

ENGINEERING
TOMORROW'S
PRODUCTION



The Future of E-Mobility

Production solutions for cell contacting systems.
Innovative and future-proof.

Manz – Your Experienced Partner and Service Provider in the Future Market E-Mobility

As a high-tech engineering company, Manz AG is an innovator of key technologies. Our focus is on intelligent and integrated production solutions for the automotive industry.

Engineering tomorrow's production

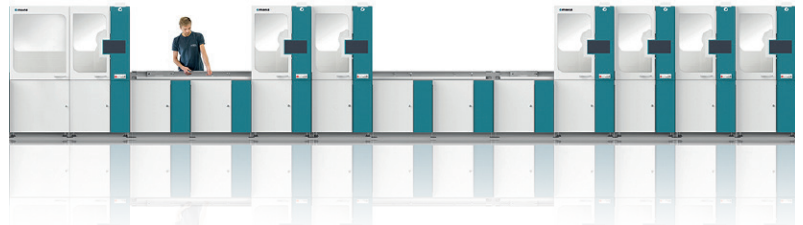
Manz AG has been setting standards with its efficient machines and systems for over 30 years. Our claim **"engineering tomorrow's production"** underscores our aspiration as an innovation driver for future markets. We bundle our extensive expertise and experience in technology fields such as automation, assembly, laser and measurement technology in pioneering production solutions.

Pacesetter for e-mobility

In our modular production lines, we always integrate and combine project and product-specific manufacturing processes: assembly and handling techniques in various degrees of automation, joining techniques such as ultrasonic or laser welding, gluing, soldering and screwing as well as automated function tests. Especially in production solutions for li-ion battery cells/-modules and capacitors as well as cell contacting and battery management systems we are a leading provider.

LightAssembly: Assembly innovation

With our modular principle, complex manufacturing processes, such as the assembly of cell contacting systems, can not only be reliably automated, but also intelligently linked. Our high-tech production systems are based on experience and production support from numerous automation projects. They embody precision, reliability, adaptability as well as transparent and low total cost of ownership (TCO).



Services Around E-Mobility

We offer tailor-made and customer-specific production solutions for the manufacturing of:

- Cell contacting and battery management systems
- Electronic components and control units
- Li-ion battery cells and modules, as well as (super)capacitors

The Advantages of Our Production Solutions:

- ✓ **Modular, scalable and flexible**
Modular design concept with maximum flexibility in the design of the plant layout
- ✓ **Outstanding process technology**
Over 50 fully integrated processes for the assembly of cell contacting systems
- ✓ **Digital, networked, data-based**
Continuous monitoring of production and quality data
- ✓ **Compact, proven, efficient**
Short throughput times, high cost-effectiveness with a minimized system footprint

Production Solutions for the Manufacturing of Cell Contacting Systems for Electric and Hybrid Vehicles

Manz's high-tech production solutions cover all of the key manufacturing steps involved in manufacturing of cell contacting systems. Automated, integrated, process-optimized – for high performance and precision with optimal life cycle costs.

Increased productivity and process reliability

Cell contacting systems (CCS) play a connecting role within the electrical powertrain. They interconnect the battery cells depending on the product structure in parallel or in series with a customer-specific battery module or pack. In addition, CCS are the sensors of the battery management system to ensure a reliable and efficient performance in the electric powertrain. In order to realize an optimized automated production of cell contacting systems, there are some success-critical points that have to be considered in the plant design in order to prepare the processes and production facilities for later large-scale production with our equipment.

Based on our leading-edge *LightAssembly* platform, we have customized solutions especially for the needs of the automotive industry. We have developed production solutions for cell contacting systems for secondary batteries that meet the high demands of the market in terms of safety-related qualities, adaptability through modular extensions and cost efficiency.

Standardized modules ensure routine commissioning and scalability. Quick change systems offer a competitive flexibility for the fully automated inline production. As a production logistics supplement, transport systems optionally ensure a smooth flow of materials between warehouses and line. The connection to the customer's Manufacturing Execution System (MES) or ITAC and the addition of third-party solutions ensure networked and transparent production according to customer requirements. Software-controlled set-up and production processes as well as feature-controlled data logging diagnostic functions on different levels, speed up the set-up and rounding off the portfolio.

The Manz Production Solution, e.g. for CCS:

- Fully automated assembly of CCS – including variants on one line
- Product-specific handling of flexible components
- Fully automated use of ultrasonic and laser welding processes
- Roll-to-roll cable processing using laser technology
- Scalability and changeability during and after the project



Our Locations



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