

Thanks for purchasing the high quality Plexiglas housing "PlexiNixie 1.08a". Please take your time to read the instruction manual. Please wear gloves during the construction so that you do not scratch the Plexiglas layers or leave fingerprints after the protective film has been taken off. All parts will fit together properly if you keep to the manual. This document is copyrighted. No parts of this documentation may be used commercially.

Please note that most of the pictures were taken with the protective cover on the Plexiglas.

Plexiglas parts and clock pcs



Screws, bolts, spacers and rubber feet



1. What you get

Mounting the pcbs together

VA-Screws, 3 pieces, 3 x 20 mm

VA bolts, 3 pieces, M 3

Spacer no thread, 3 Pieces, 8 mm long

Spacer with thread M 3, 3 pieces, 15 mm long

Case top

VA-Screws, 4 pieces, 3 x 10 mm

Case bottom

VA-Screws, 8 pieces, 3 x 5 mm

Rubber feet 4 pieces - 6mm diameter

Case

Acrylic plates – lasered, 4 aluminum pipes, 8 mm outside, app. 34 mm long

2. What you need

Allen key, screwdriver, small file, 5 mm drill

2 switches with short buttons - you can shorten your built in switches as well

gloves (cotton) - nixie kit V.108a and a bit of patience

3. The construction

Please read the documentation first, before you start and always be aware that the clock operates at high voltage. The two boards must comply with the connectors supplied by us. Be sure that the distance between the 2 pcbs is 8 mm. This is the height of the 3 plastic spacers. If the gap is too large shorten the 23 pins from the clock board with a side cutting pliers.

Please take the 10 identical Plexiglas plates and put them above each other so that all holes are over each other. The protective layer must not be removed at this stage! A good tip - the plates have 2 different protective films with a printing on one side. Put the 10 plates to the side.

You need the bottom plate now. Drill a hole into the bottom plate for your power supply cable. (**Figure 1**). The hole should be between 4 and 5 mm in size. Put some dishwashing liquid onto the drill. This will prevent the material from breaking.



Figure 1 - drilling the hole and solder the cable

Cut off the power supply connector and put the cable through the bottom plate and solder the cable to the clock board. As you normally use an AC power supply it does not matter which cable goes where. If you use a DC power supply please solder according to **figure 2**.

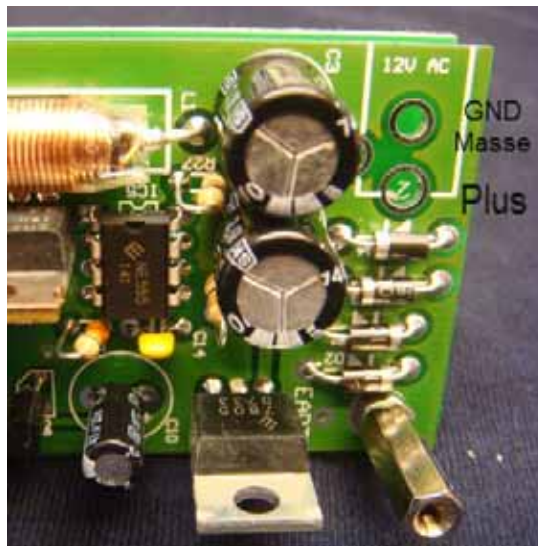


Figure 2 - connecting a DC power supply

The protective layer that points towards the board can now be taken off. If you have already soldered a jack, just desolder it. If you do not have fingerprints on your beautiful case, please pull the gloves on now!

Take the tube board, put 3 screws through the 3 holes, assemble the 8 mm spacers from the bottom and joint the tube board to the clock board. Now take the base plate and insert the M3x6 mm screws through the ground and screw them to the spacer (15 mm).

Make sure that the spacer in the middle is used. The 15 mm spacer in the middle of the clock board is not screwed to the base plate. Everything should now look like in **figure 3, 4 and 5**. Now use the 3x5 mm screws and mount the bottom Plexiglas plate to the 3 15 mm spacers. Do not over tighten the screws.



