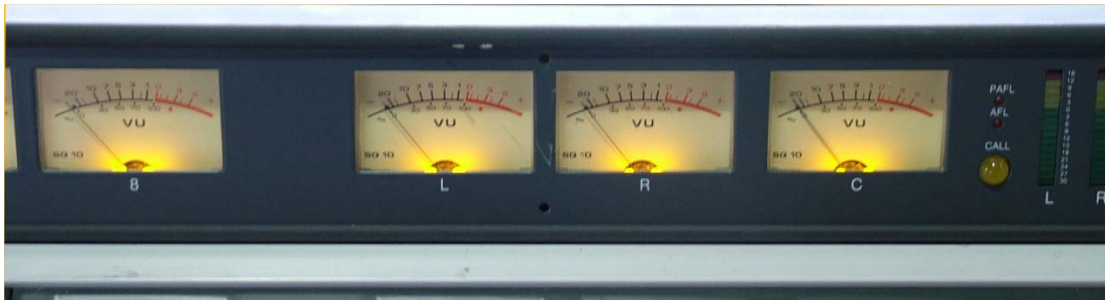


ML, GL Series and GS3000 Retro-fit LED Meter Illumination

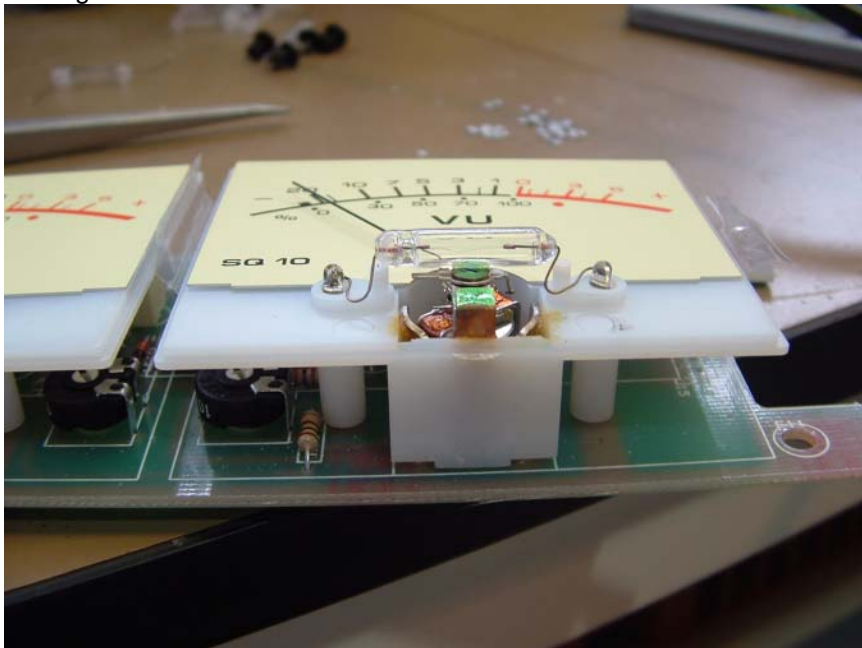


We have now developed an LED alternative for replacing the incandescent bulbs in the ML and GL-series mixer meterbridges. This can be fitted to the individual meters in the mixer as an alternative to fitting the AD0013 Meter bulb. The cost of the LED option is also cheaper than the replacement bulb, and should offer considerably longer life. Therefore your customers should find this new option to be of interest. LED Illumination will be fitted as standard to the ML-series products as of September 2005 production.

The part code for the retro-fit LED Illumination board which fits into an individual meter is:
003-390JIT PCB ASSY VU METER LED ILLUM

Here is how to swap the meter lamp for the meter LED board.

1. With the meters exposed, undo the clear tape that holds the meter Perspex in place. This will need to be reattached later, so take care not to make this awkward to get to. Now you can see how the bulbs solder to two tags.



