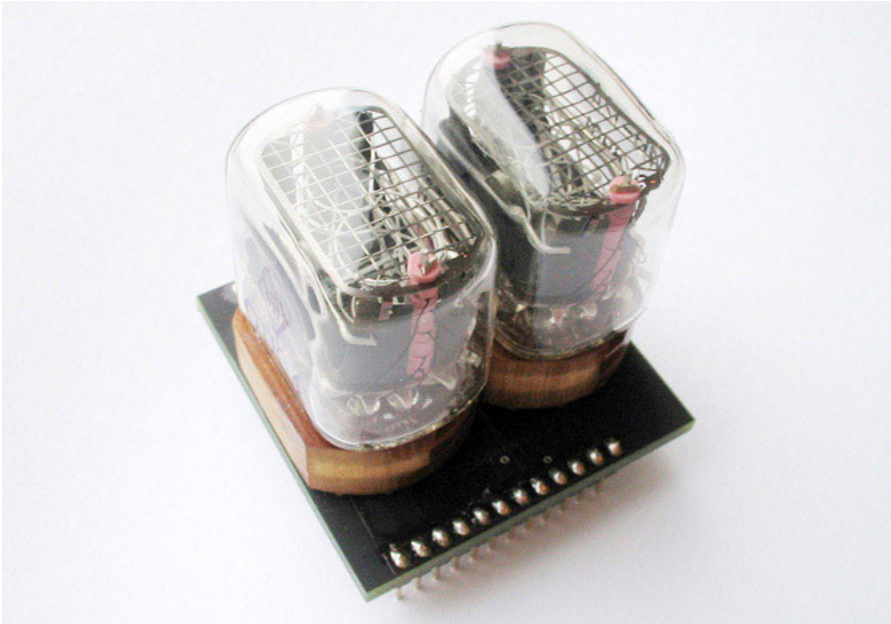# ogi lumen 荻

NIXIE DUO
assembly

The **NIXIE DUO** board supports two IN-12A type nixie tubes via two printed circuit mounting phenolic sockets. The **NIXIE DUO** board is designed to be supported by the **NIXIE DRIVER** board, which permits a microcontroller (Arduino, etc.) to address the two nixie tube digits, and via a shift register chain, multiple pairs of nixie tube digits. The edge connecting header pins easily allow the multiple digits to be physically connected and may be powered by our **NIXIE TUBE POWER SUPPPLY**. This densely packed configuration permits minimum digit spacing while threading power and serial data connections to all elements. Watch the **MOVIE**.
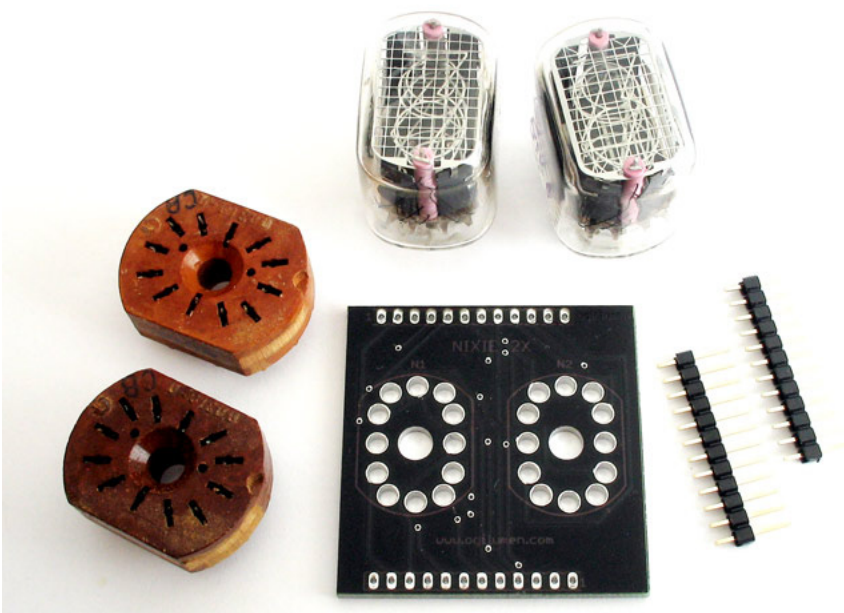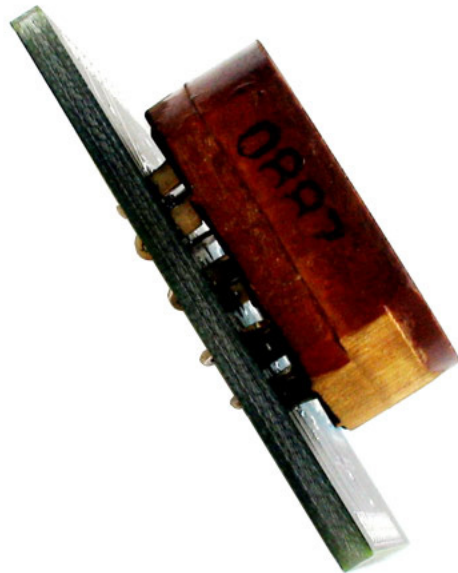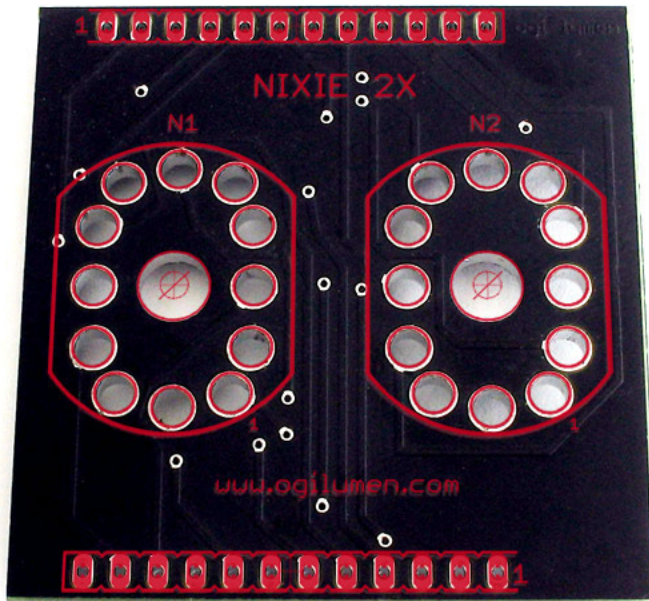

