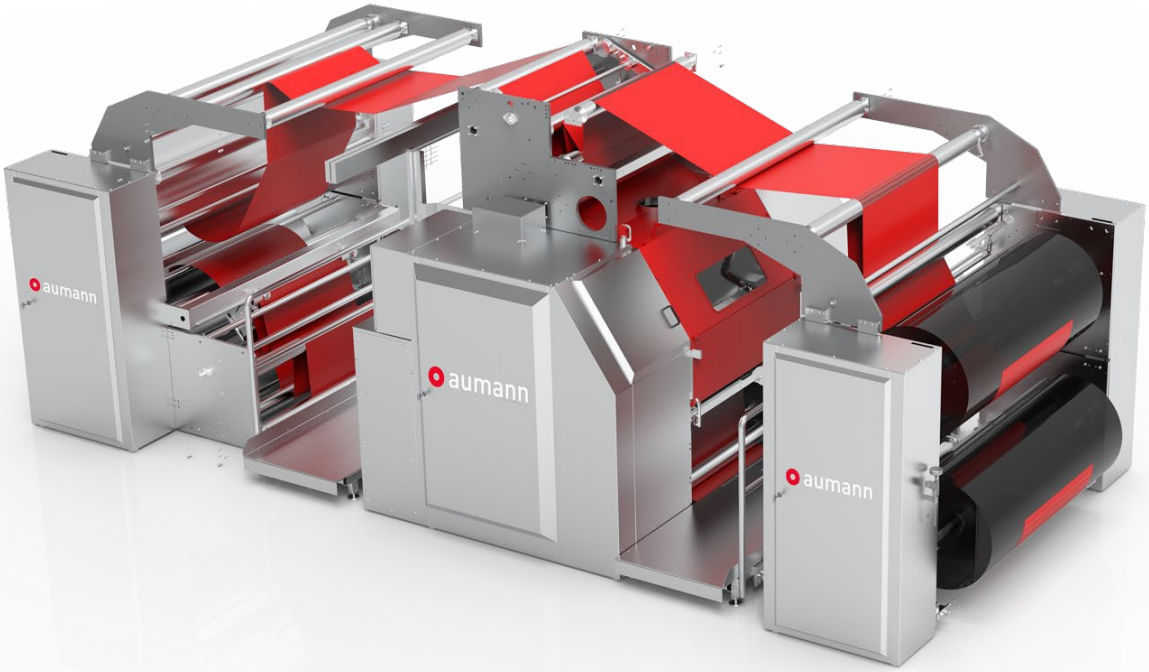
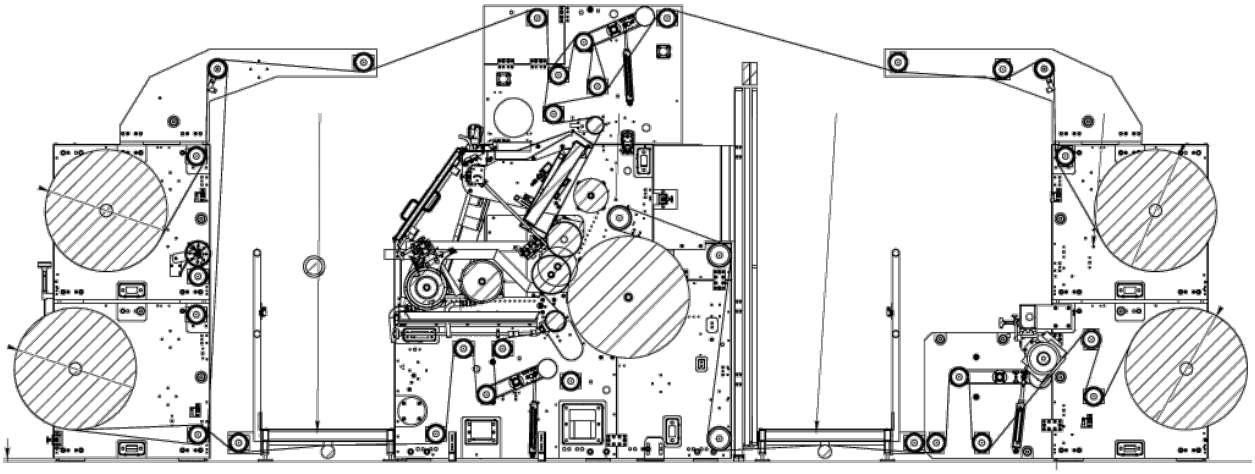
TECHNICAL CENTER

