b3FACO

THANKS FOR CHOOSING ONE OF OUR KITS!

This manual has been written 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 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!

MAIN PCB
OPEN MAIN BOARD BAG A

RESISTORS

Qty	Value	Code	Name on PCB
5	10k	Brown, Black, Brown, Red, Brown	R103, R104, R106, R107, R117
5	180k	Brown, Gray, Black, Orange, Brown	R105, R109, R112, R113, R114
2	1k	Brown, Black, Black, Brown, Brown	R100, R101
2	100k	Brown, Black, Black, Orange, Brown	R108, R102
2	300k	Orange, Black, Black, Orange, Brown	R110, R116
1	20k	Red, Black, Black, Red, Brown	R115
1	130k	Brown, Orange, Black, Orange, brown	R111

FERRITE

Solder the two ferrite beads by using 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–

ICs

First **place the socket** (taking care to orientate them properly – the notch or dot on one end of the IC should match the image on the silkscreen) and solder it into its correct position.

Next place the IC in its socket (again taking note of their orientation – the notch or dot on the top of the IC must match that of the socket and silkscreen).

Qty	Value	Name on PCB
1	TL072	IC100

CAPACITORS

Identifying capacitors can be quite tricky. Codes stated are indicative, please take a look at this guide for help identifying capacitors: http://www.wikihow.com/Read–a–Capacitor

Qty	Value	Code	Name on PCB
4	100n	104	C100, C101, C103, C104

ELECTROLYTIC CAPACITORS

Values are written on the side of the capacitor. Mind their polarity (The long leg of the capacitor is the positive (+)).

Qty	Value	Code	Name on PCB
2	10uf	10uf	C102, C105

TRANSISTORS

Be sure they are orientated correctly. The curved and flat sides of the silkscreen outline of the transistor on the PCB must match that of the transistor's body.

Qty	Value	Name on PCB
1	2n3904	Q102
2	2n3906	Q100, Q101

OPEN MAIN BOARD BAG B

POWER CONNECTOR

Solder the power connector over the silkscreen marking at "POWER" making sure that the small triangle on the connector is on the same side as the thick white line on the silkscreen.
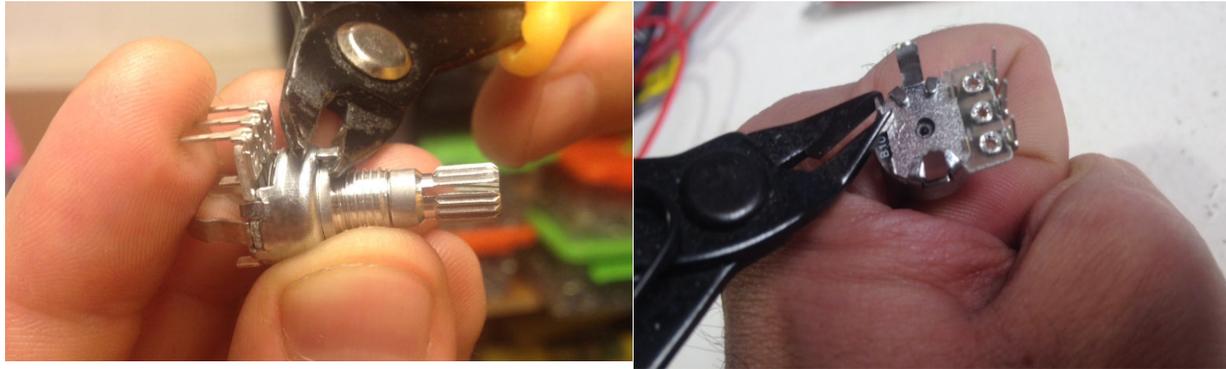
LED

Place the LED onto the PCB (the opposite side to the transistors, resistors etc…) minding its polarity (see next paragraph), but **don't solder it** until the front panel is in place. This is the only way to solder it in the right position.

On the silkscreen image you will see the letters "L, M & S". L = Long leg, M = Medium leg, S = Short leg.

Qty	Type	Name on PCB
1	Duo_LED	LED_REG

POTENTIOMETER

Cut the locating lug and base standoffs on all pots with cutting pliers as pictured. **IMPORTANT:** If you do not cut the base stands, they might short-circuit the ICs!

Now place potentiometers on the PCB over the silkscreen markings (same side as LED) but... **don't solder them**.

Qty	Type	Name on PCB
4	Single (3pin)	1_VOL, 2_VOL, 3_VOL, 4_VOL

FRONT PANEL COMPONENTS MOUNTING TIPS:

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

These components must NEVER 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 before 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 placed over the silkscreen markings, but **don't solder yet**.

Caution: the switch nut and the jack nuts look the same, but they are not equally sized and will not fit in each others' thread, so make sure to keep them separate!

[CONTINUED ON THE NEXT PAGE]

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** (pull the pots as close to the panel as possible).

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

– Next, adjust the **LED** so that it is flush with the panel and solder it.

– Put the **knob** 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!