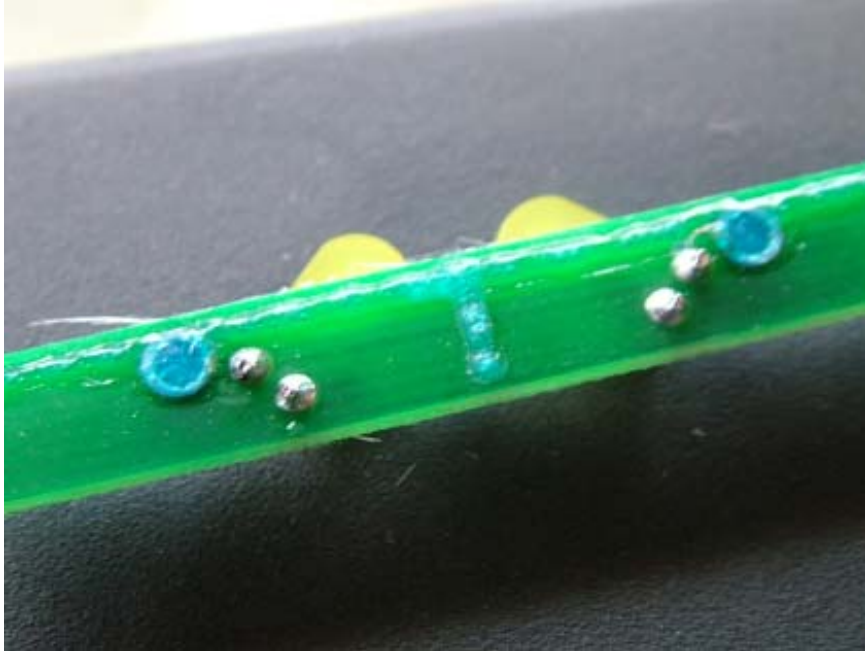
2. Desolder the bulbs and with pliers, straighten up the tags. These will go through the holes in the LED board, and it will be significantly easier to accomplish this if they are straight. Take care not to overheat the tags or the plastic pillars that they feed through may melt.



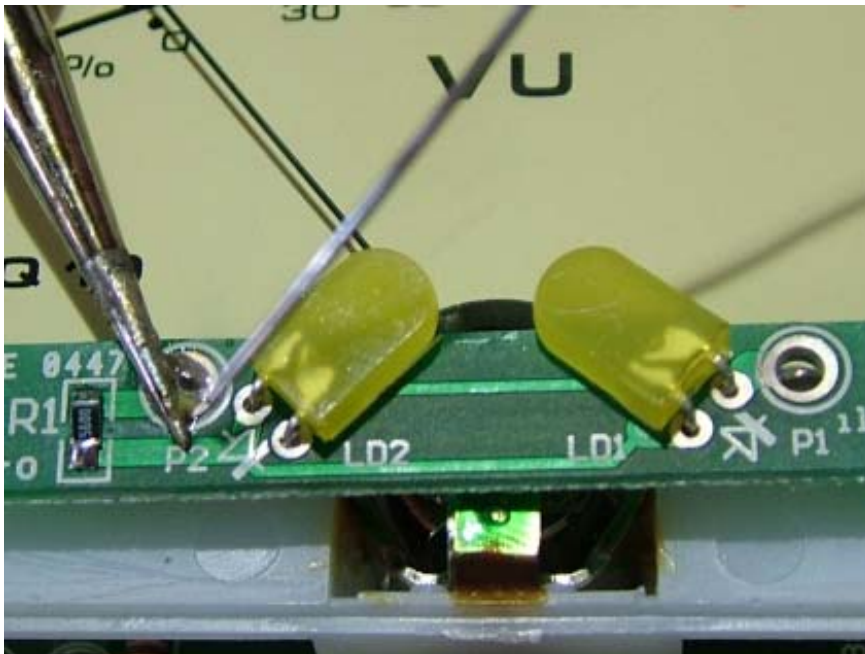
3. On the meters in this unit, there are two plastic pillars. These need to be cropped right back with cutters as they interfere with the legs of the LEDs.



