

Laminating Technology
Plastic Technology
Encapsulation Technology
Forming Technology
Powder Technology
Services

RMV-LINE

Laminating Press Systems for PCB, CCL,
Technical Laminates and Composites

Fast, flexible, efficient



FORMING
YOUR IDEAS

LAUFFER
PRESSEN

/// INTRODUCTION

LAUFFER Pressen is one of the leading manufacturers of vacuum press systems with comprehensive process and engineering know-how for laminating printed circuit boards in the electronic industry as well as for the lamination of composites. From the beginning our press technology accompanies PCB manufacturers all over the world with innovative press solutions based on passion and in tradition with more than a century of experience.

The line concept for PCB and CCL (cooper clad laminates) has been successfully transferred from electronics into different industries for laminating such as composite materials, medical applications, solar modules, busbars, FC-membranes and many more.

Innovative process and press engineering are leading to flexible, customized and expandable production solutions for compact to large scale lamination systems. The flexibility in adapting our customers' requirements into tailor-made solutions is the outstanding uniqueness of LAUFFER Pressen.

Project planning, process consulting, integration of automation and heating technology supply for complex press systems are at your service. Lived partnerships with end-users and project partners are the basis for a successful and rapid product launch into the market.

LAUFFER Process and Tool Management brings full transparency into the traceability of materials, products and processes to increase yield, optimize processes and benefit full system productivity. Established interfaces to your existing MES/ERP system are the keys to an efficient control of production and a future oriented data collection beyond human comprehension.

A reliable service team is embedding the LAUFFER Pressen system into your ambitious production all over the globe.

/// RMV-LINE

RMV Press Series for PCB, CCL and technical laminates

Key features:

- » Press frame and process chamber mono-block design
 - » Solid press components for decades of lifetime
 - » Reliable vacuum capability
- » Servo hydraulic control
 - » Precise pressure setting and repeatability
 - » Sensitive pressure control from kiss-pressure to full pressure
- » Heating technology
 - » Heating systems designed to your requirements
 - » Energy saving concepts from single press to complete press lines

Press forces	Up to 21.000 kN
Specific press forces	Up to 1.200 N/cm ²
Process temperatures	Up to 500°C
Heating / Cooling rates	Up to 15°C/min
Vacuum	Below 10 mbar

Are your requirements exceeding our standard? Please do not hesitate to contact us to show more specific use cases.



/// FULL SYSTEM FLEXIBILITY

The modular design of LAUFFER Pressen combines the efficiency for mass production with the complexity of small batch to prototyping. The RMV press series can be implemented in basic to fully-automated automation levels. The modularity allows to start with a manually-loaded press with the final plan to end up with a fully-automated press system with multiple presses of different process capability.

Full flexible laminating system combined in one line:

- » Formats
- » Pressures
- » Temperatures
- » Pinlam / Masslam
- » Automation level

Any automation level can be upgraded with the following equipment:

- » Layup
- » De-stacking
- » Tool storage / Empty tool storage
- » De-pinning
- » Separator plate handling
- » Additional hot presses / cold presses



Stand-alone

A single press is loaded manually with trolleys. The basis press can be completed with other equipment like layup and de-stacking/de-paneling stations.

The stand alone version can be upgraded to semi- or fully-automatic system at anytime.



Semi-automatic

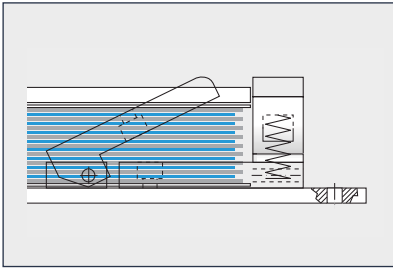
The next automation level with the semi-automated version offers the loading/unloading of the press system with an shuttle system. The tools will be loaded/unloaded automatically to the line with an existing trolley.



Fully automatic

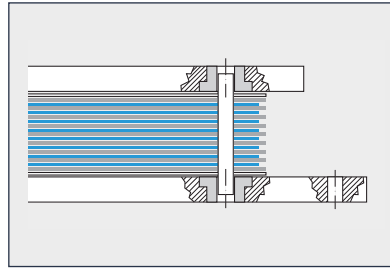
The fully automatic laminating system is equipped with loading and unloading storage as well as a shuttle which allows continuous supply of tools with conveyors. Storage capacity can be also used to buffer tools, to classify them with same processes and formats for an automatic production control.

