**Lafayette College: Electrical and Computer Engineering**

08

**Fall**

Accumulator Verification: ATP-01

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This document contains information about how to verify the electrical connections inside the pack.

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# Desired objectives

This test verifies all mechanical connections in the TSV circuit are electrically connected.

# Required Hardware

* 1 Pack
* Simulated load
* Basic GLV safety loop
* PPE per safety plan
* Danger zone per safety plan
* Cables as specified in Appendix A
* Multi-meter
* Current probe

# Required Software

None

# Hardware Setup

## Single pack

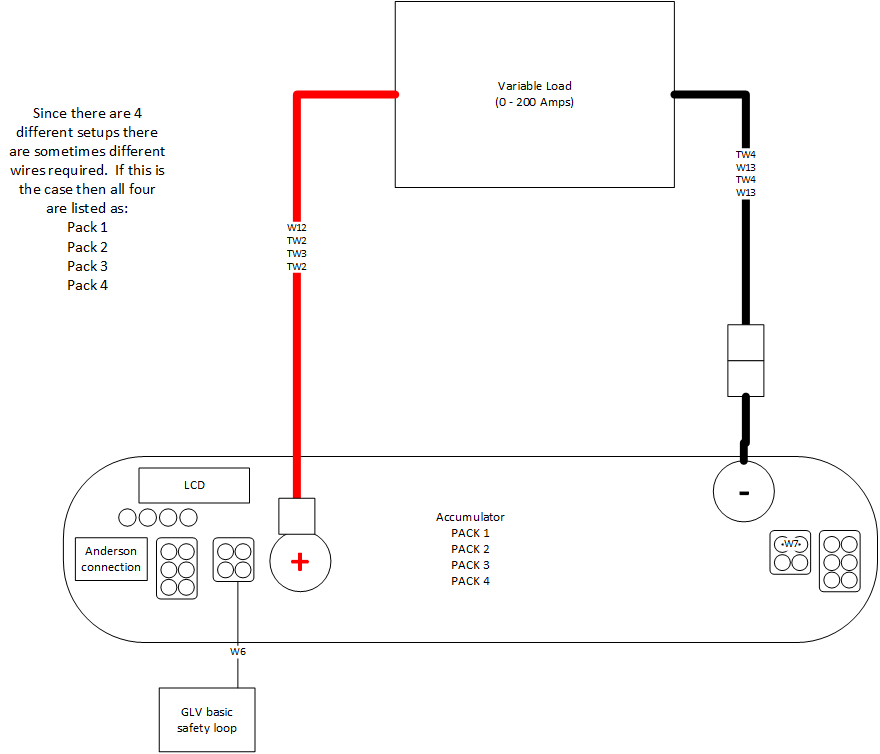


Figure 1 Single pack connections

# Software Setup

N/A

# Test

Suggestion: Run test at 20A.

## Desired data

It is desired to get the resistance between all connections. Use the picture in Appendix B. Note that in figure five pack one has an air between X1 and X2.

|  |  |  |
| --- | --- | --- |
| Contact Measurement | Resistance (µΩ) | Limit (µΩ) |
| A1 – A2 |  | 200 |
| B1 – B2 |  | 200 |
| C1 – C2 |  | 200 |
| D1- D2 |  | 200 |
| E1 – E2 |  | 200 |
| F1 – F2 |  | 200 |
| G1 – G2 |  | 200 |
| H1 – H2 |  | 200 |
| ?1 - ?2 |  | 200 |
| J1 – J2 |  | 200 |
| K1 – K2 |  | 200 |
| L1 – L2 |  | 200 |
| M1 – M2 |  | 200 |
| N1 – N2 |  | 200 |
| ?1 - ?2 |  |  |
| P1 – P2 |  |  |
| Q1 – Q2 |  |  |
|  |  |  |

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Witness/examiner signature Date Pass/Fail

