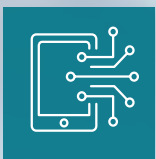


ENGINEERING
TOMORROW'S
PRODUCTION



Efficient Production Equipment for The Electronics Industry

Production solutions for electronic components and devices

Manz AG – Reliable Partner And Pioneer for Innovations

Manz AG has been setting standards with its efficient machines and systems for years in growth markets. The claim „engineering tomorrow’s production“ underscores our aspirations as an innovation driver in numerous industries and technologies.

Our promise

In a market environment with the highest demands it is crucial to always be one step ahead. That’s why we are constantly developing as a company and supporting our customers in successfully opening up new growth areas.

With our trend-setting ideas, we help key technologies achieve a breakthrough and pave the way for innovative products in fast-growing markets of the future.

Our brand promise „engineering tomorrow’s production“ sums up our strengths: As a high-tech machine manufacturer, we are designing tomorrow’s production solutions together with our customers today. In this way the basis for a future worth living.

Innovative, reliable and fit for the future

How do our customers’ groundbreaking ideas become successful products? A perfect prototype and an idea with great potential do not guarantee success. Therefore, you can benefit from our distinct pioneering spirit, our many years of experience and our enormous process know-how for efficient production.

The basis for our plant concepts are our core technologies of automation, laser processing, inspection systems, wet chemistry and digital printing.



Manz AG

- Established in 1987
- Headquarters in Reutlingen, Germany
- Other branches in Slovakia, Hungary, Italy, China, Taiwan, the US and India
- Approx. 1,500 employees worldwide, including around 500 engineers

Core Technologies

- Automation
- Laser processing
- Inspection systems
- Wet chemistry
- Digital printing

Industries

- Automotive & E-Mobility
- Battery production
- Electronics
- Energy
- Medical Technology

Our Portfolio for the Electronics Industry – Partnership for Success

Thanks to its extensive experience with integrated production systems for the manufacturing of electronics, Manz AG is a competent technology and process expert for growing industries where efficient and innovative electronics are in demand.



Manz Produktionsanlagen für Elektronik:

- Electronic components such as IC substrates, semiconductors and displays
- Power electronics such as rectifiers, inverters, DC changers, AC changers or frequency inverter
- Consumer electronics such as smart-watches, wearables and laptops

Our industry expertise

The electronics industry requires maximum flexibility and speed in order to be able to react to new market requirements. The rapid digitalisation of production in smart factories, numerous smart applications and services such as smart homes or smart grids are leading to a growing demand for high-performance components.

The market also needs production solutions for ever smaller and more powerful electronic components as well as digital, easily adaptable and traceable processes. The scalability production and the traceability of products are traceability are key success factors for profitable manufacturing.

Comprehensive technology know-how

Our core technologies are the basis for customised production solutions for demanding applications. With the development of new and the further development of existing production technologies as well as the necessary machines, we make a significant contribution to reducing the Total Costs of Ownership (TCO) and thus to providing our customers with competitive production conditions.

We deliver diverse solutions along the entire value chain, from the idea to the fully integrated turnkey production line.

Future-oriented Production Solutions for Electronic Components

Manz AG develops intelligent and efficient machinery and equipment for the components such as IC substrates and semiconductors as well as displays.

Displays

With machines and systems in the areas of wet chemistry and automation as well as integrated inspection and testing systems, we offer highly efficient production processes - for both flexible and rigid substrates of all sizes - which are used in the production of TFT-LCDs, OLEDs, micro-LEDs and cover glasses.

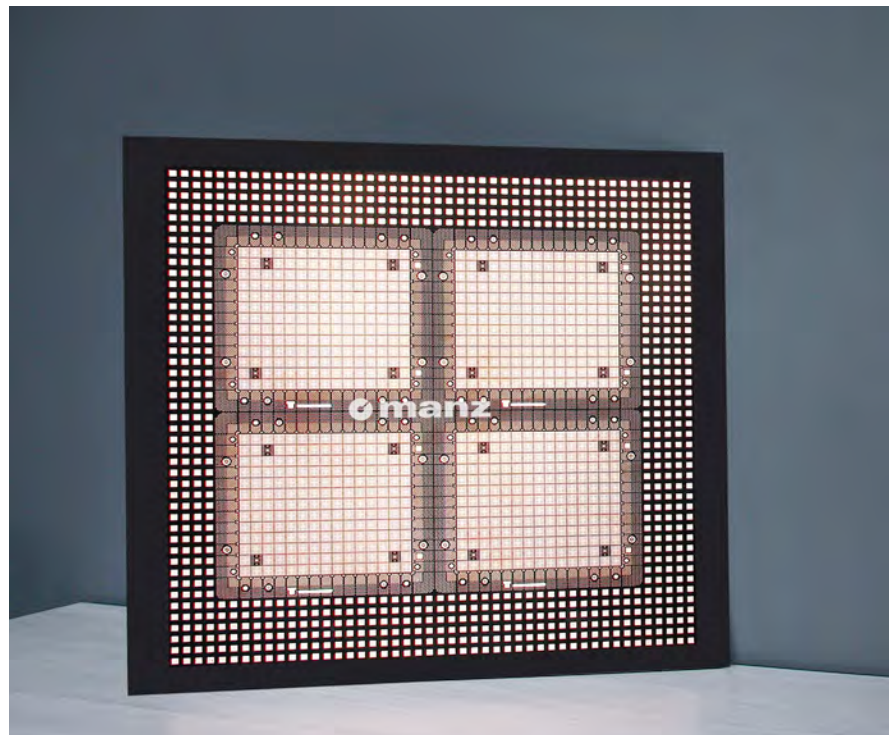
Interconnect applications and semiconductors