COATING EXPIRIENCE - Laboratory and pilot plants



For our customers' products:

- multifunctional duplex and triplex laminates for sports and leisure clothing (e.g. outdoor)
- protective workwear
- Hheat protection articles (e.g. clothing, non-garment)
- laminated and coated materials for the automotive industry (interior fittings)
- foam or fleece laminated upholstery fabrics
- laminates and coatings for the shoe industry
- textile coatings for non-slip finishing or other functional layers
- coated and laminated nonwoven
- disposable or reusable items in the medical sector
- coated and laminated composites for industrial applications
- carpet backing coatings for pile consolidation or secondary backing lamination



Multi-unwinder

Multipurpose laminating- and coating unit

Multi-winder with edge-cutting unit

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FUEL CELL - DECAL

Decal-line

Our plant concepts

- Winding and unwinding system
  - turret-winder / Single-Winder
  - with web guiding tension control
  - with web control (centered or edge controlled)
  - with manual or automated splice
- Web cleaning with anti-static units
  - non-contact or contact cleaning
  - web cleaning with anti-static units
- Preheating of the decal film by means of IR emitters and/or heated rollers
  - calander as hot press versions with rollers, subsequent exchange can be implemented at any time: steel-steel or steel-rubber
  - electrical or thermal oil heated
- Quality check and control systems:
  - surface inspection using reflected and transmitted light
  - geometric measuring (e.g. width measuring)
- Special Features:
  - crush or shear cut incl. optional extraction of cutting dust
  - cleanroom environment
  - customer oriented engineering
  - defects tracking & marking with e.g. DMC code or laser

Specifications

- Machine speed 0,5 – 15 m/min
- Reachable precision covering +/- 0,2 mm
- Substrate width max. 800 mm
- Tension 5 - 150 N

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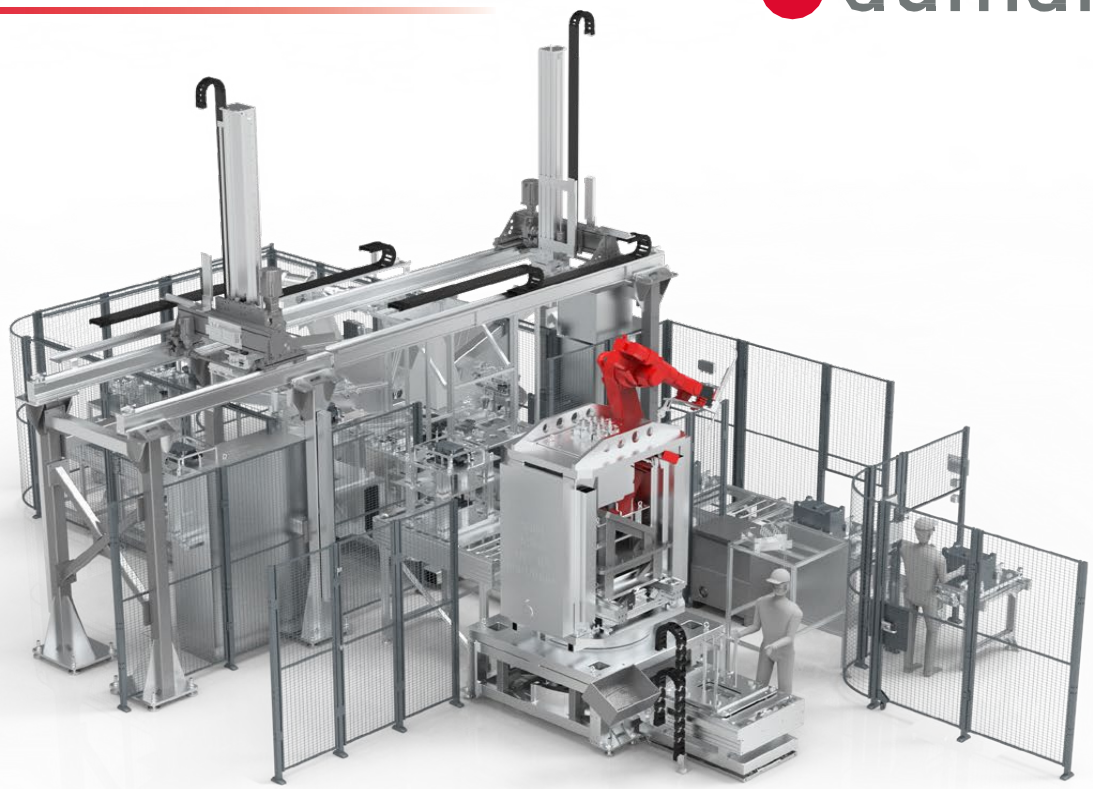
STACKING

