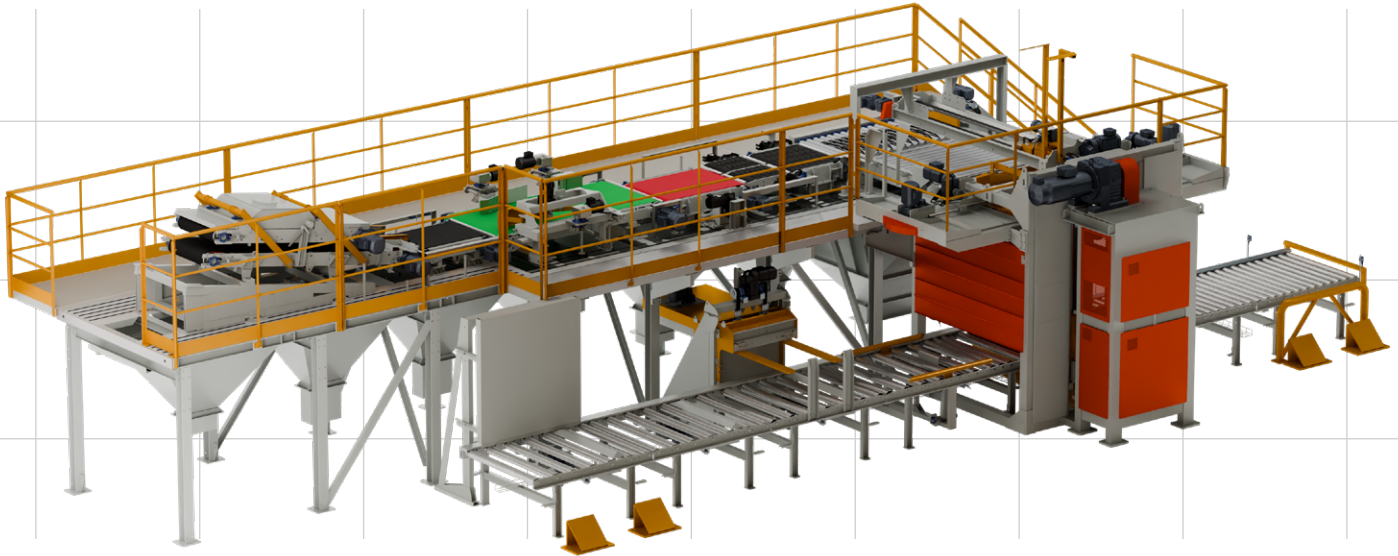


VENTOMATIC®

POLIMAT® PALLETIZING SOLUTIONS

Streamline your logistics



POLIMAT®

A COMPREHENSIVE RANGE OF PALLETIZING SOLUTIONS FOR INDUSTRIAL AUTOMATION

POLIMAT® embodies decades of innovation in automated palletizing technology. Through ongoing research and development, we have engineered a versatile range of solutions capable of handling all types of bagged bulk materials with outstanding precision. These fully automated systems create stable, secure stacks—with or without pallets—seamlessly integrating into your warehouse operations to streamline logistics and ensure products are ready for efficient distribution.

KEY BENEFITS

Reach the necessary capacity

Accommodate and handle a wide range of bagged bulk materials

Customize to suit different bag types, materials, and pallets

POLIMAT® PALLETIZING SOLUTIONS

ENGINEERED FOR EXCELLENCE, BUILT FOR VERSATILITY

POLIMAT® series embodies over 40 years of FLSmidth Ventomatic's unwavering commitment to innovation in palletizing technology. From the pioneering SPV suction pad palletizers to the advanced solutions available today, the company has consistently strived to deliver cutting-edge design and performance. POLIMAT® series is a testament to this legacy, offering a modular and adaptable platform to meet the diverse needs of modern industrial automation.



Compact design, optimal for any layout

- SMALL MODULES/STATIONS, WITH A REDUCED IMPACT ON PLANT SPACE
- L-SHAPE IDEAL TO BETTER MANAGE THE SPACES OF THE WAREHOUSES



Careful handling of bags for optimal pallet stacking

- PERFECT CONTROL IN ALL PHASES OF BAGS HANDLING
- EXTREME ACCURACY IN PALLETIZING
- CONSISTENCE PERFORMANCE OVER TIME



Flexibility and speed for different sizes

- FAST, FLEXIBLE AND PRECISE POSITIONING OF ALL ADJUSTMENTS FOR BAGS HANDLING (ELECTRICALLY AUTOMATED)
- EASY CONFIGURATION THROUGH HMI PANEL, SELECTING THE DESIRED RECIPE



Wide range of solutions to suit the customer's needs

- DIFFERENT MARKETS AND AREAS OF THE WORLD REQUIRE DIFFERENT SOLUTIONS
- WIDE RANGE OF ACCESSORIES TO FULFILL EVERY NEED WITHOUT ISSUES



Quick and easy maintenance

EACH MACHINE STATION IS DESIGNED FOR:

- MAXIMUM RELIABILITY
- EASY MAINTENANCE/ACCESS FOR REPLACING WORN COMPONENTS

Seamless Integration Meets High-Speed Performance: Polimat® EVO series and Polimat® C series for Every End-of-Line

Designed for seamless integration, POLIMAT® series optimizes end-of-line processes. The machines feature high-quality, state-of-the-art electronic components to ensure exceptional reliability and reduce maintenance. Moreover, the HMI (Human-Machine Interface) with its touchscreen allows for setting up pallet configuration with ease. These palletizers can increase speed through advanced technology, reaching capacities of up to 4200 bags/hour with the EVO series and up to 5600 bags/hour with the C series.

