THANKS FOR CHOOSING ONE OF OUR KITS!

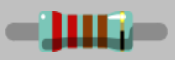
This assembly guide has been designed taking into account the common issues that we often find people experience in our workshops. The order in which the components are placed on the board is meant to make assembly as easy as possible.

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!

RESISTORS



Color code can be difficult to identify, we strongly recommend to use a **multimeter**.

Qty	Value	Code	Name on PCB
16	10k	Brown, Black, Black, Red, Brown	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R17
10	100k	Brown, Black, Black, Orange, Brown	R100, R101, R102, R103, R104, R105, R106, R107, R108, R111
4	1k	Brown, Black, Black, Brown, Brown	R109, R110, R112, R113
2	56k	Green, Blue, Black, Red, Brown	R16, R18

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.

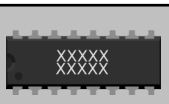
Qty	Name on PCB
2	FERRITE+-, FERRITE-+

CAPACITORS

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

Qty	Value	Code	Name on PCB
15	100n	104	C1, C2, C5, C6, C7, C11, C13, C16, C19, C22, C24, C26, C27, C100, C101
4	10pF	10	C9, C12, C14, C15
12	10uF	10uf (watch the polarity!!)	C3, C4, C8, C10, C17, C18, C20, C21, C23, C25, C28, C29

ICs



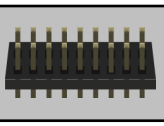
First **place the sockets** (taking care to orientate them properly – the “notch” on one end should match the image of the silkscreen) and solder them into their correct positions.

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).

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
8	TL072	IC1, IC2, IC3, IC4, IC5, IC6, IC7, IC100

PIN HEADERS



Place and solder the Pin Headers on the silkscreen side of the main board (It is the shorter pins that you are soldering). Double check they all are perfectly straight.

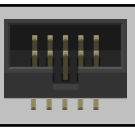
Qty	PINs	Name on PCB
2	2x4	JP1, JP4
1	2x3	JP2
1	2x5	JP3

SOCKET CONNECTORS

Place the socket connectors on the control board over the silkscreen markings at positions and solder. Double check they all are perfectly straight.

Qty	PINs	Name on PCB
2	2x4	JP101, JP103
1	2x3	JP100
1	2x5	JP102

IDC CONNECTORs



Solder the IDC connectors at bottom face of main board. Orientation is marked by the notch on silskreen, also the small arrow on the connectors must be on the side with the thick white line or a arrow.

Qty	PINs	Name on PCB
1	2x3	X1
1	2x5	POWER

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.

SPACERs

Secure the spacers onto the CONTROL PCB (through the 3 holes with silver outline) with the main body of the spacer on the component side, and the nut on the mechanical side.

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**

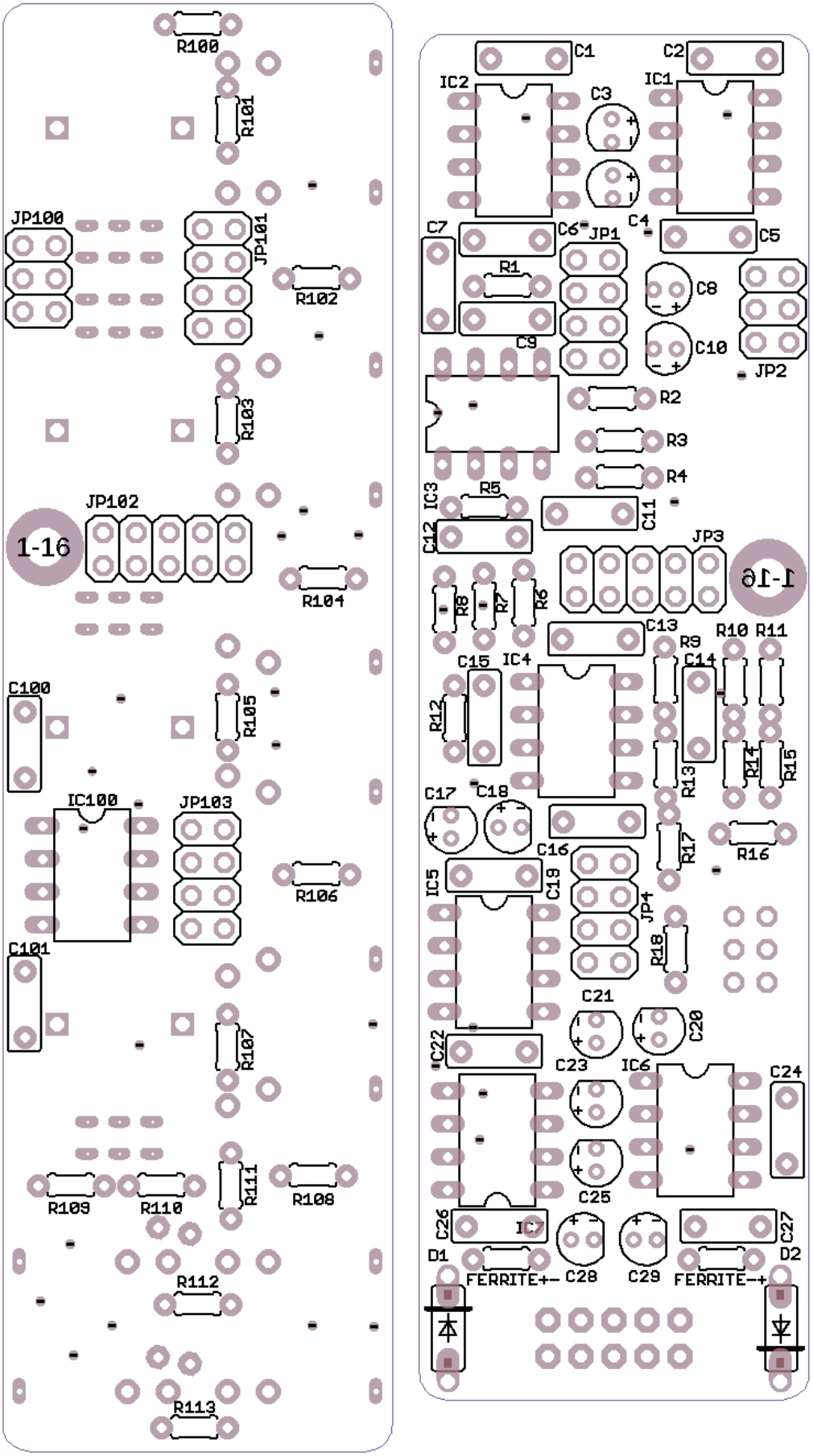
- Ensuring all of the above parts are flush with the panel then you can finally **solder** them!

- 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!


R100
R101
JP100
JP101
R102
R103
JP102
1-16
R104
C100
R105
IC100
JP103
R106
C101
R107
R109
R110
R111
R108
R112
R113
C1
C2
IC2
IC1
C3
C7
C6
JP1
C4
C5
R1
C8
C9
C10
JP2
R2
R3
R4
IC3
R5
C11
C12
JP3
1-16
R8
R7
R6
C13
R9
R10
R11
C15
IC4
C14
R12
R13
R14
R15
C17
C18
C16
R17
R16
IC5
C19
JP4
R18
C21
C20
C22
C23
IC6
C24
C25
C26
IC7
C27
D1
FERRITE+-
C28
C29
FERRITE-+
D2