KNITRIDER Expander V1.0 ASSEMBLY

Before starting this kit, prepare the following tools: Soldering iron (15-20W will do), multi-meter, protective eyewear, flush cutters, n2. hex screwdriver or allen key, phillips screwdriver and some coffee. Also briefly go through this guide and make sure that you understand all the steps, if you are having any troubles don't hesitate to seek help at the forum.
We suggest that you work in a clean and a well lit environment to avoid accidents or losing any of the small components.

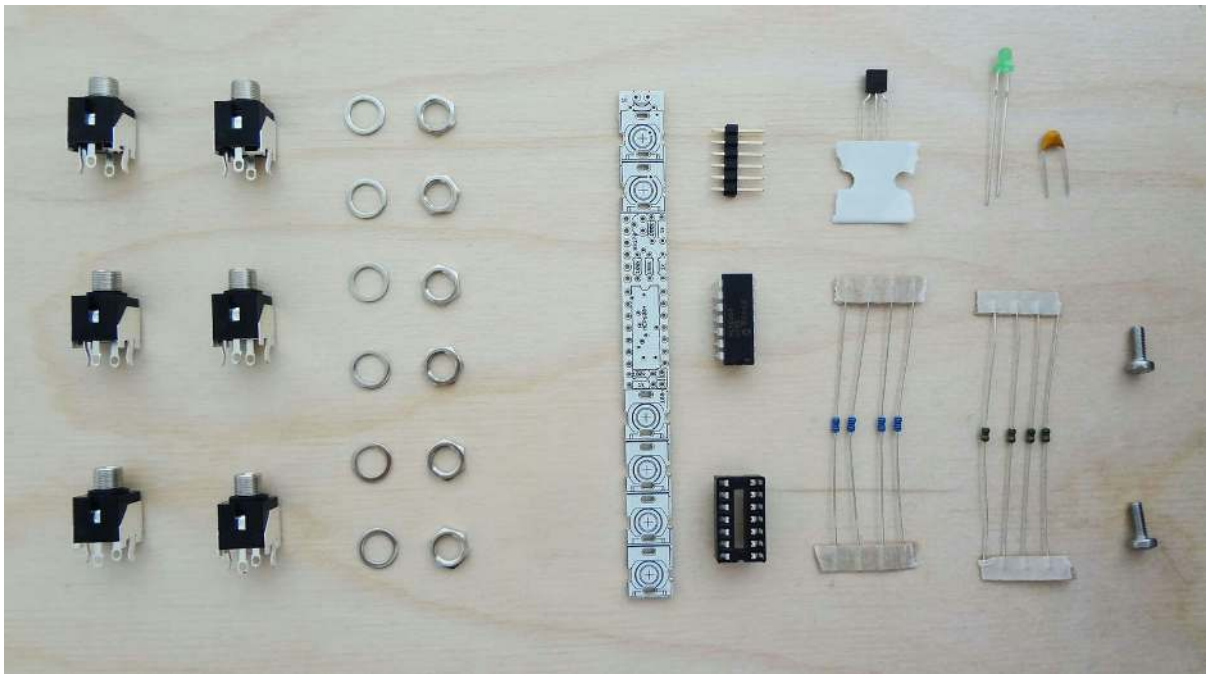
IMPORTANT!

If you have never soldered before, check out this great tutorial first.

DOWNLOADS

- schematics and board diagram – **PDF**
- And the Bill of Materials (BOM) – **Googledocs**
- user manual – **PDF**

And please check that your boards are the same version as this guide and that your kit contains the following items:



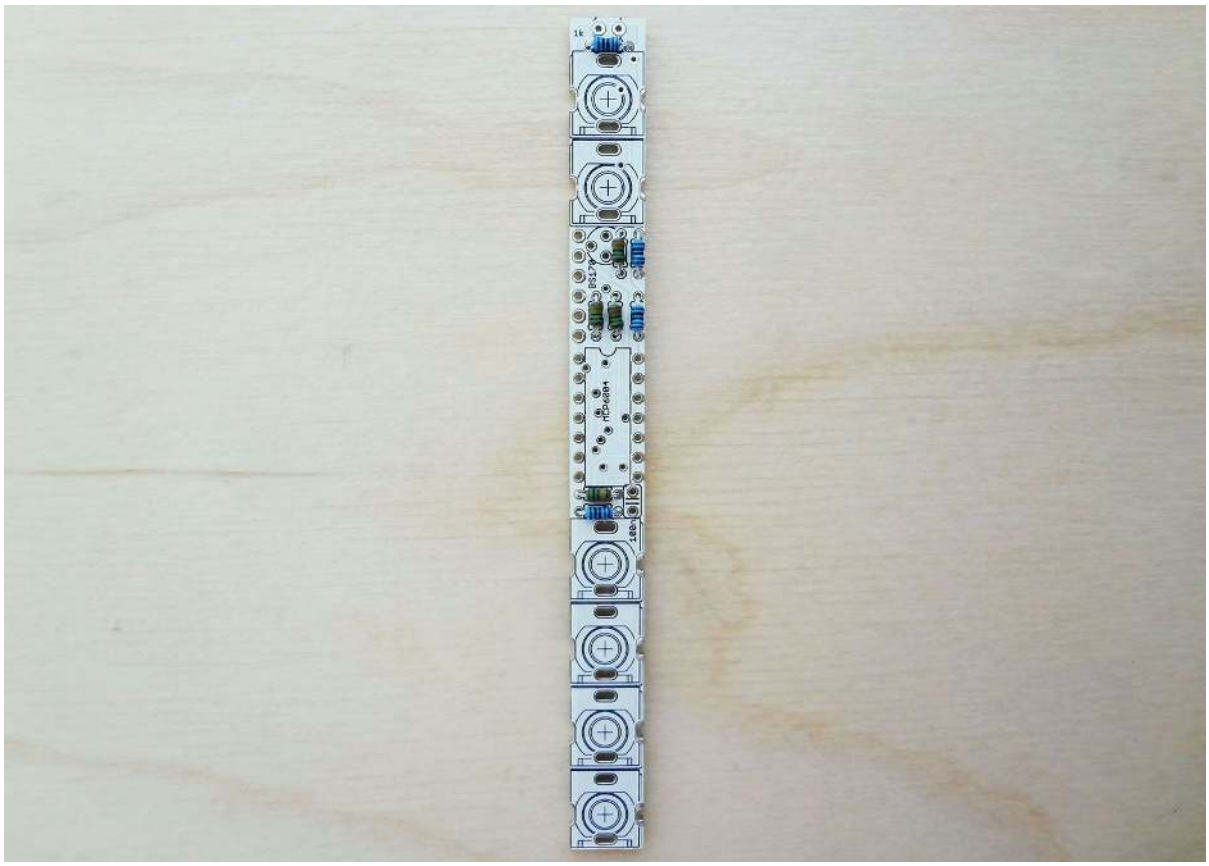
BOM – BILL OF MATERIALS

4 x 1kΩ 0,4W 1% resistor	1 x difussed green LED	6 x jack washer
4 x 100kΩ 0,4W 1% resistor	1 x 6 pin male pinheader	6 x jack nut
1 x 100nF ceramic capacitor	1 x 14 pin DIL socket	2 x 8mm panel screw
1 x BS170 transistor	1 x MCP6004 IC	1 x cable 6 pin
6 x jack connector	1 x top PCB	

