For Your Safety:

- This clock is not a kid's toy; real glass tubes are fragile!
- Anode voltage of 170V exists on the board and in tubes
- Do not open the enclosure when the clock is on
- Do not operate clock with damaged tubes or removed case
- Take care of the tube's protruding nozzle on the top
- Do not expose the clock to moisture
- Clock warms up during operation. Do not cover the clock, and do not keep it near a heat source
- Use only with included power supply or manufacturer approved similar power supply

Starting Up

Plug the DC connecter of the included power supply to the 12VDC jack on the back of the clock, and plug the power supply to an electric socket. The clock should display the initial startup time of 0:00:00.
The clock has a super capacitor that charges while the clock is plugged in. The capacitor takes several days to charge, and then it will act as a backup power source for your Nixie Clock's internal memory.
So, for example, in the case of a power outage, although the display will be off, the super capacitor will allow the clock to keep track of the time, date, and other custom settings for about 20 minutes.
If left without power for longer period of time, the clock will return to it's default settings.

Time Setup

First, make sure the clock is in Time display mode. Then, hold down the SET button until seconds will begin to flash. Pressing the ADJ button will reset the seconds back to 00.

After you are done setting the seconds, press SET again, until the minutes begin to flash. To add minutes, simply hit ADJ until you reach the correct time.

After you are finished with the minutes, press SET again. The hours will begin to flash, and they can be adjusted in the same way as the minutes.

After you are finished setting the hours, holding down the SET button for several seconds will take you back to the regular time display.

Date Setup

Starting in Time display mode, hold down the SET button until the display changes, then press MODE twice to see the date display.

Note that the default date display format on the clock is DD/MM/YY. To change the date format to MM/DD/YY, please see component 4 on the Customizing Your Clock chart.

The bulbs displaying the day will begin to flash. Hit ADJ to select the desired day. Then, press SET.

Now leftmost bulbs displaying the month should begin to flash. Hit ADJ to select the desired month. Then, press SET.

Now the bulbs displaying the year will flash. Hit ADJ to select the desired year.

When you are finished, pressing MODE will take you back to the regular display.

Alarm Setup

Start in Time display mode. Then, quickly press the MODE button. This will display the alarm time. To edit this, hold down the SET button.

The hours will begin to flash. Keep hitting ADJ until you reach the desired time. Then, press SET again.

Now, the minutes will flash. Keep hitting ADJ until you reach the desired time. Press SET again.
The rightmost bulb, where seconds are usually displayed, will begin to flash with a number from 1 to 9. This is the snooze delay. Hitting ADJ will allow you to choose a snooze delay of anywhere from 1 to 9 minutes.

Holding down SET button will return the clock to regular time display mode.
To turn the alarm ON and OFF, briefly push the SET button in regular display mode.

A tiny comma on the rightmost tube (displaying seconds) will be displayed when the alarm is ON.

Customizing Your Clock:

The Nixie Clock offers 14 different visual components that you can customize to suit your preferences.

Holding down the MODE button for several seconds will take you into the Option selection Mode, which allows you to edit these components.

With the clock facing you, the leftmost pair of bulbs will display the component (1-14), and the rightmost pair will display the option.

To change the component you are editing, quickly press the MODE button until you reach the desired component.

