

Important announcement. I am not responsible for what each one tries to do with their battery, lithium is very dangerous.

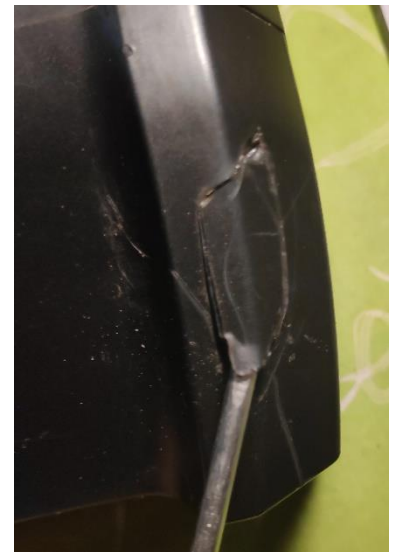
First of all, restoring cells in the bt-e8010 battery does not permanently block the BMS.

I have already carried out the restoration of three batteries, and in none of them the BMS has been blocked.

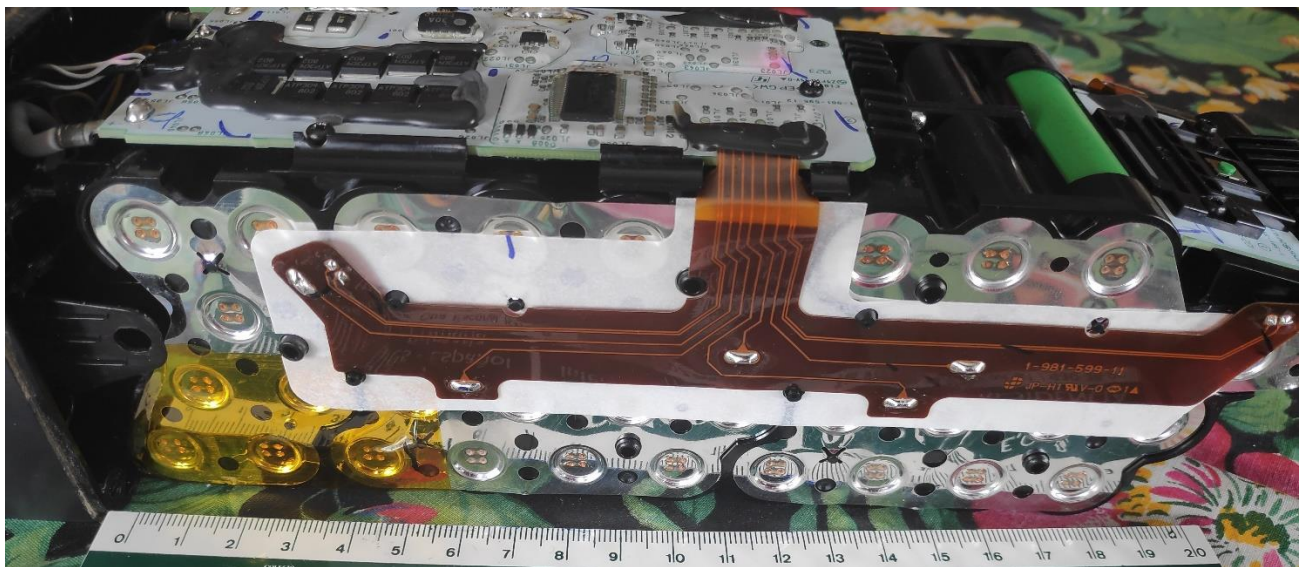
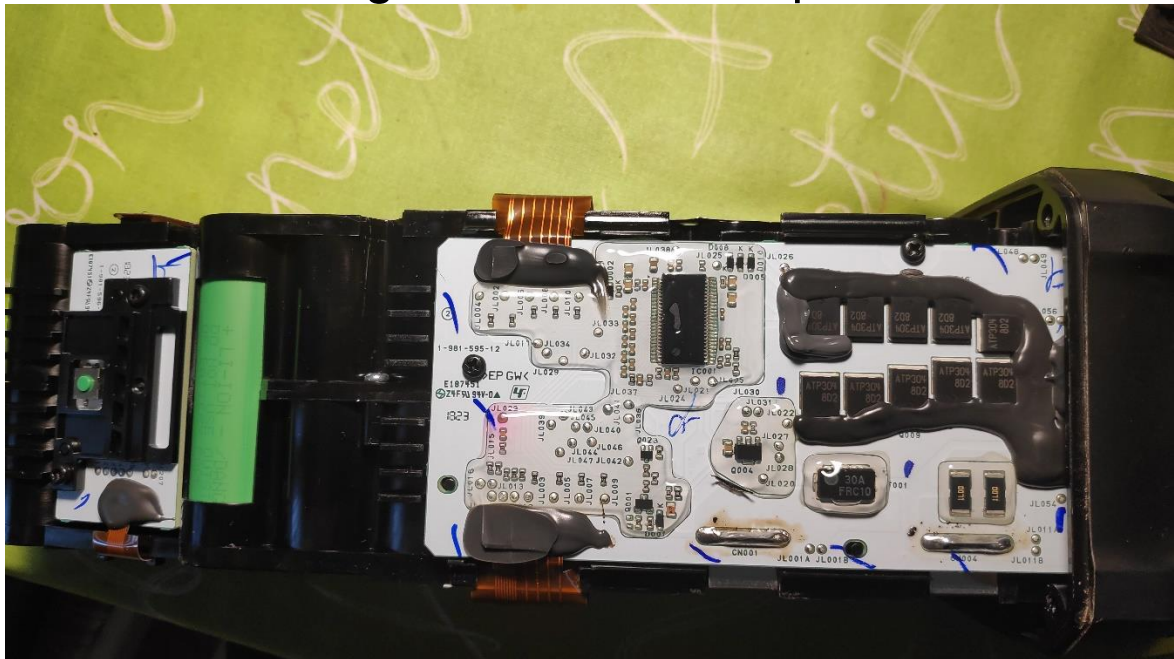
Case opening