Interconnect stands for the complex wiring that electrically connects a large number of different individual components (electronic components such as transistors) on a substrate.

As ever-smaller chips are packed closer together, more layers of interconnect are needed to integrate all the chips—an increasing challenge but an important component. The interconnect structures play an important role in the system performance of the components.

Manz has specialized in advanced interconnect applications. We deliver lithography and electroplating equipment that meets the critical process requirements for high-density redistribution layers (RDL). In addition, with our know-how in laser technology and automation, we can meet a large number of customer requirements.

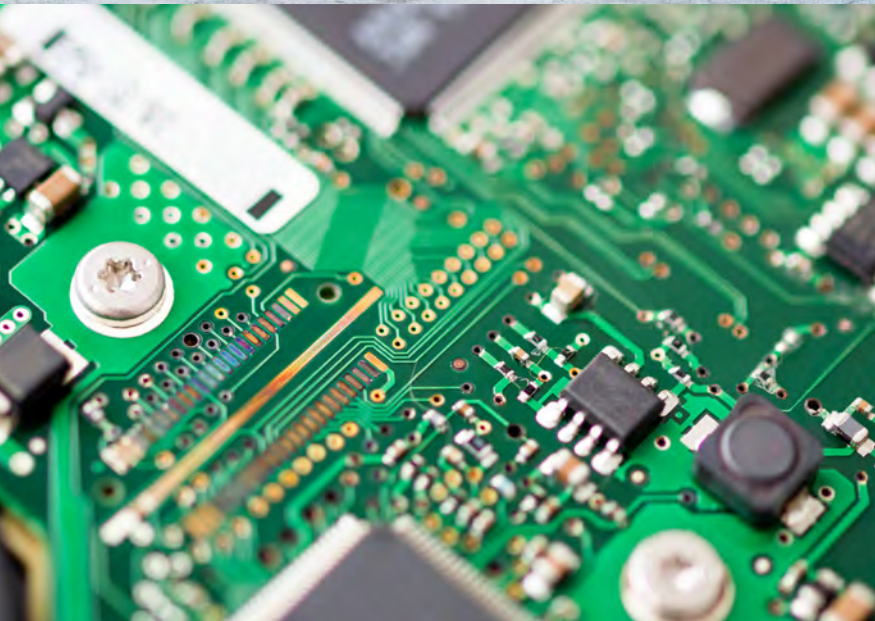
Our portfolio includes both individual systems and fully integrated solutions from a single source for the production of circuit patterns on substrates and other electronic connection systems. In doing so, we meet the criteria of the manufacturers and set standards in the market segments for IC substrates and semiconductors FOPLP (Fan-Out Panel Level Packaging).



» Through the use of innovative production equipment from Manz, the efficiency of the production capacities and the IC substrates and semiconductors significantly increased. «

Maximum Flexibility – Solutions for Power Electronics

High-tech mechanical engineering and modular manufacturing systems for customised solutions for the integrated production of power electronics for the automotive, electronics and related growth industries.



Success factors for powerful electronics

Cost-efficiency, innovation and delivery reliability, short product cycles & flexibility - these are the decisive success factors for companies in the field of power electronics. And this is exactly where our solution: a modular construction kit that adapts to the plannable but also flexible needs in production.

