



ENABLING E-MOBILITY SOLUTIONS FOR BATTERY ASSEMBLY

The e-revolution in the automotive industry has far-reaching consequences for production: The high variant diversity and increasing quality requirements in the powertrain sector are being continuously supplemented today by the newly emerging drive concepts for hybrid and electric drives.

As a result of this pressure to innovate, adaptable concepts are becoming increasingly important, as these market requirements call for highly flexible and process-reliable production systems. PIA Automation focuses on flexible assembly stations, high-precision measuring machines and testing machines with patented technology. PIA offers flexible and customized solutions for the production of battery cells, modules and packs.

FEATURES

- System solutions for the production of lithium ion battery cells (cylindrical, prismatic, or pouch), battery modules and battery packs.
- For connections screw joint, welding, gluing or crimp methods are used.
- Solutions are available for partially-automated and fully-automated production, depending on your requirements.
- Safety and fire prevention concepts are developed in collaboration with the system operator and designed to suit individual requirements.
- Quality monitoring and the traceability of incoming materials together with end-of-line (EOL) testing of the battery cells, modules, and packs can be provided from one source.

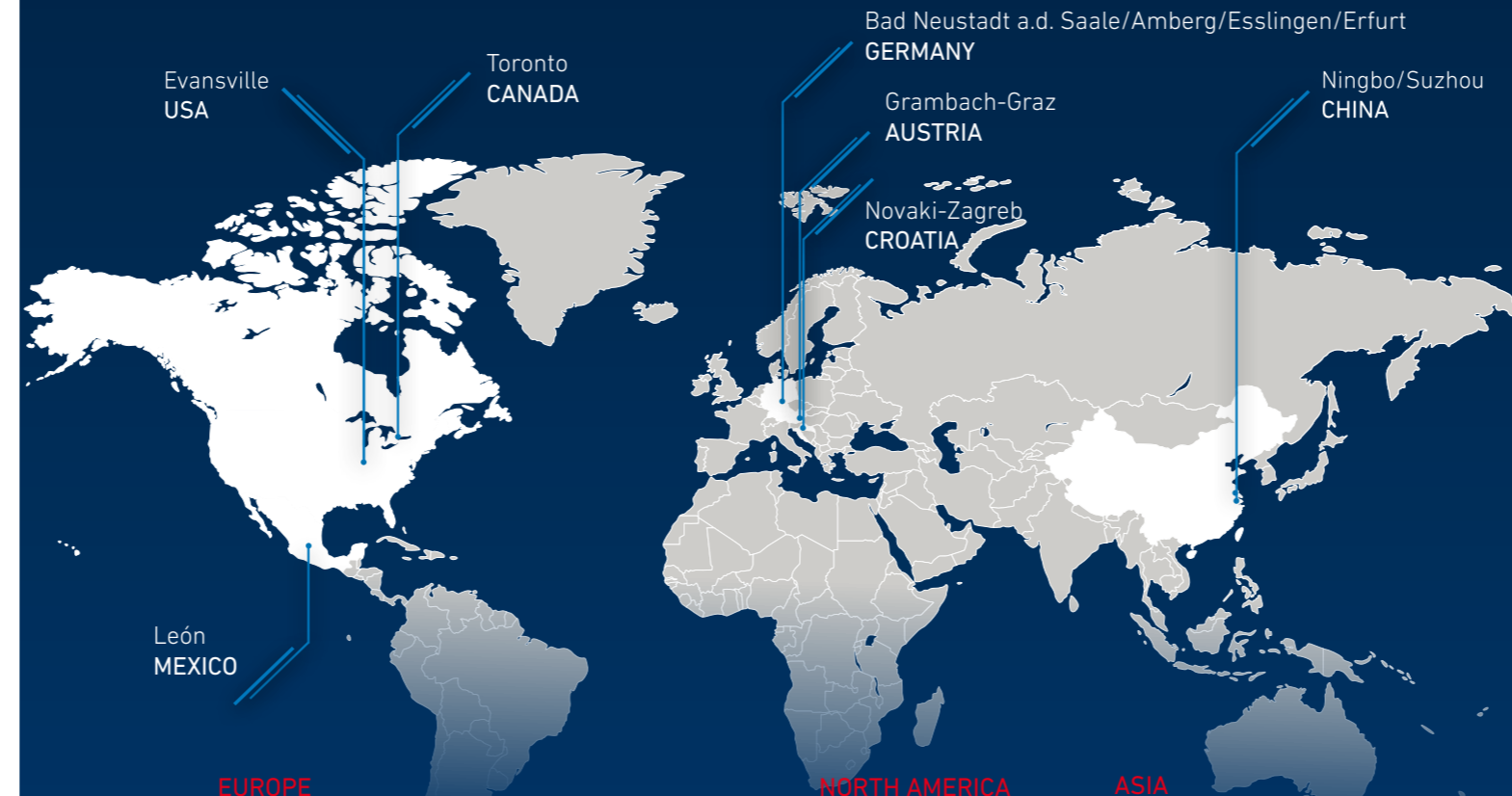


PIA INDUSTRIAL APP SUITE