There are 4 torx screws to open the battery.

Two of them are hidden under some plastic pieces must first be removed.



Once the screws are removed, the casing can be slid off, being divided into two parts



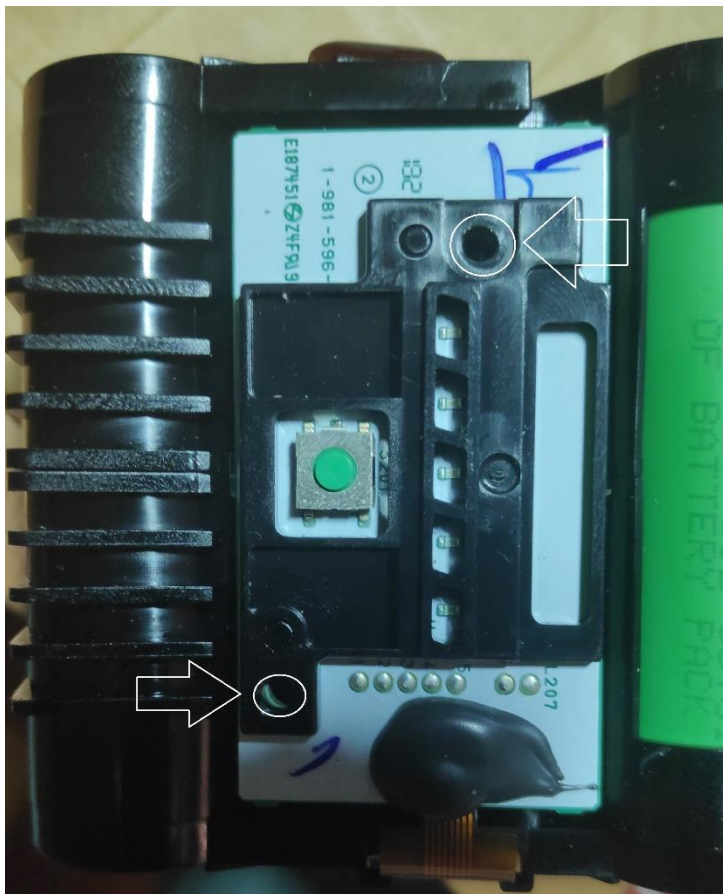
Now it's time to remove the part of the plastic casing where the connections are.