4. On the back of the LED board there is some blue solder mask that stops the holes filling up with solder. This solder mask will need to be removed with a suitable tool before fitting.

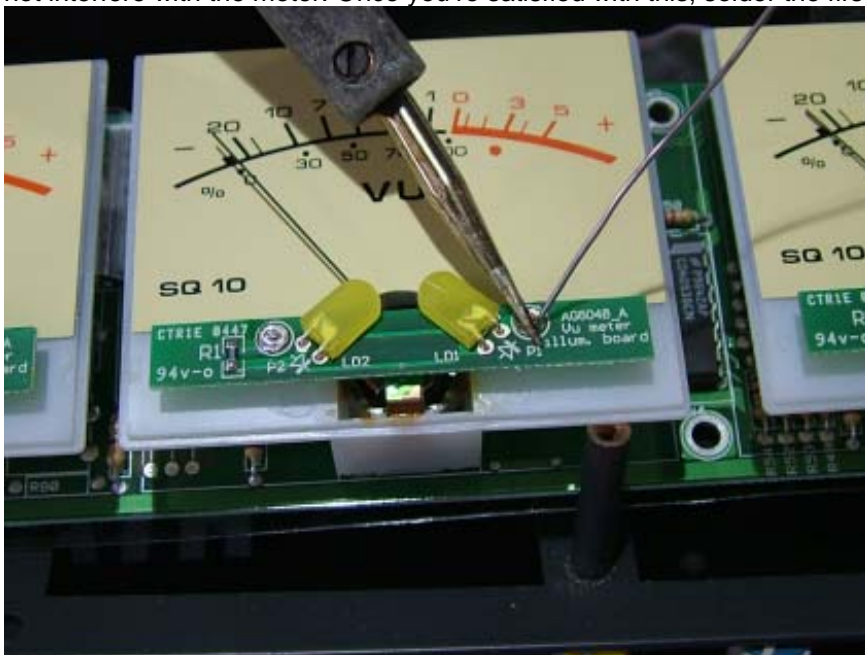


5. When these are clear, you can mount the LED board over the straightened solder tags. What you then want to do is tack one of the legs into the hole with solder, while holding the board free of the meter movement. If you don't lift the board up slightly, the meter needle may foul on the board and you will not get proper movement. Take care not to overheat the tags or the plastic pillars that they feed through may melt.





6. Once one side is approximately right, you can fully solder the other side so that it too is level and does not interfere with the meter. Once you're satisfied with this, solder the first side properly.



7. Check the movement of the meter for full range movement. You won't be able to test the mixer at this stage, as you won't be able to connect the boards back up to apply power and signal.

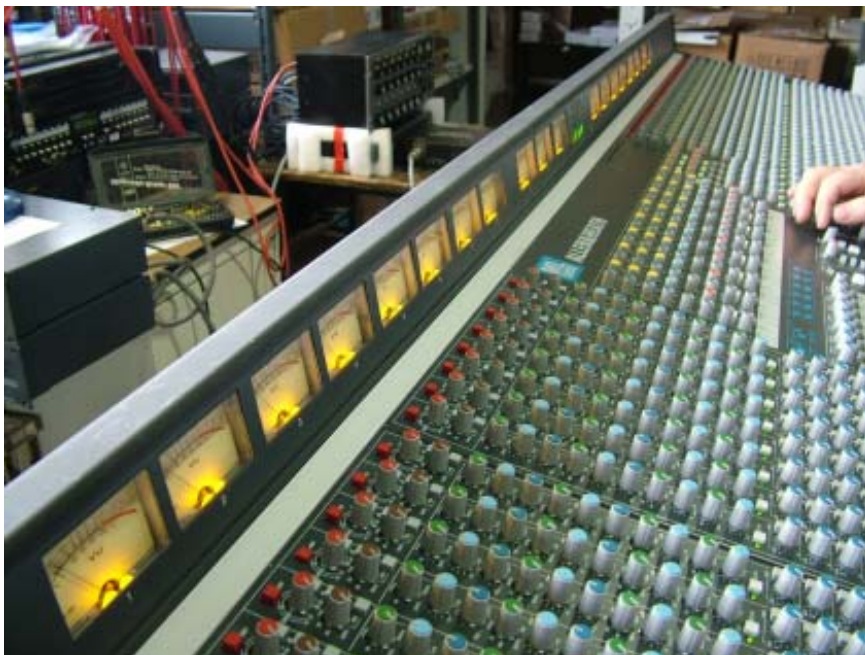
8. Repeat for the rest of the meters.

