

## e-mobility demands battery expertise

Ultrasonic expertise in battery production

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SCREENING



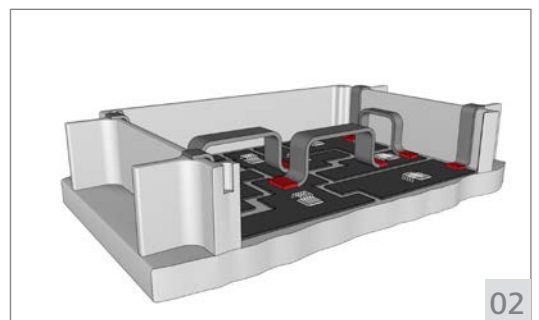
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Anyone who can offer proven competence in battery production is very much in demand in the age of e-mobility and smartphones. With its strong experience in screening and welding, the Swiss ultrasonics pioneer, Telsonic, is represented in two key processes at the beginning and end of battery production. The company's reliable process technology during ultrasonic screening ensures homogeneous powder consistency for the manufacture of the terminals. And the often indispensable torsional welding guarantees secure contacts.

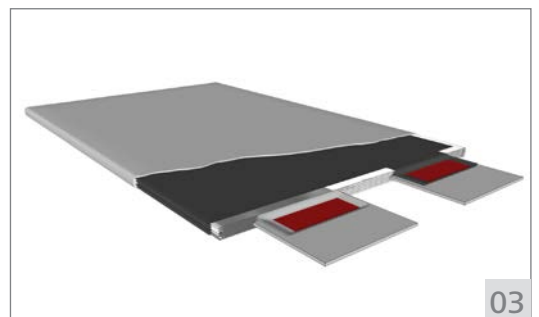
«With our ultrasonics expertise, we are represented in two key processes in battery production – powder screening and welding», states Axel Schneider, Head of Sales at Telsonic AG. In applications involving ultrasonic welding of contacts and arrestors, customers benefit from over ten years of experience in battery technology. With ultrasonic screening, Telsonic's expertise comes into play right from the start of battery production. Screens stimulated with ultrasonics filter the carbon for the anode and the lithium metal oxide for the cathode. Electrode production requires the components to be distributed as homogeneously as possible. For this reason, double decker screens – as they are known – use precisely defined mesh sizes to ensure the particle size is always uniform. This also drastically reduces the amount of incorrectly sized particles.

### Car batteries just like mobile phone batteries

With the torsional ultrasonic welding processes developed by Telsonic, SONIQTWIST® and PowerWheel®, contacts between the individual films and arrestors for the connections are welded externally using a reliable process that is fast and delivers high quality. The particular advantages of torsional welding are found in the slim sonotrodes which approach from above in cases where



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- 01 High-voltage cable with tubular cable-lug connections
- 02 Telsonic ultrasonics welding power electronics IGBTs onto ceramic substrates.
- 03 With Telsonic ultrasonic technology, even the thinnest aluminium films can be welded reliably, e.g. for battery cell connectors.

it is necessary to consider interfering contours or weld securely in tight spaces. With its significantly more complex hammerhead sonotrodes, this process is markedly superior in comparison with longitudinal welding.

Torsional welding is equally beneficial in applications that involve delicate materials. Extremely thin copper and aluminium films, for example, must not be damaged during welding processes. Similarly, in applications with IGBTs, the ceramic plate on which the tracks run and the contacts are welded must remain undamaged. These areas of expertise are not only found in car batteries – they have also been in high demand in mobile phone battery production for some time now.

#### **Reliably weld different materials**

Ultrasonic welding also reveals its strengths when it comes to joining different types of material. As an example, Telsonic has been reliably welding nickel contacts onto aluminium for cell connectors for a first-tier automotive supplier for more than ten years now.

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