It is about separating two pieces of plastic (one on each side) that join the casing to the cell block.



Electronic board disassembly

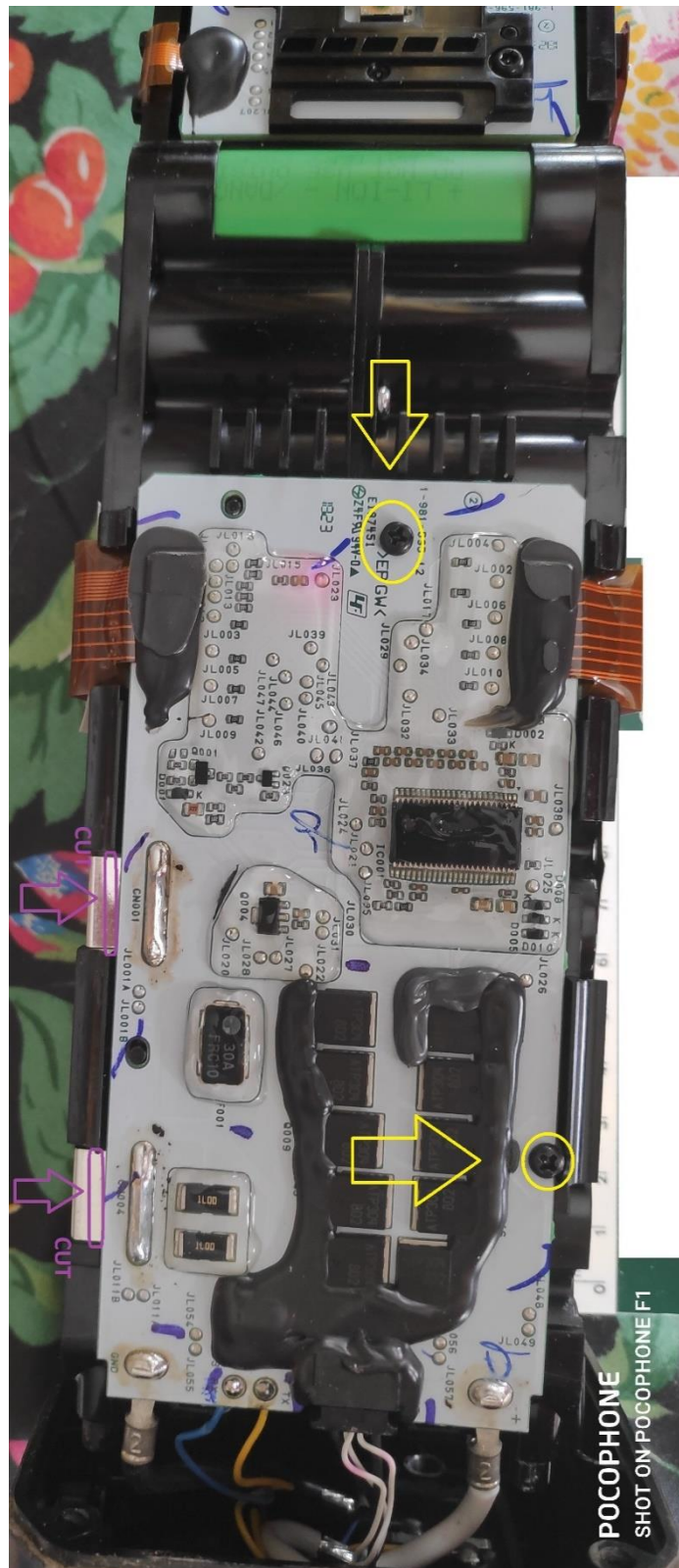
We begin with the small electronic board with a push button and battery level indicator LEDs. There are two screws that need to be removed.

