

This plan is written to serve as documentation for the testing for the 2020 - 2021 Lafayette Motorsports team to follow such that the pack can be verified to have been assembled in a manner that is safe for use.

There is a lot of chemical energy stored within each accumulator, and thus it is the duty of its creator to assure that the energy within these 125 lb behemoths is stored correctly, so that no harm comes on anyone in proximity to the pack.

### **First Test, 4 Cells:**

The checklist below outlines how upon successful completion of all tasks will ensure that the mechanical test assembly is fit for use.

1. Don proper electrical retardant jacket, gloves, and faceshield.
2. Verify that the SMD is in the OFF position and LOCKED OUT by zip tie or padlock
3. Load 4 charged cells into the pack, one in each column, pushed all the way to the rear
4. Using a 5/32 hex key, verify that the nested set screws are torqued into the 80/20 bars such that under a respectable amount of twisting force, the screws do not go in any further
5. Place ONE busbar on each cell at a time, screwing in each new busbar in one at a time, wiring the cells in series
6. Use a multimeter to measure the voltage across the long bus bars.
7. Flip the SMD to allow the and measure the voltage across its two exposed terminals.
8. Measure the voltage across the TSV+ and TSV- receptacles with the voltmeter

### **Second Test, 16 Cells:**

Any person who interacts with the accumulator must either perform the checklist above or observe another teammate or Professor perform these actions, thereby ensuring a correctly assembled pack.

1. Complete Steps 1 - 8 from the above, but with all 16 cells in the pack
2. Lug the accumulator up to the dyno room
3. Hook up the pack to the electric motor
4. Perform the accompanying dyno integration test plan with the dyno room motor