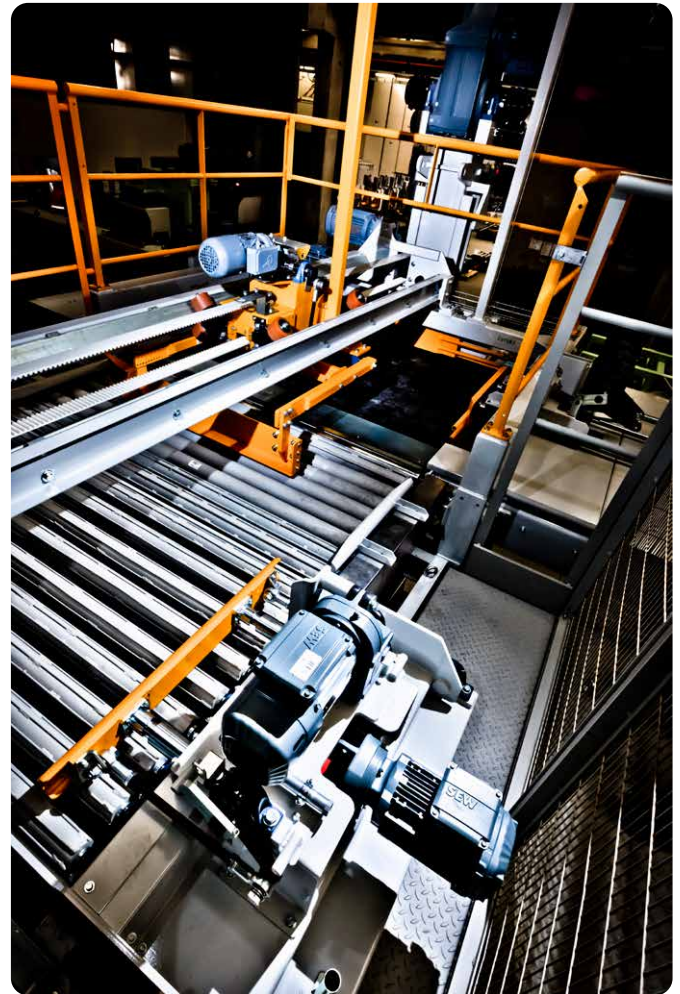
Unmatched Flexibility, Optimized Results

POLIMAT® series offers unmatched flexibility to accommodate a wide range of bag sizes, materials, and pallet configurations. From paper and plastic to woven PP bags, and with options for slip-sheet integration, stretch-hood systems, and pallet-less configurations, the solutions are tailored to provide optimized stack stability and seamless integration into dispatch processes. As you delve into the capabilities of each POLIMAT® model, you'll discover the perfect solution to elevate your palletizing operations.

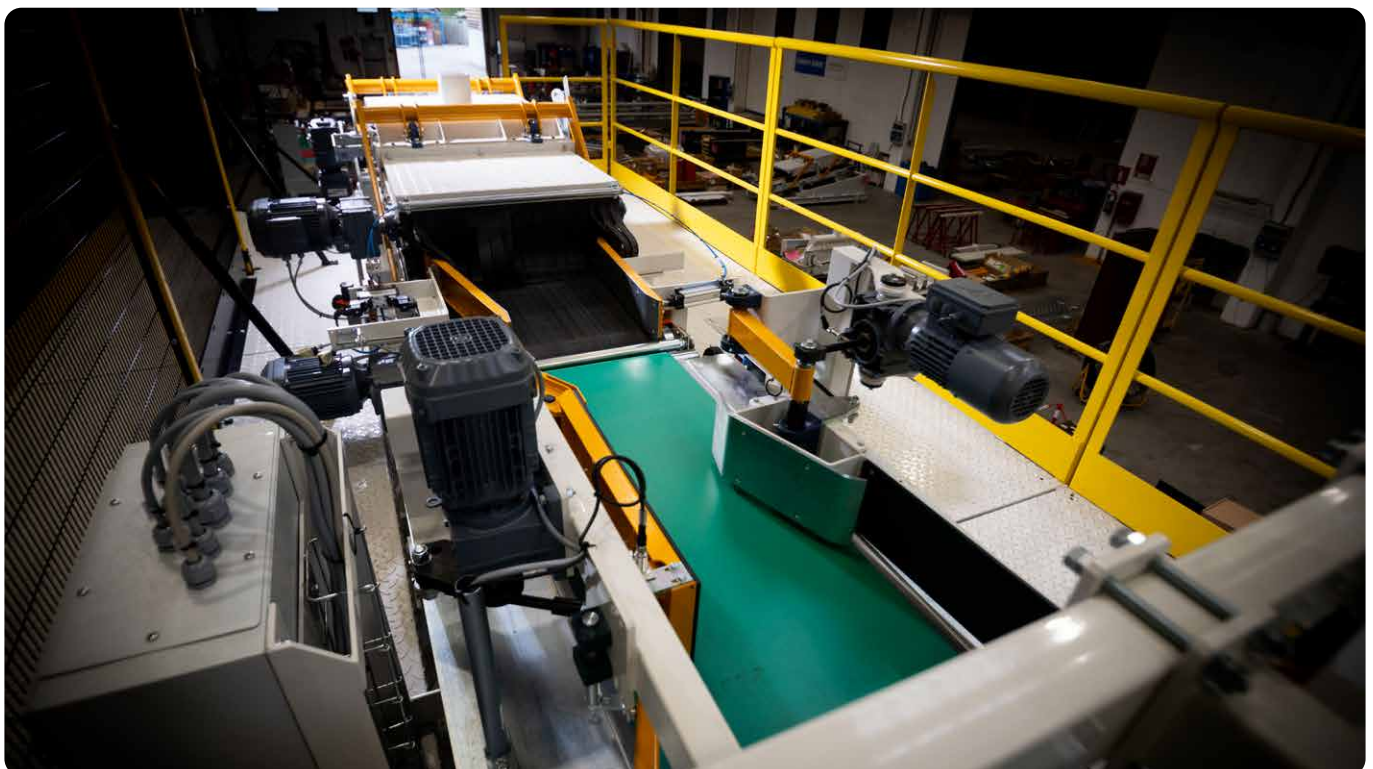


SMOOTH HANDLING OF THE BAGS

FOR OPTIMAL PALLET STACKING QUALITY



Layer formation device




Bag rotating device

PALLETIZING CAPACITY

FLEXIBILITY IN LAYER PATTERN

A wide configuration range of bags layer pattern are available covering all conventional bag size and pallet dimension, ensuring always very stable stacks. Maximum palletizing height up to 2100 mm.

BAGS LAYER PATTERN	POLIMAT® EVO 15	POLIMAT® EVO 20	POLIMAT® EVO 25	POLIMAT® EVO 40	NEW POLIMAT® C 45 S
	1800 bags/h	2000 bags/h	2600 bags/h	3600 bags/h	4800 bags/h
	1720 bags/h	1920 bags/h	2800 bags/h	3600 bags/h	4800 bags/h
	1720 bags/h	1920 bags/h	2800 bags/h	3600 bags/h	4800 bags/h
	1650 bags/h	1840 bags/h	2600 bags/h	3300 bags/h	4600 bags/h
	2000 bags/h	2700 bags/h	3000 bags/h	4200 bags/h	5600 bags/h
	2000 bags/h	2700 bags/h	3000 bags/h	4200 bags/h	5600 bags/h
	2000 bags/h	2700 bags/h	3000 bags/h	4200 bags/h	5600 bags/h
	2000 bags/h	2700 bags/h	3000 bags/h	4200 bags/h	5600 bags/h

Nominal capacity with minimum 1100 mm height of the pallet including support and with standard bag rotation device composed of sideboard and bags-rotating blade.

