Shakmat
Tessitura Tailor
Building Guide

Table of contents

1. Preamble

Thank you for purchasing a Shakmat DIY kit !

We spare no effort in our kit packing process to prevent any mistakes or missing parts. In this document as well, we do our best to describe the assembly process in the most practical and comprehensive way. If by any chance there is a missing/damaged part in your kit or if you have any suggestion, feel free to contact us via shakmat.com.

We strongly advise you NOT to spill all the bags open and mix their components. Some of them are virtually indistinguishable (like LEDs that all appear clear when inactive). We recommend to only take the neccesary component out of its bag, or to empty the bags in separate & marked containers. For each step there is a reference, next to the component's graphical representation, indicating where to find the component. (i.e. P1 for Pack 1, or LP for Loose Part).

Also, the assembly process will be dramatically simplified if you follow the order defined by this building guide. We tested various orders of steps before finding the most convenient and the one presented here is the best !

2. Component list & necessary tools

Pack 1

2x 100nF capacitor
2x 1N4148 diodes
6x 100kΩ resistors (0.1%)
5x 10kΩ resistors (0.1%)
1x 100Ω resistor (1%)
1x 5 position rotary switch
1x Rotary switch plastic nut
1x Power header

Pack 2

1x 10nF capacitor
1x 6.8kΩ resistor (1%)
1x 470kΩ resistor (1%)
2x Jack connectors
2x Jack connector nuts
1x Voltage trimmer
1x Power header connector
2x M3 Screw

Pack 3

1x PCB
1x Aluminium Intellijel format panel
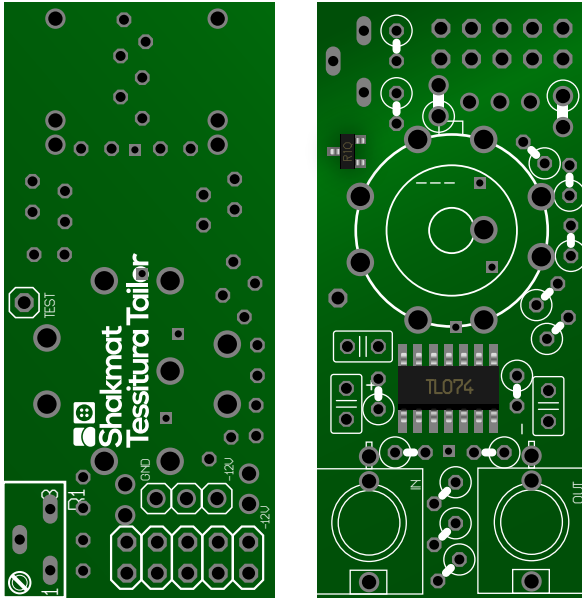1x Composite Pulp Logic format panel

Loose parts

1x Power cable
1x User manual
1x Rotary switch rubber knob

Necessary tools

Soldering iron
Solder
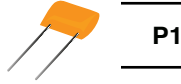Cutting pliers
Masking tape
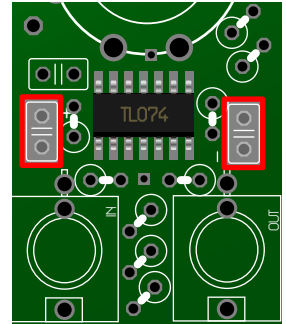Multimeter or Tuner

3. PCB details

Back & front

4. PCB assembly
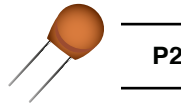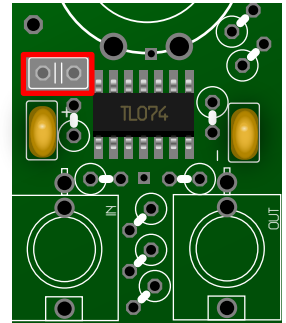
4.1 Front

4.1.1 100nF Capacitors (2x)