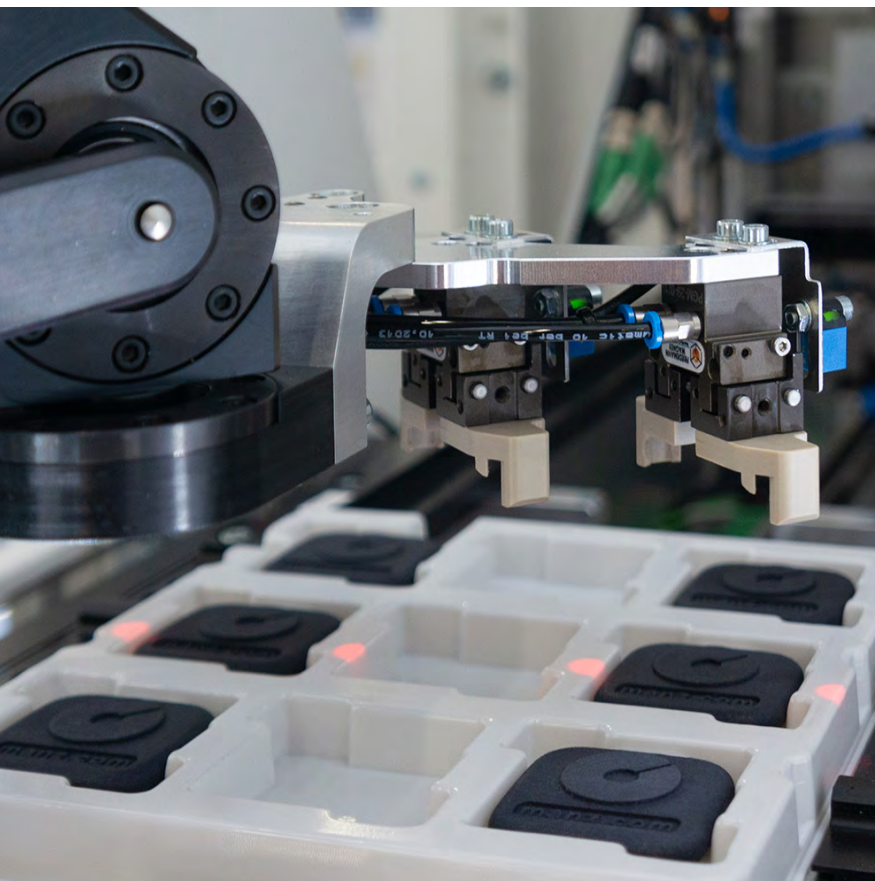
Our machine concept

By standardising the machine components, we enable an excellent cost-benefit ratio with short delivery times. At the same time, the modular design of our systems offers coherent and customer-specific layout planning of the production facilities across all planning phases. The coordinated and integrated processes guarantee high machine availability in variant and high-volume production.

Our portfolio includes various process solutions for power electronics from a single source: these include fast and precise optical component testing, all industrial joining techniques, metered material application, laser processing for ablation, marking and welding of ultra-thin metals, automated contacting for testing tasks and – based on continuous tracing – mixing & matching of the best possible matching component tolerances in the line to produce controlled and mastered qualities in the end product.

Powerful Automation Solutions for Consumer Electronics

Manz AG offers machine and system concepts for electronic devices in the field of consumer electronics such as smartwatches, wearables, laptops, digital cameras and navigation devices.



» Maximum modularity and flexibility in combination with standardized Machines and proven processes – efficient and economical.«

The future is smart

Smart watches and fitness trackers are becoming increasingly popular, smartphones, laptops and tablets are now part of basic technical equipment. Numerous devices in households can be controlled digitally and more and more intelligent, self-organising factories are emerging.

In order to support these complex systems and ensure their smooth operation, demand is growing for more powerful computer chips with higher processing speed, memory capacity and energy efficiency.

In addition, the electronics industry is driven by innovation. In order to be able to react optimally in such a rapidly changing environment, companies and especially their productions must be able to adapt quickly. We offer the optimal production equipment, tailored to the respective customer requirements and with maximum flexibility.

Our approach

In the production of consumer electronics, we are seeing steadily increasing requirements for assembly automation, which we cover completely with our solution portfolio.

Benefits of our automation solutions:

- Simple adaptation of production machines across generations and planning phases of products
- Tracking of data during production and seamless traceability of the manufactured parts for quality and documentation purposes
- Process & prototype development and scaling up for pilot production

Proven Worldwide With Numerous Customers: State-of-the-art Technologies from Manz

As a high-tech engineering company, Manz AG continuously drives the further development of its technology portfolio. This expertise, as well as the consistently practised transfer of know-how within the segments, is a clear added value for the company's customers.

Project monitoring

We see ourselves as a development partner who works out solutions together with customers.

We accompany our customers from the initial idea to the finished product and beyond. From concept, project planning and design to the installation of the production line and its maintenance, we stand by our customers. We are a development partner, a source of inspiration and a reliable service provider.

Our customers benefit from our extensive experience from numerous implemented projects. To support and accompany the process, we offer digital services such as tracking data in production, product traceability and virtual commissioning.






Technological leadership

The key to success lies in the automation, digitalisation, integration and scalability of our production processes. We work precisely at these points to constantly improve the performance of our production equipment and thus make our customers' production processes systematically more efficient.

Our experience from numerous simultaneous engineering projects enables us to map the entire production process with customer- or product-specific adapted equipment technology within a short period of time.

With our solutions, our customers can save time and money and thus be faster on the market with their products.

Our competences at a glance

-  Years of experience in automated handling, assembly, inspection and processing of flexible and rigid materials
-  Standardised modular system with an excellent cost-benefit ratio with short delivery times
-  Future-oriented technologies for adaptive and digitally supported production
-  Efficient production solutions for demanding applications including a high degree of integration
-  Everything from a single source: fully integrated production solutions and services

Our Locations



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