



Advanced Light-weight BATteRy systems Optimized for fast
charging, Safety, and Second-life applications

NEWSLETTER

MAY

Contents

- Module Production (Part II)



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WP2 - Battery Modules and Packaging

The mounting of the modules to the battery tray is described in this newsletter.

 *Modules are mounted together outside the tray to simulate the mass production process.*

Following the completion of the individual modules, they are first subjected to tests to validate their capacity and the functionality of the cooling channels embedded in the design. The modules are mounted together with bolts that are used to join the faces of the battery modules.

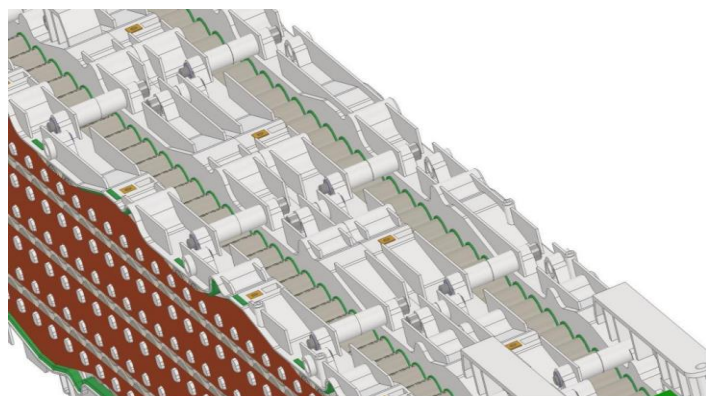


Figure 1. Sub-module to sub-module mounting.

Some initial hoses are then placed for the cooling system, as well as some cabling for the CMU and SCU is attached, along with the SCU itself (refer to Figure 2a).

The final step before the joining of the tray is to connect the modules electrically.

A set of busbars is placed only between the adjacent modules to connect the modules electrically thus to ensure a safer working environment. This means that in a line of 16 modules, module number 1 is connected to module number 2, while module number 3 is connected to module 4 and so on. The connection between modules 2 and 3 is left open to ensure there is not a high-voltage on the outputs.

Joining the modules and the battery tray is done in such a way that resembles the assembly of a vehicle body and chassis. The battery modules are mounted on a frame above the battery tray and the tray is lifted up. This is done to ensure simultaneous mounting of all clips.



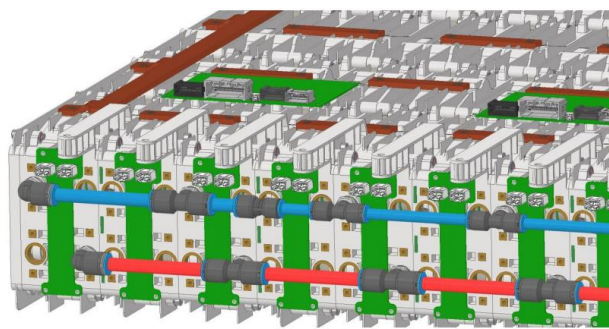
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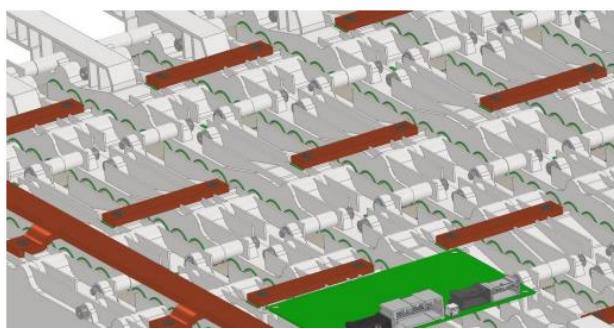
WP2 - Battery Modules and Packaging

With all modules installed, the final connection points are attached to fix the modules in their final position. As a final step, the CMU's are placed on top of the modules, together with the wiring connecting them to the module (refer to Figure 2b).

After all these connections, the positive and negative busbars can be installed before which the interconnect busbars are connected one by one, except a pair in the middle, as this will act as a safety disconnect for shipping. The latter will be placed at installation using appropriate safety gear.



(a)



(b)

Figure 2. (a) Cooling system mounting. (b) Sub-module mechanical and electric interconnection.



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