

### Materials Required

^ Permatex(R) Quick Grid, GM P/N 12346001, or equivalent

^ A small ball of fine steel wool Type 00, or

^ Optional - A strip of liquid crystal heat sensitive paper, 51 mm x 305 mm (2 in x 12 in) or similar size (Contact Edmund Scientific at 800-728-6999 for part number CR30723-70 or go to [Edmund Scientific: educational toys, gifts, hobby supplies & science equipment](#)), or

^ Optional-A portable infrared thermometer, GE-46819, available from Kent-Moore (1-800-345-2233), or equivalent.

### Correction

There are three distinct zones across the back window that must be checked. They are:

^ the driver's side outboard of the two vertical lines

^ the passenger side outboard of the two vertical lines

^ the central zone that falls between the two vertical lines

To detect a broken grid line in any of the above three zones and to isolate the exact location of the break, perform the following steps:

Caution: ^ Approved safety glasses and gloves should be worn when performing this procedure to reduce the chance of personal injury.

^ Cover the rear shelf area to prevent damage to the interior trim material.

1. Start the engine and turn on the back window defogger.

2. Take the ball of fine steel wool and twist one end to a point. Move the point slowly across each grid line. Be sure to start at the far side of the zone and move it to the opposite side of the zone. When you bridge the grid line break with the steel wool, you will see a small spark. Repeat the test over the same area to be sure you have accurately located the break. Mark the exact location of the grid line break. Repeat this portion of the test for each grid line. If you do not see a spark at any point, it is possible that there are two breaks in the same line and zone. Close visual inspection using a magnifying glass may be the only way to locate breaks in this case.

3. The following are provided as an alternative way to detect a non-functional grid line. If available, use in addition to the steel wool.

3.1. Method using liquid crystal heat sensitive paper:

Important: The first part of the test must be completed quickly before the entire surface of the back window becomes warm.

3.1.1. From outside the vehicle, place the heat sensitive paper (dull surface in contact with the glass) against the top driver side grid line. Start the engine and turn on the back window defogger. A distinct color change will take place at each conductive grid line. Repeat for the bottom grid lines until they have all been checked in the driver side zone.

3.1.2. Repeat the process for the passenger side and center area zones.

3.1.3. If no color change is noted for a grid line, place a crayon or china marker check mark beside it. Mark each grid line in the zone where it is non-conductive and, therefore, not heating up. More than one broken grid line may be found.

3.2. Method using portable infrared thermometer:

3.2.1. Start the engine and turn on the rear back window defogger.

3.2.2. From inside the vehicle, start at the top driver side grid line and slowly run the portable infrared thermometer vertically down the rear window contacting each grid line. You should be able to see a distinct variation in temperature readings.

3.2.3. Mark each grid line in the zone where it is non-conductive and, therefore, not heating up. More than one broken grid line may be found.

3.2.4. Repeat the process for the passenger side and center area zones.

4. Use Permatex(R) Quick Grid, GM P/N 12346001, or equivalent, to repair each broken grid line. Follow the manufacturer's instructions.

5. Wait 24 hours before turning the defogger on, or the repair can be fast cured using a heat gun, 260°C - 371°C (500°F - 700°F). Hold the heat gun within 25 - 51 mm (1-2 in) from the repair point for 2 to 3 minutes.

6. Recheck the grid line with the heat sensitive paper or portable infrared thermometer to ensure that the line is now functional and that the repair was successful.