In case of a bag rotation with clamp device, maximum capacity limited to 2100 bags/h.

ELECTRICAL BOARD AND OPERATOR CONTROL PANEL

HUMAN-INTERFACE MACHINES FOR PALLETIZERS

The advanced electrical boards and operator control panels provide intuitive and comprehensive machine management. Featuring a user-friendly HMI with a touchscreen interface, operators can easily navigate menus, quickly configure parameters for various bag and pallet dimensions, and access critical machine data. Real-time monitoring, diagnostic tools, and seamless integration capabilities help ensure optimal performance and reduce downtime.

Operator panels

The system features two distinct operator panels: a main control panel and a secondary panel. Both are equipped with pushbuttons featuring status indicators, as well as touchscreen interfaces that serve as intuitive control and navigation devices.

Quick IPC Backup and Recovery

With the newly introduced “restore point” feature, it is now possible to fully replicate the IPC of an operating machine onto a spare IPC in under an hour. This process transfers the complete machine control logic, HMI configuration, recipes, and parameters, ensuring minimal downtime and seamless system recovery.

Control System Highlights

- Main operator control panel (HMI) with 12” touch screen for an easy menu scrolling
- Secondary operator control panel (HMI) with 8” touch screen for an easy menu scrolling
- User friendly HMI for a quick setting of the parameters according to the variable bag and pallet dimensions
- Machine alarms, messages display and historical log of alarms
- Diagnostic data and trouble shooting support
- Machine data local back-up
- Easy to be interfaced to a supervision system for data exchange
- Field-bus control network



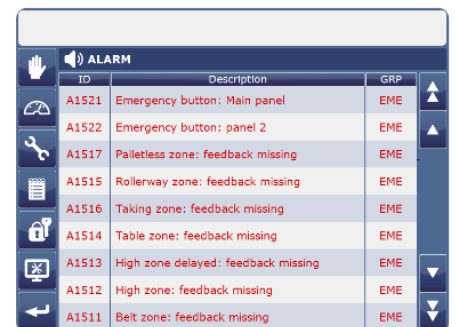
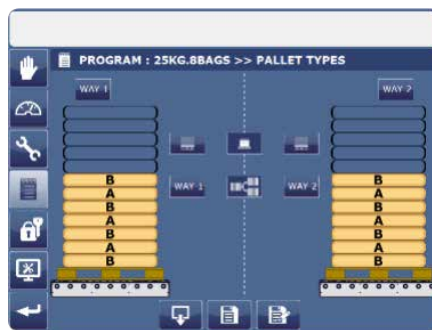
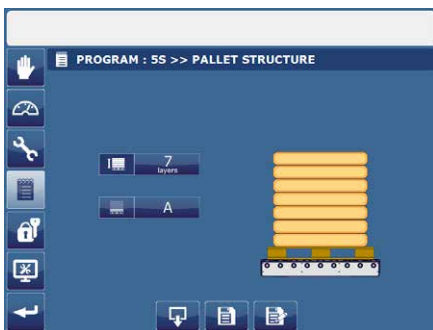
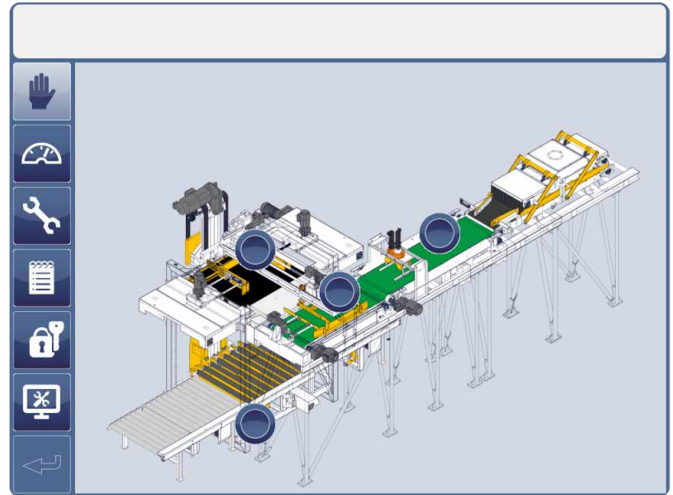
Main panel



Secondary panel

Available operations

- Display and modify machine parameters
- Manage, select, modify and display recipes and all their parameters
- Display alarms and messages for reset or troubleshooting
- View input/output status for easy diagnostics
- Display useful data on the whole machine operation
- Operate the machine in manual control
- Display production statistics
- Display and update the maintenance status
- Display and edit user services



Organization of the interface

The operator interface is clearly structured into three distinct areas:

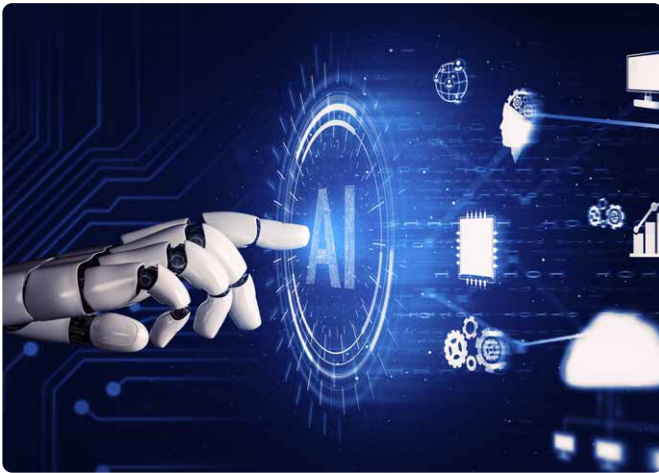
- **AREA A:** Occupying the central and largest portion of the panel, this area typically displays the machine or group of machines using dynamic icons.
- **AREA B:** Located on the left side of the panel, this section contains the navigation buttons.
- **AREA C:** Positioned at the top of the panel, this area shows active alarms and warnings.