# Appendix A: Wiring requirements

|  |  |  |
| --- | --- | --- |
| Cable | What packs use it | Total count for full test |
| W6 | 1,2,3,4 | 4 |
| W7 | 1,2,3,4 | 1 |
| W12 | 1 | 1 |
| TW2 | 2,4 | 1 |
| TW3 | 3 | 1 |
| TW4 | 1,3 | 1 |
| W13 | 2,4 | 1 |

# Appendix B: Measurement location images

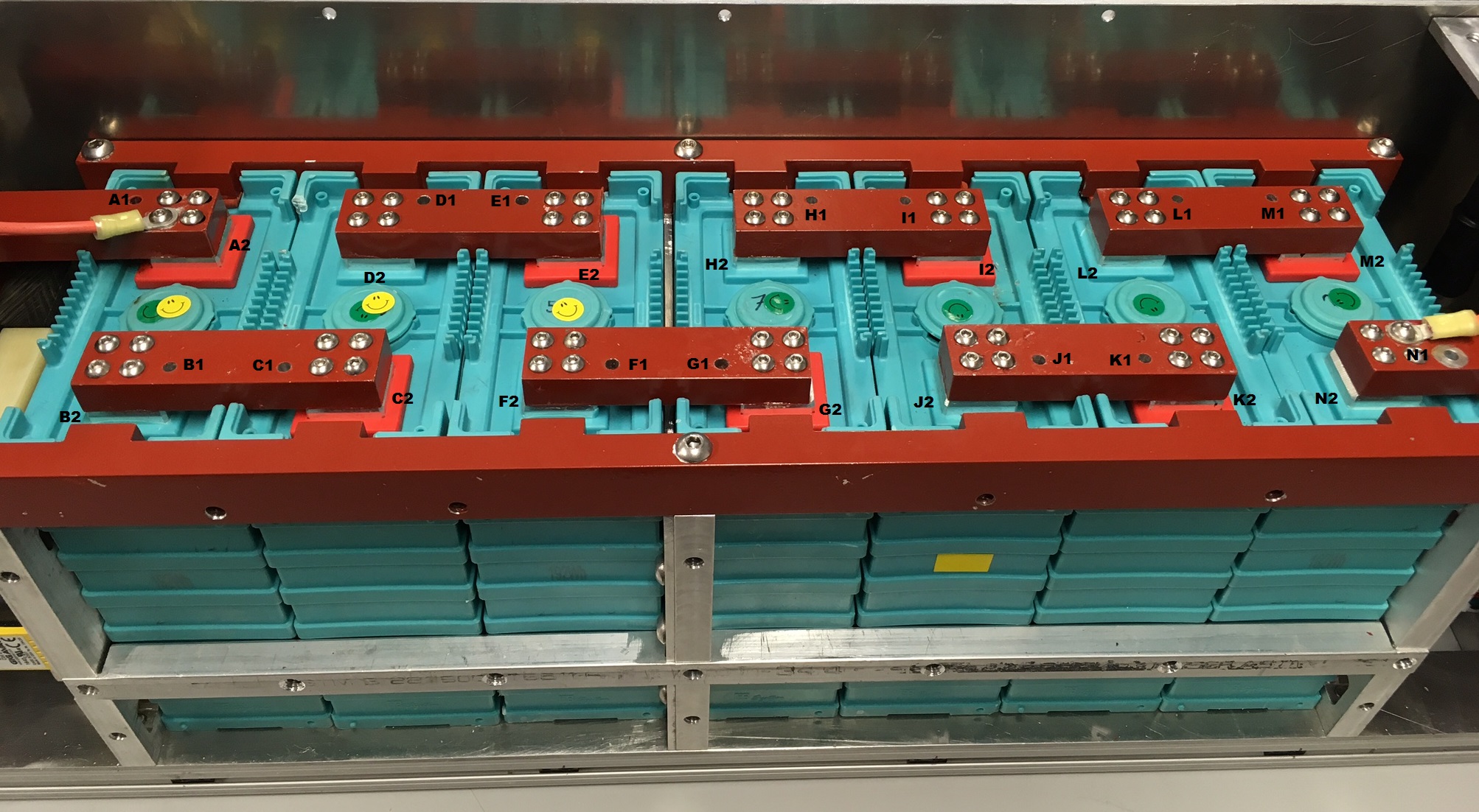


Figure 2 Top of cells