Assembly line



Our plant concepts

Our machine concepts are complete solutions made by Aumann, to fit the individual demands of our customers.

Including:

- automatic feeding of individual components, alternatively a direct connection to a Aumann system
- roundtable concept and palletizer for a neutral cycle time loading
- fast cycle Pick and Place unit as well as SCARA-Robot
- vacuum gripper
- DMC Scanner
- positioning with integrated camera systems
- transport belts
- magazine for individual components
- joining and pressing
- leak testing
- strapping (interim packaging) for transport security
- IO and NIO outward transfer e.g., container
- rework station
- geometric measuring of the stack
- DMC lasering, printing or gluing
- climate control and air treatment

Specifications

- position tolerance BPP to BPP: < 0.5 mm
- cycle time per stack dependent on number of cells, expansion stage of the system
- self-sufficient running time without material supply
- production from various varieties with one system possible
- 100% quality and traceability

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FUEL CELL & BATTERY

Mobile decal-transfer-table

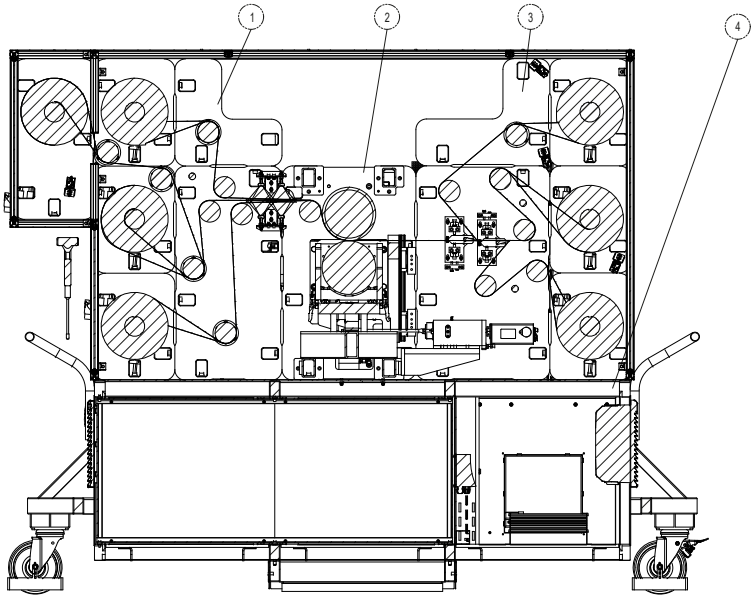
Our plant concepts

Highly flexible, mobile laboratory system for calander and transfer applications

This advanced system has been specially developed for applications in renewable energy and beyond. It offers an exceptionally high degree of flexibility and supports lamination processes.
A special highlight is the integration of infrared (IR) modules, which significantly optimize the heating process and thus significantly increase the adaptability of the materials used.
Electrically heated calander rollers ensure precise temperature control and maximum process control over the entire process.
The fully self-sufficient system combines the entire control and hydraulic unit compactly in the main housing – this means that only a single power connection is required for operation.