INTELLIGENT SYSTEMS ON BOARD THE PALLETIZERS

LEVERAGING AI FOR ENHANCED PERFORMANCE

POLIMAT® series redefines palletizing, moving beyond mere automation to embrace the power of artificial intelligence. These intelligent systems, embedded directly within the machines, proactively enhance performance, drastically reduce downtime, and represent a bold step forward in self-optimizing palletizing technology, setting a new standard for the industry.



Maintenance support directly embedded in operator panel

HMIs now feature a dedicated environment that tracks the usage of critical components, alerting operators when they approach their end-of-life threshold. This system learns from maintenance feedback, continuously refining its wear models for improved accuracy. Available on new POLIMAT® machines sold from 2025 onward, with plans for wider implementation across the product line.

Smart Bag Handling System

Designed for NEW POLIMAT® C 45 S, this advanced system compensates for belt wear and bag size variation, maintaining consistent and precise bag movement. This is a key enabler of its industry-leading throughput, allowing the C 45 S to achieve 5600+ bags/hour with a single layer formation line, unlike competitors who require costly and energy-intensive dual lines.

Adaptive Pressing Force Optimization

The machine table constantly monitors the torque used for pressing and suggests optimal settings for uniform layer compression, enhancing pallet stability and overall output quality.

OTHER VENTOMATIC® AI ENABLERS

(POLIMAT® ACCESSORIES)

For customers seeking to independently optimize their production processes using AI, Ventomatic® machines offer standard data interfaces providing real-time access to:

- Production statistics
- Weighing data and rejected bag counts for packers and bag treating systems
- Air and electricity consumption

This Plant Integration Interface L1/L2/L3 is available on all the machines, enabling two-way data exchange. Machines can not only provide data but also receive external instructions, allowing for real-time refinement of recipes and operating parameters.

Ventolink Pro: Your Gateway to Advanced AI-Powered Palletizing

The new Ventolink Pro system offers a comprehensive solution for data collection, production analysis, consumption tracking, and automated reporting.

The Ventolink PRO acquires data from Ventomatic machines and stores them in an SQL database, simplifying integration with ERP/MES and existing IT infrastructure

POLIMAT® EVO SERIES



POLIMAT® EVO series represents the pinnacle of efficiency and versatility in automated palletizing. Designed for seamless integration and optimized performance, these advanced machines offer unmatched flexibility in handling a wide range of bag sizes and materials. With features like intuitive touchscreen controls, rapid setup, and real-time diagnostics, POLIMAT® EVO series empowers you to streamline your end-of-line processes and maximize your production output.

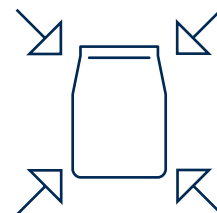
Main Features

- Flexibility in design such as full regulation for multiple bags sizes, various stacks height, use of slip-sheet or stretch-hood units;
- New concept of the lifting table;
- Integrated frame for belts;
- Increased speed using advanced control technology like brushless motors and closed-loops frequency drives to achieve capacity of up to 4200 bags/hour;
- Full electrical controls, no pneumatic or hydraulic drives;
- Palletizer modules can be pre-assembled and pre-wired with quick-connectors to minimize erection and commissioning time (optional);
- All parts can be moved manually from the HMI during maintenance or troubleshooting.



NO PNEUMATIC DRIVES

FULL ELECTRICAL CONTROLS



XS VERSION AVAILABLE

ALL POLIMAT® EVO PALLETIZERS ARE ALSO AVAILABLE IN THEIR XS VERSION FOR VERY SMALL BAG SIZE (< 15 KG)

Design Features

1

BAGS ROTATION

The rotation takes place in two stages, each of which partially rotates the bags, ensuring less deformation

2

HALF-LAYER FORMATION

Positioning of bag for the formation of a half-layer

3

HALF-LAYER SHIFTING

Made by a transferring device with blade

4

LAYER FORMATION

Receiving of the half-layers to form the complete layer

5

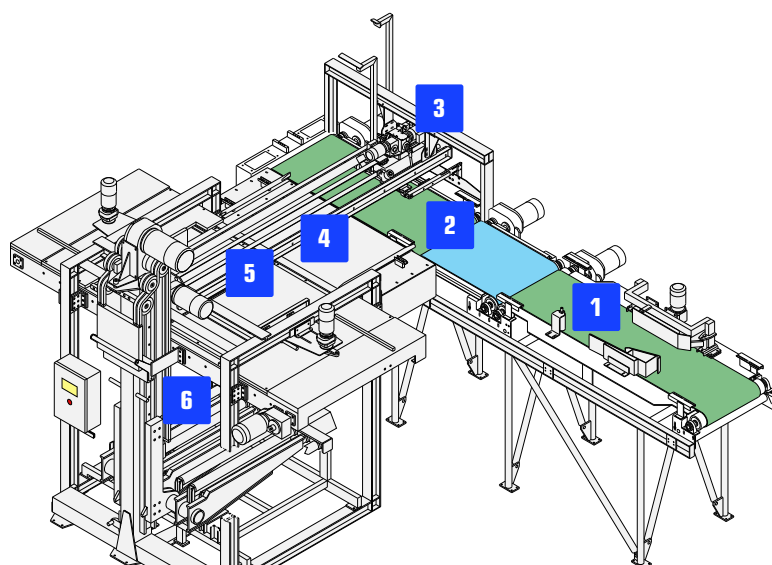
OPENING DIAPHRAGM

Compacting and shaping layers and deposit on the underneath pallet (or stack of bags)

6

PALLET (OR STACK OF BAGS) LIFTING

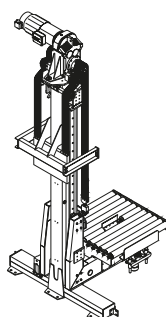
Complete formation of a pallet (or stack of bags) by lifting and compressing each layer against the above blades



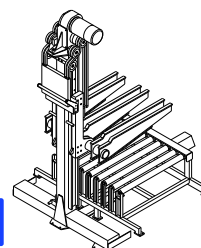
Lifting module options

- A** Lifting module with onboard roller way
- B** Lifting module with roller way on ground
- C** Lifting module with onboard belt

