

# B A S T L INSTRUMENTS

## KNIT RIDER EXPANDER v1.0 - Assembly Guide

bastl-instruments.com



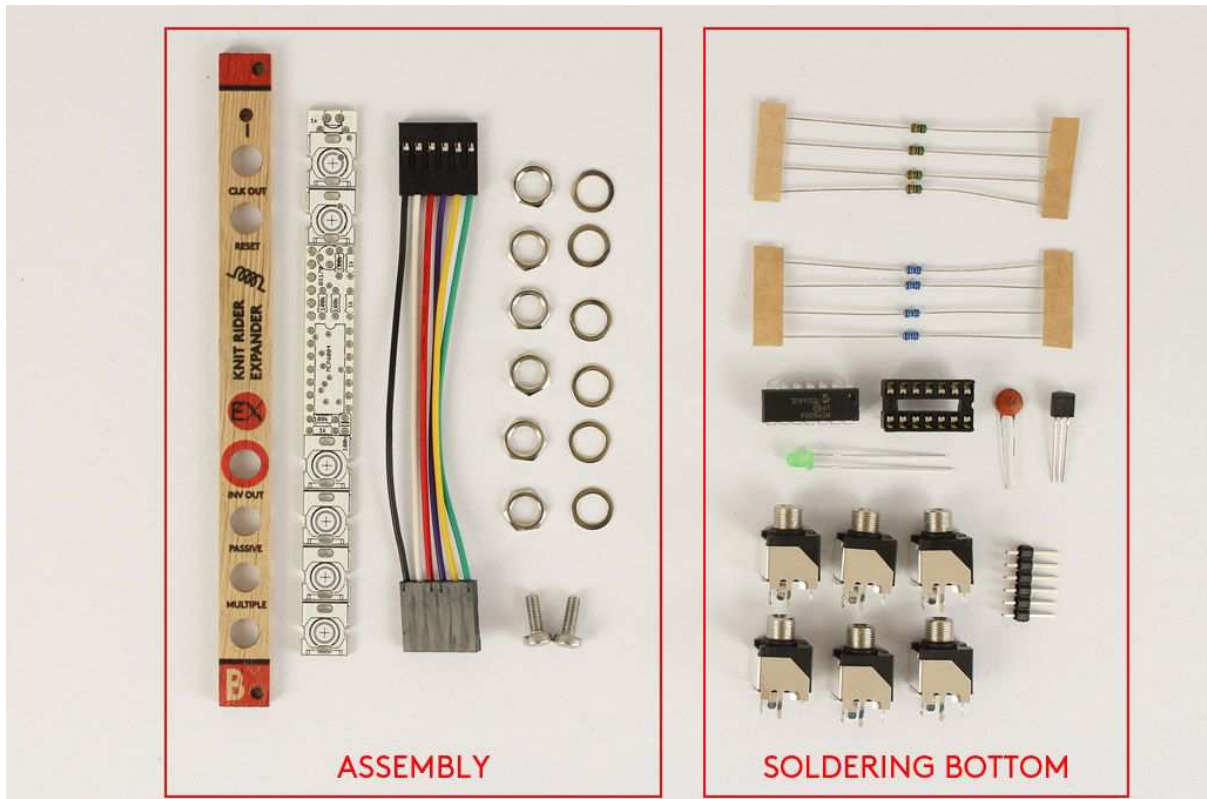
### INTRODUCTION

This guide is for building Knit Rider Expander module from Bastl Instruments. It is good to have basic soldering skills and to be able to identify electronic components before starting this kit. However if you have never soldered before, check out this [tutorial first](#)<sup>1</sup>. We even included some of the best quality solder to help you solder everything faster and better.

The module consists of one board. All the parts comes in two bags separated for Bottom board and Assembly parts. See Bill of Materials ([BOM](#)) for detailed list.