Machine components:

- unwinding (1)
- peel-off Protective Film
- pre-Temperin (2)
- g (IR-Module)
- calandering peel-off Carrier Film (3)
- winding (4)



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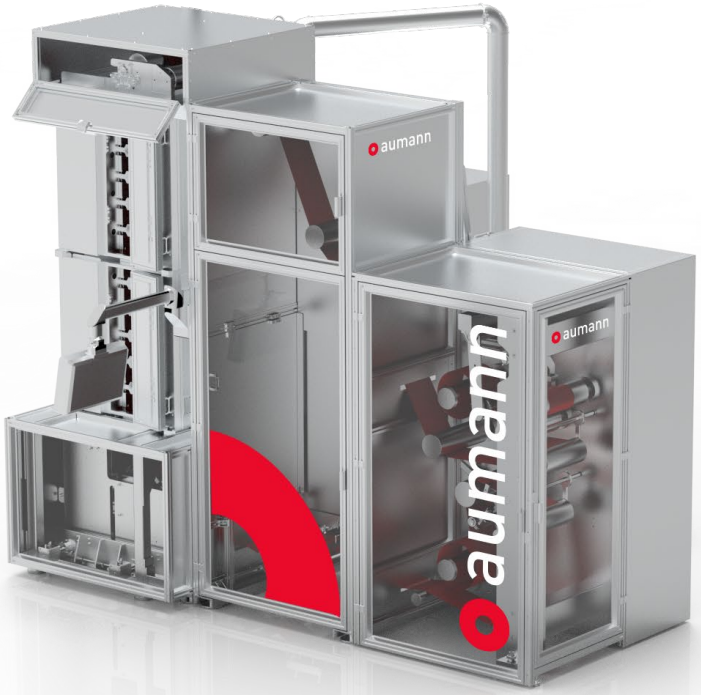
BATTERY

Vertical coating line



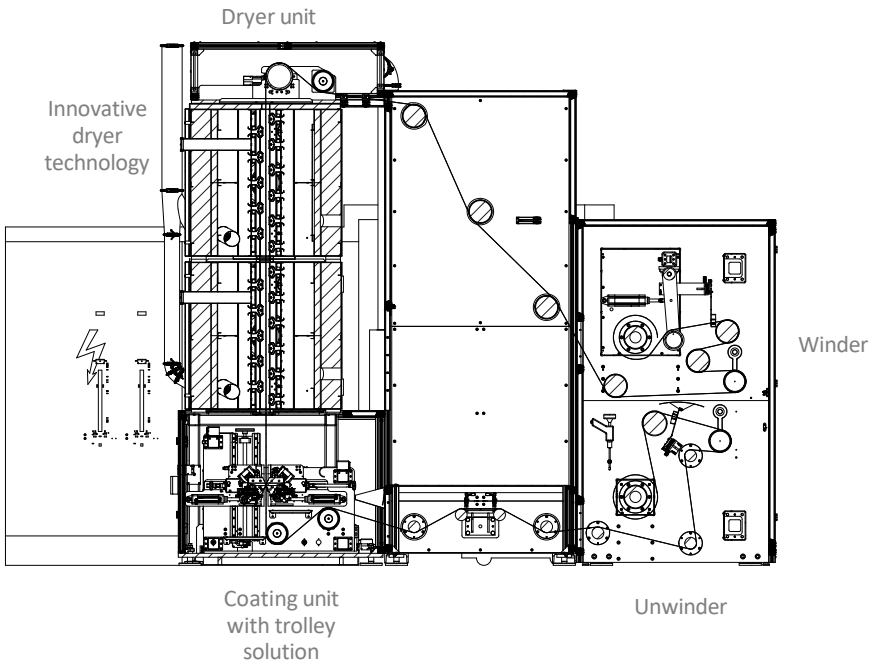
Our plant concepts

High Efficiency Laboratory System Coating Applications

This advanced system has been specially developed for applications in renewable energy and beyond. It offers exceptionally high efficiency due to coating on both sides in parallel by 2 independently operating slot-dies.
A special highlight is the vertical coating on both sides with a floating dryer technology, which is also arranged vertically. Due to the space-saving arrangement, there is also the possibility of integrating additional dryer capacity.