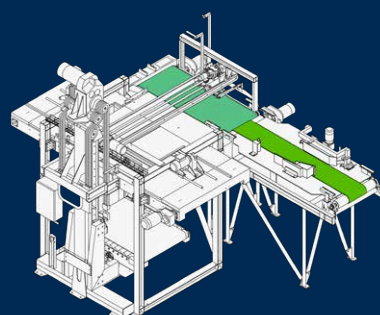
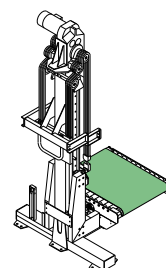
A



B

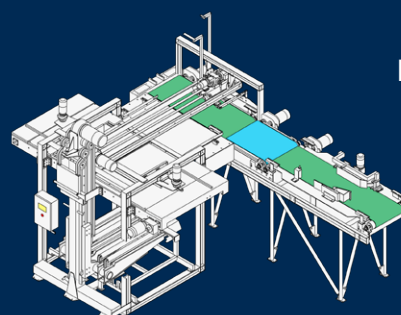


C



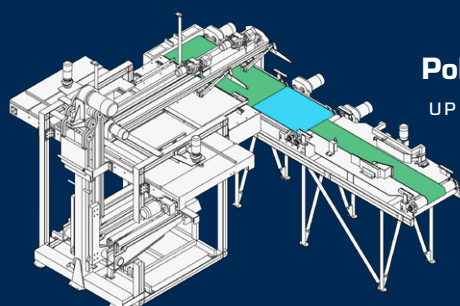
Polimat® EVO 15

UP TO 2000 BAGS/H



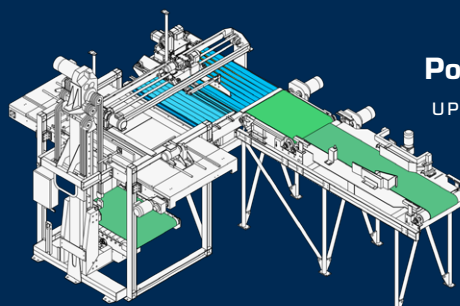
Polimat® EVO 20

UP TO 2700 BAGS/H



Polimat® EVO 25

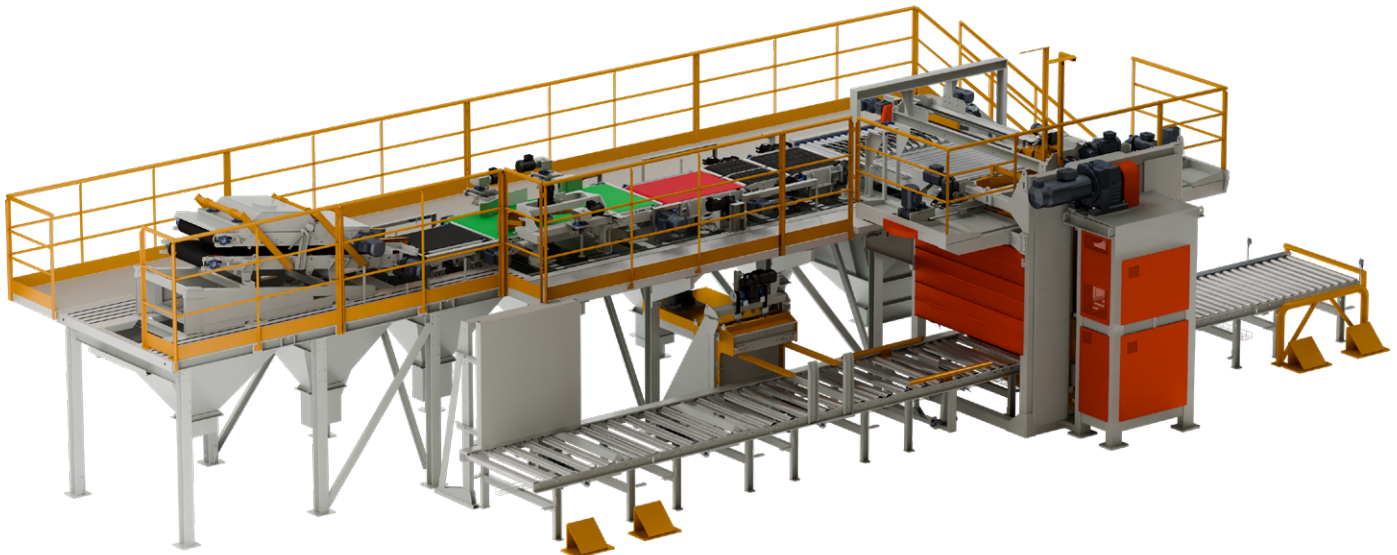
UP TO 2880 BAGS/H



Polimat® EVO 40

UP TO 4200 BAGS/H

NEW POLIMAT® C 45 S



NEW POLIMAT® C 45 S is engineered to deliver exceptional speed and accuracy through the implementation of advanced control systems, including brushless motors and closed-loop inverters. The innovative and user-friendly Human-Machine Interface (HMI) simplifies pallet configuration and parameter settings, making operation intuitive and efficient. Furthermore, the HMI provides comprehensive support for diagnostics, troubleshooting, and production data analysis, empowering you with the insights needed to optimize performance and maximize uptime.

