# Installing LED instrument lights

I had to replace a couple if blinking LED's in my cluster I bought these LED's 5 years ago and I have had a few fail mostly just 1 LED module on each globe which is frustrating. Anyway if you do want to go down this path here is what you need to do.

As LED's are polarity sensitive they MUST be installed the correct way or they will not work so first you need to identify the positive and negative terminals on the LED. You can use a 12 volt battery to do this but I have a laboratory power supply so this is what I used.

When the LED lights up remove the wires and mark the negative side with a black permanent marker. This makes it easy to install the LED in the cluster.
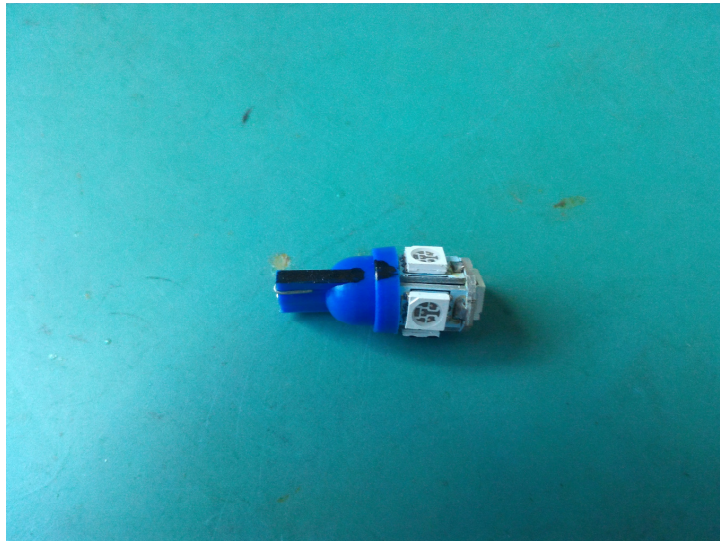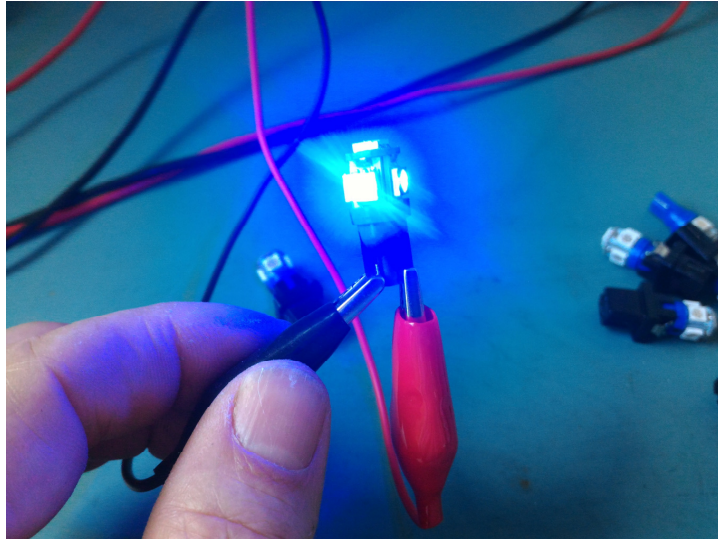
Insert the LED into the globe carrier and test it again, I found that sometimes the wire terminal on my LED's did not make good contact with the carrier. All good.
