



PINT 20S1P 21700 BATTERY

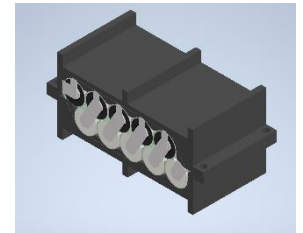
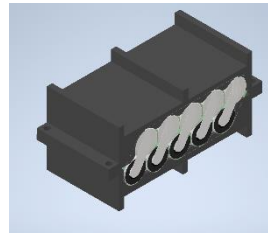
Guide intention:

This guide is designed to serve onewheel battery builders who already have the appropriate experience and insight to build lithium ion battery packs safely and reliably. There are steps in this guide that do not detail specifics such as wire placement and harnessing, that is left up to the builder.

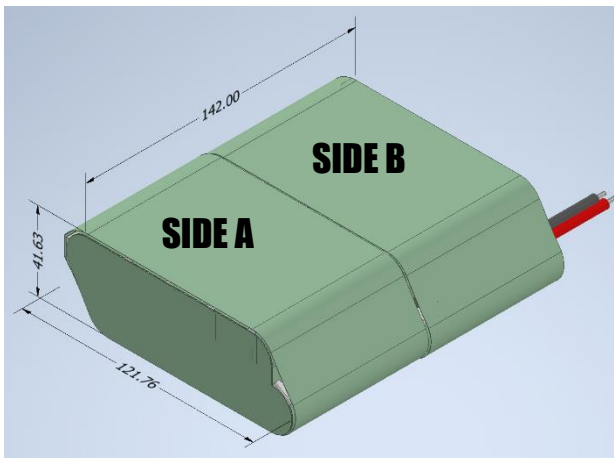
The battery design detailed is purposed to fit the VOW Pint casing, and largely deviating from the following guide may result in fitment issues or failure.

Item/Materials List:

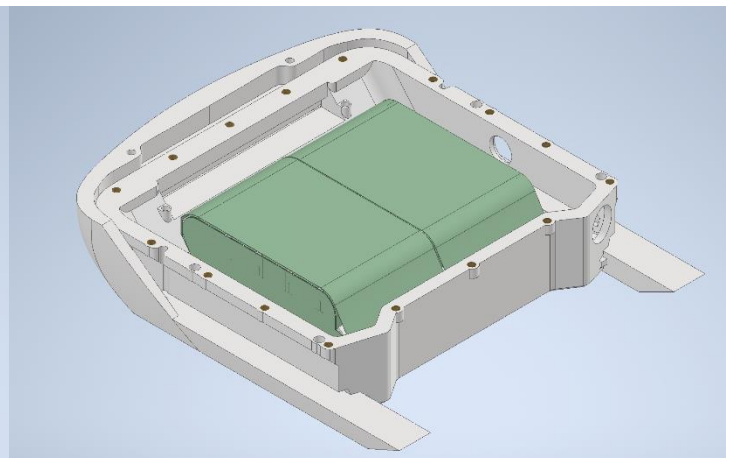
- 20* 21700 cells (21.4 * 70mm maximum, Molicel P42A/ P45B recommended)
- 0.2mm * 8mm nickel strip
- 19* "Y-shaped" nickel solder tabs
- 6mm tinned copper braid (90mm length)
- 12AWG and 16AWG cable for +ve and -ve terminals
- Fishpaper terminal rings
- 70mm width fishpaper
- Kapton Tape
- VOW 3d printed welding holsters



Desired Results:



Approximate maximum dimensions (mm)