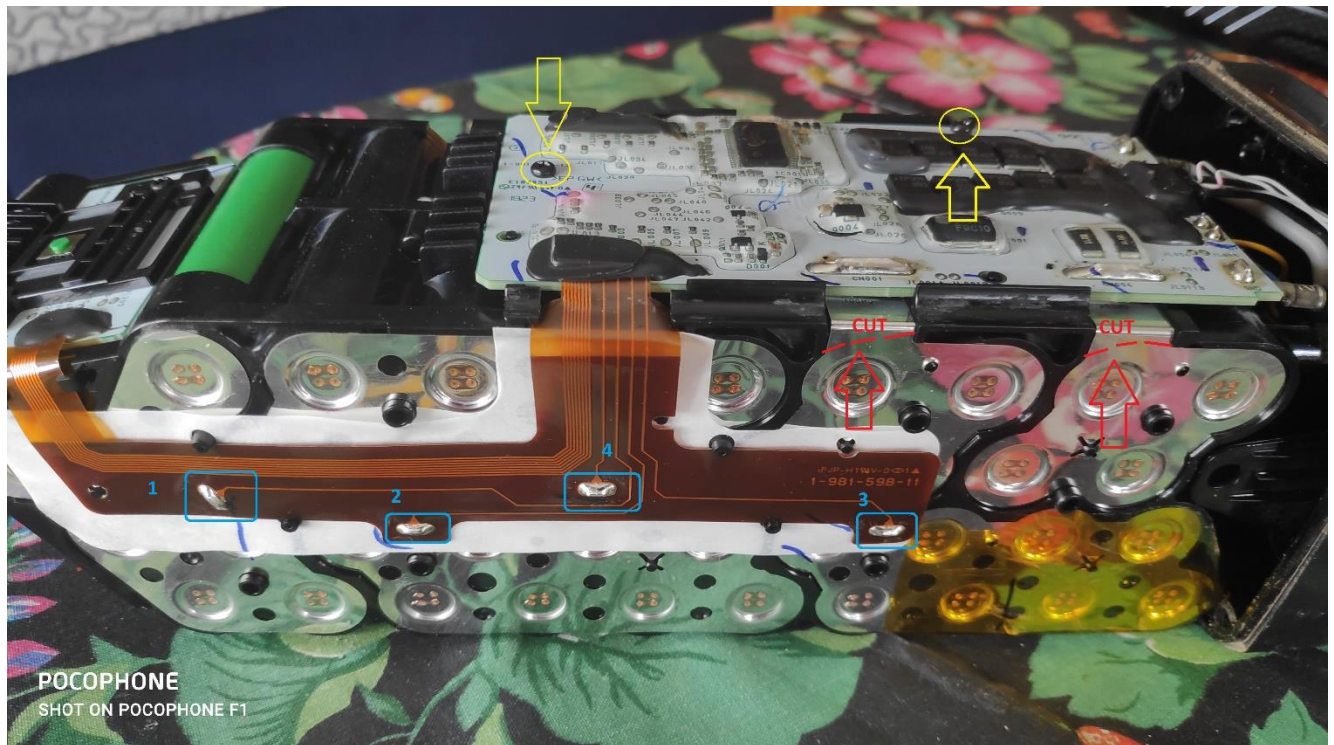


We continue with the large electronic board, removing the two screws that fix it to the cell block.

We proceed to cut the two nickel strips, in the place indicated in the photo.

