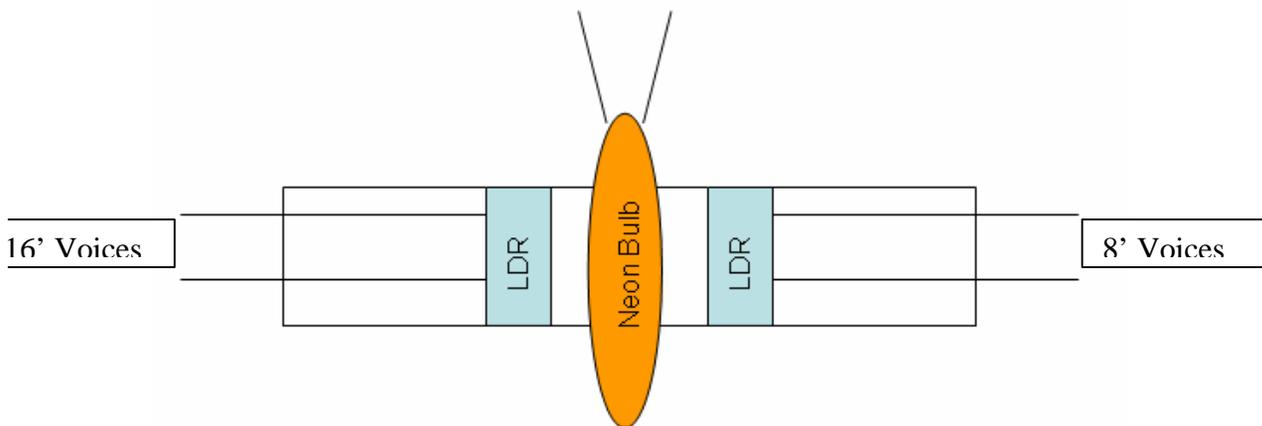


Gibson G101 Neon Bulb Replacement for Percussion & Repeat

These instructions are provided for people who may be having trouble with the percussion and repeat function on the G101 organ. When the percussion tab is on, the sound will decay once a key is depressed. When the repeat knob is turned on, the sound will repeat at a rate determined by how far clockwise the knob is set.

A common thing which can go out which affects the percussion and repeat functions is the LDR/Neon Bulb array located to the far right of the tab switches and is depicted in the first photo below. It can be somewhat difficult to diagnose the bulb as the source of the problem since there are other electronics that play into this as well. I would recommend first scratching away a small amount of the grey metallic goop that covers the bulb to see if it is flashing when the repeat knob is turned on. If the bulb flashes then either 1) The bulb has lost brightness due to age and is too dim to trigger the LDRs or 2) One or both of the LDRs are bad. I would recommend replacing the bulb first since it is much easier than replacing the LDRs. If the bulb does not flash then either 1) The bulb has burned out 2) Something else has gone bad in the repeat circuitry. Take a volt meter and touch it (careful don't short something out!) to the leads on the bulb. An analog volt meter set to 100vdc should work best but if using a digital meter, set the repeat to very slow so the change is noticeable. If you read voltage in an on/off pattern, then your repeat circuit is OK and the bulb is bad. Here is a diagram of how the LDR/Neon Bulb array works



* Repeat knob controls flashing rate of Neon Bulb. When light strikes the LDR (light dependent resistor), the value of the resistor drops, allowing the signal to pass. Note that one LDR is for the 8' brass and string voices and the other is for the 16' brass and string voices. If your percussion and repeat work only on 8' OR 16' voices, then your problem could be a bad LDR and not the neon bulb.

Purchase the bulbs here: www.allelectronics.com/ *Special thanks to Robert MacNutt for link to the bulb and assistance with this project.

