

Assembling IN-17 Nixie Clock. Recommendations

It is not difficult to assemble this clock. Please have a look at circuit diagram and components layout diagram to see what and where components should be soldered in.

Here is some recommendation, which I hope will help you to assemble your clock smoothly.

- Please follow recommendation below, as these boards I would recommend to solder in right order to avoid some components soldering problem.
- Even clock does not have any tiny smd components, its design is quite compact, so take extra care and make sure that close pads are not short.

Assembling tube PCB:

- Please use both assembling components layout diagram to solder components on both side of tube board..
- All main components including IN-17 tubes have to be inserted from the main side using **IN17clock_tubes_pcb_a.pdf** layout diagram.
- Only K155ID1 chip and board interconnection pins have to be inserted from bottom side of the board. Please use **IN17clock_tubes_pcb_b.pdf** layout diagram for it.
- I would recommend you to solder K155ID1 first, as it will be difficult to do it, if you have already soldered IN-17 tubes. First pin of this chip has square pad on the board.
- The last two components on the tube board I usually solder are 2 orange LEDs. You have to cut its legs to adjust the height of it, but make sure you insert it with right polarity. The pad marked as “+” is LED anode (usually longer leg)
- All transistor on the board are the same and are MPSA42
- All resistors , except marked on the board, are 180-200K

Assembling main uC PCB:

- Please use both assembling components layout diagram to solder components on both side of microcontroller board..
- Firstly I solder all resistors laying on the side shown on the **IN17clock_uC_pcb_a.pdf** layout diagram. At the current PCB release there is only one SMD component on the main board – 220uH inductor. Its size is relatively big to other SMD components, so it should not be a problem to solder it. Just put in the marked position on the board, hold it by few fingers and sold one contact. Have a look if its position on the board is OK, then solder opposite contact.

- Then solder all ceramic capacitor. Do not leave long legs of 0.1uF capacitor behind the board in MAX1771 area, as MAX chip body will be sitting there
- Please note that small schottky diode located near byB2 button has wrong polarity on the board, please use **IN17clock_uC_pcb_a.pdf** layout diagram to get right direction.
- Before you solder Buzzer, insert and solder all (except backup battery) components on **b** side, please use **IN17clock_uC_pcb_a.pdf** layout diagram.
- Solder MAX1771 chip. First pin of this chip has square pad on the board.
- Don't forget to solder connectors and buzzer. Please note that buzzer should be installed with correct polarity.
- Insert and solder vertically 1A fuse and 1N4001 diode, then bend their wires and solder in together in serial.
- Please use only certified and regulated power adapter, as unregulated more than 15 volts could damage your clock.
- Don't mix polarity on your 9v connection, as it could damage your Clock