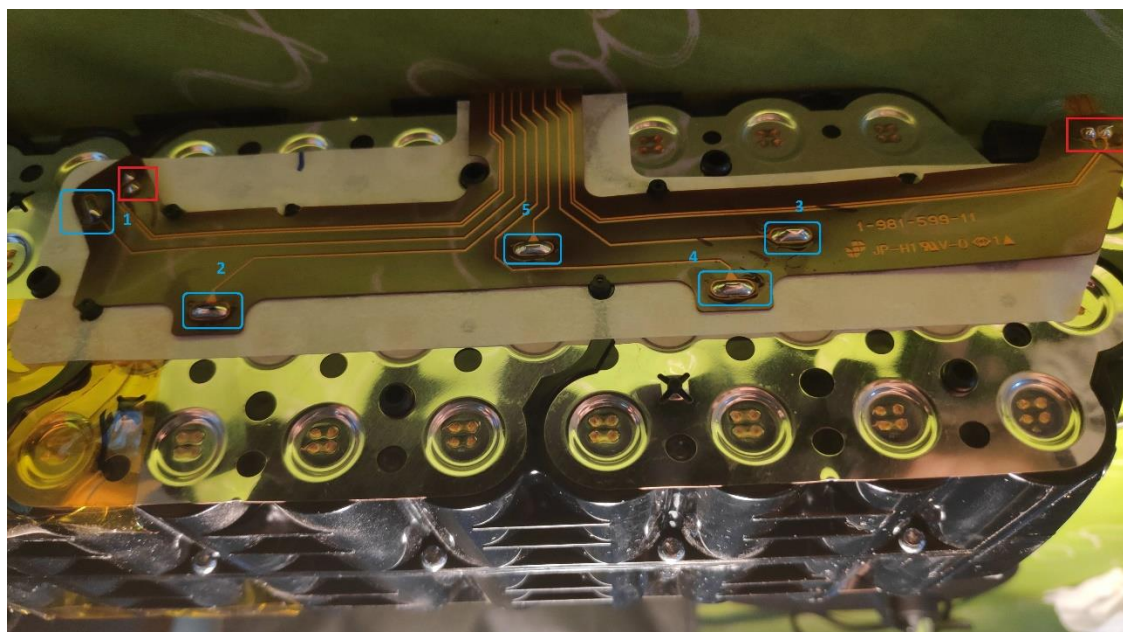
Be very careful not to touch the two strips at the same time with the cutting tool.





Next step, start desoldering the connection points of the plexi tape with the cell block. One of the faces has 4 points and the other a total of 5 points. We will start at the ends by applying heat with a soldering iron. It is about heating and removing the plex from a small nickel tab.

Attention, because one of the faces has two temperature sensors, which it is not necessary to unsolder, because they come out pulling them (red box on the pic)





Now if we have completely isolated the electronic board of the BMS with the cell block.



It is advisable that on the back of the flex, we place some small stickers on the welding points. To perform the insulating function. It will make our work easier when we reconnect the flex with the new block of already restored cells.

We can also unsolder the two nickel strips, and resolder two new, slightly longer nickel strips, to be spot welded at the end of the assembly.

We start with the most delicate and dangerous part.

It is about gradually eliminating the nickel strips.

A job that requires a lot of patience and working in areas. For this, everything must be insulated with some non-conductive material, except the area to be lifted. One must be very careful, the strip of nickel that is extracted must not remain on top of the work table.