Parts List:

1 - **NIXIE DUO** printed circuit board
2 - IN-12A nixe tube
2 - IN-12A nixie tube socket
2 - straight 12-pin male header (1x12)

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Dimensions (assembled):
1.75 x 1.75 x 1.88 inches
(44 x 44 x 48 mm)

Kit Weight: 2.1 oz (59 g)

Soldering:

The NIXIE DUO boards can be assembled in less than half an hour.

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For those new to electronic assembly, here are two links to excellent soldering tutorials:

Sparkfun

Curious Inventor

Assembly:

Note carefully to orient the NIXIE DUO printed circuit board with the "NIXIE 2X" text side up. This is the side that will receive the two nixie tube sockets. The reverse side of the board receives the two 12-pin male headers.

Also notice that there is an indent indicating pin 1 on each of the nixie tube sockets. This pin 1 corresponds to each pin 1 marked on the printed circuit board. Although the orientation of each socket has no effect on their function, this indent is present for reference, and allows you to quickly orient the nixie tubes.

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The following images offer a few hints that will assist with the insertion of the nixie tubes and the nixie tube sockets into the NIXIE DUO board. *This is the helpful part that you should not skip reading.*
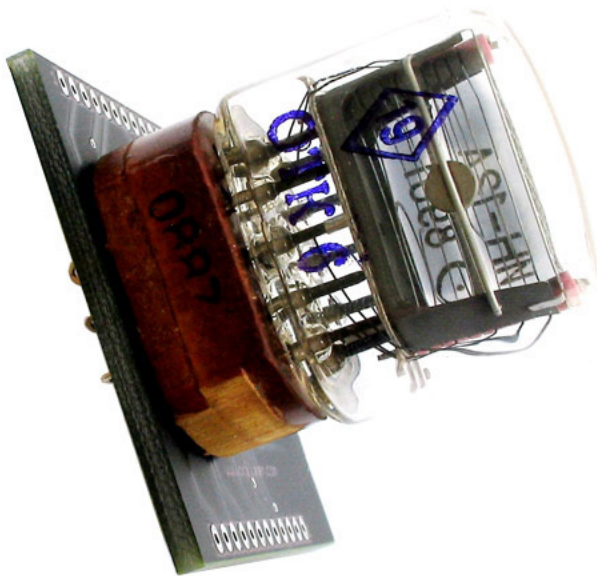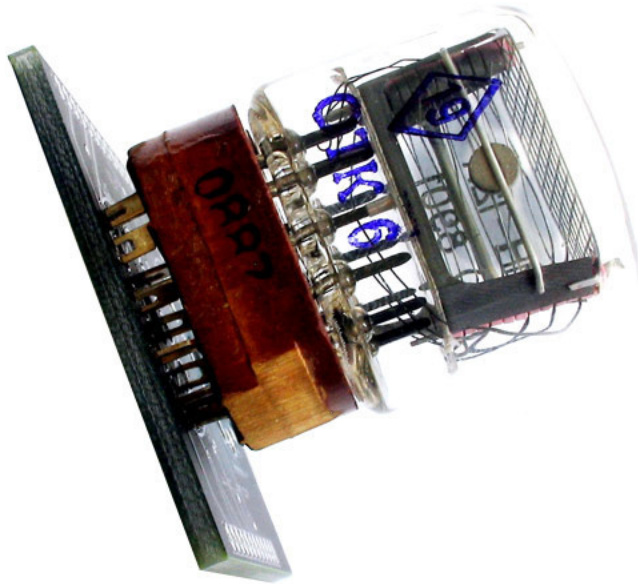
Before inserting nixie tubes or nixie tube sockets, ensure that each nixie tube will be oriented correctly. The numeral 3 is uppermost in the digit stack, and should help make this clear when inserting the nixie tubes into the nixie tube sockets. For nixie tubes that we are currently shipping, pin 1 on each nixie tube is painted white, just inside the tube.