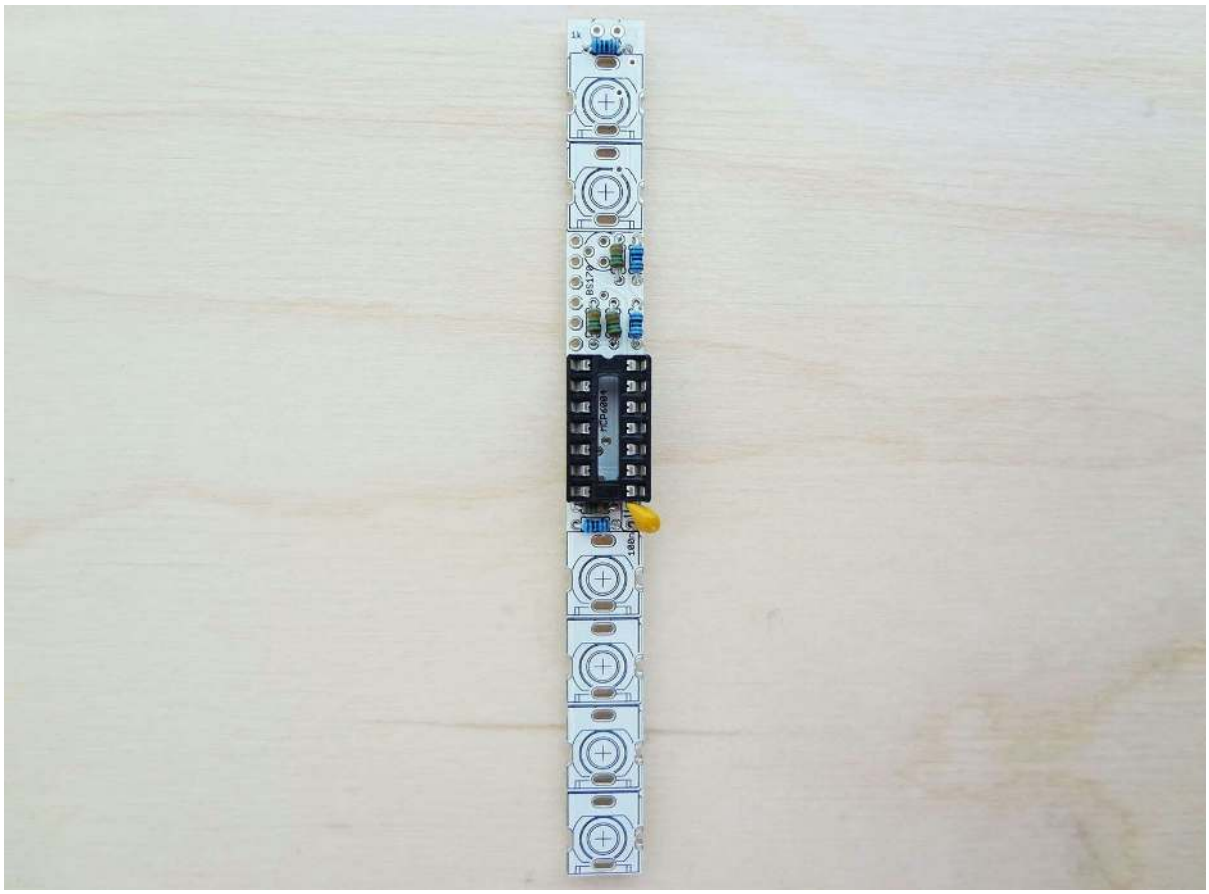
We even included some of the best quality solder we found to help you solder everything faster.
Before starting soldering, take your time and find all the resistors value, either using a multimeter or looking up their color codes.

