

THANKS FOR CHOOSING ONE OF OUR KITS!

What you have here is a semi kit, where all components are soldered in the boards and you will be doing the final assembly of mechanical components, testing and calibration.

This is a quite complex build. If you are not an experienced DIYer you might find yourself in trouble. Some steps are not obvious, and some components tricky to solder, so even if you're an experienced DIYer please read the steps thoroughly before starting.

Also, even if this is a semi kit, **TROUBLESHOOTING SKILLS ARE MANDATORY and you should be an experienced DIYer with basic schematics reading skills.**
This semi kit is not suitable for beginners.

HAVE FUN!

We will be working mostly with control board, where all mechanical components are soldered. Remember components are placed on silkscreen side.

MAIN PCB (L shape with 6,5" jacks)

| RESISTORS | | | |
|-----------|-------|-----------------------------------|-------------|
| Qty | Value | Code | Name on PCB |
| 2 | 1k | Brown, black, black, brown, brown | R231, R238 |



| PIN HEADERS | | |
|---|-----|-----|
| Place and solder the Pin Headers on the silkscreen side. It is the shorter pins that you are soldering. Double check they all are perfectly straight . | | |
| 1 | 2x5 | JP1 |
| 1 | 2X8 | JP2 |



CONTROL PCB

| SOCKET CONNECTORS | | |
|--|-----|-------|
| Place and solder the socket connectors where the silkscreen indicates. Double check they all are perfectly straight . | | |
| 1 | 2x8 | JP100 |
| 1 | 2X5 | JP101 |



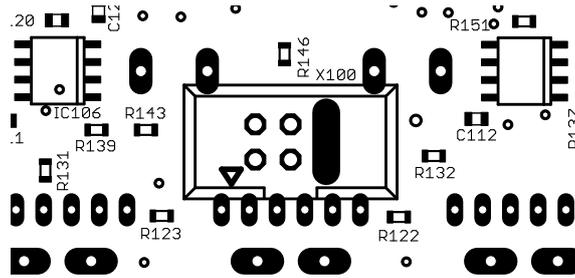


COMMUNICATION PORTS

Solder **X100** and **X101** IDC connectors , ensuring the position is correct: it must be soldered at silkscreen side, same side as the rest of components and properly oriented.

X100 location notch faces up and **X101** notch faces right. Take extra care on orientation here, as it will be hard to fix after pots are soldered.

Place the jumper between pins 5 and 6 on **X100** as pictured:



WARNING: SCREWING IT UP FROM HERE WILL RUIN YOUR DAY, GETTING YOU ON A DESOLDERING RAMPAGE, MAKING YOU FEEL MISERABLE AND CAUSE A BUNCH OF KITTENS TO COMMIT SUICIDE. BE CAREFUL. WE MEAN IT.

MECHANICAL COMPONENTS MOUNTING TIPS:

Now we will proceed to mount the jacks, potentiometer, switches and LEDs. 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.

In order to avoid problems with potentiometers we need to make sure the right height is set. Please remind to use the washers and follow soldering procedure.

MINI-JACKS

Place the mini-jacks on the PCB ensuring they are on the side with the silkscreen but **don't solder them!** Also **keep minijack nuts apart**, as they are similar to switch ones but different!

SWITCHES

Place the switches in their right places. **But do not solder them yet!**
 Leave one nut only on the Mini Switches on place so that they will have the right height. No need to use washers.

| | | |
|---|---------------------------------|------------------|
| 6 | Two circuits two position | 1, 2, 3, 4, 5, 6 |
| 3 | Mini. Two circuits two position | S1, S2, S3 |

SOLDERING MINI-JACKS AND SWITCHES

We will solder first minijacks and switches. As minijacks are the easiest to place, they will help placing switches and setting the right height to help with pots later on.

Place the front panel and screw **only** minijacks. Make sure they are sitting flat against the PCB and panel. **Then solder them.**

Once minijacks are screwed and soldered they will set the right height and position for the rest of mechanicals. At this point, **screw all switches and solder them.**

Remove the front panel to place potentiometers.

POTENTIOMETERS

Place the potentiometer on the PCB. Do not place them all the way down, leave them loose and... **don't solder them yet!** Do not forget to **use the washers.**

| Qty | Type | Code | Name on PCB |
|-----|------------|------|---|
| 2 | Dual B10k | 103 | PFL/MASTER, PHONES |
| 21 | Dual B100k | 104 | GAIN_M1, GAIN_M2, GAIN_M3, GAIN_M4, GAIN_M5, GAIN_M6, GAIN_M7, GAIN_M8, GAIN_M9, GAIN_M10, GAIN_M11, GAIN_M12, GAIN_M13, GAIN_M14, GAIN_M15, GAIN_M16, GAIN_M17, GAIN_M18, GAIN_M19, GAIN_M20, GAIN_M21 |

FRONT PANEL

At this point we have all mechanical components in place and ready for final attach of the front panel. Before doing so, fill this check list (DO IT! We are watching you):

| | |
|----------|---|
| X | |
| | Are communication ports properly soldered? (big's notch facing up,small facing right) |
| | Did you removed nuts and washers from the switches? |
| | Did you placed washers on the pots? |
| | Are all pot legs straight and properly in place? (no legs bent or whatsoever) |
| | Are you sure no pot have been placed all the way down so they are touching the board? |
| | Is jumper placed in pins 5 and 6 from X201? |

If all check items have been marked, attach the **front panel** adjusting the parts one by one until it fits. At this point a pair of fine tweezers can be helpful.

- Screw in the parts in this order: A) **Mini-jacks** B) **Switches** C) **Pots**

TIP: Soldering pots beneath expansion port is pretty hard. Use fine tip soldering and extra care on these ones! It might be helpful to rise plastic a bit, solder and putting it back in place.

- Make sure everything is flush against the panel and all pots end up all aligned (It's easy to spot like this pots not screwed flat against the panel)
- Solder all pots **except potentiometer's locating legs**. This will allow you to debug easier if you made any mistake. Solder them only when module is finished and working.

ASSEMBLING BOTH BOARDS TOGETHER

First we will place the components we are missing from main board. Then assemble boards together to make them fit and finally solder them all.



LEDs

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

| Qty | Type | Name on PCB |
|-----|------------|---|
| 2 | Red LED | LED1, LED2 |
| 4 | Yellow LED | LED3, LED4, LED5, LED6 |
| 8 | Green LED | LED7, LED8, LED9, LED10, LED11, LED12, LED13, LED14 |

6.5" JACKS

Place all 6,5" jacks in place at main board at silkscreen side at LEFT_OUT, OUT1, OUT2, OUT3, OUT4, OUT5, OUT6, PHONES, RIGHT_OUT, **but do not solder them**.

Connect the **Main PCB** to the **Control PCB**, making the pins match and jacks fit on their panel holes. The main PCB should be orientated so that the component side is facing towards the front panel and jacks match their holes.

Screw the Jacks to the panel, so both boards are parallel and flat. **Thread the M3 screws through the Main PCB** securing them to the spacers. Then **solder 6.5" jacks**.

Next, adjust the **LEDs** so that they are flush with the panel and solder them. Placing some tape over the Led holes, might help to keep all of them at the right distance.

To finish up, put the knobs in place and switch caps.

SOLDER POTS LOCATION LUGS AFTER TESTING THE MODULE.

ENJOY YOUR NEW BEFACO MODULE!