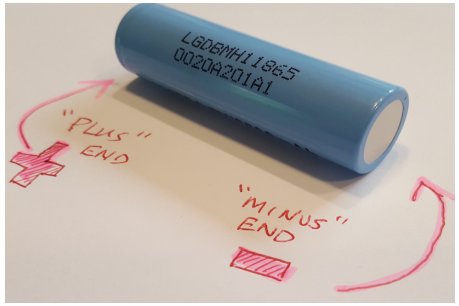
Assembling the Dkblock2 cell modules

First acquire parts and tools:

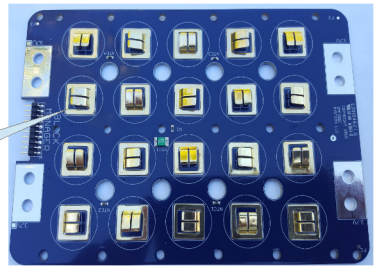
1. Lithium ion or Lithium Iron Phosphate cells – 18650 size, 20 cells per 10S2P block (for 12V you will assemble two or more battery modules)
2. Clamp boards (one each 2S-3.7V and one each 2S-7.4-0V board) per block
3. Plastic cell holders – 2 each per block
4. Clean cotton gloves – one pair
5. Workbench with nonconducting surface
6. Standoff and screws with hand operated screwdriver
7. Dewalt DW920 or Makita DT01 driver with #1 phillips bit or equivalent battery driver calibrated to about 3.5 inch-pounds of torque
8. Plastic cell organizers – 3d printed from github or purchased from Offgrid

Now IDENTIFY your parts/tools

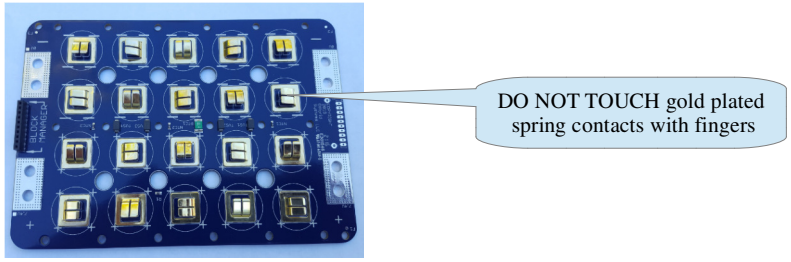
Battery cell has PLUS and MINUS ends



3.7V board

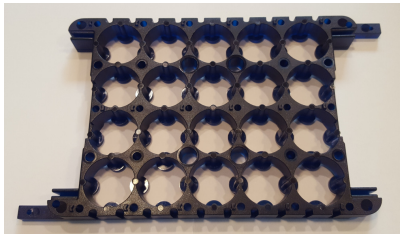


7.4V board



Screwdrivers

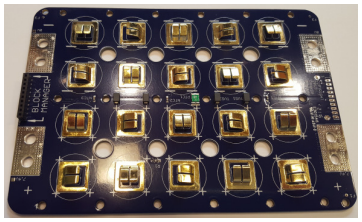
Cell Spacer



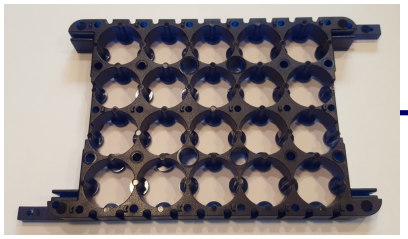
1

Begin block assembly:

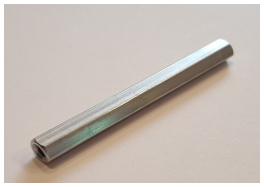
1. You will be assembling the basic block using two clamp boards, the 7.4V board and the 3.7V board. We'll start with the 7.4V board.
Using 18 screws (4-40 x 0.75in), attach the 1.75 in long standoffs with each screw, using the plastic cell spacer, as in this image, and tighten to hand-tight:

1 

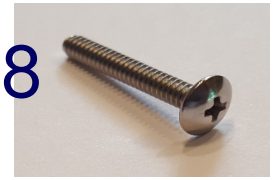
7.4V board

+1 

Cell spacer

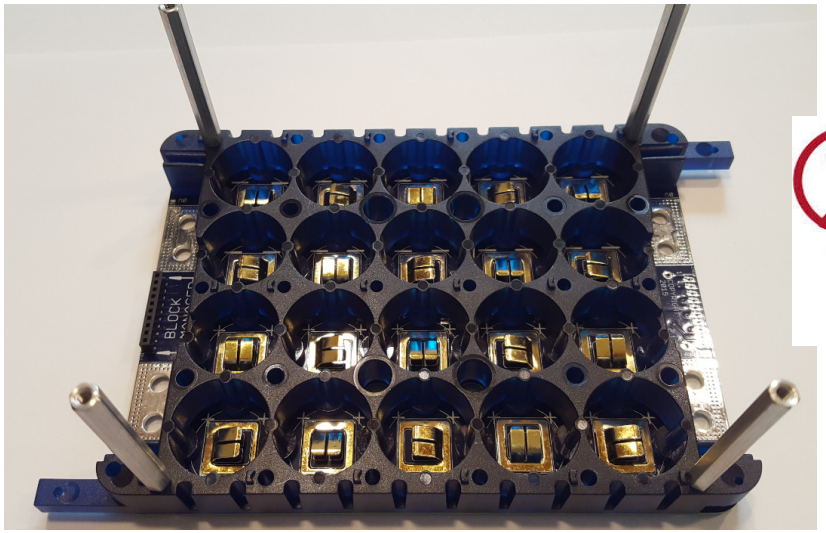
+18 

1.75 in Standoff

+18 

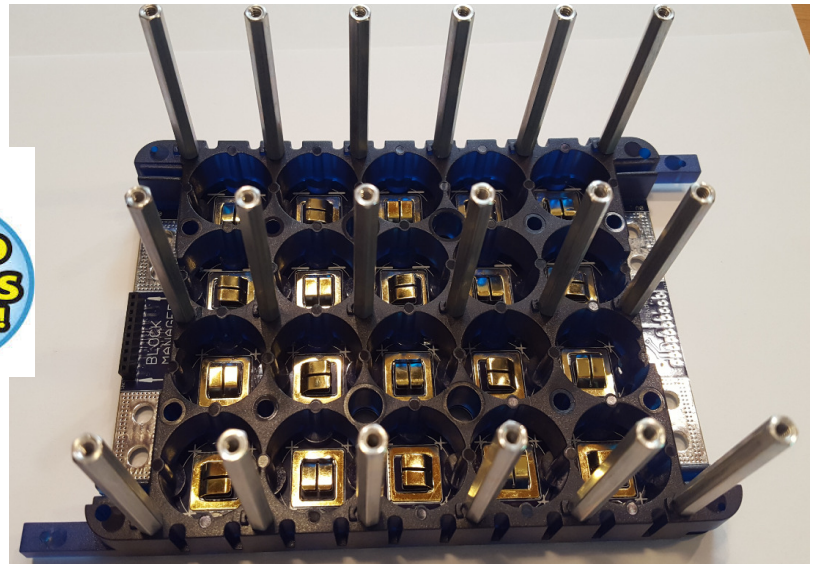
4-40 screw

Assembly should look like this:



start with 4 screws

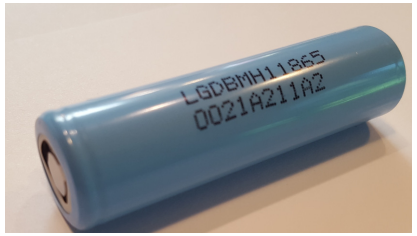
FINGER TIGHT ONLY



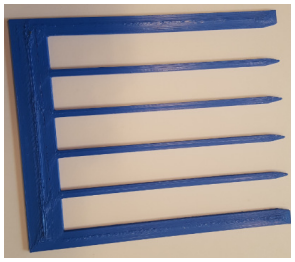
Then add all the rest

2

20

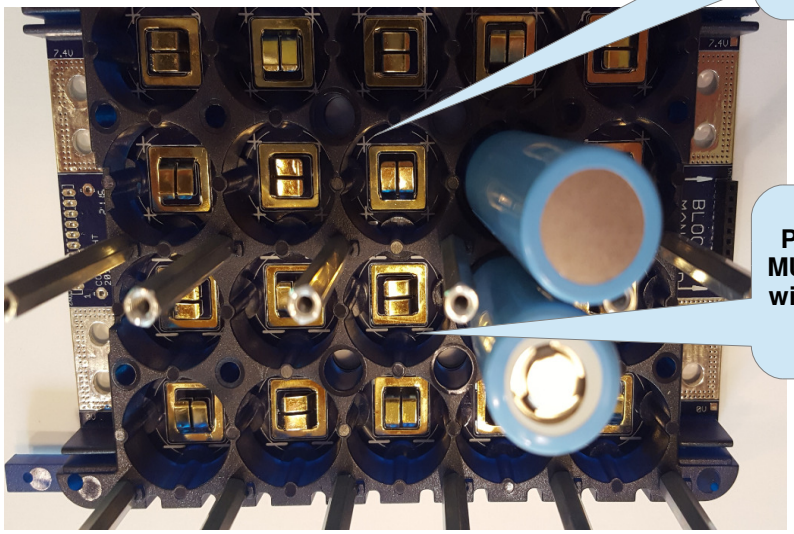


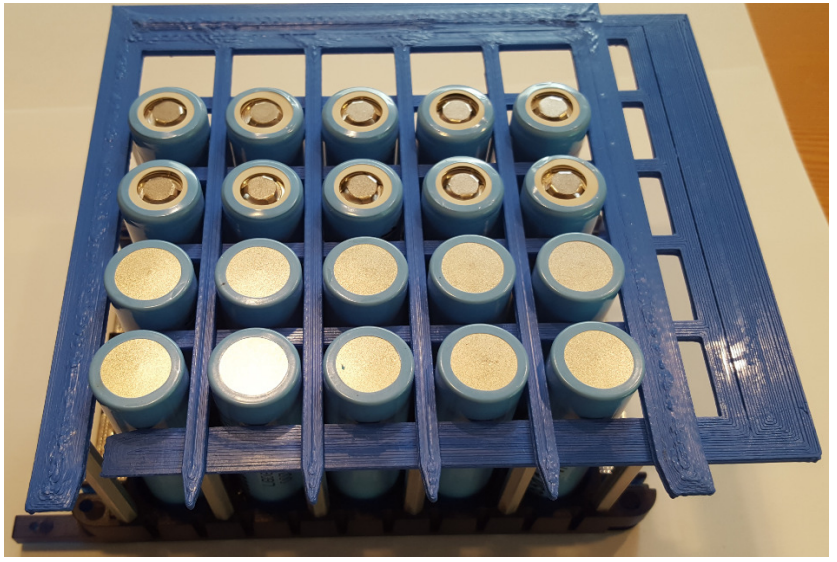
+2



Add up to 20 lithium cells paying attention to polarity. Positive cell end is placed into PLUS marked on printed circuit board.

2 each cell organizers printed from github page (not necessary but helpful)





Place battery cells into place being very careful with polarity. PLUS cell goes to plus on the printed circuit board

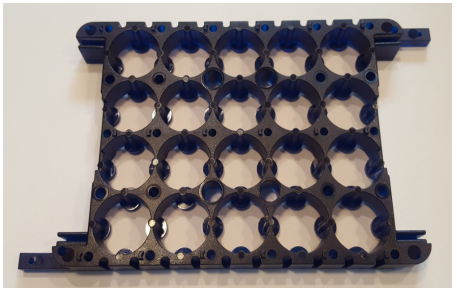
Place cell array organizer over cells to prepare for the top cell spacer

