

**LAUFFER Pressen**

**Forming your ideas**

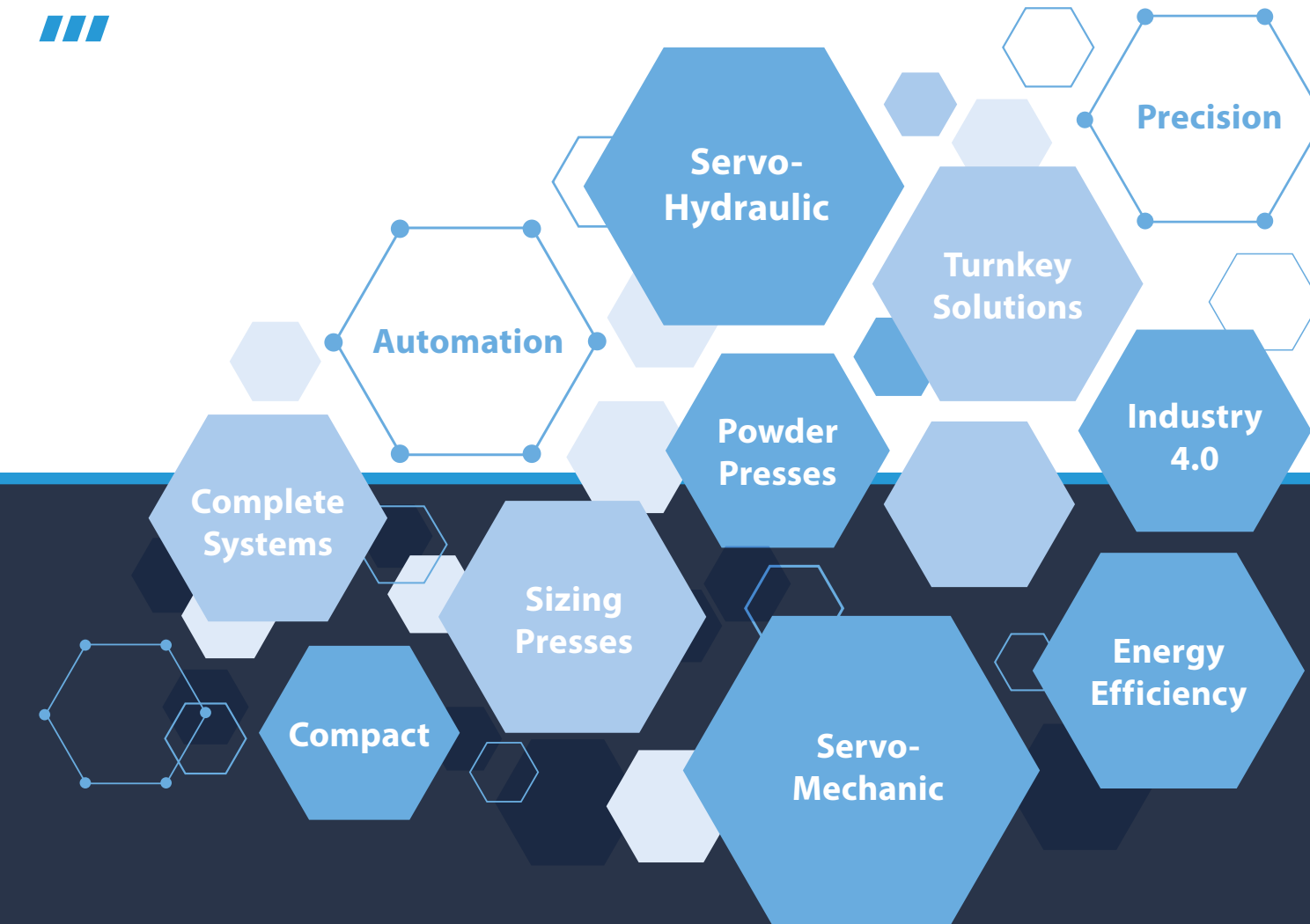
For over 150 years, LAUFFER has proven that consistent quality and extensive process knowledge prevail in the market. Today, we are among the leading manufacturers of hydraulic presses and equipment in the fields of laminating and composite technology, plastic and encapsulation technology, forming technology and powder technology. With over 270 dedicated employees, we develop solutions to build presses, making our customers successful worldwide. We are dealing with the thoughts and ideas of our customers and provide solutions for their tasks. Therefore, we are always a reliable partner. We build presses – with progress and tradition.

