

Battery pack removal sequence

What is a battery pack disassembly?

Robotic disassembly involves several research topics such as Task and Motion Planning (TAMP), robot tool design, and robot sensor-guided motion. Battery pack disassembly is a part of this field of applications as a practical approach to preserving operators' safety and health by coping with the high variability of products [38, 64].

Is a fully automatic battery pack disassembly possible?

Battery pack disassembly is a part of this field of applications as a practical approach to preserving operators' safety and health by coping with the high variability of products [38,64]. However, most authors agree that a fully automatic battery pack disassembly is not feasible with the current constraints [17,21,37,41,56].

Can a planning approach be used for the disassembly of electric vehicle batteries?

5. Conclusions Using the example of the Audi Q5 Hybrid battery system, a planning approach for the disassembly of electric vehicle batteries has been demonstrated. Based on a priority matrix, a disassembly sequence for the Q5 battery system has been derived.

Can a robotic cell disassemble a battery pack?

The analysis highlights that a complete automatic disassembly remains difficult, while human-robot collaborative disassembly guarantees high flexibility and productivity. The paper introduces guidelines for designing a robotic cell to disassemble a battery pack with the support of an operator.

How ATEX 3 battery pack was disassembled?

Following the recommendations given after the safety analysis, as a specific potentially explosive atmosphere (ATEX) 3 zone, the battery pack was manually disassembled. The manual disassembly brought to a disassembly procedure which was decomposed and analysed to identify how to automate the same operations with a robot.

How do you remove a battery pack from a stack holder?

After disassembling the stack holders, the battery pack can be taken out of the casing bottom. In a last step, the stack fasteners are unscrewed and removed to finally obtain the battery stacks/modules. Table 2.

of Battery Packs Master's Thesis in Product Development Mikaela Collijn 931215 Emma Johansson 920728
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Secure the new battery to the bracket and grease the terminals. Place the new battery in the battery tray and secure it to the bracket. Simply reverse the process you used to ...

Hellmuth et al. (2021) proposed a general method for evaluating the automation potential of battery removal

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steps for 2017 Chevrolet Bolt batteries and Audi Q5 batteries, and develops criteria...

Based on a priority matrix, a disassembly sequence for the Q5 battery system has been derived. Subsequently, the battery has been analyzed concerning the complexity of ...

Students shall remove and replace a BEV, HEV, PHEV, or FCEV battery pack from a vehicle using the prescribed procedures, processes, tools, and equipment. Task: Students will remove ...

This paper proposes four optimization objective functions for the battery pack disassembly sequence planning: average idle time on single side(IT), safety factor(S F), ...

Identifying Battery Cables. The battery terminals in your car should be either marked or color-coded. If the terminals are marked, you will see a plus sign on the positive ...

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The first stage includes the disassembly blocks of covers removal, coolant removal (in case of liquid cooling system) and the SP removal (safety fuse in case of Tesla ...

This process sequence depicts a pack-to-module and module-to-cell disassembly sequence for EOL EVBs. As the articles analyze various types of BEV and plug ...

Hellmuth et al. (2021) proposed a general method for evaluating the automation potential of battery removal steps for 2017 Chevrolet Bolt batteries and Audi Q5 ...

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battery pack in modules which can be replaced, the expected life of a module can be longer than the battery pack life by a factor $1 / (n/m)(1 / ?)$, which makes a point for replacing failed battery ...

This paper analyses the use of robotics for EVs" battery pack disassembly to enable the extraction of the battery modules preserving their integrity for further reuse or ...

Removal Sequence This section explains the removal and replacement procedures for the 1200XL unit. Serial Number Location Report the unit's serial number 1 to Compaq when ...

The X26 ECD is shipped with the DPM battery pack pre-installed. To change the DPM: Shift the safety switch to the down (SAFE) position. Remove the TASER cartridge. To unload the DPM, depress the DPM release button and remove ...

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From the battery pack to the modules, then to the cells, making decisions for the disassembly sequence is required to determine the optimal disassembly depth and how to remove the lid, ...

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