With the digitization strategy „PIA 4.0“ we offer our customers added value. We provide a solution portfolio using PIA Industrial App Suite - a digital portfolio of products, solutions and services. With PIA Industrial App Suite our aim is to support our customers in achieving their business goals in a sustainable and proactive way. We understand goals as priorities and therefore improvement of OEE, the increase of production quality, along with an even more flexible and transparent production planning are essential.

- VISIBILITY BOX** (VB) Plant digitization and Production transparency
- pieOEEtracker** (ET) Increase effectiveness
- pieAnalyze** (AN) Analysis of host computer data
- pieOptimum** (OP) Optimization of production efficiency
- pieLineController** (LC) Increased production transparency
- pieDynamics** (DY) Hardware - independent measuring computer system

ENABLING E-MOBILITY SOLUTIONS FROM THE WORLD'S LEADING AUTOMATION PARTNER



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USA

Toronto
CANADA

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GERMANY

Grambach-Graz
AUSTRIA

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WE AUTOMATE YOUR WORLD

www.piagroup.com



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ENABLING E-MOBILITY SOLUTIONS FOR BATTERY ASSEMBLY

PIA offers flexible and customized solutions for the production of battery modules and packs.

WE AUTOMATE YOUR WORLD





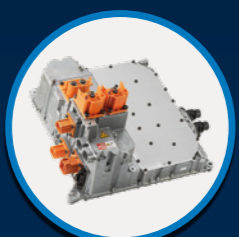
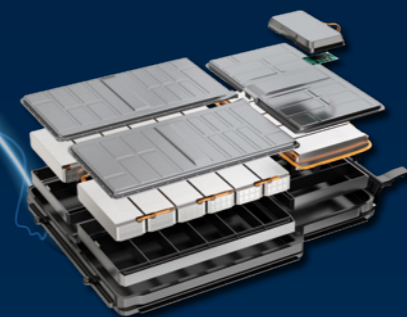
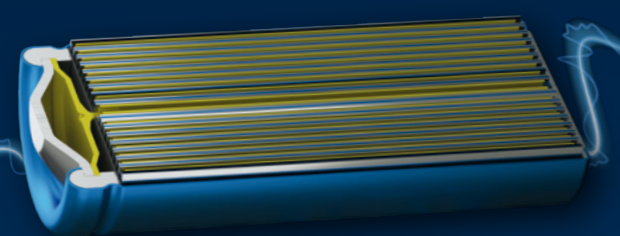
COMPETENCE IN CELL MANUFACTURING PROCESS



COMPETENCE IN MODULE MANUFACTURING PROCESS

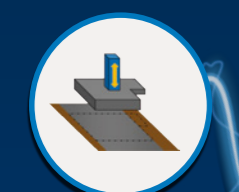


COMPETENCE IN PACK MANUFACTURING PROCESS

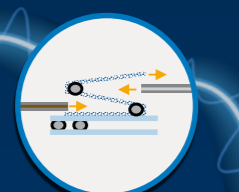


BOOSTER & INVERTER

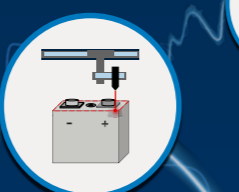
GO!



