## THANKS FOR CHOOSING ONE OF OUR KITS!

This assembly guide has been designed taking into account the common issues that we often find people experience in our workshops. The order in which the components are placed on the board is meant to make assembly as easy as possible.
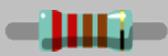
Some steps are not obvious, so even if you're an experienced DIYer, please take the time to read the steps thoroughly before starting.

If this is your first project, please read this article before you start assembling the kit: www.befaco.org/howto/

## GOOD LUCK!

# ASSEMBLY

## OPEN MAIN BOARD BAG A

### RESISTORS

| Qty | Value | Code | Name on PCB |
|-----|-------|------|-------------|
| 16 | 10k | Brown, Black, Black, Red, Brown | R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R14, R15, R16, R17, R18, R19 |
| 4 | 1k | Brown, Black, Black, Brown, Brown | R13, R20, R21, R22 |
| 2 | 56k | Green, blue, black, red, brown | R1, R2 |

### DIODES

Solder the diodes **observing their polarity**. The black or white line on the diode must be in the same place as the white line on the diode symbol on PCB silkscreen.

| Qty | Value | Name on PCB |
|-----|-------|-------------|
| 2 | 1N5817 | D1,D2 |

### FERRITE

To solder the two ferrite beads use a recycled resistor leg passed through each ferrite and proceed as if it were a resistor. Ferrite beads don't have polarity.

| Qty | Name on PCB |
|-----|-------------|
| 2 | FERRITE+, FERRITE- |

### CAPACITORS

Mind the polarity of the 10uF capacitors (The long leg of the capacitor is the positive (+)).

| Qty | Value | Code | Name on PCB |
|-----|-------|------|-------------|
| 6 | 100n | 104 | C2, C3, C6, C7, C10, C11 |
| 4 | 10pF | 10 | C5, C8, C9, C12 |
| 2 | 10uF | 10uf  (watch the polarity!! ) | C1, C4 |

## OPEN IC BAG

| ICs |
|---|
| First **place the sockets** (taking care to orientate them properly – the "notch" on one end should match the image of the silkscreen) and solder them into their correct positions.<br><br>Next place the ICs in their respective sockets (again taking note of their polarity - the mark or "notch" on the front of the IC must match that of the socket and silkscreen).<br><br>Note: Make sure to trim down the solder points as much as possible on the opposite side of the PCB to ensure they don't touch the base of the Potentiometers. |

| Qty | Value | Name on PCB |
|---|---|---|
| 3 | TL072 | IC1, IC2, IC3 |

## OPEN MAIN BOARD BAG B
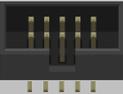
| POWER CONNECTOR |
|---|
| Solder the power connector at "POWER". The small arrow on the connectors must be on the side with the thick white line. |

| MALE PIN HEADER |
|---|
| Place and solder the male pin header at "X1" where the silkscreen indicates. ( |

## FRONT PANEL COMPONENTS MOUNTING TIPS:

Now we will proceed to mount the jacks, LEDs and potentiometers. This part of the assembly is CRITICAL. Please take your time and read the instructions carefully.

These components must **NOT** be soldered until they are placed on the PCB and fully attached to the front panel.

There are two reasons for this:

- The height of the panel components are not all the same. Because of this, if not attached properly before soldering, they will not stay properly seated against the panel. This might cause mechanical stress reducing their life expectancy and in the worst case cause them to break.
- The second reason is that it is very difficult to align the components to the holes if the panel is not positioned prior to soldering. In the case of the LEDs, they are almost impossible to set to the correct height without reference to the front panel.

## OPEN MINI-JACKS BAG

| MINI-JACKS |
|---|
| Place all the mini-jacks onto the PCB ensuring they are on the silkscreen side, but **don't solder yet**. |

| POTENTIOMETERS |
|---|

Place potentiometers, but leave them loose. **DO NOT PLACE ALL THE WAY DOWN TO THE PCB.** Keep in mind they need to be screwed tight against the panel.
Do not solder them yet!

| Qty | Type | Name on PCB |
|---|---|---|
| 4 | Dual 100k | GAIN_1, GAIN_2, GAIN_3, GAIN_4 |



| LEDs |
|---|

Place the LED onto the PCB minding their polarity, but **don't solder them** until the front panel is in place. This is the only way to solder them in the right position.

The long leg is the positive and the short the negative. On the PCB the square pad indicates the negative side and there is a + symbol to indicate the positive.

| Qty | Name on PCB |
|---|---|
| 2 | LED1, LED2 |

| FRONT PANEL |
|---|

Attach the **front panel** adjusting the parts one by one if necessary until they fit. At this point a pair of fine tweezers can be helpful.

To finish:

- Secure the parts to the panel in this order: A) **Mini-jacks** B) **Pots**

- Ensuring all of the above parts are flush with the panel then you can finally **solder** them!

- Next, adjust the **LEDS** so that they are flush with the panel and solder them.

- Put the **knobs** on the potentiometers.

- Connect the **power ribbon cable**: The red wire (-12V) on the power ribbon cable corresponds to pin number one on the male power connector. The number one pin is indicated with a small triangle on the male power connector and a white line on the main PCB.  A white or black line (or "-12v") marked on your power bus normally indicates the corresponding pin.

# ENJOY YOUR NEW BEFACO MODULE!