- » Laminating Technology
- » Plastic Processing
- » Encapsulation Technology
- » Metalforming Technology
- » Powder Technology
- » Technical Services

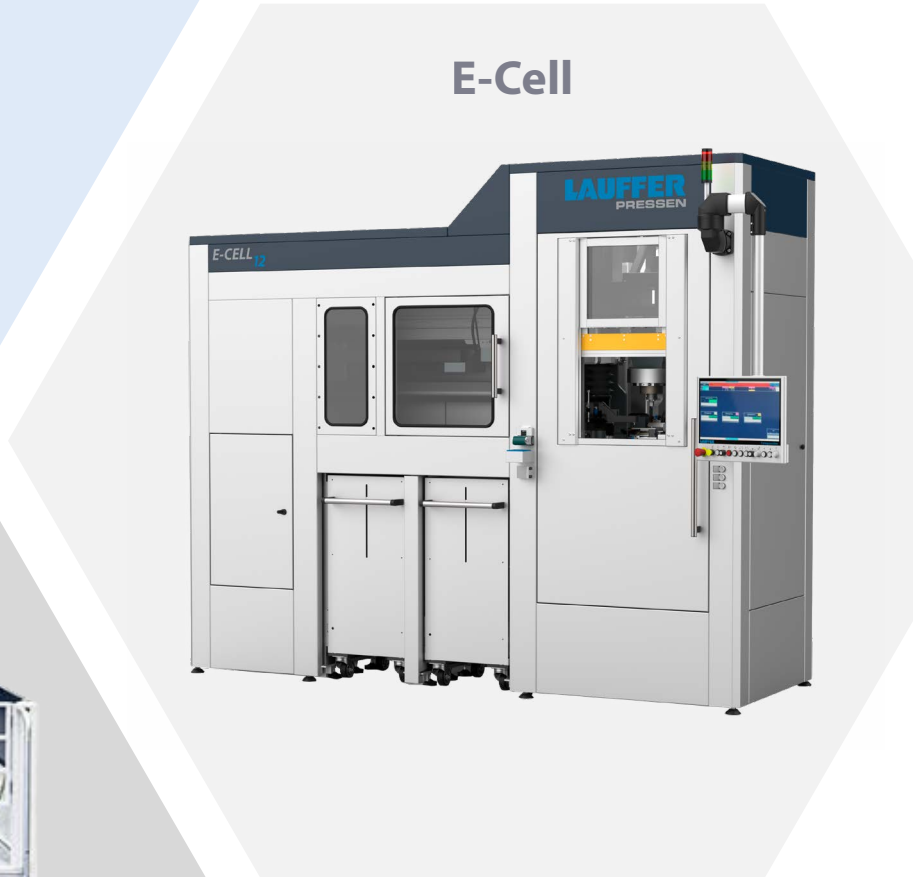
# LAUFFER Powder Technology

Process Solutions for Powder Metallurgy

Fast, flexible, efficient



E-Line



E-Cell



C-Line



MFC



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## /// The LAUFFER Powder Technology Portfolio

### Standard Presses

#### Electro-mechanical powder presses

Powder compacting presses in ejection process [E-Line](#)  
Powder press systems with integrated automation [E-Cell](#)

#### Servo-hydraulic powder presses

Powder compacting presses in withdrawal process [C-Line](#)

