Mecmesin

testing to perfection

Solutions@Mecmesin

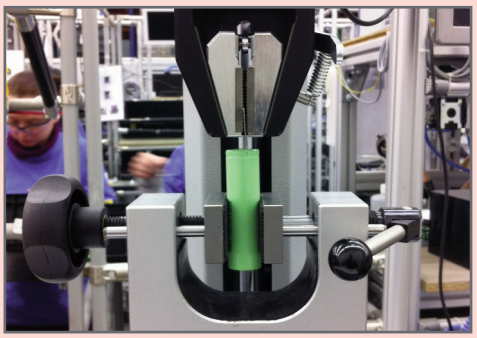
Battery terminal tension test

Specification

BMZ is one the largest European suppliers involved in the design and manufacture of specialist custom-made battery systems for mobile power applications.

As part of their production process, BMZ Poland in Gliwice need to test the integrity of the welding on electrical connections fixed to each end of their rechargeable cells. Each connection is welded in two places, and BMZ needed to know that both welds have been made securely. The tests need to be made on the shop floor, close to the production area.

MultiTest 2.5-*i* test stand



5 kN wedge grip and
custom-made insulated grip

Solution

ITA, Mecmesin's distributor in Poland, supplied a MultiTest 2.5-*i* computer-controlled test stand fitted with a 1000 N loadcell, a standard 5 kN Wedge Grip, and a custom-made insulated grip to hold BMZ's rechargeable cell. The MultiTest 2.5-*i* stand was supplied with Mecmesin's powerful Emperor™ force testing software, which is used to create the test program and collect and present the results. An important point for BMZ was the requirement to see a graph of the results, to check on the behaviour of the welds. Emperor™ can show a real-time graph of the test as it proceeds and reports can be written with, if required, colour coded 'Pass' or 'Fail' statements, making interpreting the results extremely simple.

BMZ needed to know that the cell connections had been correctly welded in two places, so after clamping the cell body in the customised insulated grip, the cell connection is secured in the jaws of the 5 kN wedge grip. An Emperor™ program was written to include on-screen messages prompting the operator to load the sample correctly, run the test, and prepare for the next sample.

Emperor™ software controls the stand, moving the crosshead slowly at first to find a 'Touch-on' point as a reference, so that each sample is measured from the same starting position. After zeroing the graph, the crosshead is then moved upwards at a speed of 1000 mm per minute, subjecting the cell connection to a tensile force, breaking first one weld, then the second. Emperor™ software calculates the peak force detected for each weld, saves the results, and creates printable reports.

System

- MultiTest 2.5-*i* supplied with Emperor™ software
- ILC-S 1000 N Loadcell
- 5 kN wedge grip
- Custom-made insulated grip

Testimonial

"The MultiTest 2.5-*i* is very reliable and we have had no problems since we purchased it. Because it's failure-free, accurate and has intuitive operation (very user-friendly software) it's superior to the older control system from another supplier. It's also worth to mention the after-sales support from ITA, Mecmesin's Polish Distributor, is quick and efficient."

Miroslaw Bratus, Production Purchase Coordinator

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