NOTCHING



STACKING



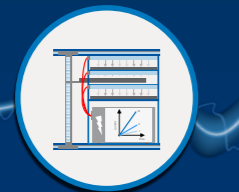
PACKAGING



CELL LID/CAP



EOL TEST

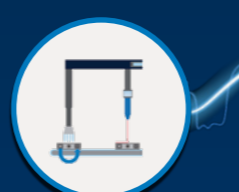


FORMATION

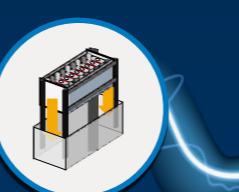


FILLING

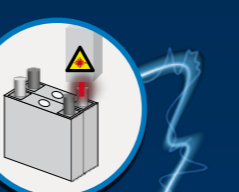
CELL



PRE-ASSEMBLY



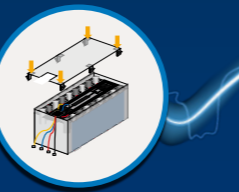
INSULATION & TENSIONING



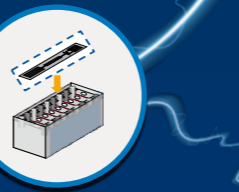
ELECTRICAL CONTACTING



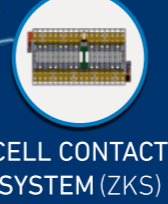
EOL TEST



MOUNTING COVER

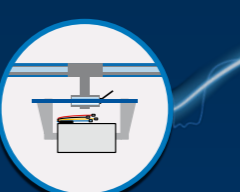


MOUNTING BUSBAR

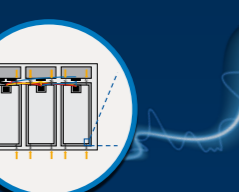


CELL CONTACT SYSTEM (ZKS)

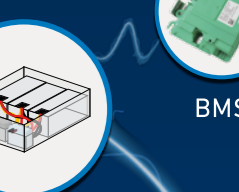
MODULE



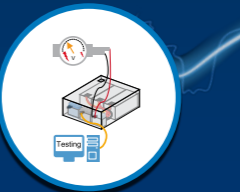
INSERTION OF MODULES



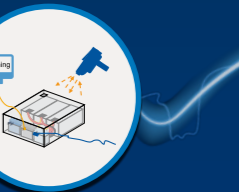
ATTACHMENT OF MODULES



ELECTRICAL & THERMAL INTEGRATION



EOL TEST



CHARGING & FLASHING



SEALING & LEAK TEST



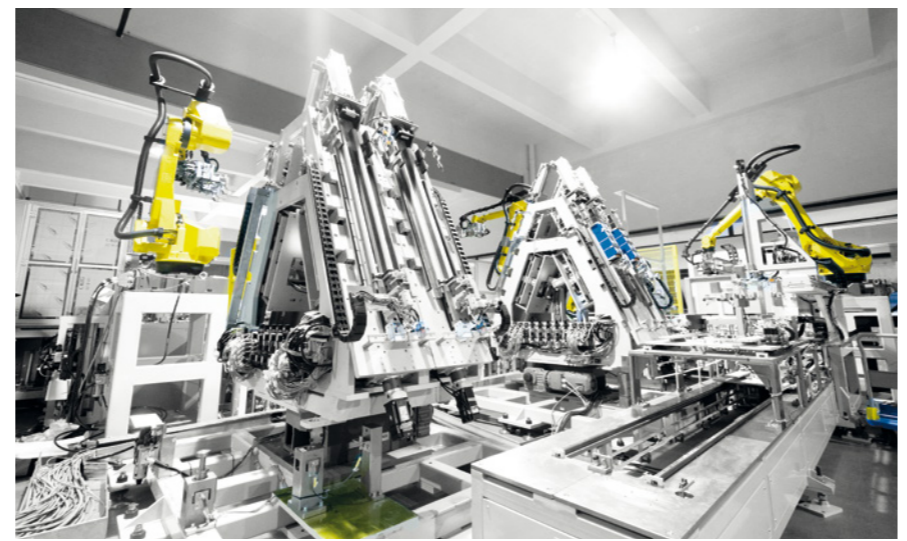
BMS

PACK



CELL ASSEMBLY

For the production of battery cells, PIA offers years of experience in process-safe and reliable assembly of small parts in the high-cycle range. Cells can be produced in cylindrical, prismatic or pouch form. The scope of services includes the assembly of all components: Electrode winding or stack, housing, cover, seal, insulation and safety valve. The assembly is completed by qualified EOL testing.



MODULE ASSEMBLY

In the field of battery modules, PIA Automation is the ideal partner for the key processes of laser welding, cleaning, testing, stacking, handling of medium-weight parts. Customers also benefit from PIA's know-how in software, traceability and logistics, based on many years of experience in the automotive industry.



PACK ASSEMBLY

Besides the conventional automation systems we can also offer flexible and scalable solutions in the battery pack production using our AMR (Autonomous Mobile Robot). Due to the high flexibility within the PIA Group we can react to market needs and implement special requirements.