For our customers' products:

→ process (1) Unwind
→ process (2) Double-sided coating
→ process (3) Drying
→ process (4) Transport
→ process (5) Winding



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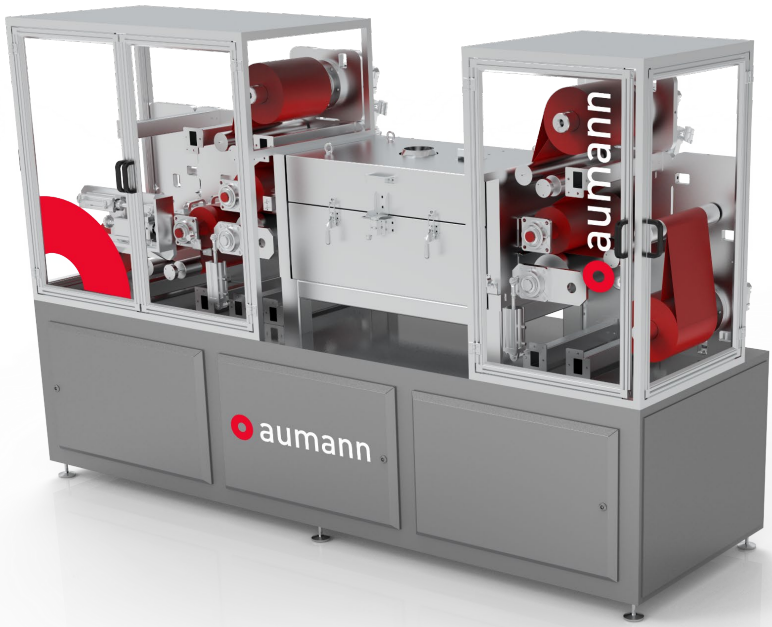
FUEL CELL & BATTERY

Mobile coating line



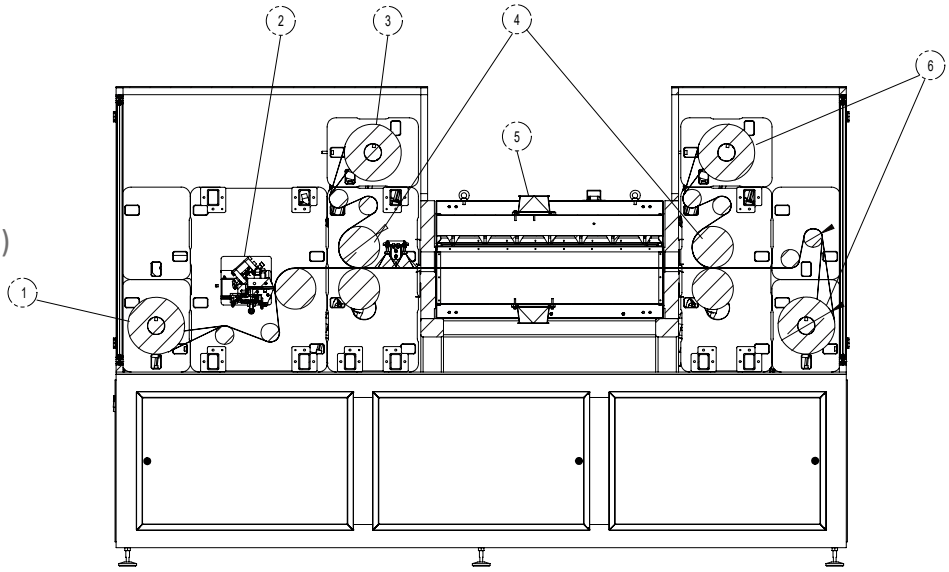
Our plant concepts

Highly flexible, mobile laboratory system coating and laminating application.

This advanced system has been specially developed for applications in renewable energy and beyond. The system offers the possibility of simulating coating processes in the laboratory using a substrate width of 300 mm and a slot-die as well as a one-meter-long convection dryer. The dryer has two dryer zones (2x500 mm). The system can be customized with different rewinders and unwinders for example for protective film.
The fully self-sufficient system combines the entire control unit compactly in the main housing – this means that only a single power connection is required for operation.

Machine components:

- unwinding (1)
- slot-die coating (2)
- Unwinding laminate (3)
- laminating unit (4)
- 1m dryer (5)
- Unwinding protective film (6)
- winding (7)



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