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While it is possible to first fully insert the nixie sockets into the NIXIE DUO board for soldering, it is then the more difficult to insert the nixie tubes into the sockets.

To make this process less difficult, first partially insert the sockets into the NIXIE DUO board, and then fully insert the nixie tubes into the sockets. The sockets can then be fully depressed into the board.

It is very difficult to adjust the nixie tube sockets once they have been soldered to the printed circuit board. A good strategy is to first anchor a socket by soldering two opposing pins. In this way, the socket will not shift before all pins are soldered.

Use care to apply even force around the tubes and sockets to well seat them into the NIXIE DUO board. Once the sockets are seated uniformly as shown, they can be soldered with best results.
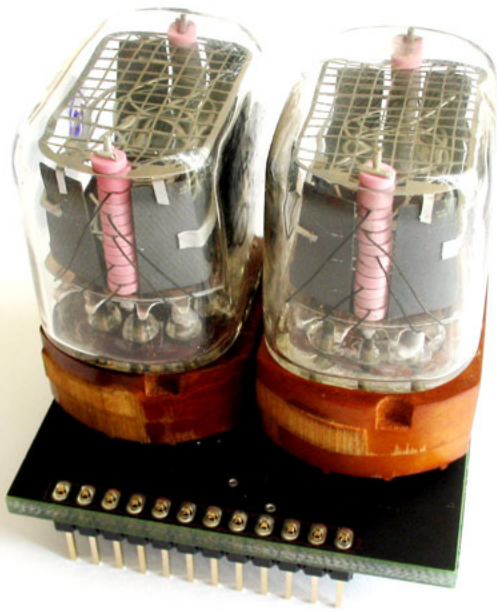
The two straight 12-pin male headers should be inserted into the side of the board opposite the nixie tube sockets. If both of these headers are inserted into the NIXIE DUO board at the same time, they can be the more easily soldered while held in place by the weight of the board.

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If you prefer to use female tube pins instead of the nixie sockets provided, Mill-Max makes a tube pin receptacle compatible with the NIXIE DUO board. See Digi-key part number ED5024-ND. If you choose to use these pins, however, you'll have to increase the vertical spacing between the NIXIE DRIVER board and the NIXIE DUO board using taller header pins.
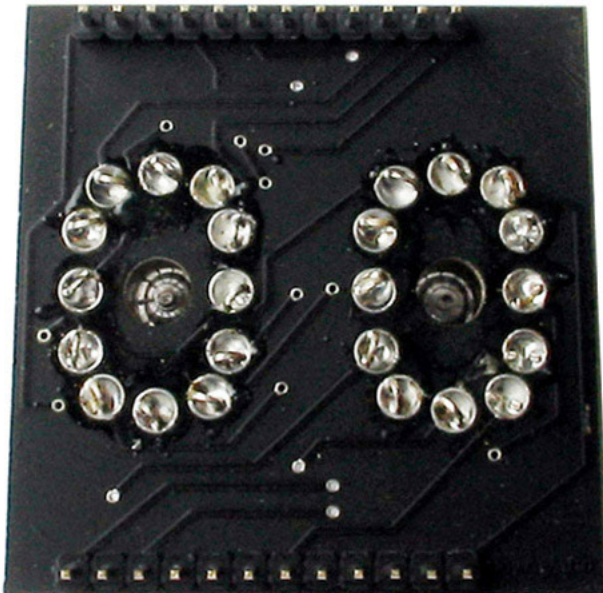
For multiple pairs of digits, note that our NIXIE TUBE POWER SUPPLY will support at least eight pairs of IN-12A nixie tubes.

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Please send any queries or issues regarding product assembly to OGI LUMEN at:
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Schematic:

Vancouver BC CANADA
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open source tools for neon, nixie tubes, and LEDs