Unitree A1

Battery: + ICR18650 2000mah 3.7v TP LI-ION MH46259 WL312

Best Method

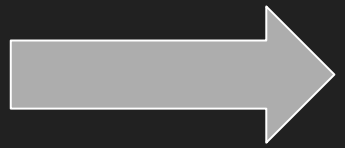
For Batteries: Reuse, Reattach, Retack

Disassembly

Battery Pack

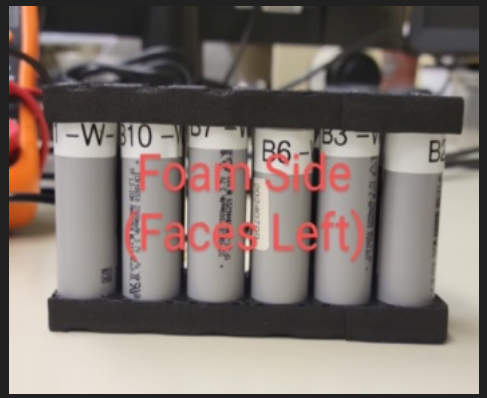
Remove Casing (6 screws) and Take Out BMS/Battery Pack

Remove Electrical Tape on Both Sides of the Board

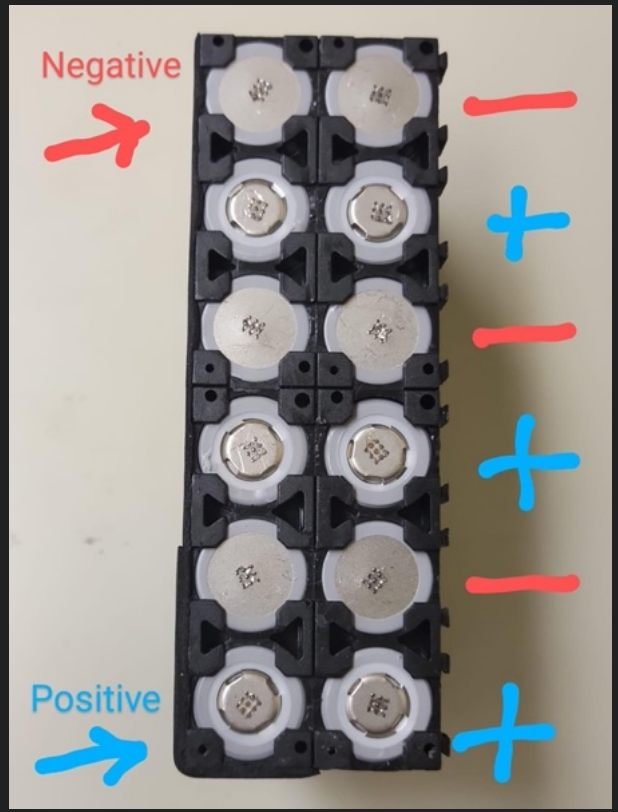


Remove Duct Tape on Both Sides of the Board

Verify That the Batteries Are Aligned in the Following Pattern
(Nickel Strips Removed for Explanation, Nickel Strips Must Already Be On)

