Jonas & Redmann
The Automation Company

ASSEMBLY OF LI-BASED CELLS
ELECTROLYTE FILLING

For years, Jonas & Redmann has been automating complex assembly and production processes for innovative products with highly sensitive components. Our owner-operated company brings its expertise and industry-tested technoligies to the lithium-ion batteryindustry with our pouch and prismatic cell production lines. We have developed and delivered equipment for all the production steps after coating, including lines for complete module assembly.

At Jonas & Redmann, we know that we can not be succeed unless our customers are successful. Therefore, our goal is to develop long-lasting partnerships with our customers. We accomplish this by understanding our client‘s needs and adapting the equipment to their specific requirements. Together, we work with our customers throughout the project, which does not end with equipment delivery. We continue by offering the support and service to deliver the best partnership possible. Jonas & Redmann doesn‘t measure success by the project. We measure it by the strength of the partnership.

Features:

- very precise and homogeneous electrolyte filling
- advanced process control (vacuum and inert gas)
- developed to ensure the highest degree of process safety
- complies with the valid regulations for explosion protection
- qualified for clean rooms and dry room
- very gentle handling of pouch bag

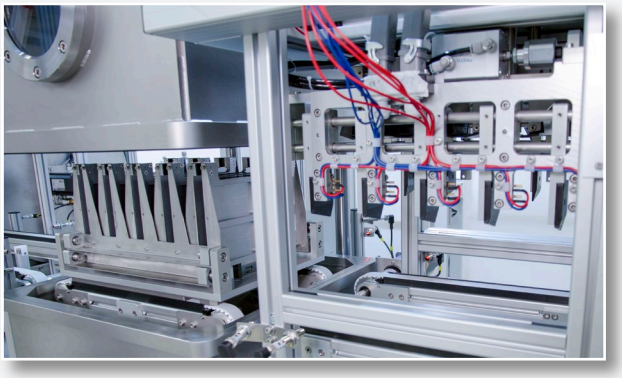
Cell Production

Stack Assembly → Tab Welding → Pouch Packaging → **Electrolyte-filling** → Formation → Degassing → Final Test Discharge

Features:

MATERIAL INPUT	ELECTROLYTE STORAGE CABINET AND CABINET CONNECTION	FILLING PROCESS	MATERIAL OUTPUT
cell stacks in/ from: carriers, blisters, customized tranportation formats, conveyor belt airlocks for vacuum generation and inert gas (drying option)	explosion protection and fire protection absolutely safe electrolyte pipeline (pipe-in-pipe system) automatic measurement of electrolyte supply quantity in the electrolyte storage cabinet and the electrolyte reservoir adjustable valve circuit varios cleaning options	electrolyte filling (single or multiple cells) by: - dispension pump or - gravimetric principle level indicator, vision system and/or sensor-based monitoring	cell stacks in/onto: carriers, blisters customized transportation formats conveyor belt interlink to production line airlocks for vacuum generation and inert gas (drying option)

- integrated gas cleaning system
- special cabinet guarantees the safe storage of the electrolyte
- machine components offer long term resistance to corrosive substances
- complete assembly line integration
- inline process control and customized quality check



Options (others on request)

INPUT	PROCESS	OUTPUT	GENERAL
inert gas cleaning/ reprocessing of used gas	leak protection and detection system (pipe-in-pipe system) automatic change of electrolyte barrel	electrolye filling under vacuum conditions weight monitoring (electrolyte filling level) integration of pre-formation under vacuum condition integration of pre-sealing	standard HMI, operator languages English, Chinese, others MES connection, e.g. Secs GEM, XML according Semi PV02

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