Lighting gauges with Electroluminescent Tape

by DanLewis
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Imagine changing the illumination of the gauges in my Bugeye using a product called Electroluminescent tape (or simply “EL tape”).

Although the tape is advertised as "white", it lights up slightly blue as you can see in the first two photos. They sell the tape in different colors if you prefer a different color.

**Hint:** Click on any of the pictures to see a larger version.
I purchased four EL tapes (http://www.jab-tech.com/5-foot-EL-Ta...e-pr-4795.html). They each come with a 12 volt to 90 volt inverter for just under $8 US. You don't need four inverters - one will drive all four tapes - but they don't sell the tape and inverter separately.

For the speedometer and tachometer, I used contact cement to glue the tape to the inside of the can near the front and drilled a small hole at the top for the wiring to pass through.

(You can just see light coming through the hole at the top of the can underneath the tape in the two photos.) You can't see the tape or wire once the gauges are reassembled and installed - unless of course you turn on the lighting.

For the two smaller gauges, I had to remove the blue plastic ring and then wrap the tape around the outside of the gauge.

The tape comes in 5 foot lengths - far longer than needed - but you can cut it to length without fear of damaging it. Supposedly it's possible to use the extra tape that you cut off by soldering wires to it, but I found it MUCH MUCH easier just to use four tapes and cut each to length. The amount of power required by the tape is proportional to its length, so when you cut it down to what's needed, you can wire all four in parallel and drive them from a single inverter.

I used Velcro to tape the inverter to the rear of the dash and bought three 2-to-1 "Y" splitters to connect power among the four tapes. I found this 4-to-1 splitter later:

http://www.adafruit.com/products/402...FYdxQgodHkgA3Q.
A few tips I remembered that I thought I would pass along ...

The inverter's 12 volt input is polarized, so be sure to connect the red wire to positive and the black to negative. You can test the tape to see if it lights by connecting the 12 volt inverter to a small 9 volt battery, which is much more convenient that trying to connect it to your car.

Only one side of the tape lights up, so be careful when you install it that you have it the right way. One side of the white tape that I used is pink and the other was sort of silver grey. The pink side lights up. And yes, it really isn't pink when it lights up - it's pale blue.

If you don't remove the blue plastic rings inside the two smaller gauges, the illumination will be too dim and a slightly different color. To remove the plastic ring, you of course have to remove the bezel and glass since the ring is inside the gauge. Next you have to remove the black face, which can be a bit tricky. In the case of the fuel gauge, this means very carefully bending the needle just enough to let you remove the face. Once removed, you can then easily remove the plastic ring. In the case of the combination gauge, you have to carefully pull off the two pointers, remove the face, and then the plastic ring. The pointers simply press back on.

To hold the EL tape to the outside of the two small gauges, I used clear plastic tape - the kind used to wrap packages for shipping. It's about 1.75" wide and has to be trimmed a bit, but I found it to be more reliable than trying to glue the tape to the outside of the can.

Drilling a hole for the wiring in the larger gauges: A two-conductor wire about 12" long comes attached to the end of the EL tape and has a connector attached to the other end of the wire. Although the connector is quite small, a hole large enough to pass the connector through the can was larger than I thought prudent. So I drilled a smaller hole large enough to pass the wire, cut the wire, passed it through the hole, spliced the wire back together, and used heat shrinkable tubing to cover the splice.

Oh, one last point: The wire is attached to the tape such that it comes straight off the end of the tape. It would have been nice if it was at a ninety degree angle because then the wire would naturally exit towards the rear of the gauge after wrapping it around the gauge. This simply means that you have to be careful when putting the gauge back in the dash. In my case, I have a custom wooden dash and the holes were just large enough to provide the extra clearance needed. I haven't tested the fit on the stock metal dash. If it's a tight fit, then you might need to create a little more clearance with a file.

Enjoy!

Dan

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Tags: dash, gauges, instruments, lights

2 Comments
bthompson - 02-23-2013, 09:34 PM

WOW! That looks fantastic! I've played around with EL tape before, but never thought about using it for gauge illumination!

Considering Chrysler was using EL dashboards in 1960, I'd even call this a "period-correct upgrade!" 😊

Johnny - Today, 07:35 PM

Super article, I wish you would of written your article before I used the LED lights. The tape would have been so much better. Especially around the safety gauge and fuel gauge. I really think wrapping the tape around the outside of the smaller gauges (with the blue plastic removed) would be a lot easier than my solution of pointing the LED into the gauge.

😊