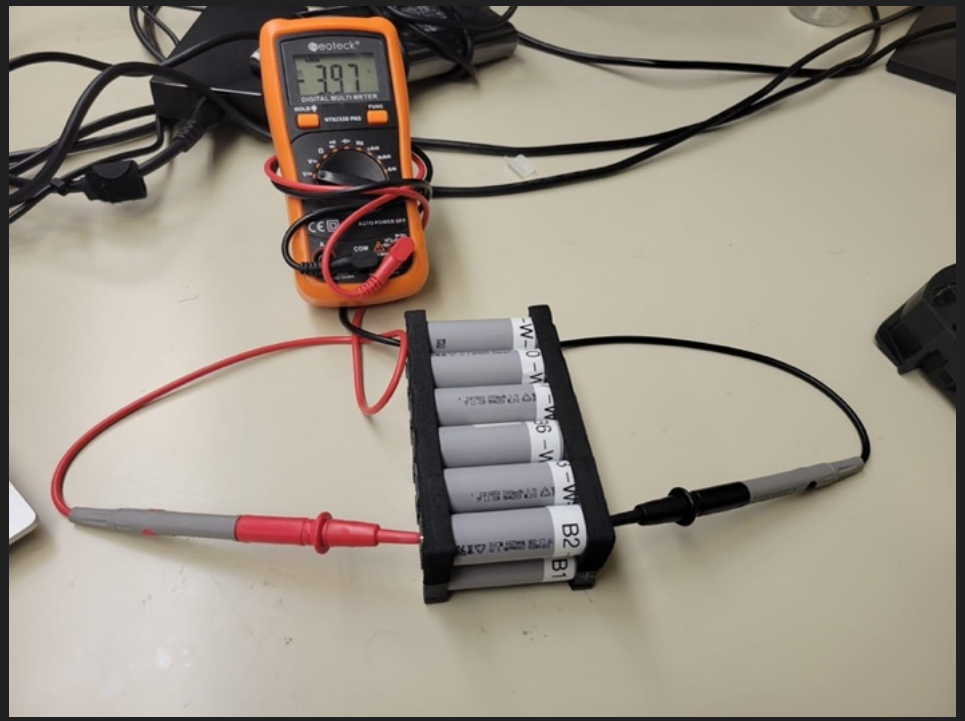


Series Pattern



Check Voltage on Each Battery Using Voltmeter

Ensure Voltage for Each Battery Is 3.6V+

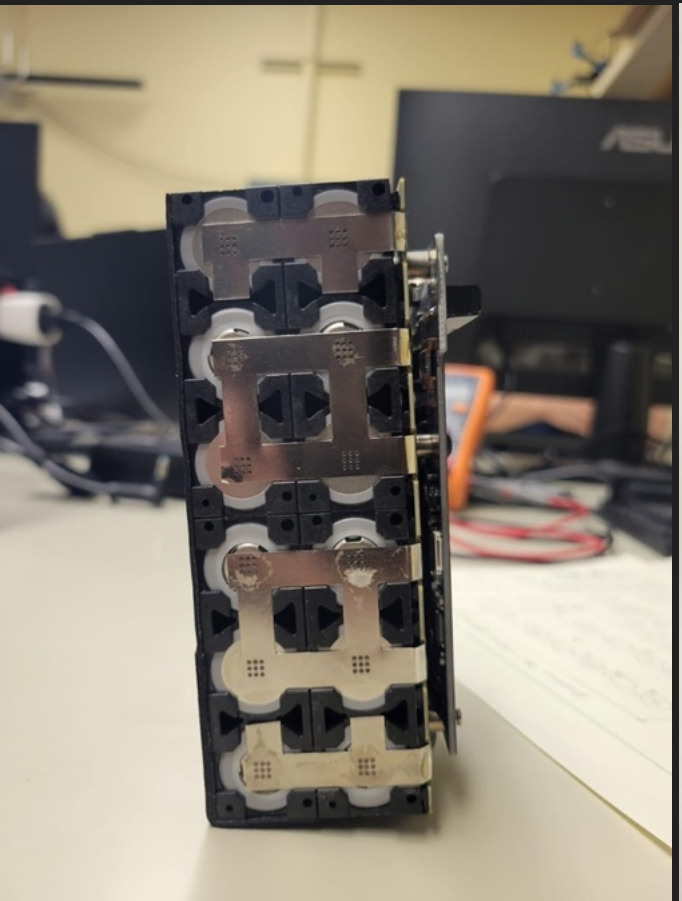


For Any Faulty/Low Voltage Batteries, Proceed

For Batteries Less Than 3.4

Using Scissors, Carefully Cut the Nickel Strips on Both Sides Attached to the BMS Board While Ensuring That the Strip Remnants Remain on the Board in Perfect Shape

IMPORTANT: THIS WILL ENSURE THERE ARE NO SPARKS, DO NOT SKIP THIS STEP | AN ALTERNATIVE METHOD IS ON THE NEXT SLIDE: HOWEVER IT IS MUCH MORE RISKY



Alternative Method (Does Not Involve Removing BMS)

You Can Proceed to the Next Slide Without Removing the BMS, but Exercise Extreme Caution When Detaching Nickel Strips Because Although this method may be faster and feel more efficient, it increases the risk of short circuiting or damaging the BMS or battery. Sparks may occur during removal if you're not Careful. Use Tools That Do Not React With the Batteries

In the Event of a Faulty/Low Voltage Battery, Carefully Remove the Nickel Strips On the Top and Bottom Part From The Whole Pack *While to the Best of Your Ability Retaining the Shape of the Strip as Shown Below*