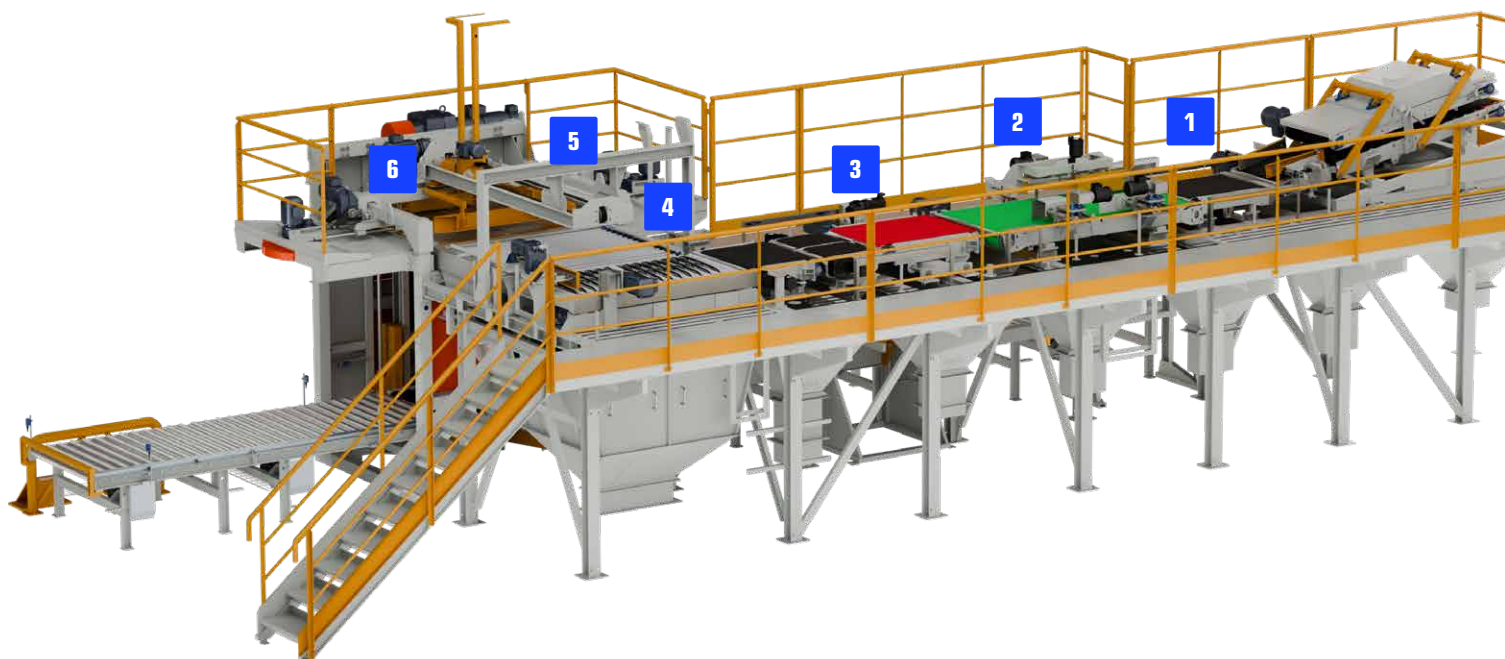
Main Features

- High quality state of the art electronic components to ensure high reliability
- Modular concept and wide use of standard parts in order to optimize the fabrication process and in order to minimize delivery time
- Flexibility in design allows options such as full automatic regulation for multiple bags size, various stack height, various full pallet weight etc.
- Palletizer modules can be pre-assembled and pre-wired execution with “fast connection” plugs to minimize erection and commission time (optional)
- Field-bus control network for all sensors installed on the equipment (optional)
- Wide range of auxiliary equipment to fit the layout requirements according to available space and customer dispatch philosophy (wrapping, stretch hood, palletless etc.)



UP TO 5600 BAGS/H

ENGINEERED TO OPTIMIZE THE TRANSITION FROM
50 KG TO 25 KG BAGS
IN THE PRODUCTION PROCESS



Design Features

1

LAUNCHING BELT

Necessary for the acceleration of bags to the required speed of the downstream process

2

BAGS ROTATION

The rotation takes place in two stages, each of which partially rotates the bags, ensuring less deformation

3

BAGS ACCUMULATION AND TRANSFER

All together the belts of this group allow the accumulation of an enough number of bags for the half-layer formation

4

HALF-LAYER FORMATION

Positioning of bag for the formation of a half-layer

5

HALF-LAYER SHIFTING

Made by a transferring device with paddles

6

LAYER FORMATION

Receiving of the half-layers to form the complete layer

7

OPENING DIAPHRAGM

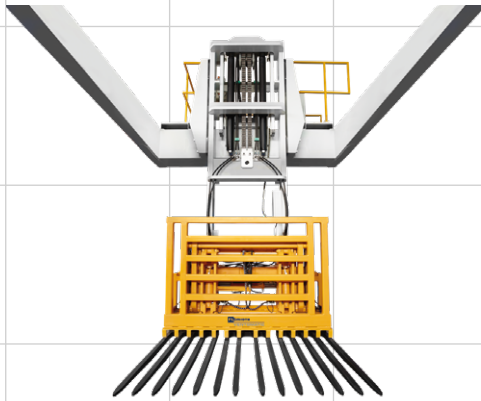
Compacting and shaping layers and deposit on the underneath pallet (or stack of bags)

8

PALLET (OR STACK OF BAGS) LIFTING

Complete formation of a pallet (or stack of bags) by lifting and compressing each layer against the above blades





END-OF-LINE ACCESSORIES

STREAMLINE LOGISTICS, ENHANCE PROTECTION, AND OPTIMIZE EFFICIENCY
WITH A RANGE OF ACCESSORIES

POLIMAT® system extends beyond palletizing, offering a complete solution for optimizing end-of-line processes. A range of accessories enhances logistical flow, adding layers of protection to the product, improving automation and increasing efficiency. From sling bag loading to stretch hood systems and automatic truck loaders, these additions maximize palletizing investment and streamline the operation from start to finish.

KEY BENEFITS

Enhanced Product Protection

Optimized Handling & Logistics

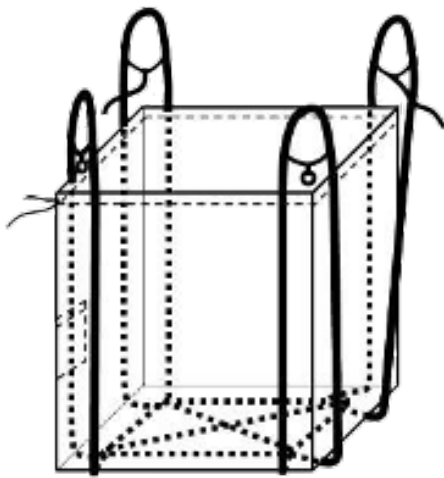
Increased Automation & Efficiency

Improved Safety

END-OF-LINE ACCESSORIES

SLING BAGS LOADING SOLUTION

The Sling Bags Loading Solution offers a robust and efficient method for containing palletized stacks of bags. This system utilizes a large, durable bag equipped with four integrated lifting loops, enabling quick and easy handling of entire pallet loads. The sling bag provides enhanced protection during storage and transport while also facilitating simplified loading and unloading processes.



Key benefit

SUPERIOR PROTECTION FROM THE ELEMENTS

Provides a high level of protection against humidity, dust, and other environmental contaminants, preserving product integrity.

REDUCES COSTS WITH PALLET RECYCLING

Lowers material costs and storage needs, thanks to the option for pallet recycling programs.

SIMPLIFIED HANDLING & STORAGE

Facilitates effortless handling and storage due to integrated „4 loops“ system.

EXCEPTIONAL STACK STABILITY & SECURITY

Ensures reliably stable and secure stacks of bags, minimizing the risk of damage or spillage.

