Nixie IN-9 kit assembly instructions

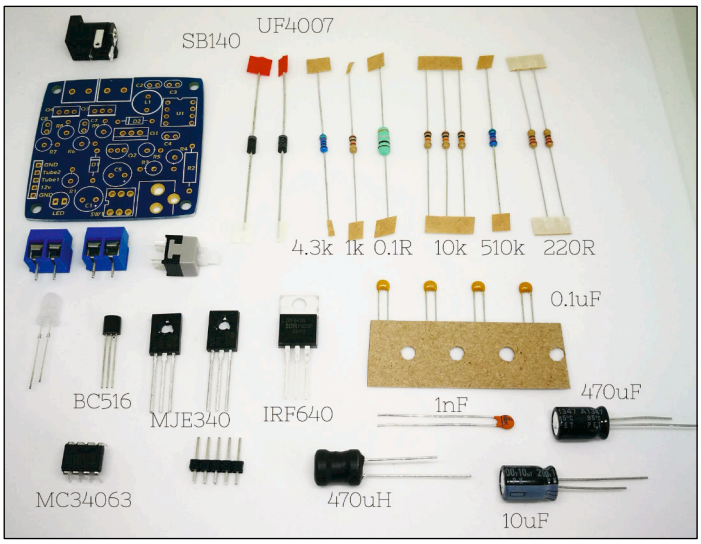
CAUTION: This device is a source of dangerous voltage! The Nixie kit must always be disconnected from the power and the output voltage dropped to a safe level, which should be confirmed by measurement. The completed kit should be housed in an insulating cover to avoid contact with high voltages.

Example Arduino sketches, board schematic and a copy of these instructions can all be found here:

github.com/RCS101/Nixie-Bargraph-Driver

In your kit you will receive 31 components, this is to convert a 12v power supply to the necessary 150v required for driving the Nixie tubes and to allow the tube heights to be controlled using PWM inputs.

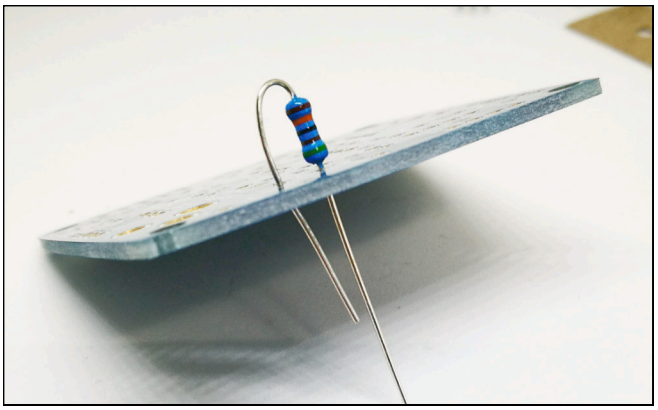
Upon opening the kit you should have this selection of components:



You can see on the PCB that next to each component footprint a letter and number is marked in gold, for example, R2, D1, and Q3. These markings tell you which component fits that hole. The list of components are:

R1 = R6 = R7 = 10 kΩ
R2 = 0.1 Ω
R3 = 1 kΩ
R4 = 510 kΩ
R5 = 4.3 kΩ
R8 = R9 = 220 Ω
C1 = 470 uF
C2 = C3 = C7 = C8 = 0.1 uF
C4 = 1 nF
C5 = 10 uF
L1 = 470 uH
SW1 = Push switch
Q1 = IRF640
Q2 = BC516
Q3 = Q4 = MJE340
D1 = SB140
D2 = UF4007
U1 = MC34063
LED = LED!
1x DC connector
2x screw terminals
1x 5 pin header

To ensure that the kit could fit on a nice small board the resistors have been designed to fit in a vertical configuration. This means instead of laying flat against the board the body of the resistor is vertical from the boards surface. To mount the resistor, bend one leg 180 degrees so that it runs parallel to the other leg. Then thread both legs through the PCB lining up the body of the resistor with the circle printed on the PCB. The solder into place and trim the legs.



To ensure you are using the correct components, make sure to carefully check them before soldering them into place.

Additionally, make sure to check the polarity for those components that require it; C1, C5, D1, D2 and LED. If you are not sure, you can check these pictures of an assembled board.

Start by soldering all the resistors to the board. Making sure to get R4 and R5 the correct way around!