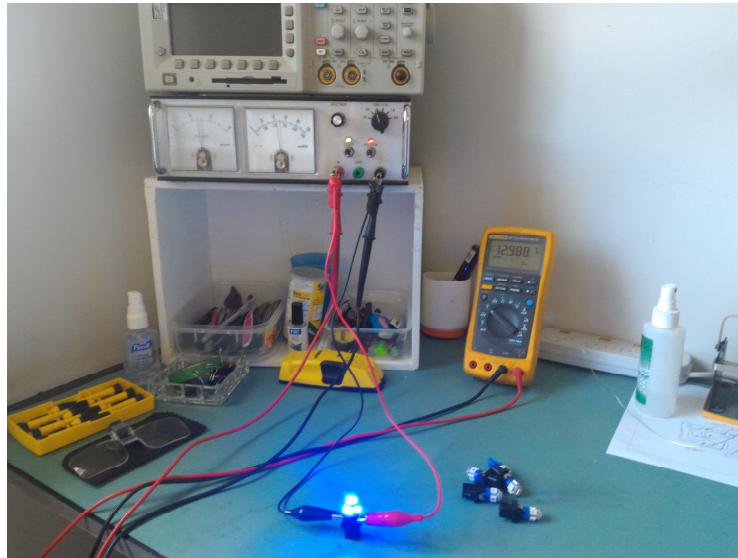
Next we need to identify the pos and neg in the cluster, in the pic below I have marked the neg with a black marker. All the lower globes neg is on the left as pictured. The top 2 are different, neg is on the inside so the left globe neg is on the right and the right globe neg is on the left.
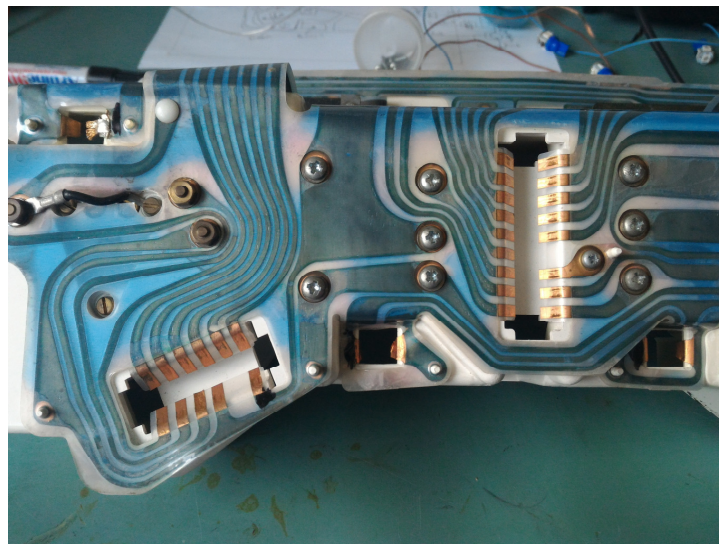
This is pos terminal for dash lights.
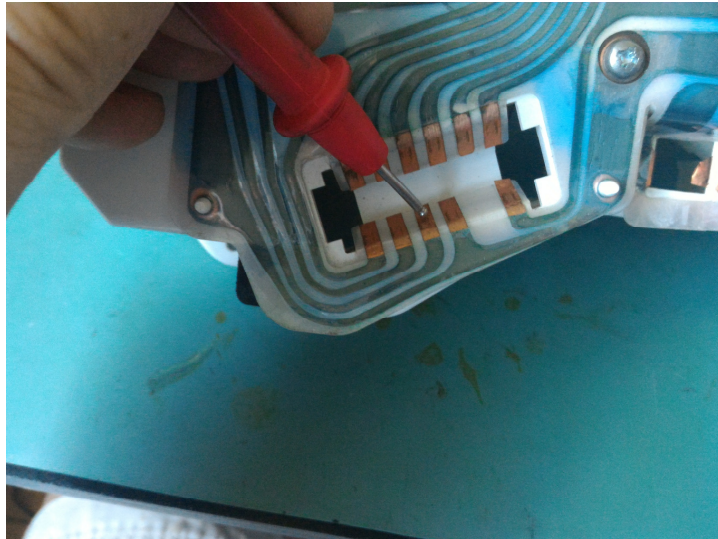
Here are the LED's installed, I do have some LED's in the warning lights but I would advise against this especially the Alternator/Battery light, this MUST be incandescent, an LED in here will prevent the light coming on if the Alternator fails one way around or the Battery if the LED is reversed. As I have blue LED's I removed the green covers, these LED's would not fit anyway with the covers in place.

Dash dimmed simulation.

Dimmer off simulation.