

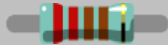
THANKS FOR CHOOSING ONE OF OUR KITS!


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. You will be soldering both boards at the same time.


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

GOOD LUCK!

RESISTORS 			
It's strongly recommended to measure the resistors with a multimeter. Color code might be hard to read with blue/green background.			
Qty	Value	Code	Name on PCB
15	100k	Brown, black, black, orange, brown	R7, R11, R12, R13, R16, R17, R18, R21, R22, R25, R29, R30, R102, R103, R104
14	10k	Brown, black, black, red, brown	R2, R3, R5, R6, R8, R14, R19, R23, R24, R26, R31, R34, R105, R106
4	4M7	Yellow, Purple, black, yellow, brown	R4, R9, R27, R32
2	1k	Brown, black, black, brown, brown	R100, R108
2	3k9	Orange, white, black, brown, brown	R101, R107
2	9k1	White, brown, black, brown, brown	R1, R33
2	51k	Green, brown, black, red, brown	R10, R28
2	56k	Green, blue, black, red, brown	R15, R20

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-

DIODES 		
Solder the diodes observing their polarity. The black or white line on the diode must match with the white line on the diode symbol on the PCB silkscreen.		
Qty	Value	Name on PCB
2	1N5817	D1, D2




ICs

First place the sockets (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 them into their correct positions.

Next place the ICs in their respective sockets (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
3	DIP8	IC2, IC3, IC100, IC101
2	DIP14	IC1, IC4



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
14	100n	104	C1, C3, C4, C5, C7, C8, C10, C11, C12, C14, C101, C102, C104, C105
4	10p	10	C2, C13, C100, C103




ELECTROLYTIC CAPACITORS

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

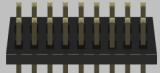
Qty	Value	Code	Name on PCB
2	10µF	10µF	C6, C9

This is a good moment to split the boards apart.




SOCKET CONNECTORS

Place and solder the socket connectors on the control board where the silkscreen indicates (“CONTROL” & “CONTROL1”). Double check they are perfectly straight.



PIN HEADERS

Place and solder the pin headers on the main board where the silkscreen indicates “MAIN” & “MAIN1” (it is the shorter pins that you are soldering).

POWER CONNECTOR	
Solder the power connector at “POWER”, ensuring it is facing out from the edge of the PCB. The small arrow on the connectors must be on the side with the thick white line.	

SPACERS
Secure the spacer onto Control PCB (through the hole with silver outline) with the main body of the spacer on the component side, and the nut on the opposite.

FRONT PANEL COMPONENTS MOUNTING TIPS:

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

POTENTIOMETERS		
Place the potentiometers on the PCB. Do not place them all the way down, as it should be the same height as minijacks and ... don't solder it yet!		
Qty	Type	Name on PCB
4	Single (3pin) B100K	ATT_B_1, ATT_B_2, ATT_C_1, ATT_C_2

MINI-JACKS
Place all the mini-jacks onto the PCB ensuring they are on the silkscreen side, 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!

LEDs	
Place the LEDs 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	LED_1, LED_2



ICs

Next place the ICs in their respective sockets (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
2	AD633N	IC2, IC3
2	TL074	IC1, IC4
2	TL072	IC100, IC101

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** This is critical, as pots might short components behind them. Then you can finally **solder** them all!
- Next, adjust the **LEDs** so that they are flush with the panel and solder them.
- Connect the **main PCB** to the **control PCB** by threading the M3 screw through the main PCB and securing them to the spacer. The main PCB should be orientated so that the component side is facing towards the front panel.
- 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!