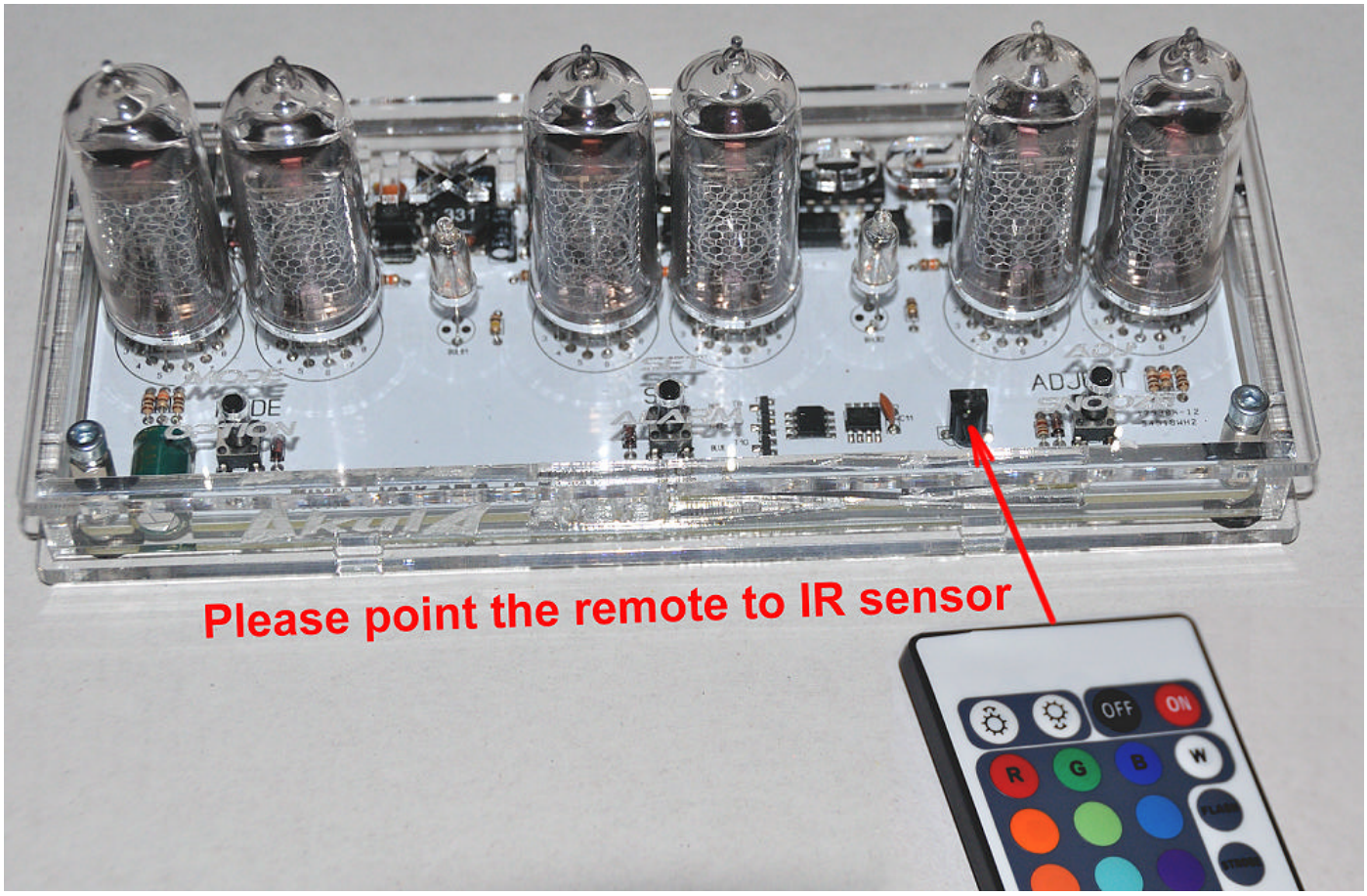
To change the option for the component, quickly press the ADJUST button until you've selected the desired option. Each option is represented by a number, as shown in the table below:

Component	Option
1. Time format	24 hour format (default), 12 hour format
2. Leading zero suppression	0 – disabled, 1 – enabled (default)
3. Digit cross fading	0 – disabled (default), 1-9 (fast-slow)
4. Date format	1 – DD/MM/YY (default), 2 – MM/DD/YY
5. Automatic date display	0 – disabled (default), 1-5 (every 10-50 seconds), 6 – at the top of the hour, 7 – midnight
6. Date display scrolling speed	1 – 4 (fast-slow)
7. Digit cycling mode	0 – disabled (default), 1 – slots cycle every minute, 2 – wave cycle every minute, 3 – slots cycle every 10 minutes, 4 – slots cycle every hour, 5 – slots cycle at midnight
8. Slot stop format	1 – left to right, 2 – right to left, 3 – all at once, 4 – random sequence
9. Brightness of tube display	1-10 (minimum-max). 10 is the default.
10. Precision/speed	Pressing the ADJ button speeds up the clock at approximately 1.3 seconds per month, pressing the SET button does the opposite.
11. Alarm sound	1-9 (fast-slow beep), 10 – no alarm
12. Brightness	0-10 (display is off-maximum brightness). 4 is the default.
13. Start time of dimming	00-23 (midnight to 23:00/11:00 PM). Midnight is the default.
14. Duration of dimming (hours)	00-24 (dimming disabled-dimming is always on).

To increase the tube's life, it is recommended that you enable digit cycling (to promote even burning of the tubes), and to enable dimming for at least part of the day.