---

<sup>1</sup> <http://www.instructables.com/id/How-to-solder/>



Before starting this kit, prepare the following tools:

- Soldering iron (15-20W)
- Multi-meter
- Flush cutters
- Wrench No. 8
- Protective eyewear

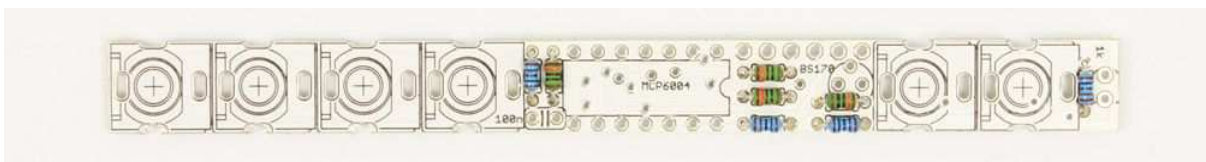
We suggest that you work in a clean and a well lit and ventilated environment to avoid accidents or losing any of the small components.

Also briefly go through this guide and make sure that you understand all the steps.

## BOTTOM BOARD

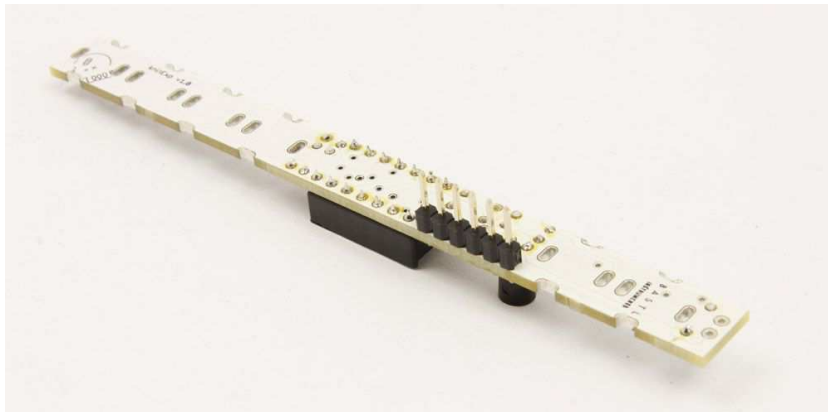
Before you start soldering, take your time and find the resistors values [using a multimeter](https://learn.sparkfun.com/tutorials/how-to-use-a-multimeter/measuring-resistance)<sup>2</sup>.

Now insert and solder all eight **resistors** (4x 1k, 4x 100k). Then snip the leads as close to the PCB as you can (be sure to make this step on all remaining leads in the course of this guide).



<sup>2</sup> <https://learn.sparkfun.com/tutorials/how-to-use-a-multimeter/measuring-resistance>

Next place and solder the **IC 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"). Solder also the **BS170 transistor** (flat side of transistor must **match the outline** drawn on the PCB).

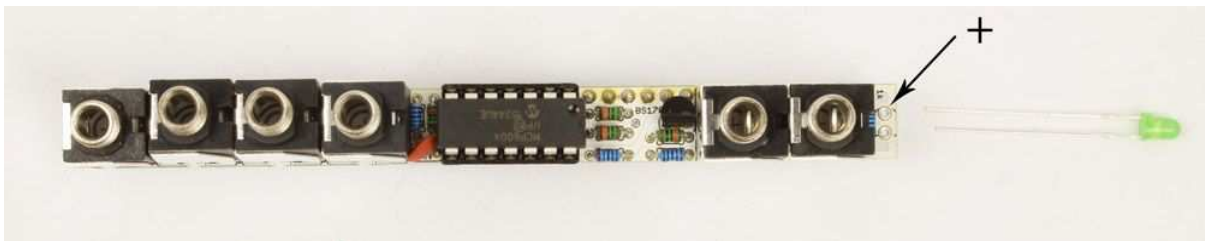


Turn around the PCB and insert and solder the **6 pin male header**. Be careful to solder the pinheader straight. You may first solder the middle pin, then take the board in your hand and re-heat that pin while pressing down on the header to align it. Wait for it to cool and solder the rest of the pins.