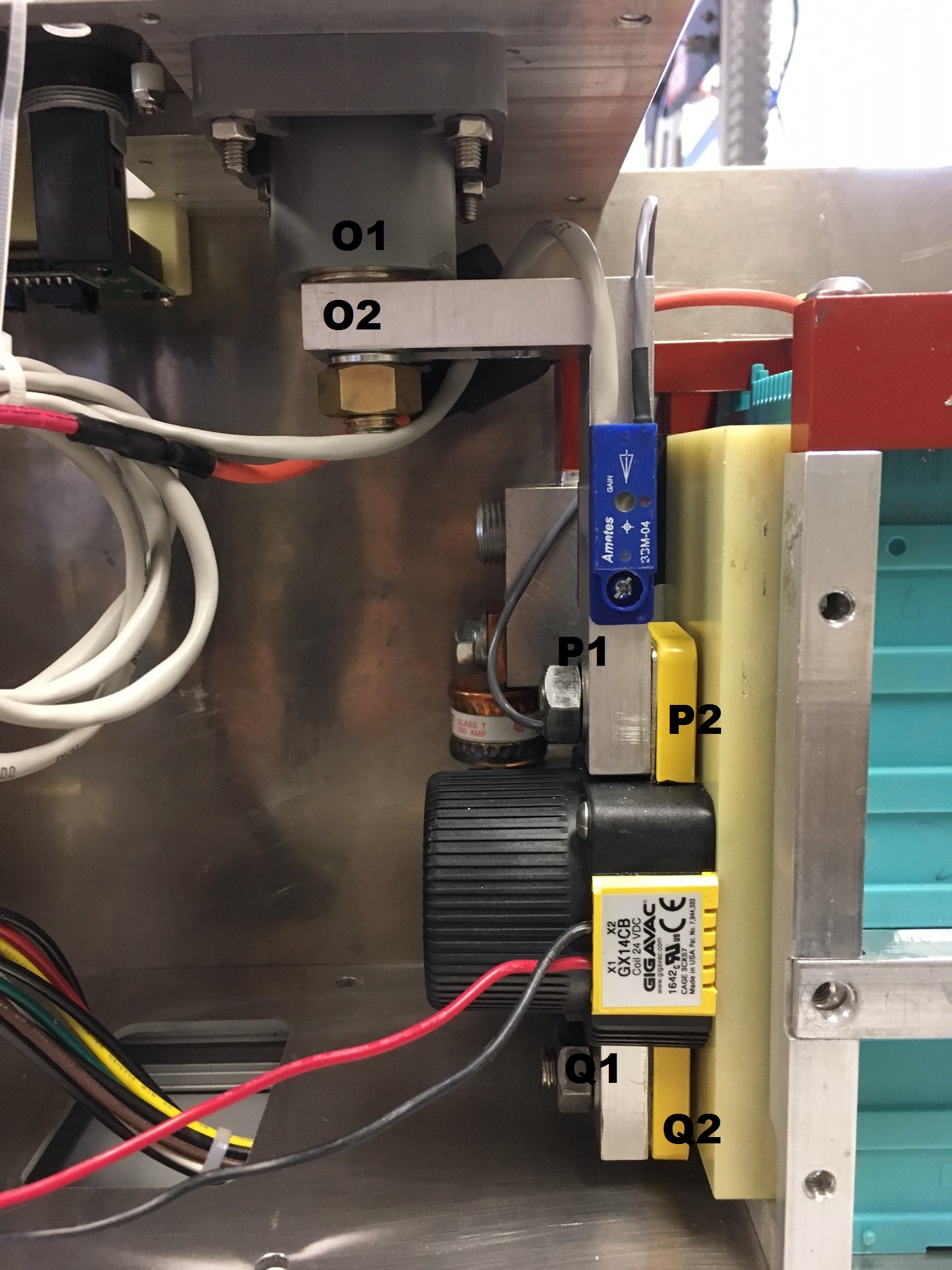


Figure 3 Positive connections front



Figure 4 Positive terminal side

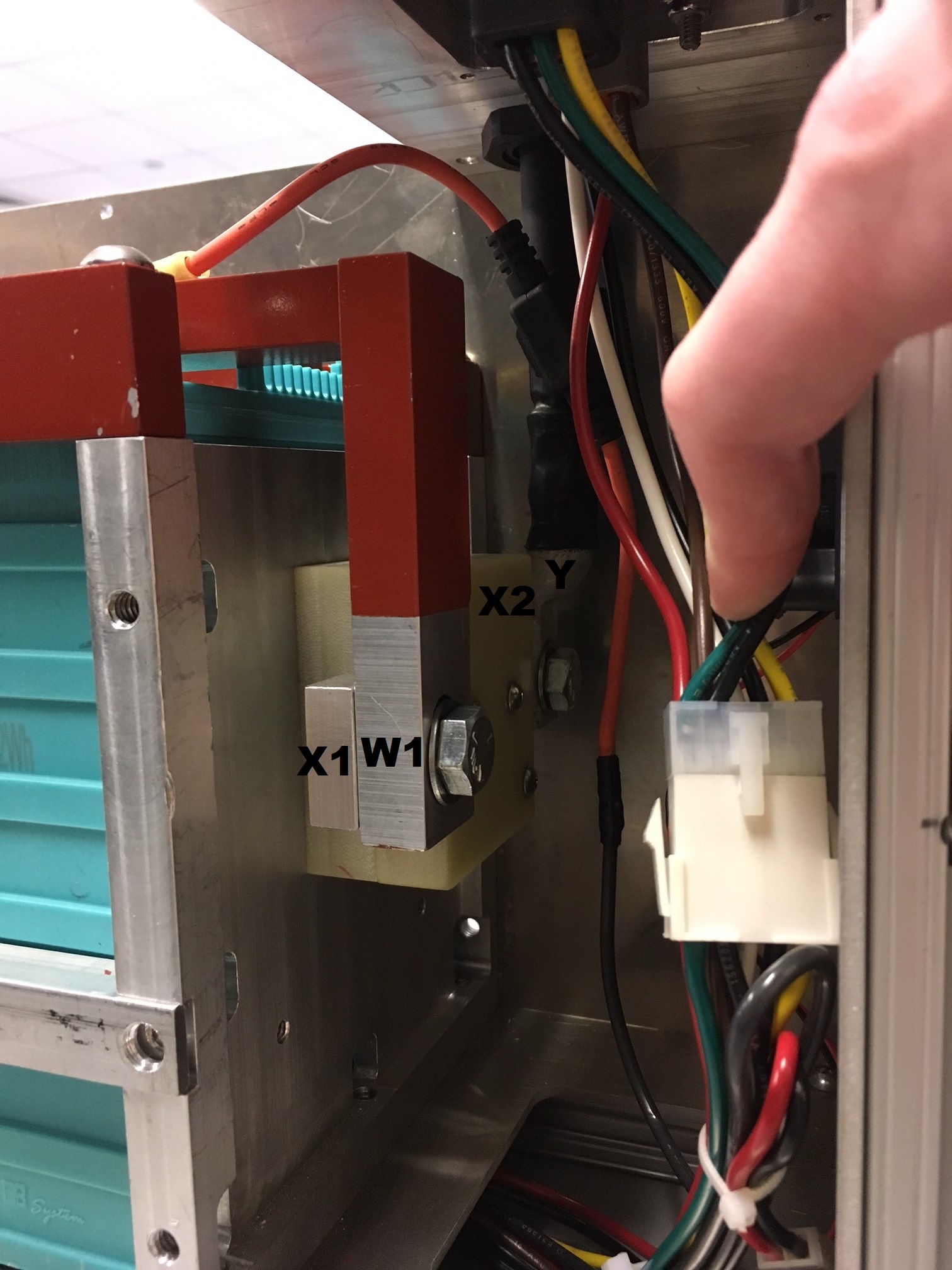


Figure 5 Negative connection side