#### Servo-hydraulic sizing presses and lines

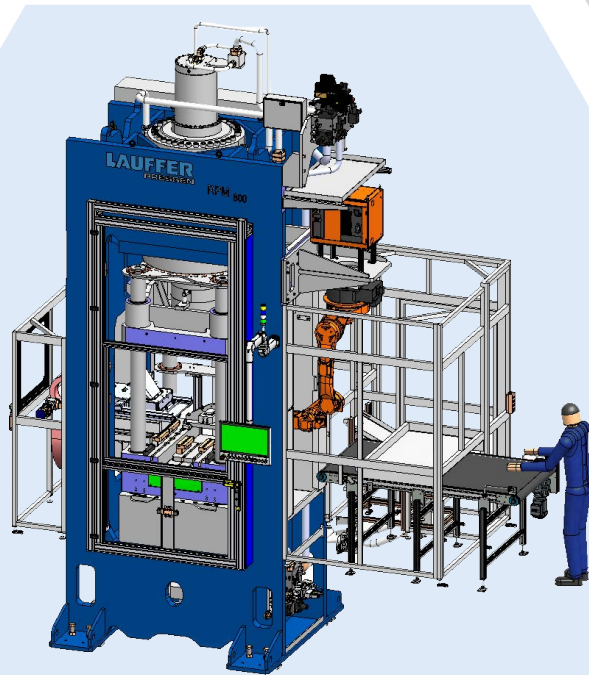
Sizing presses in ejection process [MFC](#)

### Customized Presses

- » Turnkey press solutions for customer requirements
- » Presses for special purpose and laboratory applications
- » Multi-platen technology

### Automation Solutions by LAUFFER

- » Turnkey solutions for automation systems for sizing and powder press lines
- » Robot integration
- » LAUFFER part removal device (-gripper)
- » Set-up and simulation stations for adapters
- » Balances and weighing cells
- » Optical control systems
- » Various part handling systems
- » Spraying- and blowing units
- » and much more ...



## /// Technological Progress with Tradition

Growing demands in state-of-the-art P/M part production require flexible and high-performance presses. Servo-controlled presses, synchronous compacting, LAUFFER-designed intuitively operating CAM software, either with the latest servo-hydraulic or electro-mechanical drives, highest precision and low energy consumption are only some of the features distinguishing LAUFFER presses. Due to the recording of all relevant machine and process data and a LAUFFER-designed press control, our powder compacting and sizing presses and lines are perfectly equipped for the requirements of Industry 4.0. High quality parts have to be produced accurately regarding regular density and utmost dimensional accuracy. The densifying process is repeatedly automatically controlled, statistically analyzed and documented for quality proof. To ensure a steady quality over the production cycle, all axes of the LAUFFER powder compacting presses are electronically position-controlled. The absence of mechanical stops allows automatic correction of the relevant quality parameters during operation.

**Are you looking for a solution to an unusual problem in powder production?  
We will also support you with a turnkey solution.**

### Let's talk – communication is the basis of our work

Thinking innovatively, we develop suitable solutions, find the right technical answers, and build high-quality products.

### Forming your ideas – our trademark is our passion

We develop and manufacture special-purpose machines and systems for various applications, industries, and areas of use. LAUFFER stands for a high level of quality and openness, responds flexibly, and tailors our products and services to the needs of our customers. As a reliable partner, LAUFFER focuses on close customer contact, individual consultation, and customized technology. Under the LAUFFER principle "We build presses – with progress and tradition" we actively shaping the future of press technology. Having been active internationally from an early stage, we now supply customers and markets all over the world.



## /// Synchronous Compaction

A technology has conquered the sintering world. Synchronous compaction combines latest control technology with highly precise axis control and offers various chances in the production of complex sintered parts.

- » Highly dynamic synchronization of the levels during the press cycle, the powder transport, the densifying and compacting process
- » All axes are force-controlled
- » Compaction movements in both directions
- » Withdrawal / ejection movements in both directions
- » Regular density distribution of the green part during compaction
- » Dynamic collision control of the tool position during the complete movement sequence
- » Avoiding of crack formations
- » Freely programmable movement sequences



## /// Control Technology

Top results in the production of critical sintered parts can only be achieved by best performance in electronics. The dynamic synchronization of the axes during the pressing cycle – from powder transfer, pre-compacting to compaction – requires a control technology beyond conventional concepts.

LAUFFER control technology, including our in-house designed CNC control, enables best possible results.

- » Intuitive control concept for compacting and sizing presses
- » Free and flexible process programming
- » Closed-loop controlled
- » Real-time process simulation including 3D animation
- » Dynamic tolerance bands for all axes
- » Stand-alone „desktop version“ for offline programming
- » POP functionality (partial top pressing)
- » DCC functionality (dynamic collision control) for tool protection and field of work limitation