1

*Envelope Bags
with the Sling Bag*



2

*Transport
with Forklift*



3

*Reuse
the Pallet*



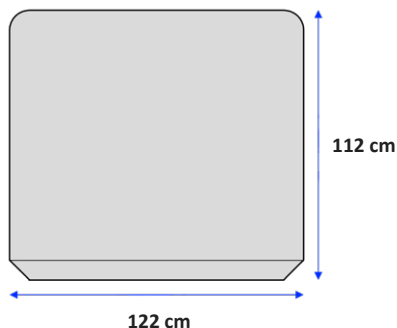
END-OF-LINE ACCESSORIES

SLIP SHEET SOLUTION

The Slip Sheet Solution offers a cost-effective and space-saving alternative to traditional pallets. Constructed from durable HDPE or recycled PP, these thin sheets provide a reliable moisture barrier against rising damp. With a weight of approximately 3 kg and dimensions tailored to your specific bag layer, slip sheets streamline storage and transport while reducing material costs and optimizing warehouse space. Features like rounded corners, a smooth surface, and chamfered edges ensure safe and efficient handling of your palletized loads.

Slip sheet specifications

- different manufacturing materials
- different sheet dimensions
- various thickness range
- final dimensions/manufacturing characteristics shall be defined according to full bag dimensions (layer dimensions) and fork-lift characteristics



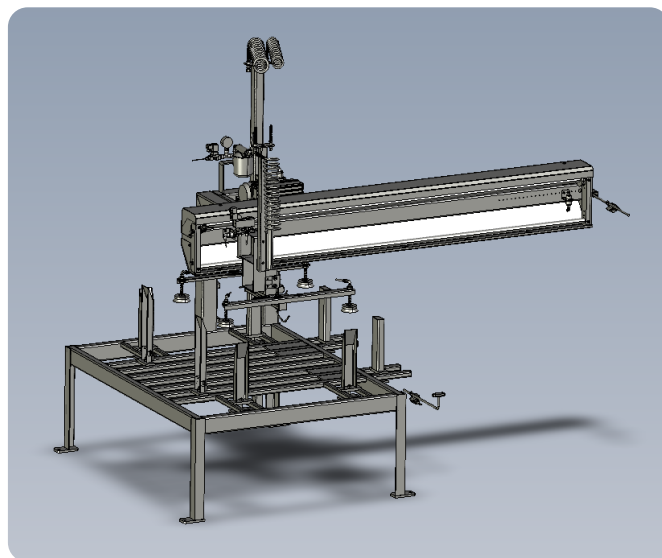
Key benefit

SUPERIOR PROTECTION FROM RISING DAMP

Provides a high level of defense against ground moisture, maintaining product integrity and preventing damage.

REDUCES COSTS WITH OPTIMIZED SPACE

Lowers pallet expenses and maximizes storage capacity by eliminating the need for traditional pallet systems.



1

The slip sheet dispenser retrieves the slip sheet and positions it on the rollers

2

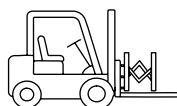
Rollers shift slip sheet into place

3

Stack is lowered onto slip sheet

4

Load is easily moved with a push-pull forklift

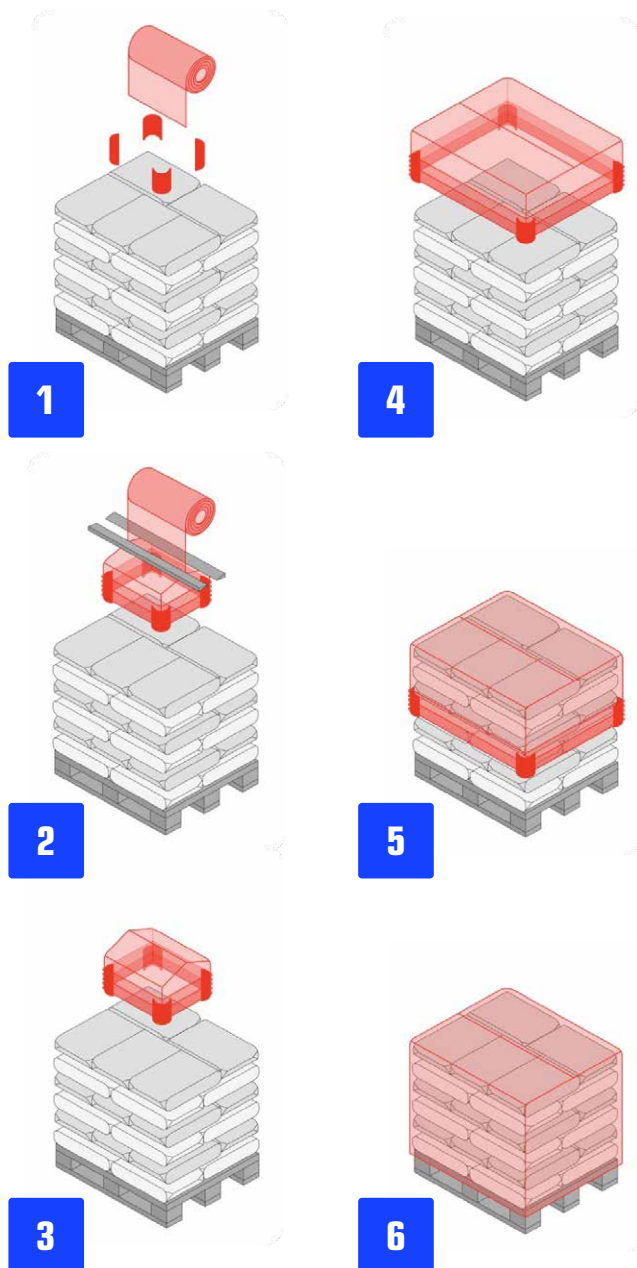


Slip sheets require handling with a forklift fitted with a push-pull system.

END-OF-LINE ACCESSORIES

STRETCH HOOD SYSTEM WITH PLASTIC FILM

The Stretch Hood System delivers exceptional protection and stability for palletized loads. This advanced system utilizes a seamless plastic film that stretches and tightly conforms to the shape of the pallet, creating a secure and weather-resistant enclosure. Ideal for a wide range of products, the Stretch Hood System offers a reliable and cost-effective solution for safeguarding your goods during storage and transportation.