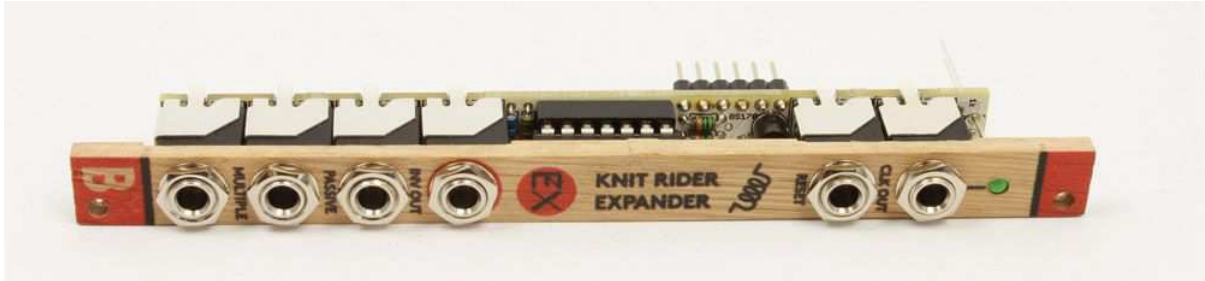
Before next soldering don't forget to insert the **IC** (MCP6004). Again **watch out for orientation**.



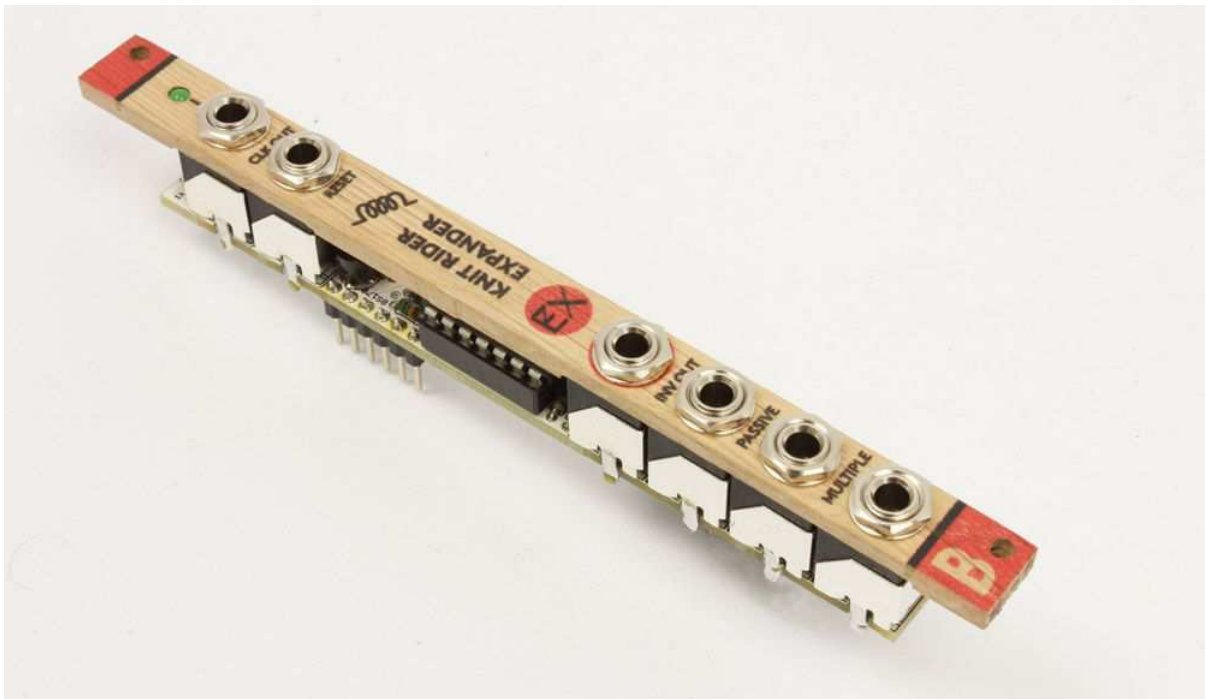
Now just insert mono **jack connectors** (6x) and **green LED** (The LED is polarized so make sure that the longer lead (+) is facing left). **Don't solder anything yet!**



Place the **front panel** on. Make sure that the components are properly aligned. Screw the panel with **washers** and **nuts** (don't tighten them too much as you may damage the panel). Push the LEDs leads to fit its head on the panel. Make sure that everything is properly aligned. Finally you can solder all the components.



Congratulations! You have made it through, now just connect the expander to the Knit Rider module with the provided cable (see the [manual](#)) 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

First check out the [DIY F.A.Q.](#)

If you are still in trouble you can send the detailed description of the problem with enclosed high-resolution photos on [diy@bastl-instruments.com](mailto:diy@bastl-instruments.com).

If you think that you are unable to make the module work on your own, consider our [“Come to Daddy”](#) service.