

Application example

Copper jumper flag on an aluminum battery cap

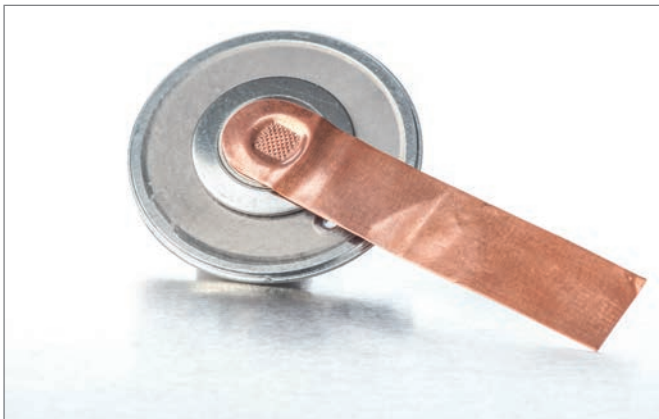
PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SIEVING



Task

An aluminum battery cap needs to be connected to a copper electrical conductor. Space is limited as the film-style electrical conductor has to be welded into an embossed channel in the battery cap. Due to the high quantity of units, the process has to be automated following validation. The standards for process monitoring and quality control are very high.

Solution

Despite their different melting points, aluminum and copper can be reliably welded together thanks to ultrasonic technology. Ultrasonic welding uses a friction-based cold welding technique to create a molecular firm bond. The application is realized using torsional, ultrasonic SONIQTWIST® welding technology, which offers a number of advantages.

Advantages of this configuration

By creating a firm weld without any additional tools, ultrasonics generates corrosion-resistant electrical connections with low contact resistance at a level similar to that of the original materials. In this application, one of the key advantages offered by torsional SONIQTWIST® welding technology is the easy access to the lower welding point on the component; this is because application takes place axially from above. The process controller offers a high degree of flexibility and countless opportunities for process and weld quality monitoring. For instance, you can even export welding results via USB or Ethernet.



The application was welded using torsional SONIQTWIST® technology. The ultrasonic welding components were integrated into a special-purpose system.