9. If you are working on a GL-series mixer, refer to the appendix regarding changing the jumper links, otherwise proceed below.

10. Reconnect the meter boards and mount back into the meter extrusion. Take care to make sure that the wiring for the lamp sockets do not interfere with the boards. Now would be a good opportunity to fit insulation on the back of the master meter board if it is not already fitted, as this can minimise any risk of shorting of the lamp XLR sockets against the board. Make sure that the lamp resistor is vertically out of the way at least.



11. Test for correct operation and full and free movement of the meters. If the left hand meters are not illuminated and you are working on a GL-series mixer, see appendix below.



APPENDIX 1 – adapting the existing GL-series to work with LEDs

The GL-series mixers use a split DC supply to the GL meter PCBs. The left hand PCB is powered from the positive rail and the right hand PCB is powered from the negative rail. The result is that the LEDs on the left hand PCB will be reverse biased and will not light unless the following links are changed:

GL3000 and early GL3300/GL4000 (no peak LED): Locate jumper links L10 and L9 behind the first VU on the left hand PCB. Cut L10 and solder a link in position L9.

Late-model GL3300/GL4000 (peak LED in meter) and GL3800/GL4800: Locate jumper links JP2 and JP3 behind the first VU on the left hand PCB. Cut JP3 and solder a link in position JP2.

The left hand PCB will now be powered from the positive rail. This mod must only be carried out to enable the LED conversion to function, and for no other reason. See following pages for relevant link positions.

APPENDIX 2 – adapting the GS3000 to work with LEDs

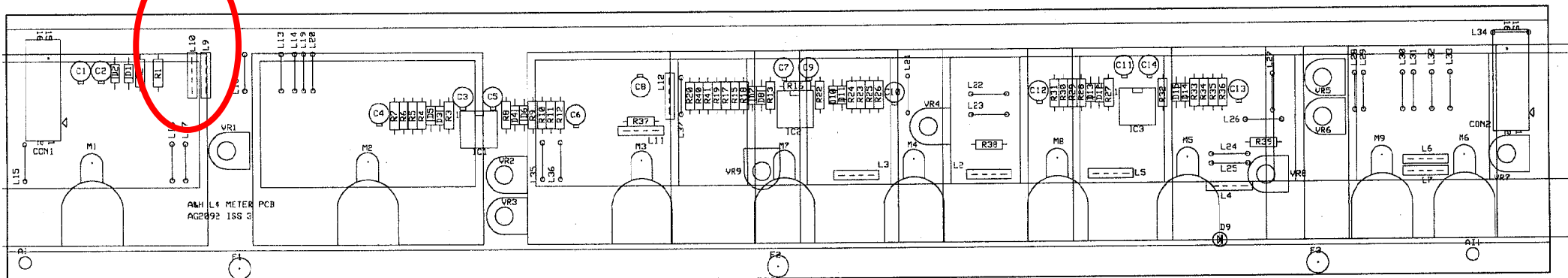
The GS3000 mixers use a similar split DC supply to the GL meter PCBs, and may require the polarity of the twin VU meter board to be changed, if it is currently powered from the negative rail. If this is not changed,

the result is that the LEDs on the left hand PCB will be reverse biased and will not light unless the following links are changed:

Locate jumper links L10 and L9 behind the first VU on the VU meter board. Cut L10 and solder a link in position L9.

See following page 'S3C VU METER' for relevant link positions.

If you have any questions on this, please contact Allen & Heath Technical Support on +44 1326 370106 or email support@allen-heath.com.



A&H AG4535 ISS 3 GL SERIES METERS