3

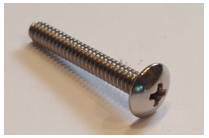
1

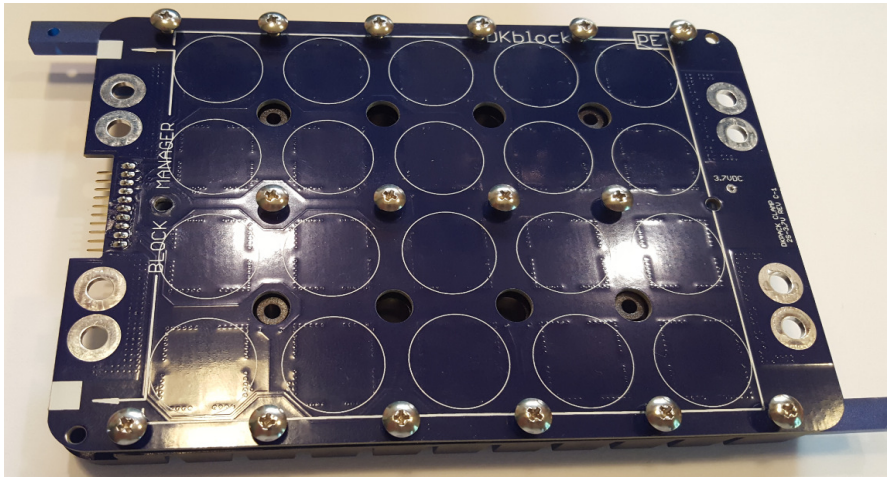
3.7V board

+1



+18

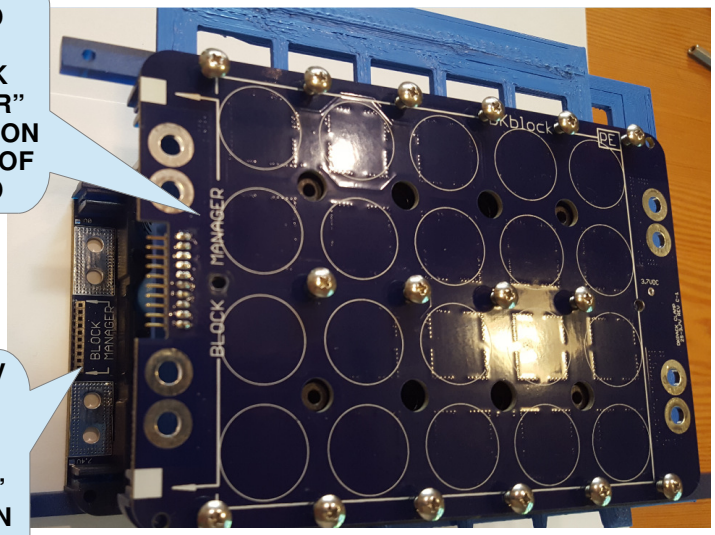




Insert 18 screws into 3.7V board and cell spacer

ALIGN 3.7v BOARD WITH "BLOCK MANAGER" PRINTED ON THIS END OF BOARD

ALIGN 7.4V BOARD WITH "BLOCK MANAGER" PRINTED ON THIS END OF BOARD

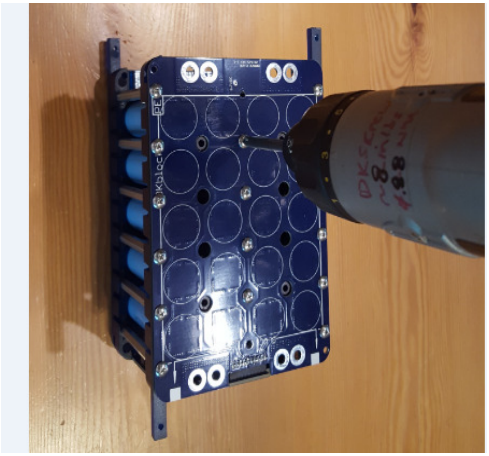


Place 3.7V board and cell spacer on cells and pull out plastic organizer

4

Keep battery block on non-conductive surface for this operation

Tighten all screws on 3.7more V board to 3.5in-lbs



Tighten all screws on 7.4V board to 3.5in-lbs

Verify connectors on both boards are pointing in the same direction, and
measure from plus (+) to minus (-) on 7.4V board, and
verify voltage is at least 7.0VDC (or appropriate cell x2 voltage) with the proper polarity.

Congratulations you finished the block assembly!!!! (Now build one more for 12V or 3 more for 24V etc.)