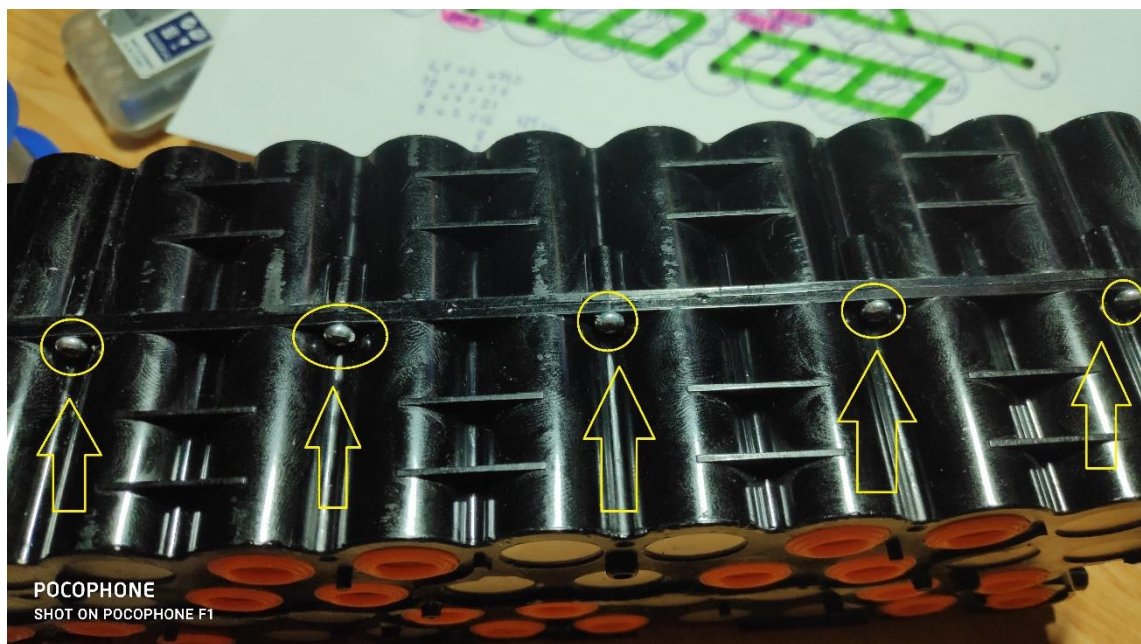
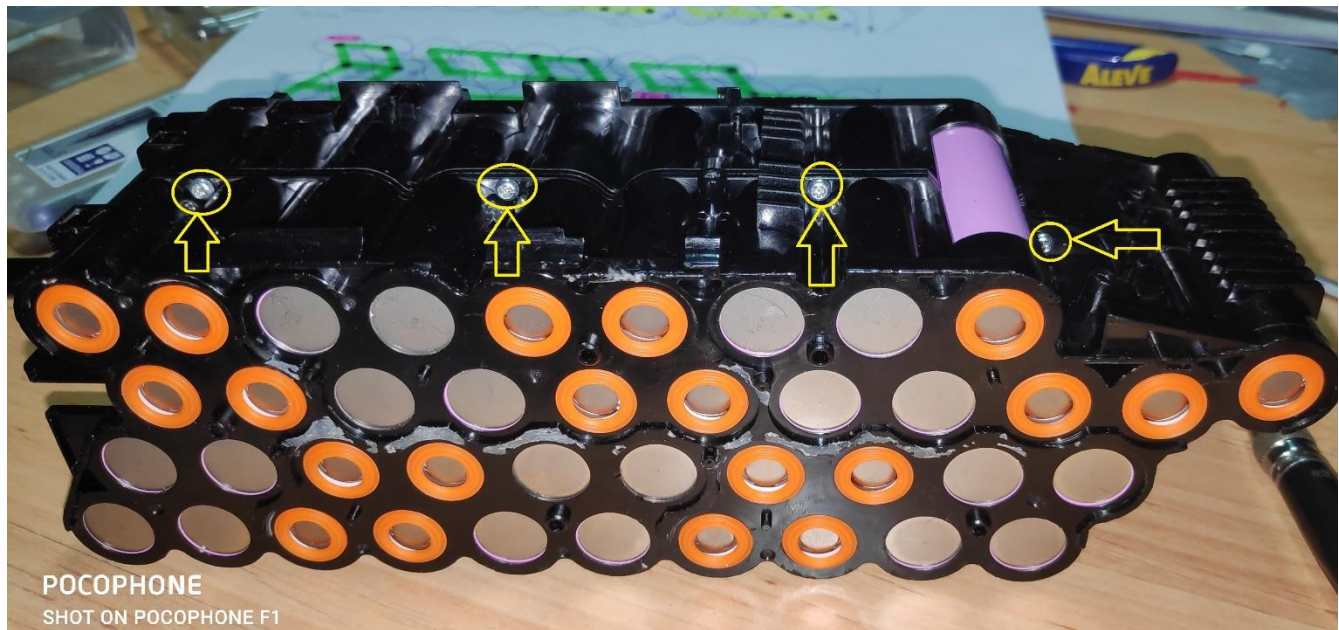
The tool that will facilitate this task should be a cutting pliers with very narrow tips, so that it can penetrate the nickel