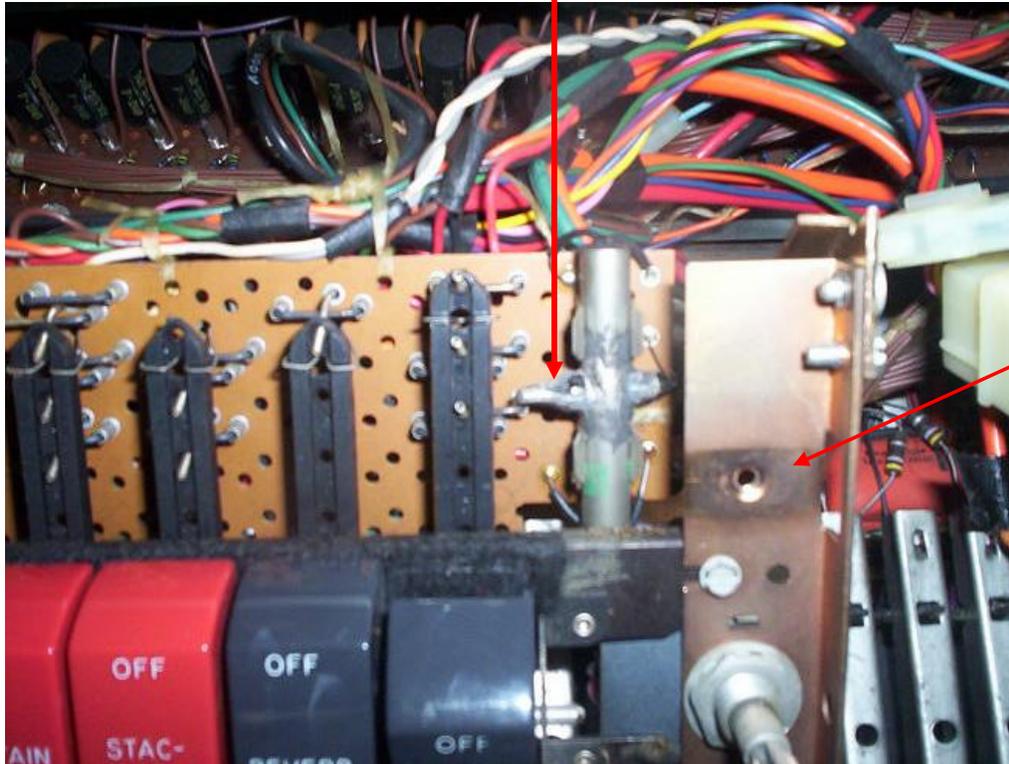
Neon lamp with 16K Ohm resistor. 2.6" bare wire leads.

CAT# NL-3



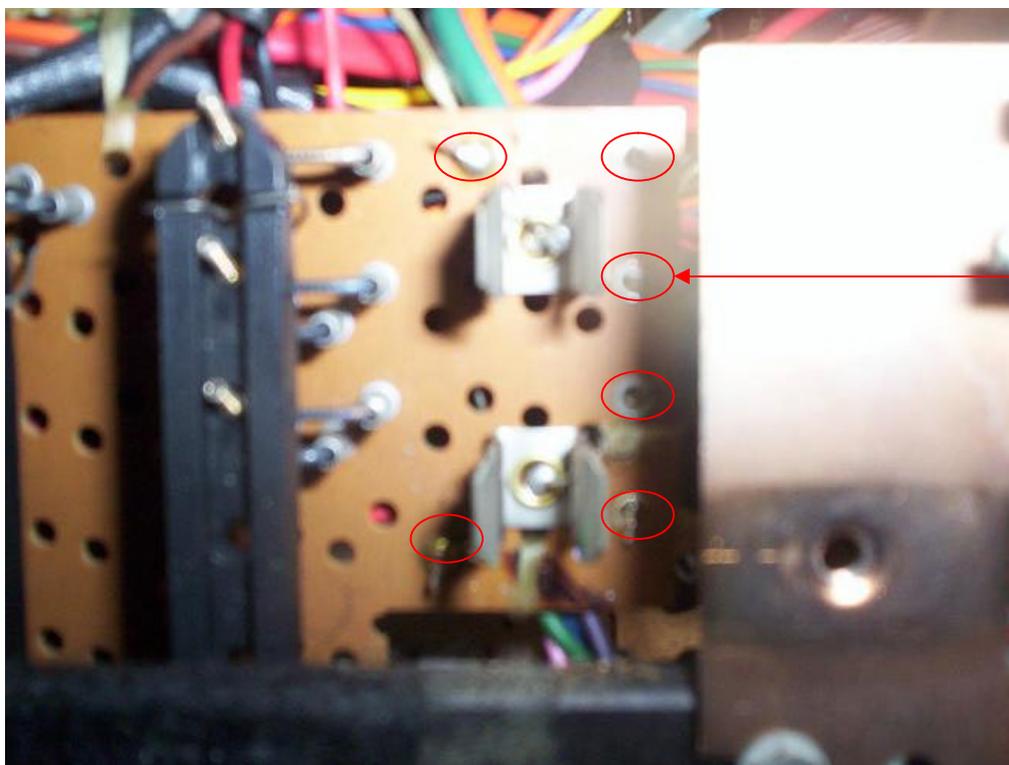
Replacing the Bulb

This is the original LDR assembly with neon bulb cemented in the middle of the metal calendar



