Capacitor Riveting Process

What is electromagnetic riveting?

In the electromagnetic riveting process,electromagnetic energyis the prime source of energy which is further converted into mechanical energy and this transformation finally ends with the deformation of the rivet. The diagrammatic representation of electromagnetic riveting setup is shown in Fig. 2.

What is riveting process?

Riveting process is widely used to join sheets by using rivets. It can be used in many fields due to its simple process,easy disassembly,and high reliability. In addition,it has incomparable advantage in the joining of light alloy,composite,and dissimilar materials. Conventional riveting belongs to mechanical joining.

What is the first stage of the riveting process?

The first stage therefore involves studying the riveting process itself. After an introduction to the riveting process itself,this paper incorporates analysis of strains and stresses located in the plates and rivet in post-riveting.

How is conventional riveting done?

Schematic of conventional riveting is shown in Fig. 1. Holes need to be drilled in advance on both sheets. Rivet is put in the hole of sheets, with factory head being fixed by lower die. Upper die is driven by hydraulic power or hammer hitting to punch the rivet.

How does piercing riveting work?

piercing riveting. Not only does the joint it produced pos- weight of struct ure greatly. The process of self-pierce rive ting is shown in Fig. 8. sheet. Punch pushes the rivet and forces it to pierce uppe r sheet. In the same time,the rivet drives lowe r sheet to deform plasticall y towards female di e. During the proc ess of riveting,

What is the degree of rivet deformation?

The degree of rivet deformation is positively related to the strength of the impulse. When the capacitance increases by 0.063 F,the total electromagnetic repulsion force rises by 60%,reaching 15.45 kN at 0.096 F,while the riveting time rises by 20%,from 2.33 ms to 2.80 ms.

The capacitor charger 1 of the main coil charges the capacitor C1, and the charger 2 charges capacitor C2 as shown in Fig. 2. The trigger and time sequence controller controls the main switch S1 and resetting switch S2. The main switch is closed firstly. Then, the ferromagnetic mover accelerates till it hits the rivet. This process lasts about 10 ms. After 20 ...

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Riveting device is one of the most critical components in the capacitor equipment, foil and cover the riveting quality plays an important role. Basic design requirements are: riveting cover plates to be the accurate and reliable, easy installation and maintenance, riveting time is short, simple structure. Therefore, the structure shown in Figure

Electromagnetic riveting process (EMR) is a high-speed impact connection technology with the advantages of fast loading speed, large impact force and stable rivet deformation. In this work, the axisymmetric sequential and loose electromagnetic-structural coupling simulation models were conducted to perform the electromagnetic riveting process of ...

of the most creative in the development process. II. THE PRINCIPLE OF THE RIVETING DEVICE Riveting device is one of the most critical components in the capacitor equipment, foil and cover the riveting quality plays an important role. Basic design requirements are: riveting cover plates to be the accurate and reliable,

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Riveting JMQ 6800pF +1050 JMQ 3300pF 400v Stock Dispatch ProductAudit Impregnation -.....> JMQ 6800pF 420V +105C by QA Combination Seal Curling, Washing Aging Marking, Insulating Charging Visual Inspection Packing Conformance Inspection Packing . Title: jb-Screw-Aluminum-Electrolytic-Capacitors-Production-Process-Flow Author: jb® Capacitors Company Subject: jb ...

The electromagnetic repulsion force acting on the driver plate pushes the punch to deform rivets. The whole EMR process is much faster than conventional riveting techniques, ...

Many scholars at home and abroad have studied the electromagnetic riveting efficiency, riveting quality, deformation mechanism of composite materials, the riveting process with large diameter and large sandwich thickness, and the formulation and optimization of the riveting process parameters.

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Electromagnetic riveting (EMR) is a relatively new riveting technology [7] s riveting force is derived from the electromagnetic repulsion force between a spiral flat coil and a circular copper plate, called driver plate (see in Fig. 1) the EMR process, the capacitor bank is charged to a preset energy value by closing the charging switch S 3.

The electromagnetic repulsion force acting on the driver plate pushes the punch to deform rivets. The whole EMR process is much faster than conventional riveting techniques, fully shaping the rivet only in several

milliseconds and even hundreds of microseconds [9].

The riveting process may not be as widely used nowadays as it was back then, but it remains a relevant part of modern manufacturing methods. A rivet is typically made of carbon steel, but lightweight alternatives like aluminum and copper are also used quite commonly. The primary purpose of a rivet is to support shear loads oriented perpendicular to the axis of ...

Modified methods which originate from existing riveting techniques, such as reshaped riveting, restored riveting, self-piercing riveting, clinch riveting, electromagnetic riveting, flow...

Capacitor Discharge stud welding eliminates drilling, tapping, punching, riveting, gluing, and screwing; and is especially beneficial when working with thin gauge materials due to the absence of reverse-side marring or discoloration. This ...

Heat-Free Process: Riveting doesn"t need heat, preventing any damage to the mechanical properties of aluminum. Eliminates Galvanic Corrosion: The use of self-piercing rivets solves the problem of galvanic corrosion, offering water-tight joints. Efficiency: Compared to welding, riveting is a faster and cleaner process. Versatility: Self-piercing rivets made of ...

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