

Replacing the rear hatch demister/defroster on a Lotus Esprit S1/S2

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The tinting on my rear hatch needed to be replaced because of a couple large scratches. The rear hatch was removed when I removed & replaced the engine, so it was an ideal time to replace the tinting. While it was off, I figured it was a good time to renew the rear demister/defroster. This is a terribly important piece of equipment here in Florida (NOT!), but the time was right to do it right.

I removed the rear tinting by spraying it with water, covering it with a garbage bag, and let it sit out in the sunshine for 30 minutes. Most of the tinting came off easily that way, although I did have to scrap some of it off.

The old heating grid was next to be removed. It is just some thin metal strips that are glued onto the glass. Over the years, the glass was etched, so it all can't be removed, but using a sharp razor blade, I was able to scrap it off to smooth.

I purchased a legacy stick defroster part number 1215-4667-STK from <https://www.frostfighter.com/>. The details of the defroster are as follows:

Voltage: 12

Height: 18.75 in (47.6)

Elements: 15

Modulation: 100%

Min Length: 46 in (117)

Max Length: 67 in (170)

What the Clear View part numbers mean:

12 = Voltage

15 = Number of elements in defroster (height)

46 = Minimum length in inches

67 = Maximum length in inches

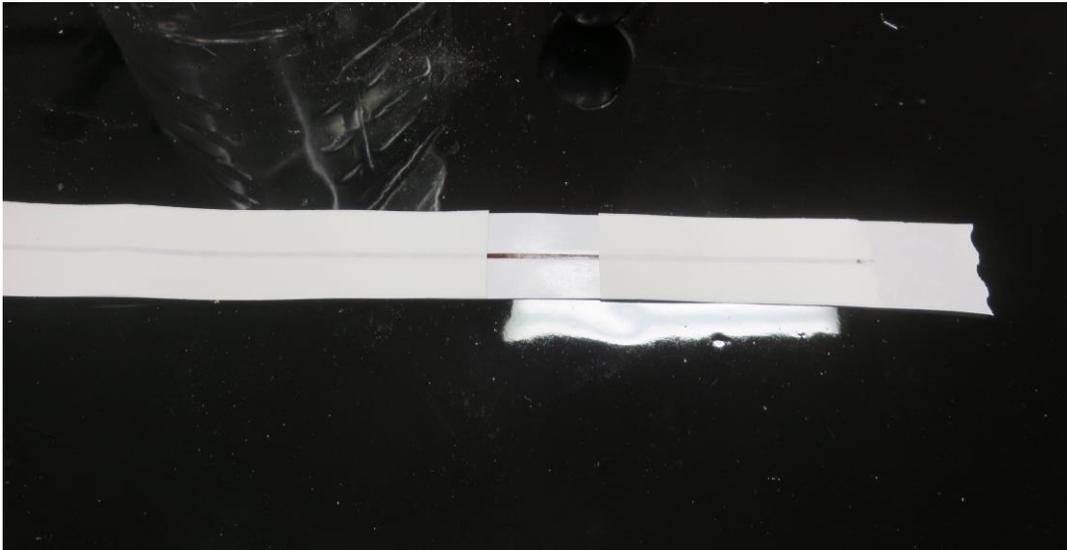
STK = Stick Kit (defroster only)

The grids were much longer than needed, about 81 inches. It might be possible to get by with the 1215-2740-STK kit, which is \$0.15 cheaper. I don't know if the grids are the same as the 4767 kit, and have not confirmed that with the company.

They suggest that you don't go outside their limits of minimum or maximum width. I did. The Esprit rear glass needs grids that are 38" wide at the top, and 42" at the bottom. There are 15 grids, so you want to keep that. The grids are a combination of 5 grid lines in parallel, with three sets of those in series. If you have any electrical engineering classes in your past, this is easy to comprehend.

The spacing for the electrical grid lines matched the existing grid lines, but I was nervous about trying to get 5 grids down straight, while covering the existing lines, so I decided to do them one at a time. If

you've ever done any pin striping work, the concept is the same. In this case, the pin striping is copper strips, with adhesive on one side that sticks to the glass. Peel back a piece of the backing paper and cut it, then relocate to down a couple inches.