Once all the dangerous nickel strips have been removed. We proceed to remove all the screws that surround the entire contour of the plastic casing, where the cells are housed.

The cells in their positive pole have an orange rubber to protect the cell from possible short circuits.



Once all the torx screws have been removed from the casing, it is divided into two parts.

It is about separating both parts, in order to extract the degraded cells. Curious fact, they are 3500mah Sony Murata cells.



We will place our new cells, I chose the 3500mah Samsung 35E cells. They can be placed from other brands, as long as they meet the condition of being 18650 format, and that they have a capacity of 3400-3500 mah

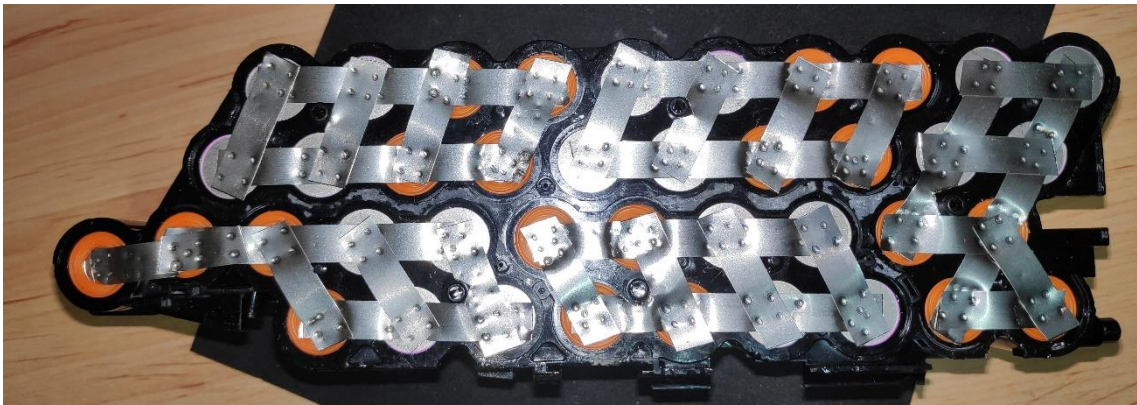
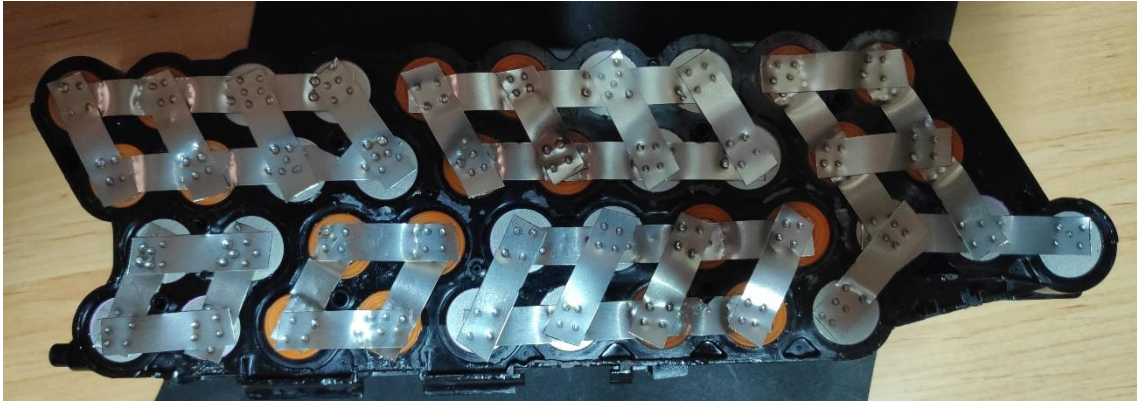