Pint Casing Fitment

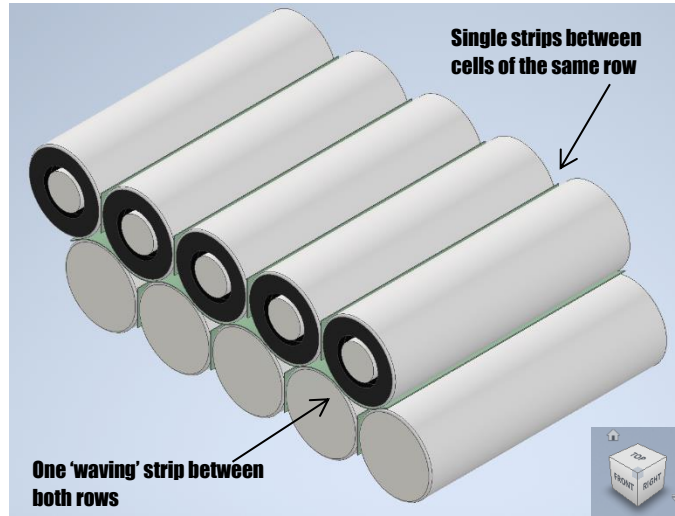


Balance and Main terminals

Side A – construction

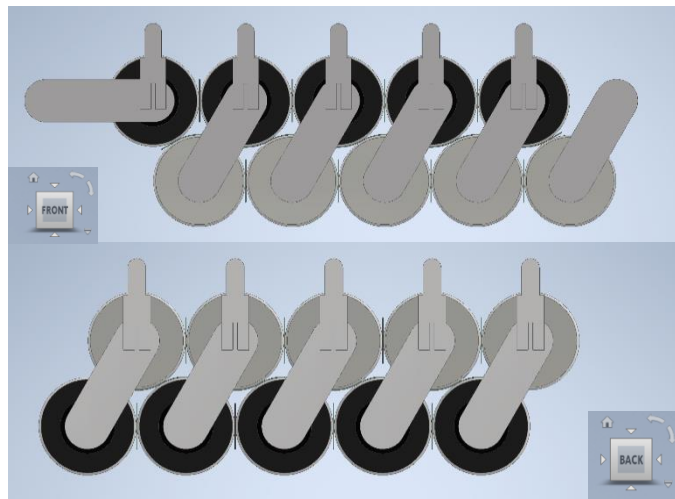
1. Fishpaper Isolation

Apply fishpaper O-rings to the positive terminal of each cell. Each cell in a row should be isolated from the adjacent cell with a strip of fishpaper, and both rows should be isolated with a waving strip through the middle



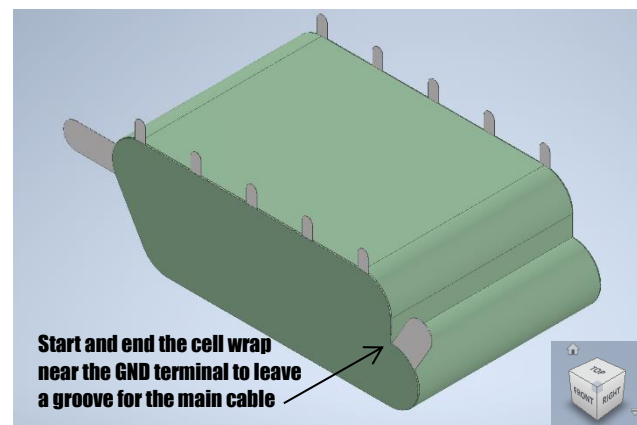
2. Welding

Fully secure Side A in the printed welding holster and weld appropriately cut 0.2mm 8mm nickel strip to the cell terminals. Then weld the balance tabs.



3. Fishpaper Inner Shell

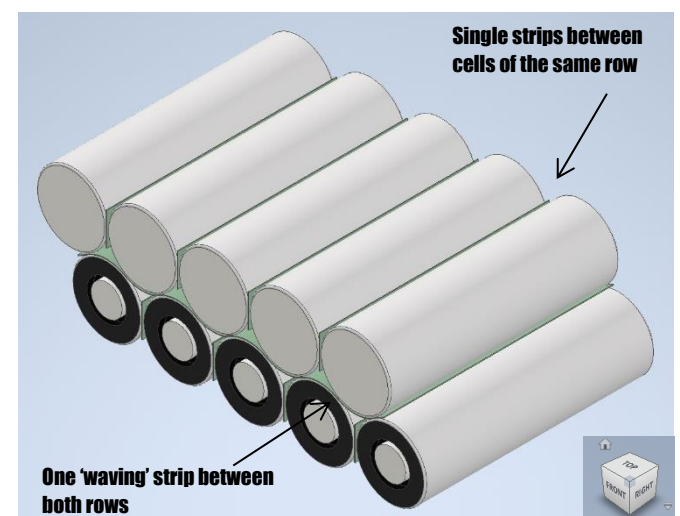
Fully wrap Side A with fishpaper, using a 70mm width strip around the cells and custom cutting pieces for both sides. This leaves only the tabs exposed



Side B – construction

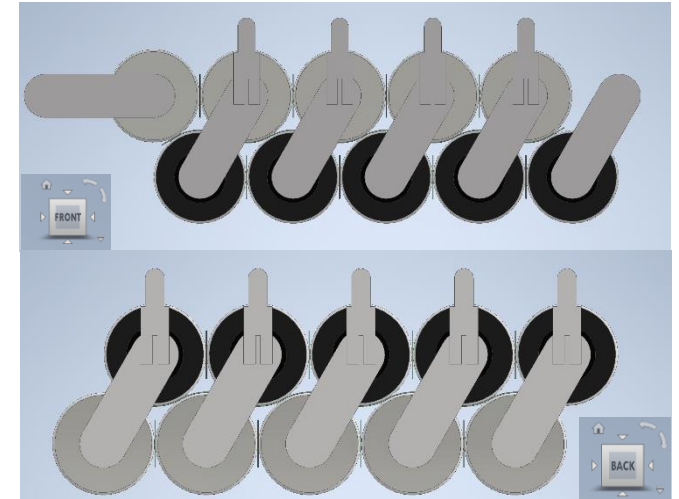
. Fishpaper Isolation

Apply fishpaper O-rings to the positive terminal of each cell. Each cell in a row should be isolated from the adjacent cell with a strip of fishpaper, and both rows should be isolated with a waving strip through the middle