FRONT SIDE

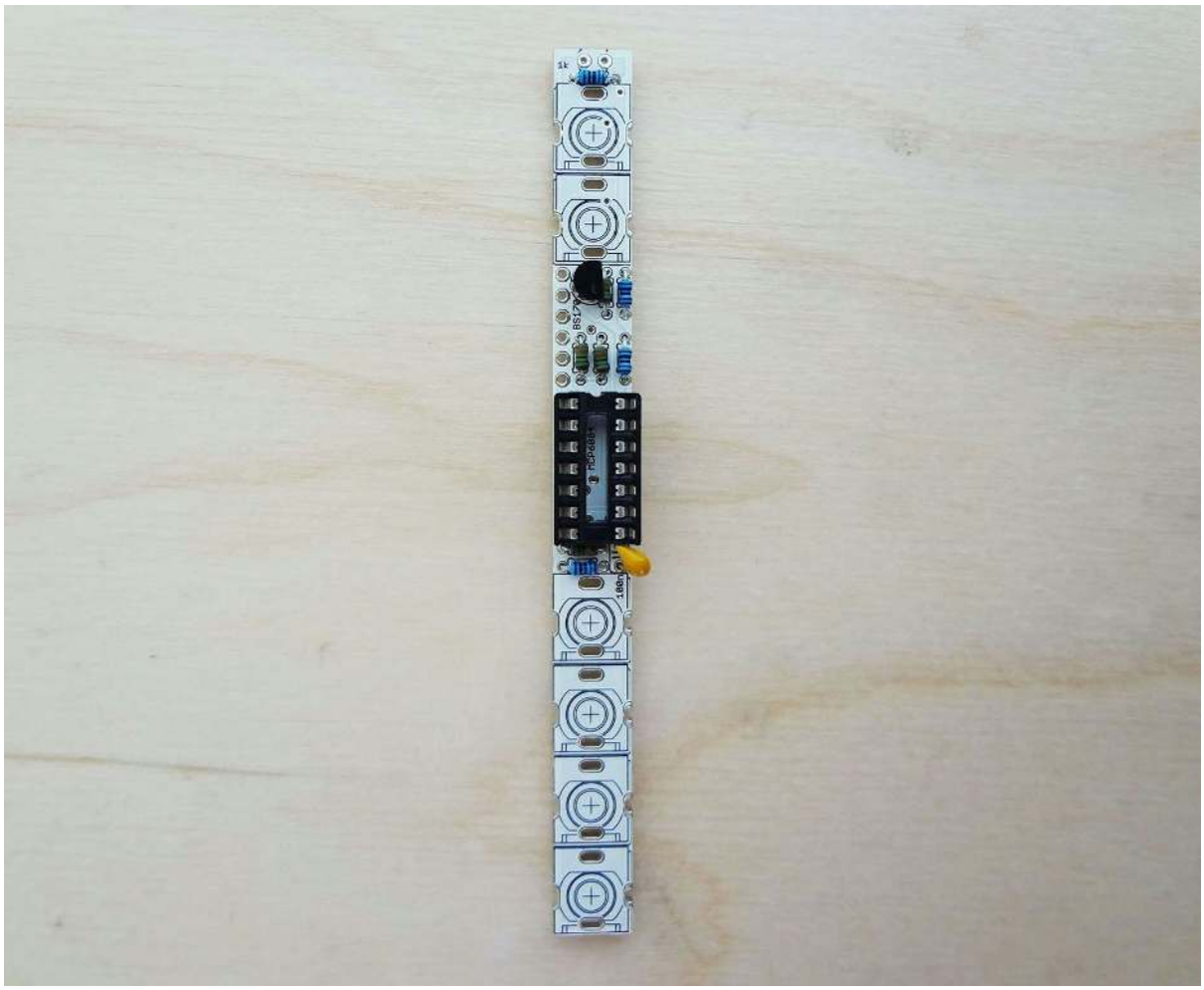
Lets start with the bottom board, with the shortest and smallest parts.
Take a strip of resistors and look up the values printed on the circuit boards. Start with the 100KΩ, and 1KΩ Resistors. (The color of the resistor body may defer from the pictures, but its the color code of the values that matters). Place them through the board, solder them and clip off the excess leads.
Your board should look like this (click on the images to enlarge):



Next place and solder the socket. Make sure that the notch is in the **same direction** as printed on the circuit board.
Then add the capacitor, there is one 100nF capacitor (marked 104, follow the link for more details on capacitor codes). It should be in 2.54mm ceramic package other wise it wont fit, don’t worry they are not polarized.



Next solder in the BS170 unipolar transistor. Take care that it is oriented the same way as printed on the board.