Figure 3 – clock and tube board mounted

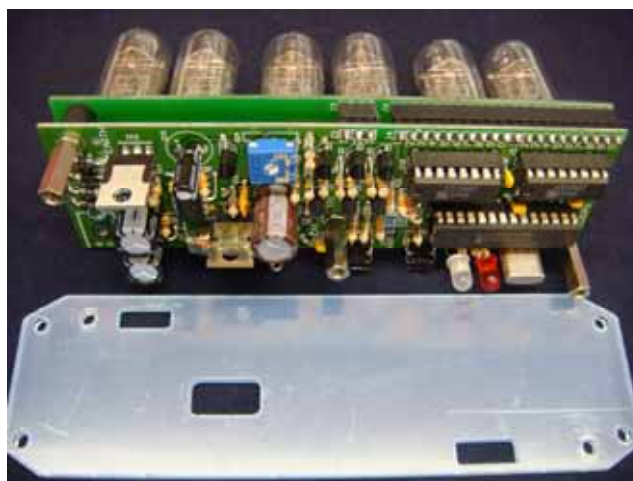


Figure 4 - base plate ready to be mounted

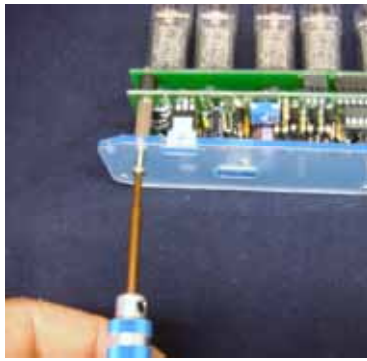


Figure 5 - base plate mounted

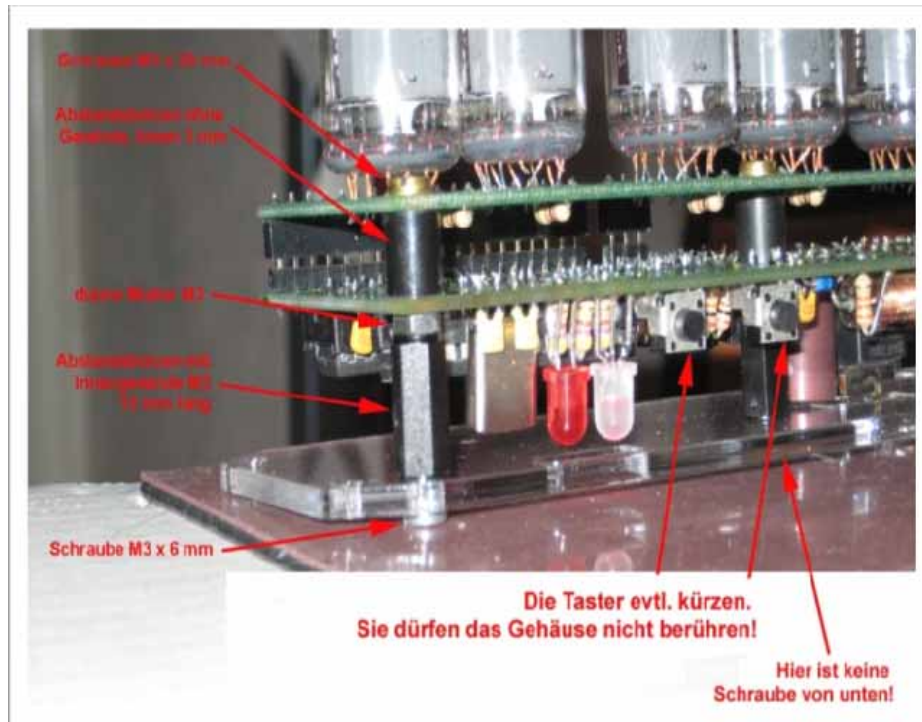


Figure 6 – Overview connection of pcbs and base plate

Take off the protective foil from the 10 layers you had put aside before and lay them over the 4 aluminium tubes as shown in **figure 7**.



