

Electric Vehicle Battery Pack Assembly Process at Nissan UK

Providing a tailored solution to ensure correct, precise assembly for Nissan's state-of-the-art EV battery assembly facility.

Nissan Motor Manufacturing, based in Sunderland in the UK, required a new, precise assembly solution for their state-of-the-art EV battery assembly facility where they produce hybrid batteries for the vehicles.

For this process, Nissan required a series of highly accurate digital torque wrenches that could be used to perform all of their process quality over-checks, whilst also acting as repair wrenches that could be used as and when required.

In addition, Nissan also required that all tooling that was to be used in their battery assembly facility was to be electrically safe and insulated. This was to ensure there was added protection for the user working in a high voltage application but also security against product failure due to any potential electrical damage.

The tooling also had to be accurately positioned during operation as there were a mixture of low torque fasteners in close proximity that could be metal or plastic and therefore have varying tightening parameters.

Crane Electronics proposed a solution to Nissan that was tailored to their requirements and involved developing a new version of our industry-proven WrenchStar Multi (WSM) digital torque wrench, that could meet and exceed the conditions of the project and provide an accurate torque wrench ranging from 2Nm up to 50Nm within a fully insulated wrench body.

We worked closely with Nissan's engineers to deliver and test a number of different product prototypes, considering the extensive feedback to develop and deliver the new WrenchStar Multi-e: a new electrically-safe, insulated digital torque wrench.

The WrenchStar Multi-e is finished with insulated and isolated components making it ideal for electrically-live situations with

Customer: Nissan Motor Manufacturing UK, one of the world's largest vehicle manufacturers.

The Challenge: To provide an insulated and precise assembly solution for their state-of-the-art EV battery assembly facility.

Crane Products: Crane Electronics worked alongside Nissan's engineers to devise, develop and produce a new electrically safe and insulated digital torque wrench; the WrenchStar Multi-e.



Our torque measurement solutions are utilised across the automotive industry in critical applications including EV & Battery environments.



the ability to withstand voltages up to 1000V. This gives added protection for the user in high voltage applications and security against product failure due to electrical damage.

Also incorporated is a new inductive battery charging system, removing external charging contacts and making the process of charging the torque wrench easier by simply placing the wrench in the new charging cradle. Thanks to user feedback from the engineers utilising the new WrenchStar Multi-e, further modifications were made to the status light-ring program and vibration alerts to deliver the best indication possible to alert when accurate fastenings are made.

Since the implementation of the new assembly solution, Nissan have provided positive feedback that the new WrenchStar Multi-e has impressed operators from an ease of use and ergonomic perspective. The added benefit of the extremely high-accuracy of the wrench has also allowed Nissan to tightly control their torque quality, right from the beginning of the battery assembly process.

Jack Coing, Planning Engineer at Nissan also commented:

“Using these tools has helped us identify any potential concerns and also allowed us to achieve our safety requirements and standards.

I would recommend Crane Electronics to anyone who values the quality of their product. The whole team at Crane are very helpful, and continue to support you during and after project delivery. Aside from being helpful, they are very knowledgeable in their field.”

John Jones, UK Sales Manager at Crane Electronics, who worked closely with the team at Nissan over the course of the project, commented:

“Being able to deliver a completely new, tailored solution for Nissan is a project that we’ve thoroughly enjoyed working on at Crane Electronics. We worked closely with Jack and the team to ensure that we developed a solution that delivered on everything they needed for their battery assembly process.

Since the new solution has been implemented, we have been delighted with the feedback we’ve received and we look forward to working together and supporting their needs going forward.”

For more information about how we can provide a solution for your business, please contact us online at www.crane-electronics.com or alternatively, email us at sales@crane-electronics.com.



The new insulated features of the WrenchStar Multi-e offer complete peace of mind when used in electrically-live assembly applications such as those in electric vehicle and battery applications.



Locations

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