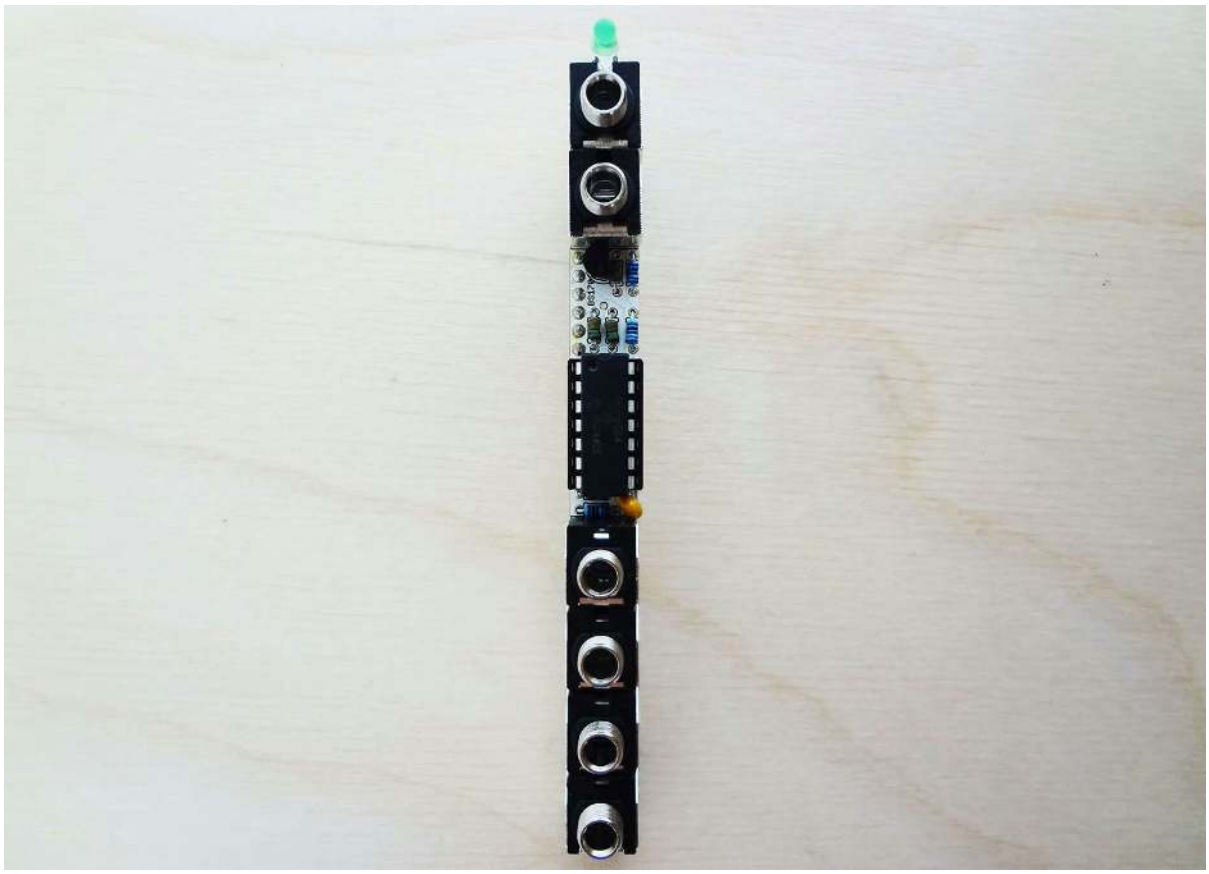


BACK SIDE

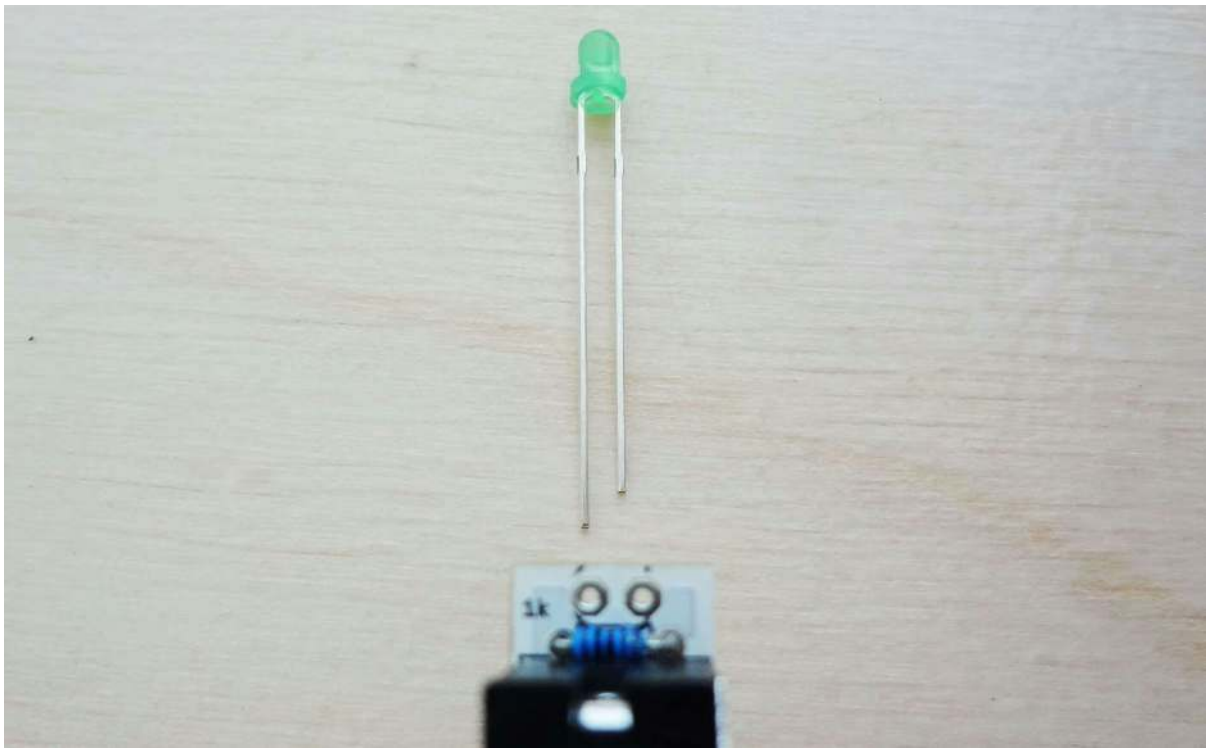
Now prepare your pin header by cutting it in the correct size.
Take the connector and place it also on the back side of the board. It might be tricky to solder it straight, but you can place something like your cutter under the board to hold it level. Also first solder in just one of the pins, then take the board in your hand and re heat that pin while pressing down on the header to align it (be careful though, you don’t want to touch the pin you are heating up) wait for it to cool and solder the rest of the pins. Do the same for eight jumper headers.