P1

Solder the two capacitors on the front of the PCB and trim the legs flush. Capacitors have no polarity (except for electrolytic ones) so the orientation of the component does not matter.
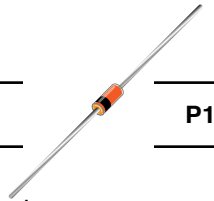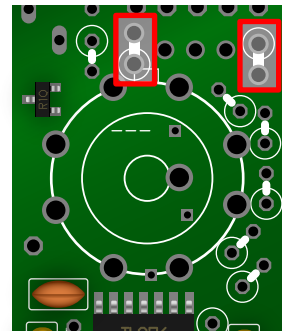
4.1.2 10nF Capacitor

P2

Solder the capacitor on the front side of the PCB and trim the legs flush.

4.1.3 1N4148 diodes (x2)

P1

The diodes are mounted perpendicularly
to the PCB. Pay attention to the polarity. The black line on the component's body mark the side that has to be inserted into the circled hole of the PCB's silkscreen. Solder and then trim the legs flush.
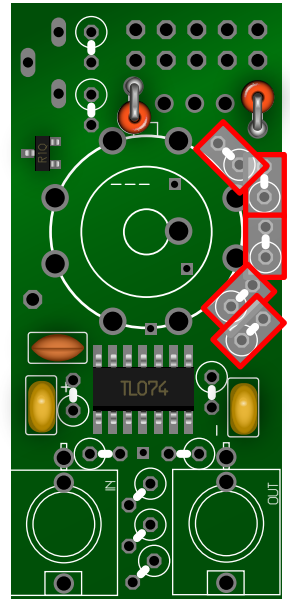
4.1.4 10kΩ resistors (0.1%) (x5)   **P1**

All the resistors are mounted
perpendicularly to the PCB so you only need to bend
one leg. Be careful not to bend too far off the resistor's
body, because it could lead to short-circuits with the
aluminium front panel.

Those are precision resistors (0.1% tolerance). If you
loose one, don't replace it with a common resistor as it
may cause the module to easily go out of tune. Solder,
then trim the legs with cutting pliers. Resistors have no
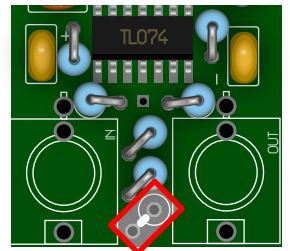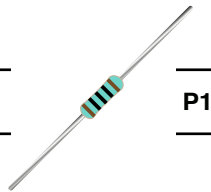polarity so the orientation does not matter.

4.1.5 100kΩ resistors (0.1%) (x6)   **P1**

Bend one leg of each 100kΩ (0.1%)
resistor and solder them perpendicularly to the PCB,
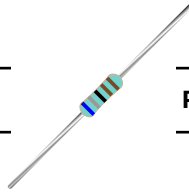then trim the legs with cutting pliers.
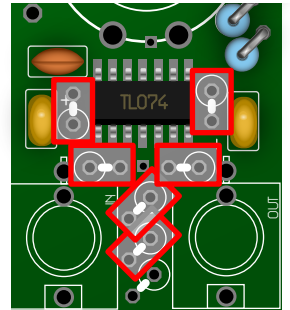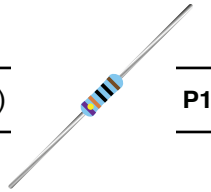
4.1.6 100Ω resistor (1%)   **P1**

Bend one leg of the 100Ω (1%)
resistor and solder it perpendicularly to the PCB,
then trim the legs with cutting pliers.
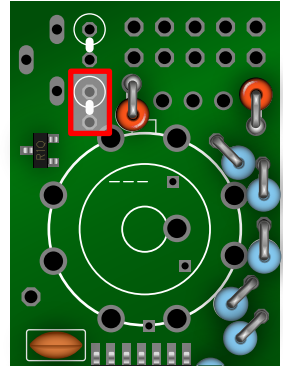
4.1.7 6.8kΩ resistor (1%)   **P2**

