

UK BATTERY
INDUSTRIALISATION
CENTRE



Case study UKBIC



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Based at the new Coventry and Warwickshire Gateway near Coventry Airport, UK Battery Industrialisation Centre (UKBIC) is a pioneering battery production development facility to enable the scale-up of UK battery manufacturing.



Brief

UKBIC contacted Techno Group to support the production of prototype tooling for testing and acceptance of their production machines.

As with large scale investments and systems, it is important to ensure the function of the new equipment at the factory build stage, and that it is installed onsite to the required specifications. Important requirements for the tooling involve the electrical insulation properties and cleanliness, as well as overall flatness.

The first tool required for testing was a cylindrical cell welding tray. As part of an automated process, the tray assembly facilitates the precise positioning of several battery cells ready for the terminals to be welded to a busbar. The tooling required the machining of the main tray and side uprights, assembled using pressed roll pins, threaded inserts, fasteners and delivered as a completed product to the site for machine testing.



Solution

Producing large plate components where 80% of the material mass is removed often leads to complications. In the early stages of the tooling design, Techno Group worked closely with the UKBIC design team and engineers to support the manufacturing process.

Following the development of the design and the successful production of the first set of tools using their NM500 machining centre, Techno Group and UKBIC reconvened to discuss the lessons learnt from the production and assembly. This important stage of the project allowed both teams to gain further understanding, and to go on to improve the design for manufacture and performance of the tooling.

As the smallest amount of material removal could potentially result in stresses to the component, it was paramount to maintain the flatness of the tooling. To combat this, Techno Group engineers developed a specific sequence of machining operations, devised a schedule that allowed the component to rest between processes, and worked with tooling providers to establish the optimal cutting parameters during machining. Trials were also carried out on different materials with similar electrical insulation properties.

Techno Group sourced and performed machinability trials to assess the dimensional stability of the materials for use in the tooling, working closely with UKBIC to understand their suitability for application in an ultra-clean environment.

Result

Following the successful development of the tooling and testing of the machinery, Techno Group and UKBIC now have greater knowledge of the materials required for use in this environment, and the machinability challenges faced when producing tooling to the highest levels of quality.

Techno Group and UKBIC engineers have established a formidable working relationship, supporting each other in achieving success. With the continuous drive for electrification in the UK, we hope this is the start of a long-term collaboration between the two companies.

Manufacturing solutions

With decades of experience in precision engineering and assembly, achieving and maintaining AS9100 Rev D quality standards, Techno Group drives supply chain efficiency, component consistency and reliability through one-hit manufacturing from our fleet of multi-axis machines.

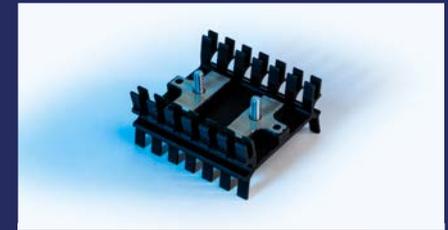
We have a worldwide reputation of excellence that we constantly strive to maintain and improve on. With over 65 people based across our strategically-located manufacturing sites in St Leonards (Technoturn) and Rugby (Technoset), Techno Group is ready to help you with your precision manufacturing needs.



Turned components



Milled components



Assemblies

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