

Medium Rate Pull Tester



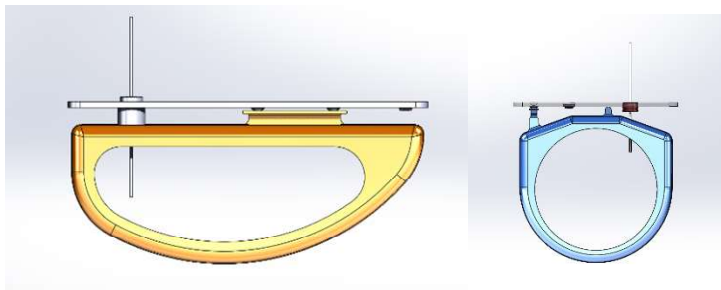
From left to right: Nuegia Lor, Sofia Caballero, Mikayla Schmidt and Antoine Chehade

PROJECT SUMMARY:

The medium rate battery universal pull-test fixture project at Medtronic's Energy and Components Center aims to improve the existing pull-test process for battery weld strength verification. The current method outputs numerical data but relies on a visual pass/fail inspection for validation preventing engineers from utilizing the numerical data as evidence to make quality decisions and is inefficient from a cycle time perspective. This project seeks to develop a standardized, repeatable testing solution that provides precise force vs. displacement data while reducing cycle time.

DESIGN GOAL:

The goal is to design a fixture able to isolate the weld joints and apply purely vertical force on the medium rate battery. The other goal is to develop a procedure that simplifies the testing of the weld joints and ensures that the devices are safe for implantation.



TEAM 17

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DESIGN CONSTRAINTS:

- Weigh less than 2lbs
- Cycle time less than 3.5 minutes
- Environmentally compatible with cleanroom standards
- Output data numerically represented
- Not deformed or damaged in the pull test process