This is then placed on the glass starting on one side, and work your way over to the other side. Peel the backing paper from a long piece and place the copper strip on the glass. If it isn't straight, pick it back up and straighten it. I used a drop light under the hatch to cast a shadow from the existing grid remnants, which helped to line up the new copper grid.

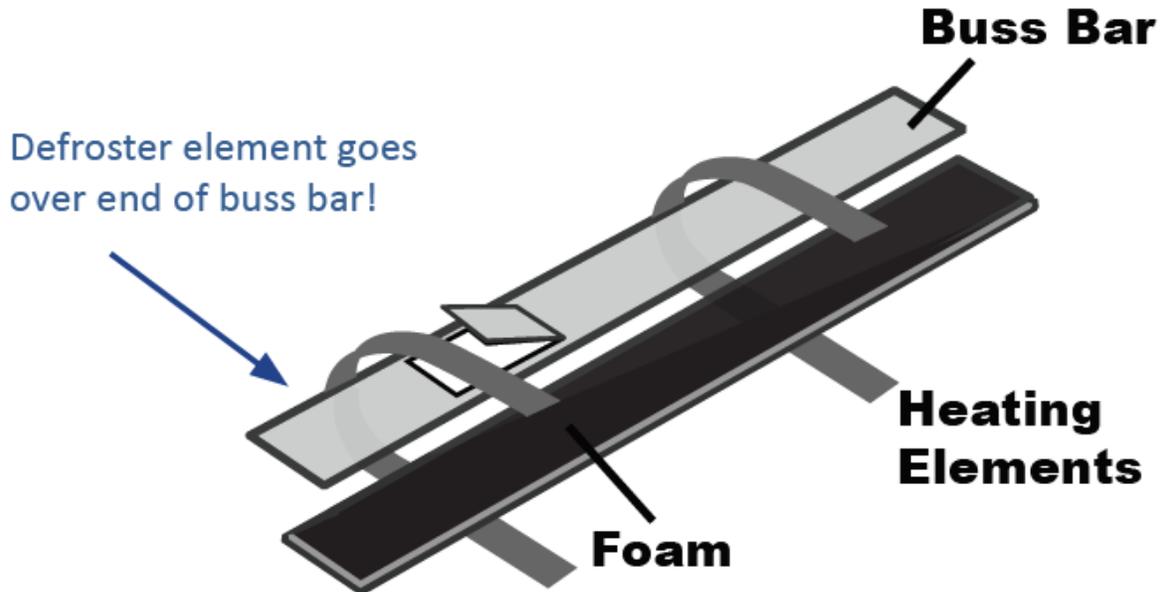




What you are left with are pieces of the copper strip hanging over the glass. The bottom of this strip is stuck to the glass, and the top side is copper, which is conductive.



