New energy battery box stamping principle

Why is the box structure of the power battery pack important?
Abstract: The box structure of the power battery pack is an important issue to ensure the safe driving of new energy vehicles,which required relatively better vibration resistance,shock resistance,and durability.

How does a battery pack box work?
The battery pack box is bolted to the chassis structure of the vehicle through the lifting lugs and fixed to the chassis of the vehicle. The internal structure of the battery pack box is shown in Fig. 8. The structure includes the upper-pressure rod, the upper-pressure cover, and the inner frame.

Why do new energy vehicles need a power battery pack structure?
In the structure of new energy vehicles,the power battery pack structure is the most important power component,thus,it needs to be designed with a safer and more reasonable structure to meet the requirements of shock resistance and durability.

How does a rigid column affect a battery pack box?
In the analysis of the vehicle side impact test,the rigid column invades the electric vehicle,which deforms the sill beamand the side of the battery pack box. Figure 10 shows the distribution of the stress nephogram of the battery pack box during the collision.

What is the main structure of a battery pack box?
The main structure of the battery pack box includes the upper-pressure cover,the upper-pressure rod,the lower box body of the battery pack,the inner frame,the lifting lug,the battery module,the single battery,and other structures.

What is the stress nephogram of a battery pack box?
Figure 10 shows the distribution of the stress nephogram of the battery pack box during the collision. The maximum stress value of the box is 335.5 MPa, and the maximum stress value of the lifting lug closest to the collision rigid column is 413.4 MPa.

The invention provides a new energy automobile battery box stamping forming process, which comprises the following steps: s1, drawing the blank for the first time to process a first...

Manufacturing Process of New Energy Battery Enclosures. 1. Raw Material Preparation. 1.1. Preparation of sheet materials: The sheet materials are cut into the required size and shape ...

Lan et al. proposed a set of methods for analyzing the impact response of the battery pack box and internal structure, established a refined battery pack model, and verified the model through the calculation results of

the crash analysis, which provided a basis for the crash analysis and optimization design of the battery pack [8].

To solve the problems of energy shortage and environmental pollution, new energy power batteries, as a green and efficient energy storage technology product, have gradually entered people"s vision. As an important ...

This study takes a new energy vehicle as the research object, establishing a three-dimensional model of the battery box based on CATIA software, importing it into ANSYS ...

Aluminum Vaccum Stamping Liquid Cooling Plate for New Energy Electric Vehicle. Liquid cooling is mostly an active battery thermal management system in EV & ESS industries. Compared with air cooling solution, water cooling plate is compact and optimized design, more profitability, flexibility, and safety. That"s why now it"s also widely used in ...

This paper takes a BEV as the target model and optimizes the lightweight design of the battery pack box and surrounding structural parts to achieve the goal of improving vehicle crash safety and lightweight, providing participation in the application of new materials in new energy vehicles.

3003 aluminum plate has many advantages for new energy power battery shells . 1. Battery aluminum alloy shell has good processability. 3003 aluminum alloy power battery aluminum shell (except the shell cover) can be stretched and formed at one time. Compared with stainless steel shell, the box bottom welding process can be omitted. 2. The ...

New Energy Battery Conversion Sheet Stamping Principle. The invention is suitable for the technical field of new energy automobile battery modules, and provides an integrated ...

New Energy Battery Conversion Sheet Stamping Principle. The invention is suitable for the technical field of new energy automobile battery modules, and provides an integrated processing technology for stamping and packaging nickel ...

Lan et al. proposed a set of methods for analyzing the impact response of the battery pack box and internal structure, established a refined battery pack model, and verified the model ...

This study takes a new energy vehicle as the research object, establishing a three-dimensional model of the battery box based on CATIA software, importing it into ANSYS finite element software, defines its material properties, conducts grid division, and sets boundary conditions, and then conducts static and modal analysis to obtain the stress ...

For new energy vehicles, the core technology lies in the power battery. The metal parts of the power battery include aluminum shells, battery covers, explosion-proof valves, flip-flops, negative ...

New energy battery box stamping principle

Roland et al. assessed the performance of a mechanical battery pack structure on the basis of energy absorption and packaging eficiency, thus enabling optimization of the ...

Battery 2030+ is the "European large-scale research initiative for future battery technologies" with an approach focusing on the most critical steps that can enable the acceleration of the findings of new materials and battery concepts, the introduction of smart functionalities directly into battery cells and all different parts always including ideas for stimulating long-term research on ...

The invention discloses a pressing process of a new energy automobile battery box, which comprises the following steps: 1) pre-pressing: preliminarily pressing a plate body through a ...

Web: https://doubletime.es