Battery Pack 13KWh

Objective:
- Design a battery module using 135Ahr prismatic cells, this module will be used later to make a desired battery pack.
- Use battery module & package it to fit existing space in 4-wheeler vehicle for retrofitment of IC engine to electric vehicle.
- The battery pack was designed such that two packs can be placed below the loading bucket of Tata Ace & Tata 407.

Approach:
- Designed Module of 48V which can be used in series & parallel to achieve desired battery pack configurations in terms of size, shape, peak discharge, voltage, & Amp.
- 96V was selected considering the drivetrain configuration.

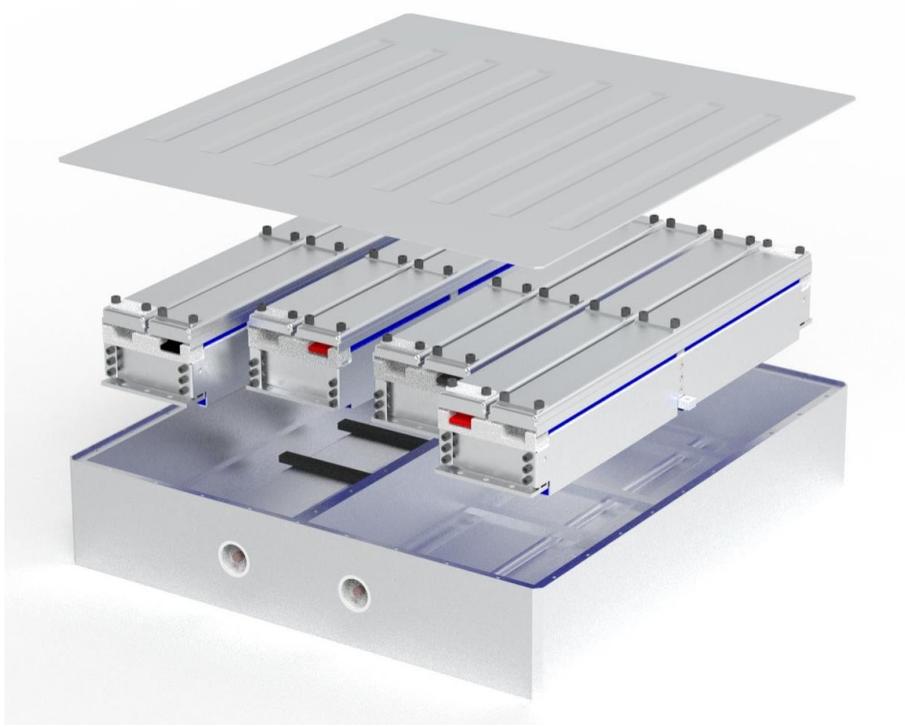
Solution:
- The battery pack was designed to fit existing space inside the 4-wheeler and battery swapping can be done.
- Battery pack was designed such that four battery packs can be placed bellow the loading bucket.

My Role:
- Conceptualization
- Design battery module as per AIS 048
- CAD & Production drawing GD&T
- Thermal Calculations
- Design for Manufacturing & Assembly
- Busbar & battery terminal Laser welding
- Manufacturing
- Testing.

Product Specification:

Rated Capacity	13KWh ,1350Ahr
Nominal Voltage	96 Volt
Module	9S1P x 2 ,7S1P x 2
Cell to cell connection	Laser welded busbar using lapjoint
Number of Cells	30
Rated Charging rate	1C
Rated discharging rate	3C for 30 Sec ,1C continuous
Cell Type	135Ahr LFP Prismatic Cell

- **Exploded View of Battery Pack**



- **Exploded View of 8S1P Module**