We will fit the two plastic casings together. Surely it will be difficult for the two pieces to fit together, we will have to help each other by hitting the entire block against the work table. We proceed to place the torx screws, to close the entire block.

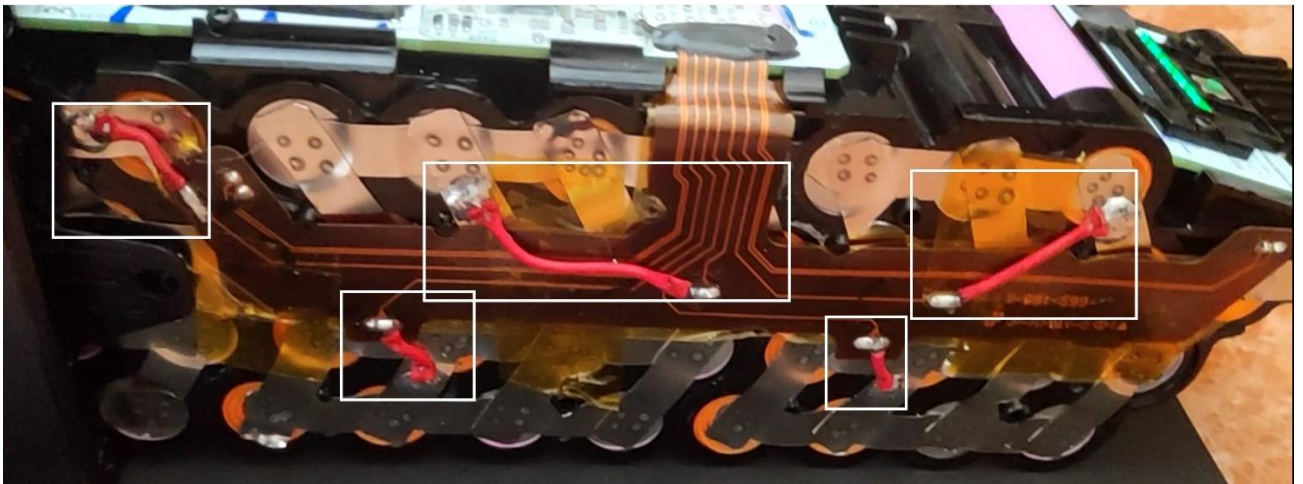
Checking that all the cells have been placed in their corresponding original place.

We proceed to weld new nickel strips, with the spot welding equipment, following the connection diagram that we have previously copied.



We place the main electronic board of the BMS, with its screws, as well as the small push button board and battery level LED indicator.

The old welds of the plex strip, we will connect them with small wires, to make the original connections.





In conclusion, adjust the plex strips, under the channels through which the outer shell must slide. We don't want to rip them off when we try to slide the casing off.

All that remains is to spot weld the two nickel strips that we will have previously soldered on the main electronic board to the cell block in its corresponding place.

If everything is correct, the block should easily fit into the main casing.

Once the battery is closed, **VERY IMPORTANT**, connect the official shimano charger, so that the system starts working.

The battery charge level indicator leds should start blinking, that means that everything is correct