/// TOOLING TECHNOLOGIES



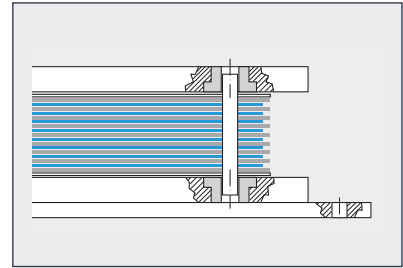
Masslam

Bracket registration for rough alignment of separator plates and top tool plate. Laminates will be optically aligned, re-bonded and stacked up.



Pinlam

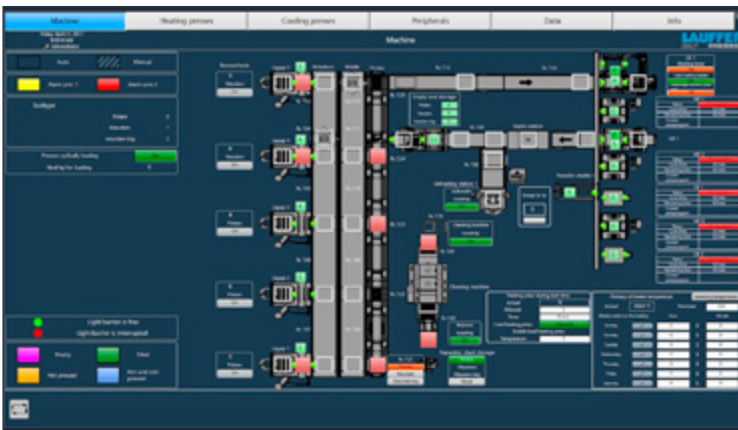
Integrated pin registration system for highest accuracies in laminating for one or more panel sizes. Single sheets will be punched and aligned with pins during the layout and lamination process.



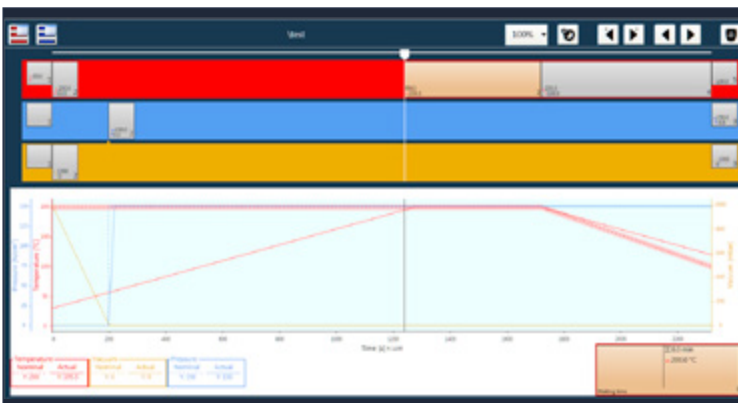
Multilam

On the Multifunctional-Transport-Plate any tooling can be placed in the center. The transport plate assures automatic and manual transfer as well as the centering in the press.

/// ADVANCED LAMINATION CONTROL



LAUFFER Pressen Process and Tool Management has been established and improved based on customer orientated requirements. Small lot sizes, mixed panel formats, short lead-times are only a few of your challenges in the present market. LAUFFER Tool Management is classifying and organizing the work queue controlled by prioritization, waiting time, batch collection with direct interfaces into your existing MES/ERP system. Process and running history can be added to your data collection and linked directly to the final product.



LAUFFER Pressen Tool Management manages the balance between fast-track prototyping and efficient mass production with the advantage of direct personal interaction.