SUPER MEGA IMPORTANT!!! RESPECT CHIP POLARITY.

Next insert the IC chip into its socket. Again make sure that the **notch** on the chip is **facing the same direction** as the notch on the socket.
Then, place the mono jacks on the board and the LED. But don’t solder them yet



The LEDs are **polarized** so make sure that the long leg (+) is facing left. Also the notch on led and circuit board should match. Still don’t solder anything yet.

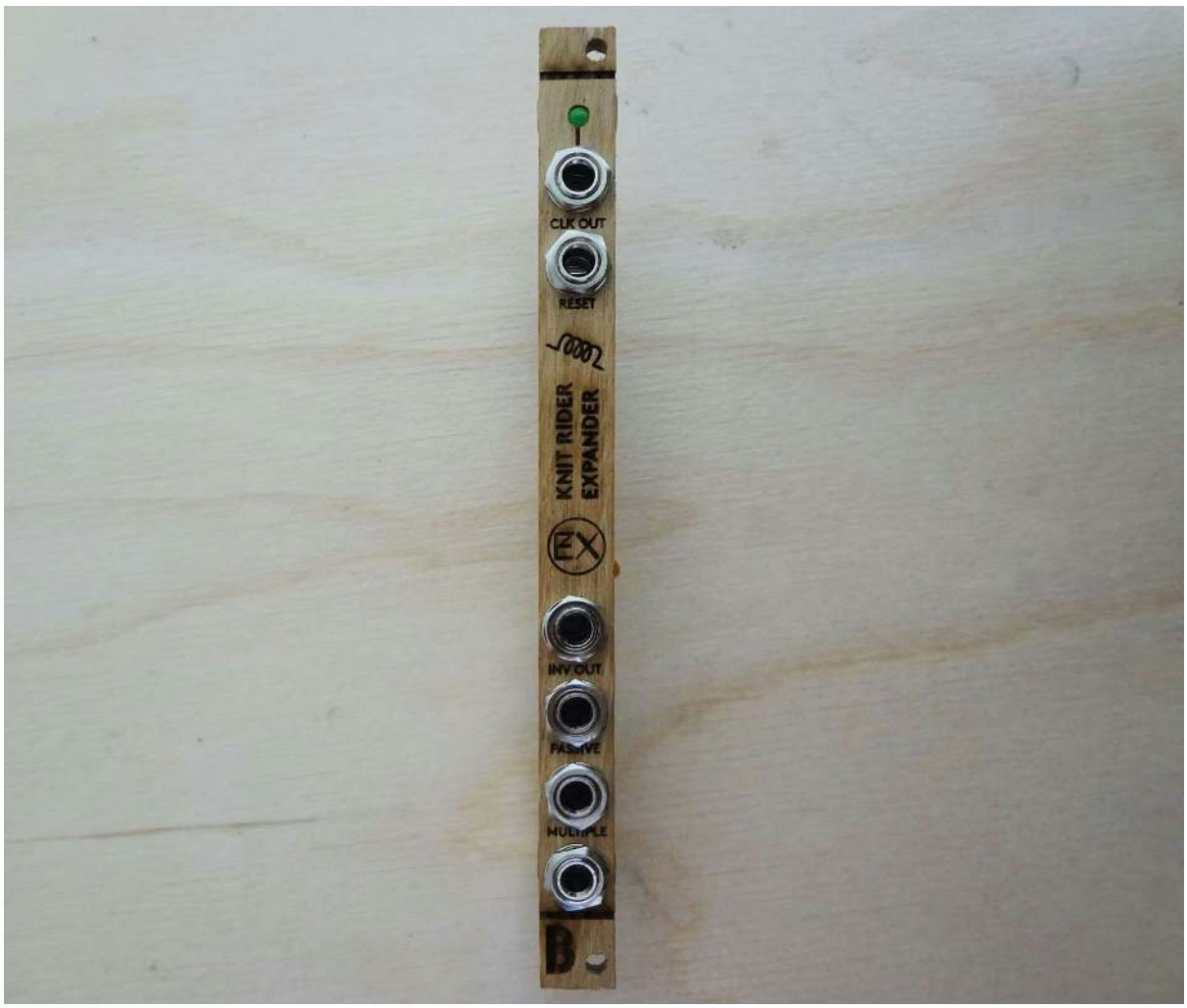


ENCLOSURE ASSEMBLY

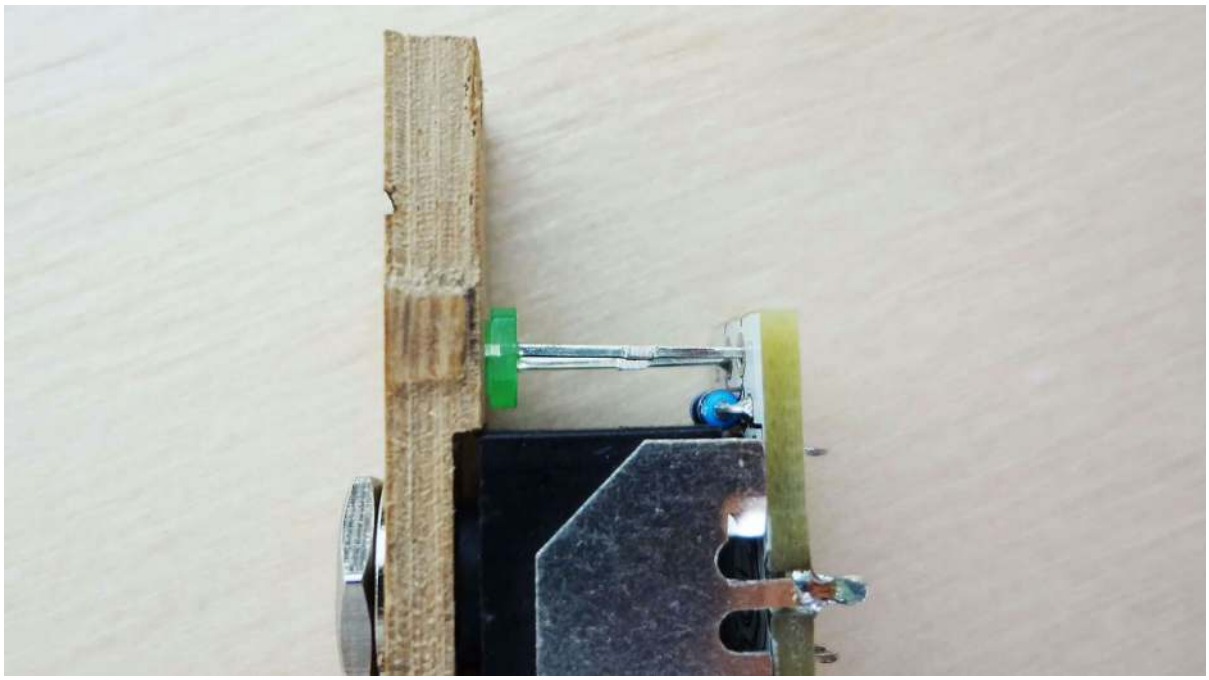
We want to make sure that all the **components are properly aligned** with the front panel, so check that all the components came through and then screw the jacks to the panel with the washers and the nuts.