Must Use the Following: Nose-Pliers, Flush Cutters, Chisel, or Flathead Screwdriver

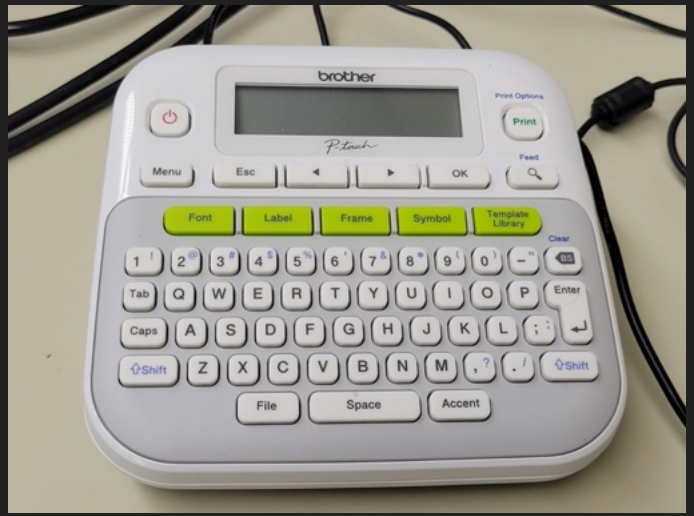
Ignore Any Nickel Tacks Left on the Batteries

Once the Nickel Strips Are Removed, Pull Out the Top Cover of the Batteries to Expose Them as Shown Below

Place the Faulty/Low Voltage Batteries in the Charger, With the Positive Facing Upward and the Negative Downward as Shown Below

Check Battery Charging Status With a Voltmeter and Label (With a Label Maker) Accordingly Using the Following Format:
-For batteries that are charging and functional: B# -W-
-For batteries that are faulty and won't charge: B# - - -

Label Maker

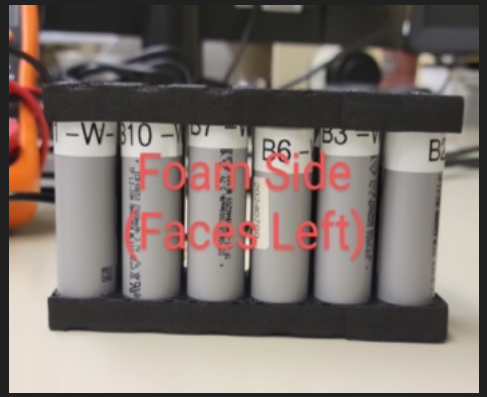


Example of a Properly Labeled Working Battery

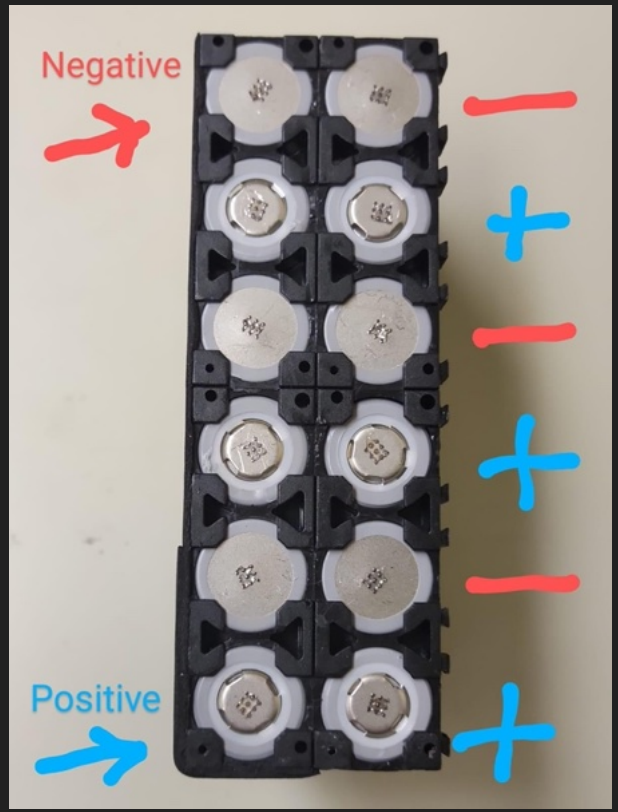
Reassembly

Battery Pack

After Charging Batteries to 3.5V+, Reinsert Them in Their Original Configuration as Shown Below