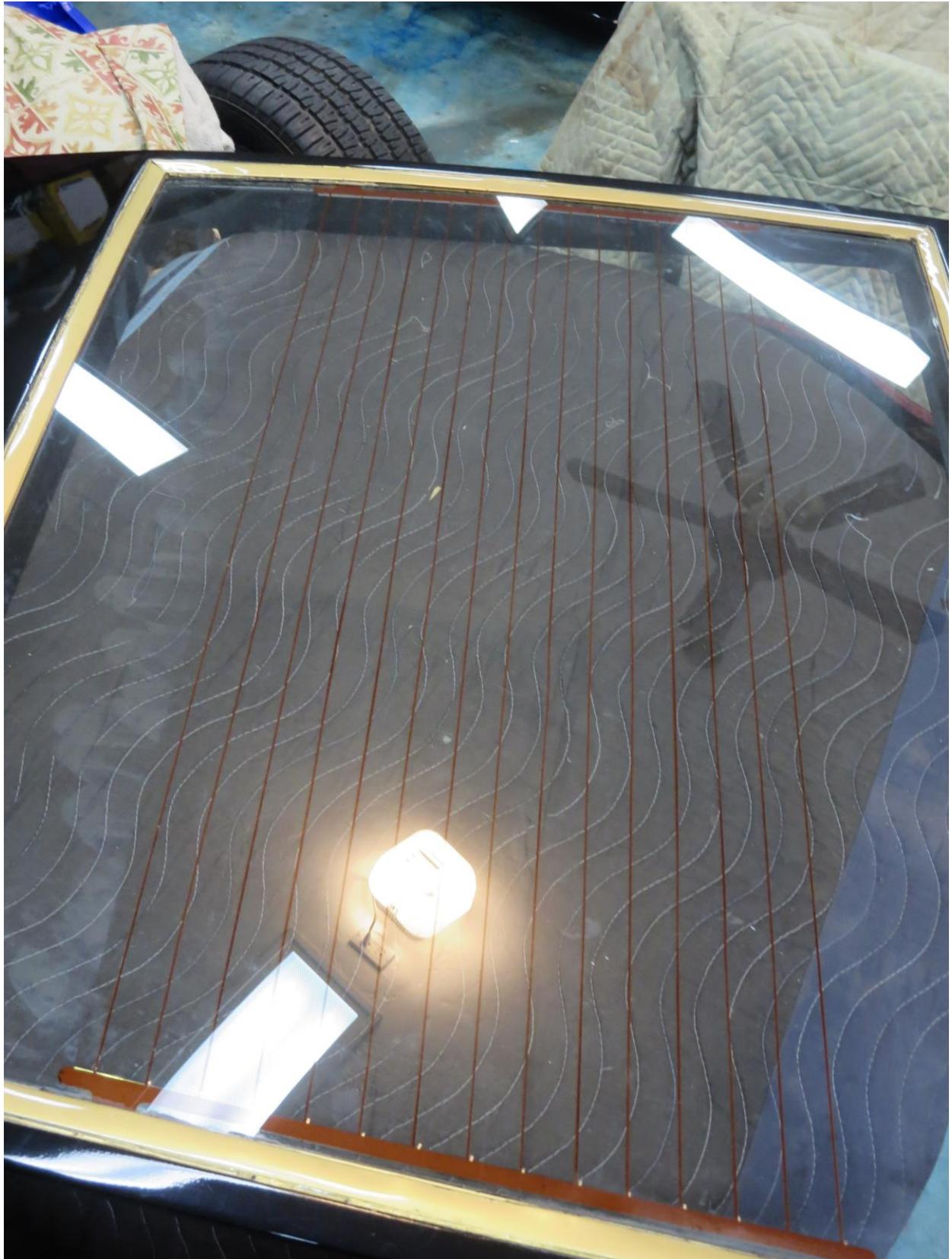
Once you have all the grid lines down, you then put the foam strip on the glass, then the copper buss bar, and fold the copper strips over this buss bar. Since just one side of each strip is conductive, they make contact with the buss bar. There is then a plastic cover placed over the buss bar to protect it from accidentally shorting.



Defroster side buss bars go on top of foam as shown above.

Power for the rear demister/defroster is supplied by a relay, activated by the dash switch. The relay is on the right side for RHD domestic cars, over the driver's right ear. On LHD federal cars, the relay is on the left side, over the driver's left ear, in both applications behind the bulkhead panel. The panel is held in place with some simple clips, so just grab the panel and pull it forward. Power is transmitted from the relay to the grid through the rear hatch hinges. The right hinge should be the power, and the left hinge should be the ground.

On my set-up, I recorded about 14.2 amps current draw through the new grid. I don't expect to use it ever, but at least it works on my car. Not a lot of Lotus Esprits that have a working demister/defroster.



I then had the rear window tinted professionally, using 5% limo tinting. Normally, this might have been something that I tackled myself, but I was glad that I had a professional do it. He cleaned everything, and laid the tinting on the outside of the glass to cut it and shrink it slightly for the curvature of the glass. He then moved it to inside of the glass, and very carefully cut it all using many new sharp razor blade (I guess that's where many amateurs fail). He spent over 2.5 hours on it, and charged me \$125 US. Money well spent.

Every day or so, I would squeegee any remaining water or air bubbles out, and allowed it to dry for about a week. I also had to go in a paint the area between the buss bar and the side of the hatch with black paint.