IMPORTANT

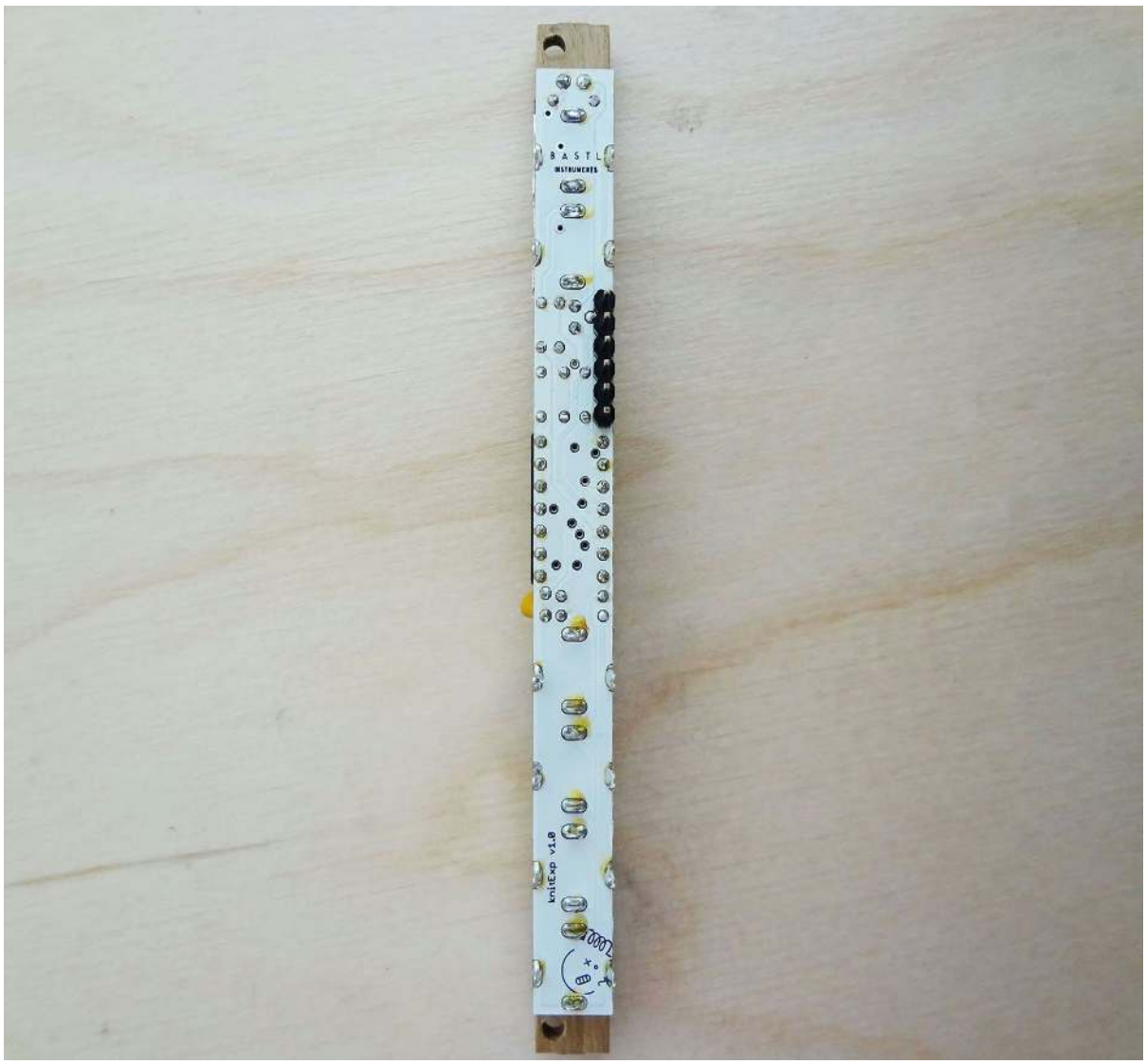
Don’t tighten the screws and jack washers too much as you may damage them!



The LED **should have some space** off the board, or else it won’t come through the panel, like in the image below.



Turn over the board and solder the remaining components.



Congratulations! You have made it through, now just connect the expansion to the main module with the provided cable and you are ready to enjoy your new module.

Before you connect anything, make sure that your system is disconnected from power. Also make sure that cable connections on both modules are in the same side!

TROUBLESHOOTING

Did you plug it in correctly?
Check that all solder joins are solid.

RELEASES

- 1.0 – Original release.