Figure 7 – threading the plates to the aluminium tubes

Please be take caution that all 10 plates really fit. Look the drill holes that will help you. Do not use any screws now. After having done that please see the 2 buttons (DIMM and SET) on the back of the case. **See figure 8.**

Mark the position of them with a felt pen. Take the 10 layers off again and file away a bit of the material to reach the buttons later. You need not take away much as you can reach the buttons with a ballpen or something similar. You can do as you like. A good option is to use small reed relais and set the clock with a small magnet. If you do that you need not file away the material. It is important that you have taken away the protective foil, because with the foil the layers will have a different height! **Do not drill – it will not work!**

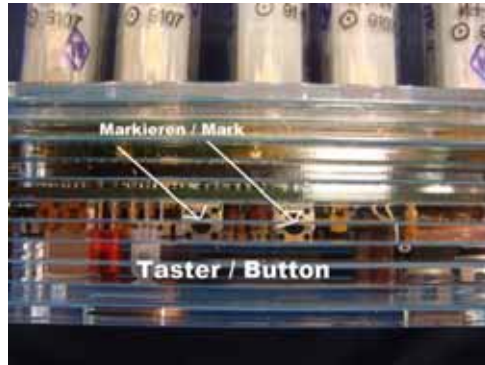


Figure 8 – Marking the buttons

Now put on the top layer (**figure 9**) and after that the tube ring layer (**figure 10**). Be careful not to break the tubes.

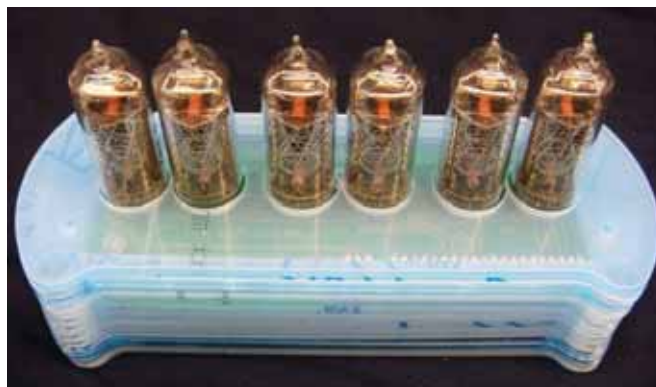


Figure 9 – top layer – take away the protective foil!



Figure 10 - the tube ring layer- take away the protective foil!

Mount the 4 screws (3 x 10 mm) on top of the case. (**Figure 11**) When done mount the 4 screws (3 x 5 mm) on the bottom of the case according to **figure 12**. Please do not overtighten the screws! The plate under the top cover plate has a 3 mm thread as well as the plate above the bottom plate.



Figure 11 - case bottom screws fit in 3 mm thread

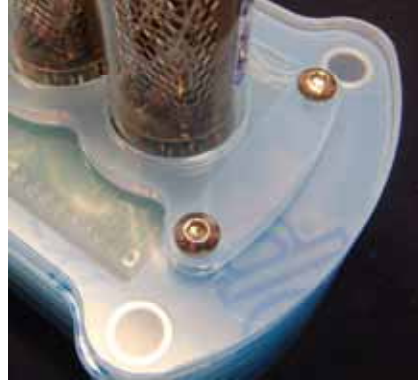


Figure 12 – case top screws fit in 3 mm thread

Now as you have nearly finished you need to mount the 4 rubber feet into the aluminium tubes. This will prevent your clock from scratching your furniture. You can of course mount them before you put the 10 layers on the tubes. It is up to you. ☺



Figure 13 – rubber feet in aluminium tube

We hope you enjoy your beautiful Nixieclock!

4. Safety and Legal Warnings

DANGER: This circuit design includes a switching-mode voltage converter which generates **180 VDC**. Therefore, assembly should be attempted only by competent qualified personnel experienced in electronics assembly and high voltage safety. Safe assembly and operation of this kit is completely the reader's responsibility.

IMPORTANT: Please follow the assembly steps with extreme care. Please operate the clock only in an enclosed housing which prevents contact with the dangerous voltages present on both printed circuit boards (PCB).

DISCLAIMER: The information in this document is provided strictly 'as is'. It is hereby stated that this kit is to be assembled only by experienced electronics engineers. No troubleshooting information is provided. Readers should not attempt to build this kit and/or design unless they are competent at electronics assembly and understand the dangers of mains voltages. Further, www.nixieclocks.de takes no responsibility for any possible personal or property damage. No responsibility is accepted for any damage, injury (however serious) or death. In no event shall www.nixieclocks.de be held liable to you or any third parties for any special, punitive, incidental, indirect, consequential, or any other damages resulting from the assembly or use of this kit and/or design. The assembled unit should be properly encased to prevent contact with high voltages.

All applicable UL, CCE, VDE and local regulations must be considered. Commercial use of the kit, circuit designs, software or any parts thereof requires express written permission.