Note that metal rail has been removed for easier access to the solder points

Desolder the six wires connecting it and the bulb to the board and remove it:



Solder Points (be carefull not to melt any plastic items such as the tabs or tab levers when using the iron in this area)

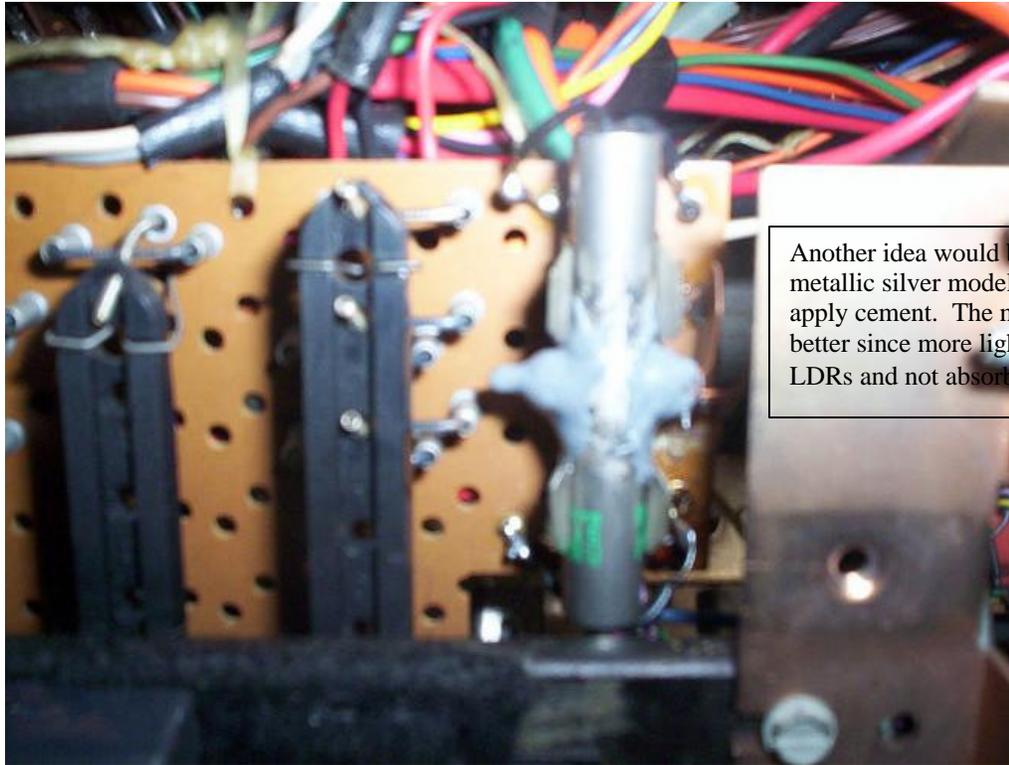
Next whittle away the grey goop from around the bulb which is cementing it in place. An exacto knife worked for me. Remove the bulb:



Make sure you get as much Grey goop from around the hole as possible. Insert the new bulb. Snip off resistor if bulb has one:



Cover bulb with cement and let dry overnight. I used JB Weld since it is grey and somewhat metallic like the original. It seems to work fine. Solder the unit into place:



Another idea would be to paint the bulb with that metallic silver model paint first, let dry, and then apply cement. The more reflective the coating, the better since more light will be directed towards the LDRs and not absorbed by the bulb covering.

Test the repeat circuitry. I left just a small hole in my cement covering so I could verify visually that the bulb is flashing. This certainly isn't required but I found it nice to be able to see that. I just left a small hole next to where the leads come out of the bulb. When your repeat knob is turned clockwise, the pulses of sound will get closer and closer together until they finally "mush" together. Stock this is around 8 O'clock on the knob. I found that with this bulb, the effect "mushes" together very close although not exact – perhaps closer to 7 O'clock with the replacement bulb.