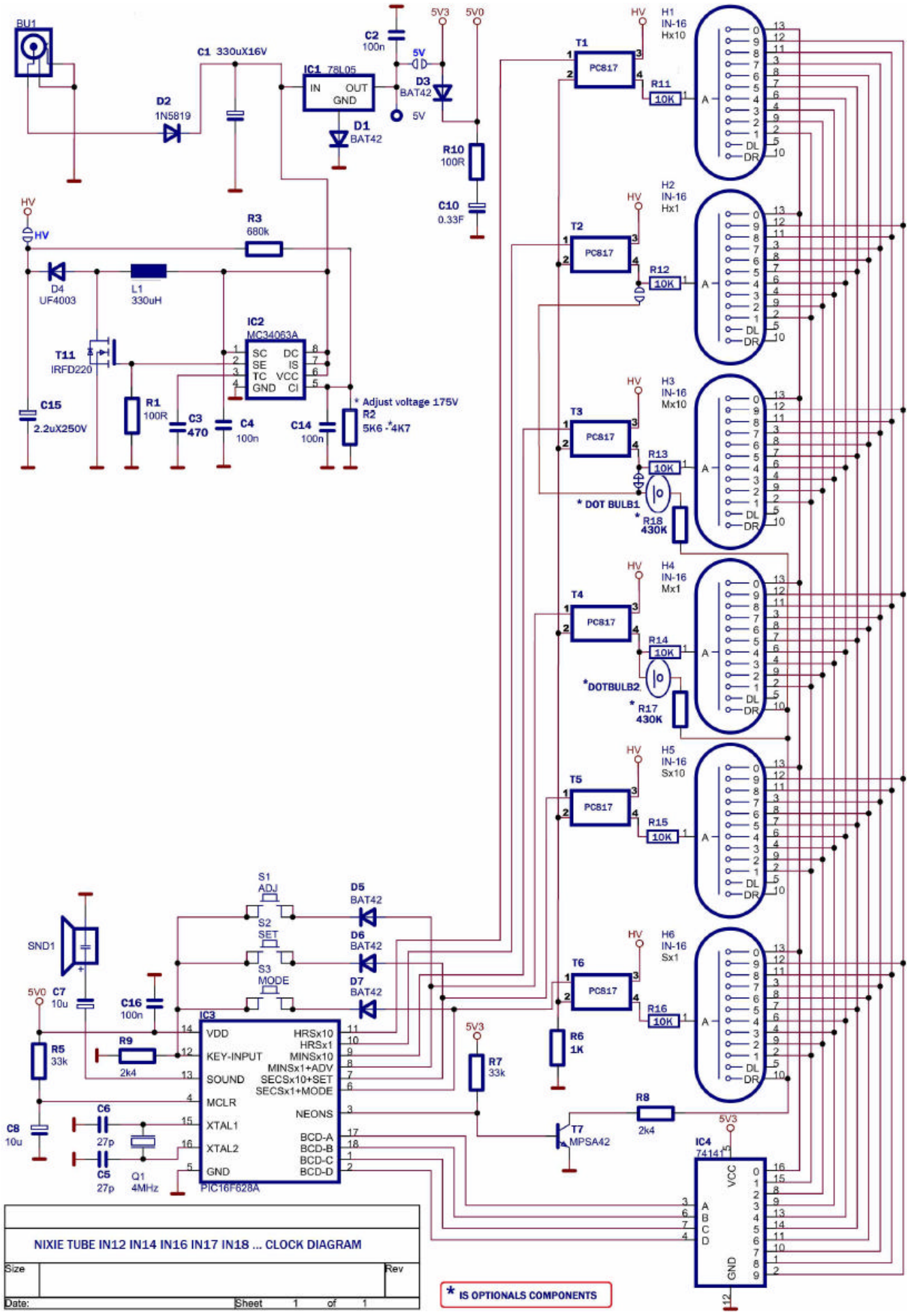
Using The Remote

The included remote is used to turn the ON and OFF, and to change the color and automatic cycling pattern of the floor LED lights by pressing the respective buttons.
Prior first use, please pull out the battery protection inset located at the remote's bottom edge. Remote's battery replacement is illustrated at the back of the remote.
The remote must be aimed at the IR sensor, located on the PCB, to the left of the ADJUST button.
The clock's protective acrylic case may interfere with the remote's signal, so you may need to press some buttons more than once.



www.printerdoctor.com

www.flexledlights.com


BU1
C1 330uX16V
D2
1N5819
IC1 78L05
IN OUT
GND
C2
100n
5V3
5V0
5V
D3
BAT42
5V
D1
BAT42
R10
100R
C10
0.33F
HV
HV
R3
680k
D4
UF4003
L1
330uH
IC2
MC34063A
SC DC
SE IS
TC VCC
GND CI
T11
IRFD220
C15
2.2uX250V
R1
100R
C3
470
C4
100n
C14
100n
* Adjust voltage 175V
R2
5K6 -*4K7
T1
PC817
R11
10K
H1
IN-16
Hx10
T2
PC817
R12
10K
H2
IN-16
Hx1
T3
PC817
R13
10K
* DOT BULB1
* R18
430K
H3
IN-16
Mx10
T4
PC817
R14
10K
*DOTBULB2
* R17
430K
H4
IN-16
Mx1
T5
PC817
R15
10K
H5
IN-16
Sx10
T6
PC817
R16
10K
R6
1K
H6
IN-16
Sx1
A
DL
DR
S1
ADJ
S2
SET
S3
MODE
D5
BAT42
D6
BAT42
D7
BAT42
SND1
5V0
C7
10u
C16
100n
IC3
VDD
KEY-INPUT
SOUND
MCLR
XTAL1
XTAL2
GND
HRSx10
HRSx1
MINSx10
MINSx1+ADV
SECSx10+SET
SECSx1+MODE
NEONS
BCD-A
BCD-B
BCD-C
BCD-D
PIC16F628A
R5
33k
R9
2k4
C6
27p
C5
27p
Q1
4MHz
C8
10u
5V3
R7
33k
R8
2k4
T7
MPSA42
IC4
74141
VCC
GND
A
B
C
D
NIXIE TUBE IN12 IN14 IN16 IN17 IN18 ... CLOCK DIAGRAM
Size
Rev
Date:
Sheet 1 of 1
* IS OPTIONALS COMPONENTS