Bend one leg of the 6.8kΩ (1%)
resistor and solder it perpendicularly to the PCB,
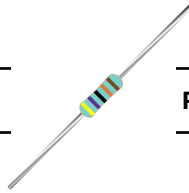then trim the legs with cutting pliers.
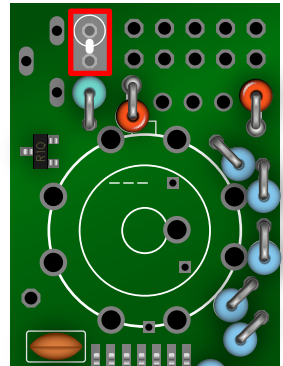
4.1.8 470kΩ resistor (1%)   **P2**

Bend one leg of the 470kΩ (1%)
resistor and solder it perpendicularly to the PCB,
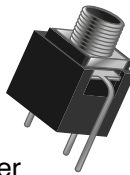then trim the legs with cutting pliers.
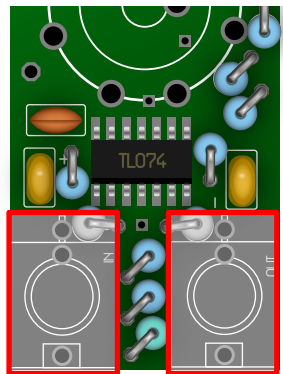
4.1.9 Jack connectors (x2)   **P2**

Flip the PCB again, we're going to solder
the two jack connectors. Push the connectors all the
way through the PCB holes and be sure to lay them
flat and perpendicular before soldering all the legs.

CUT

**4.1.10** 5 position rotary switch

P1

Before soldering, use a pair of cutting pliers or a sharp knife to cut the small plastic piece off the top of the component. The rotary switch has eight pins plus one that fits the hole indicated in the picture, so you can only place it the right way. Be sure the push it entirely through and perpendicular with the PCB. We recommend you to solder one pin and check the alignment, correct it if necessary, then solder the remaining pins.
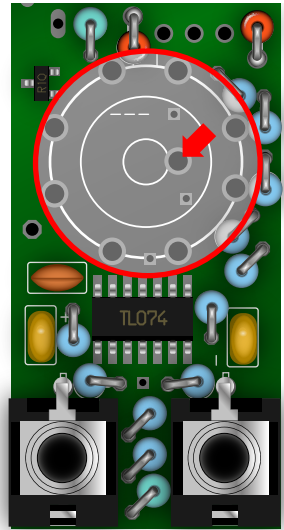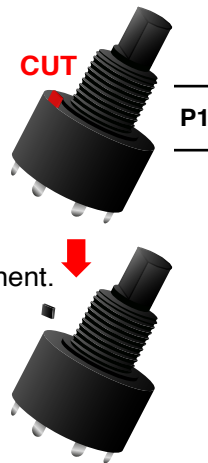
4.2 Back

4.2.1 Voltage trimmer

P2

Flip the PCB again, we're going to solder the voltage trimmer. This component has three legs, so it can only be soldered on the right way. It's normal that the PCB silkscreen is larger than the component's size.
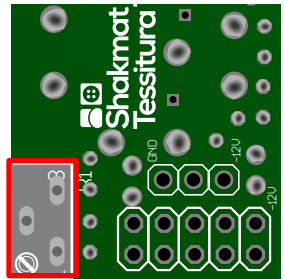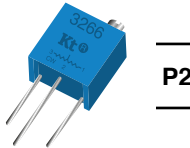
4.2.2 Power header (2x5 pin)

P1

Place the power header and be sure to lay it flat. We recommend you to solder only one pin and check the alignment, correct it if necessary, and then solder the remaining pins.

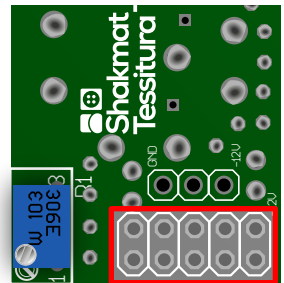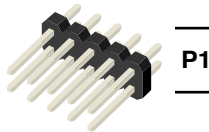# 5. Fastening the panel

5.1 Jack nuts (x2)   **P2**

Place the two jack connectors nuts and tighten them.