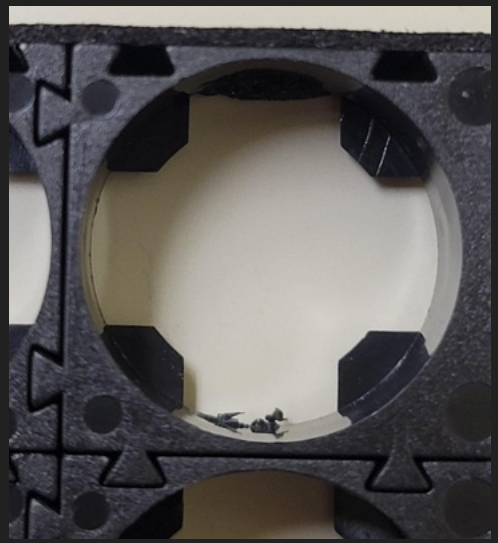


Series Pattern

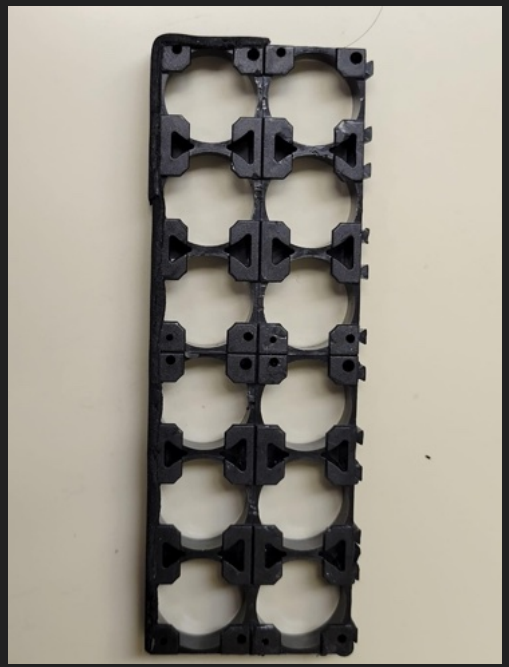


Ensure the Four Corners in Each Slot Face Opposite the Battery Direction for a Secure Fit

Four Corners in Each Slot



View When Facing Opposite the Battery Orientation

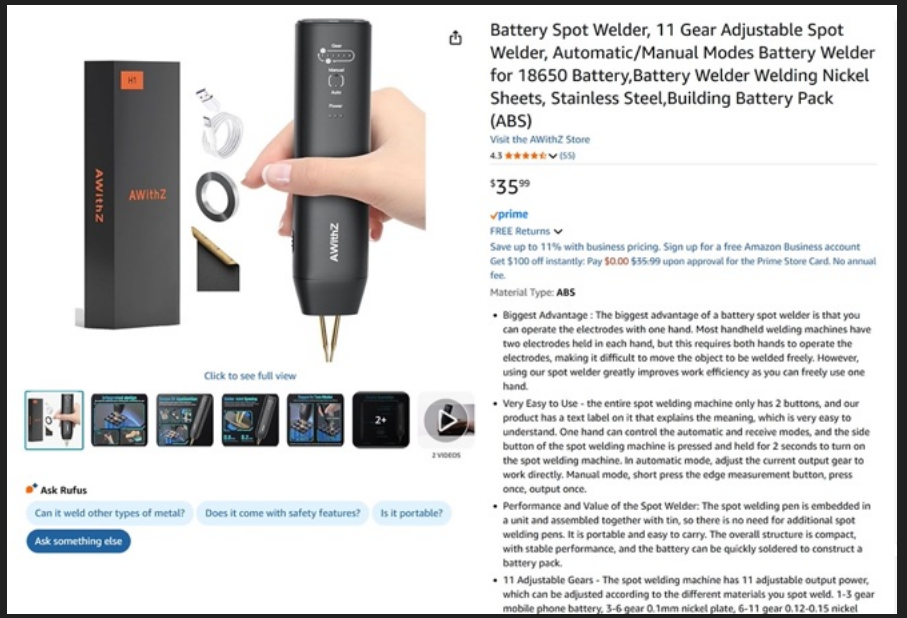


Once Placed in the Original Orientation, Gather the Following Materials for Reassembly