LAUFFER | INDUSTRY **4.0**
PRESSEN

/// LAMINATING PROCESSES

Cold Start

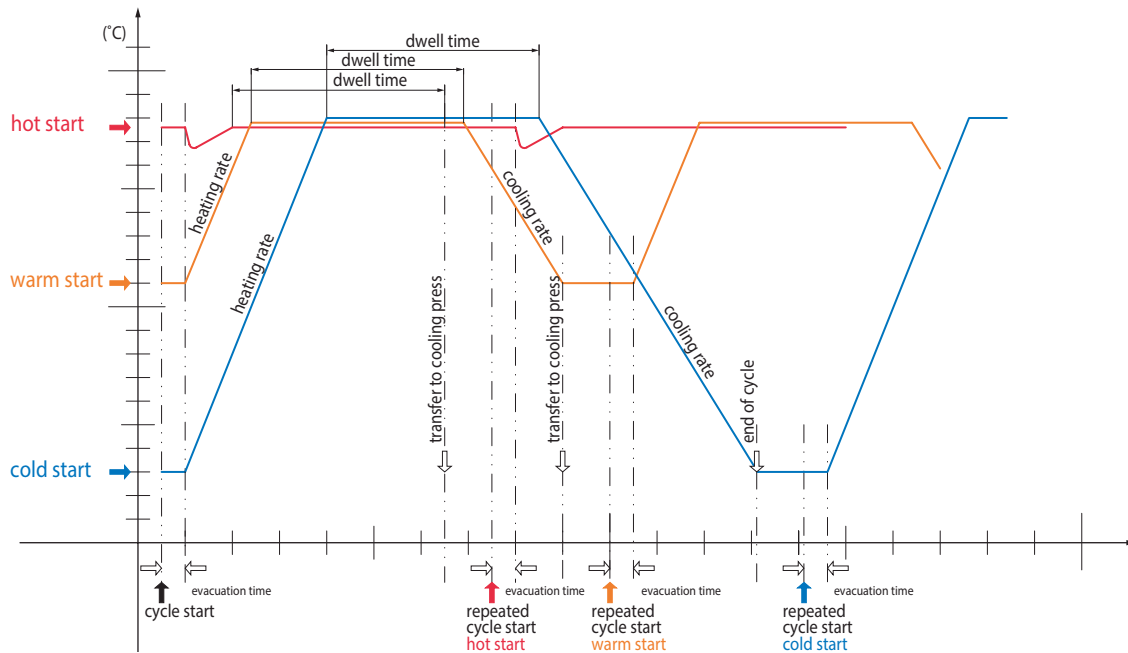
Entire laminating process in the heating press. Generally, this process is used with stand-alone presses or sensitive materials which can only be pressure released on low temperatures due e.g. shrinkage.

Warm Start

Laminate transfer from the heating press to the cooling press at a temperature below the glass transition of the laminate. The advantages are a shorter process time in the heating press and a reduced power consumption. Even extremely intricate products can be laminated.

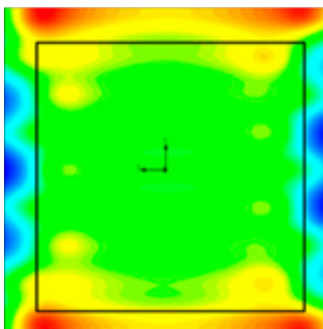
Hot Start

Laminate transfer from the heating press to the cooling press at process temperature. Highest productivity in the heating press with lowest power consumption.

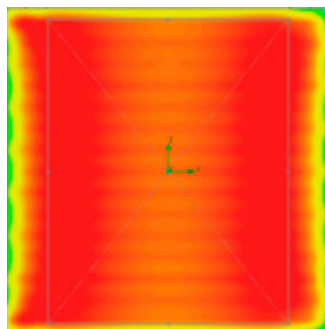


/// HEATING TECHNOLOGY

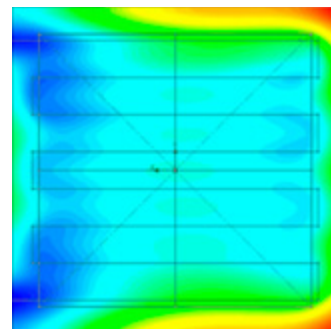
Heating platen technology for productive stack lamination to highly accurate single sheet lamination.



Heating



Dwell Time



Cooling

- » Flexible process capability – different temperature levels up to 500°C can be placed in one common lamination system
- » Balanced running cost and invest – simple electrically heated to economical gas-fired heating systems
- » Energy recycling – single presses to complete lamination systems with dynamic processing allows energy saving up to 40%
- » Energy saving concept

Forming your ideas

LAUFFER PRESSEN belongs to the leading manufacturers of modern press technologies. Founded in 1872, our company is building hydraulic presses and automated press systems for different industries and applications for almost 100 years. Worldwide, thousands of LAUFFER systems are in use with our customers 24/7 and 365 days a year.

Today, LAUFFER produces presses and automated systems with a team of more than 280 skilled employees at our modern, 10.000 square meter facility in Horb am Neckar, Germany.

Our main product lines are:

- » **Laminating Technology**
- » **Plastic Processing Technology**
- » **Encapsulation Technology**
- » **Forming Technology**
- » **Powder Technology**
- » **Services**



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