5.2 Rotary switch nut   **P2**

Place the rotary switch nut and tighten it.
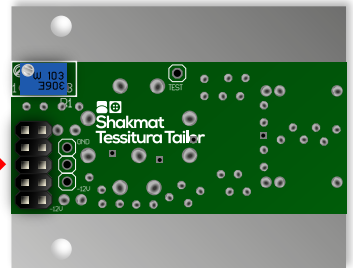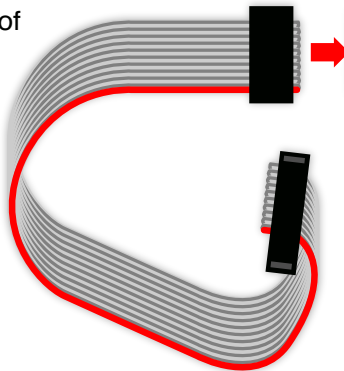
5.3 Rotary switch knob   **P2**

Push the rotary switch knob in place.
Sometimes, this knob can be a little loose on the switch. If it's the case, simply put a little piece of tape around the shaft and then push the knob over it.

6. Powering

Plug the power cable in and make sure the red side of the ribbon matches the -12V on the PCB.

7. Calibration

Using a multimeter, measure the voltage reference test point (marked on the back of the PCB), and adjust the trimmer to obtain a precise value of 5V. You can also calibrate the Tessitura Tailor by sending its output to a well calibrated VCO's V/Oct input. Place the switch in its middle position (0), tune the VCO, place the switch at the +2 position and adjust the trimmer until your VCO is in tune.

T **Voltage reference point**
Use a multimeter here for calibration.
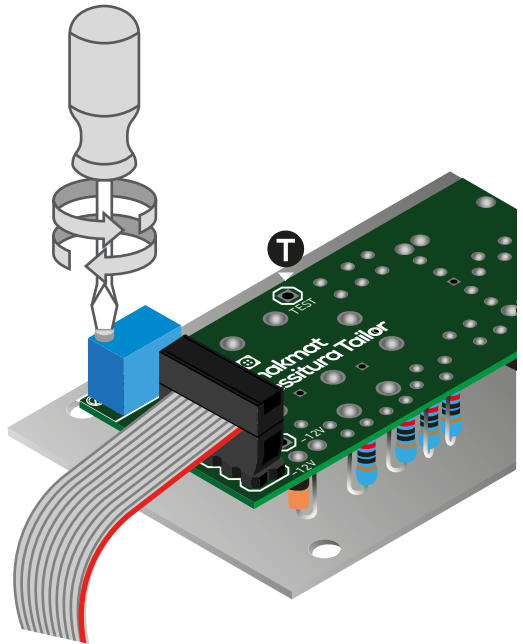
8. Pulp Logic

In order to provide a cross standard approach, the module comes with both Intellijel and Pulp Logic 1U front panels. The format is easily changed by swapping them out. To do so, unscrew the 4 jack nuts, swap the front panel & screw the nuts back on.
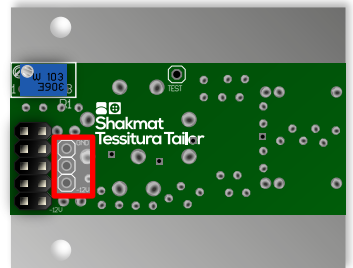
The Tessitura Tailor can also be powered via a 1U Tile power bus. For this, you need to solder a cable ending with a Futaba J male connector to the three soldering holes right above the standard eurorack power header. The cable has to be soldered on the right way. The white wire goes to -12V, the red wire in the middle hole and the black wire goes to GND. Strip about 3 mm off the cable and tin the wires. Pass the wires through the PCB holes from the back and solder them to the front. Finally, mount the Pulp Logic panel and screw the jack nuts back on. When the Pulp Logic power socket is used, cover the eurorack power header with the provided blank connector in order to prevent shorts.

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Product & brand design : Steve Hackx