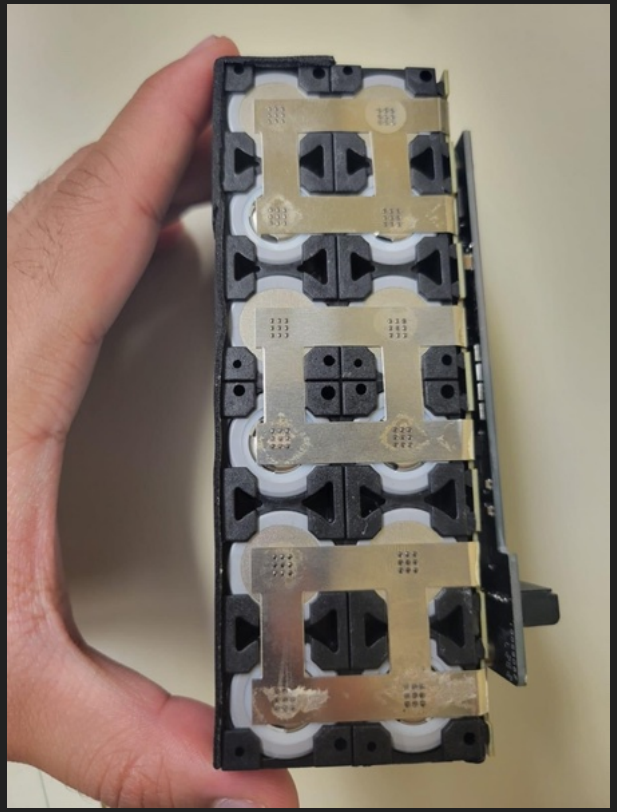
Subject To Change

Nickel Strips

Tack Welder for 18650 Battery



Recall the Original Format of the Battery Pack



Attach Nickel Strips in the Same Orientation Using the Tack Welder as Shown in the Previous Slide (Two Dots Per Tack)

Ensure Nickel Strips Are Fully Connected Across to the BMS at the Original Cut-Off Points

Place Nickel Strip Directly Onto the Batteries (Overlapping Previous Strips Is Acceptable)

Align, Press Gently, Release

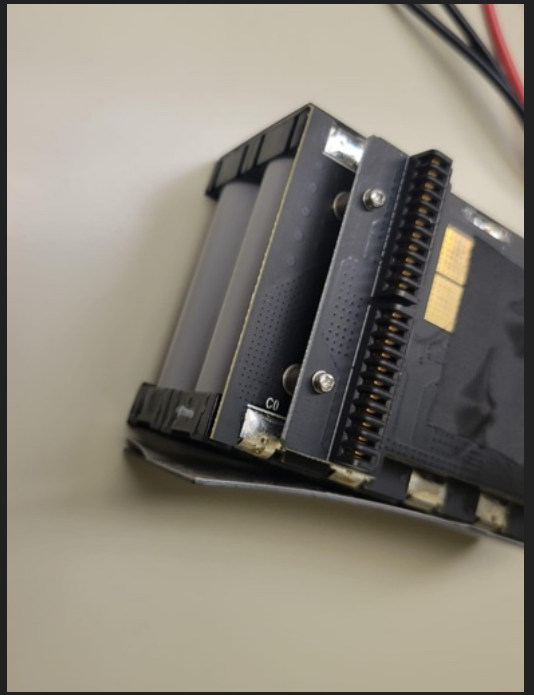
Displayed Video: https://www.youtube.com/watch?v=_dL8hCMCnlY

After Attaching the Nickel Strips, Confirm the Final Product Matches the Reference Shown Below

Follow the Orientation

Top View: Place Duct Tape on Each Side

Side View



Insert the Battery Pack and BMS Circuit Into the Top Casing

Top Casing

Align the LEDs for the Circuit

Closer View

Place the Back Cover Onto the Battery Pack

Ensure the Foam Side of the Battery Faces Upward as Shown Below; the Back Casing Will Be Placed on Top (As Shown Below)

After Placing Back Cover

While Holding the Battery Pack Together, Gently Flip It Over and Reinsert the Screws Into Their Original Holes

Gently flip and verify if the casing matches the one below

Reinsert the Screws (Tight fit)

Finally, Click the Button Shown Below to Verify the Charge, Then Insert the Battery Pack Into the A1 Unitrees Charging Station