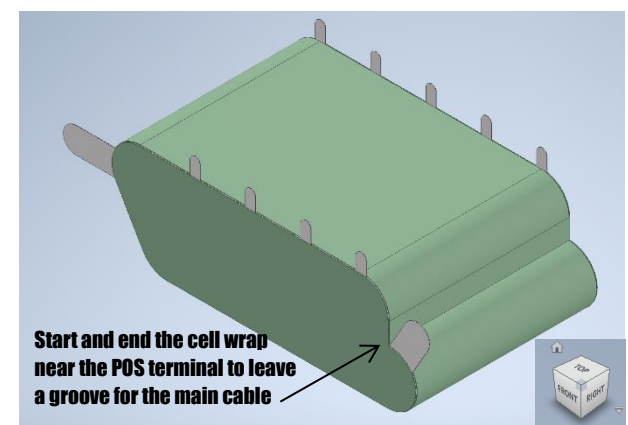
. Welding

Fully secure Side B in the printed welding holster and weld appropriately cut 0.2mm 8mm nickel strip to the cell terminals. Then weld the balance tabs.



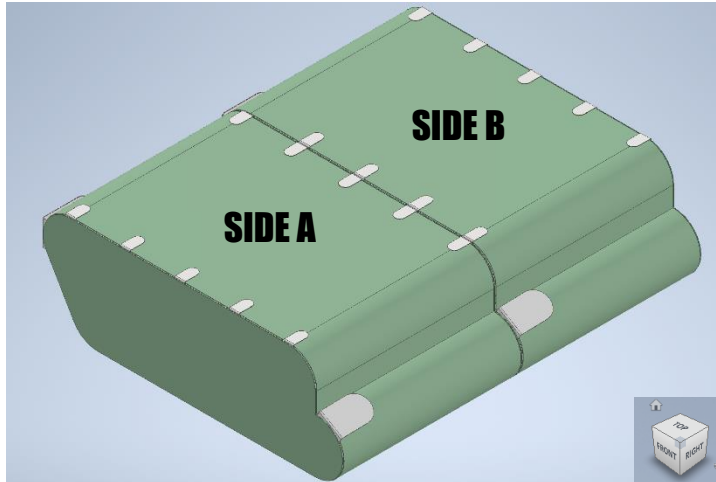
3. Fishpaper Inner Shell

Fully wrap Side B with fishpaper, using a 70mm width strip around the cells and custom cutting pieces for both sides. This leaves only the tabs exposed

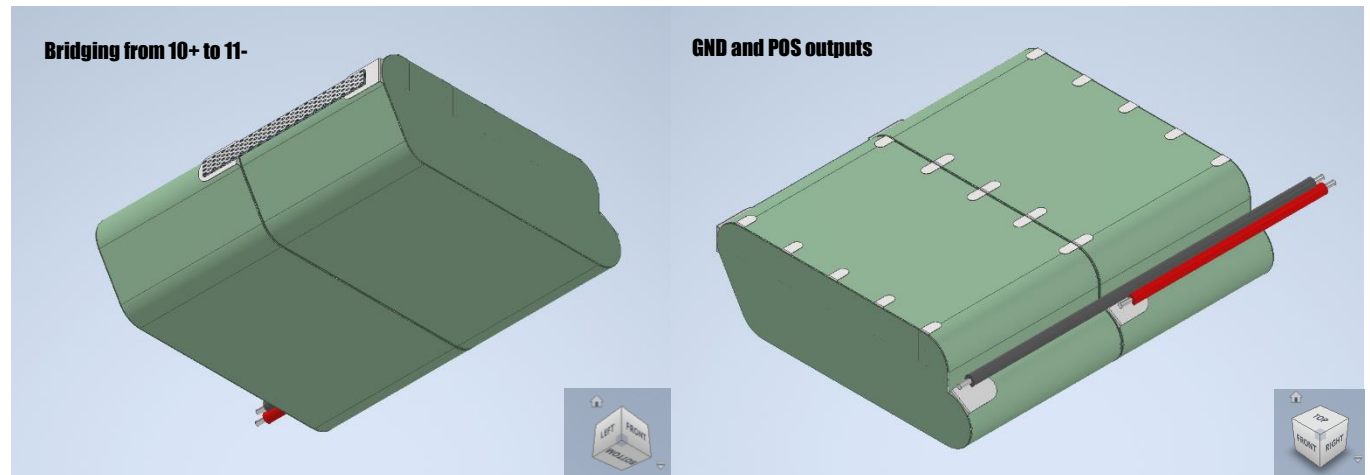


4. Group assembly

With Side A and B finished, fold the balance and terminal tabs flat then place the cell groups next to each other to prepare for joining.



Solder the bridge connection using the 6mm tinned copper braid, then solder the main GND and POS terminals as necessary. It's common to use 12AWG cable for the main output and 16AWG for charging input.



Solder the balance wires to the folded balance tabs from your 20s BMS. Note that the ground and 20+ balance wires are supposed to be soldered to the main GND and POS pack terminals, instead of having their own tabs.

Add extra fishpaper over possible wear spots as necessary, such as a layer over the POS terminal as the GND Cables run over it for example.

4. Fishpaper Outer Shell and Wrap

Once in place, wrap the pack in an extra layer of fishpaper, similar to Step 3, then finish with a heat shrink wrap, or a tight wrap of Kapton tape.