Key benefit

COMPLETE ENVIRONMENTAL PROTECTION

Provides a sealed barrier against dampness, dust, and other contaminants, ensuring the integrity of palletized goods.

DURABLE & USER-FRIENDLY

Offers a robust and reliable technology that is easy to operate and requires minimal maintenance.

SIMPLIFIED HANDLING & WAREHOUSING

Facilitates easy handling and storage of wrapped pallets, improving warehouse efficiency.

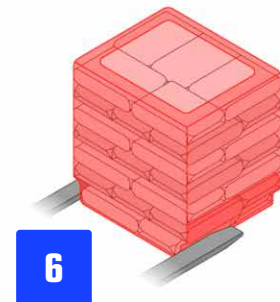
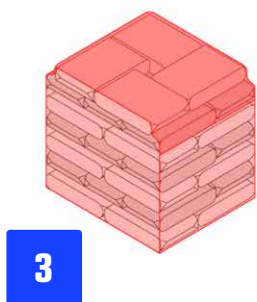
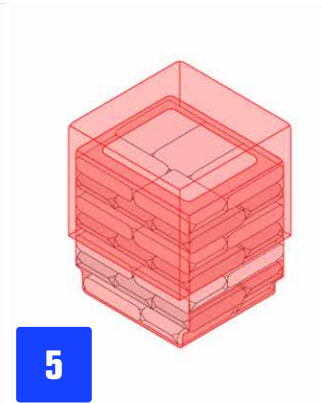
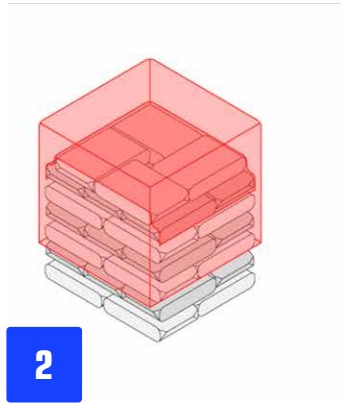
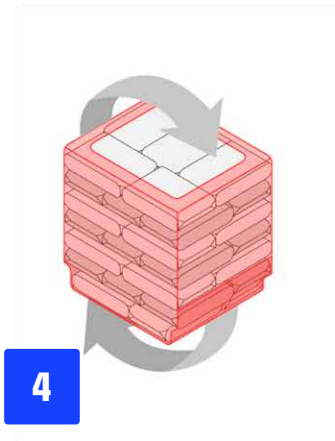
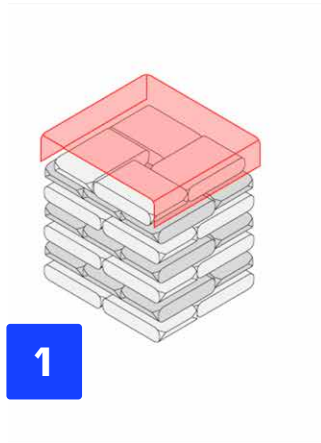
ENHANCED LOAD STABILITY

Creates exceptionally stable and secure stacks, particularly for small to medium-sized bags, minimizing the risk of shifting or damage during transport.

END-OF-LINE ACCESSORIES

PALLET-LESS SYSTEM

The Pallet-Less System offers a revolutionary approach to palletizing, eliminating the need for traditional pallets. This innovative system wraps the entire pallet load, top and bottom, in a durable, waterproof film, creating a completely sealed and protected unit. Ideal for goods requiring maximum protection from the elements or for streamlining sea transport, the Pallet-Less System reduces costs, simplifies handling, and enhances sustainability.



Key benefit

COMPLETE WATERPROOF PROTECTION

Provides a fully sealed, waterproof enclosure, safeguarding against dampness, dust, and environmental contaminants.

ELIMINATES PALLET COSTS & HANDLING

Removes the need for pallets entirely, reducing material expenses and simplifying logistics.

OPTIMIZED FOR SEA TRANSPORT

Ideal for shipping goods via sea, offering superior protection and stability without the constraints of pallets.

STABLE, SECURE & EFFICIENT

Ensures stable and secure stacks for efficient handling, storage, and transport.

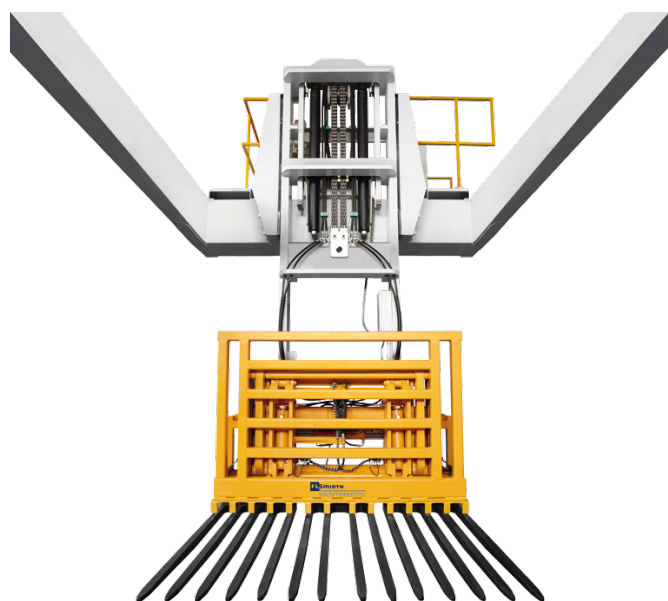
END-OF-LINE ACCESSORIES

FLYING FORK-LIFT (FFL) AUTOMATIC LOADER

The Ventomatic® Flying Fork-Lift (FFL) Automatic Truck Loaders represents a new era in automated loading. Designed for both open-top trucks and enclosed containers, the FFL system provides a safe, efficient, and hands-free solution for loading stacks of bags with or without any support (i.e., wooden pallet, slip sheet, etc.). With its ground-level installation, minimal infrastructure requirements, and seamless integration capabilities, the FFL dramatically streamlines the dispatch process, reducing loading times and optimizing overall logistics.

As the fork modules are interchangeable, the same machine can be used for different load types based on the dispatch requirements:

- Palletized goods (bags, carton boxes, etc.)
- Stacked bags without pallets
- Jumbo bags



Key benefit

FULL AUTOMATION

Enables completely automatic loading operations, minimizing the need for manual labor and maximizing efficiency.

GROUND-LEVEL INSTALLATION

Requires minimal civil infrastructure and supporting steel structure with all equipment installed at ground level for ease of access and maintenance.

ENHANCED SAFETY

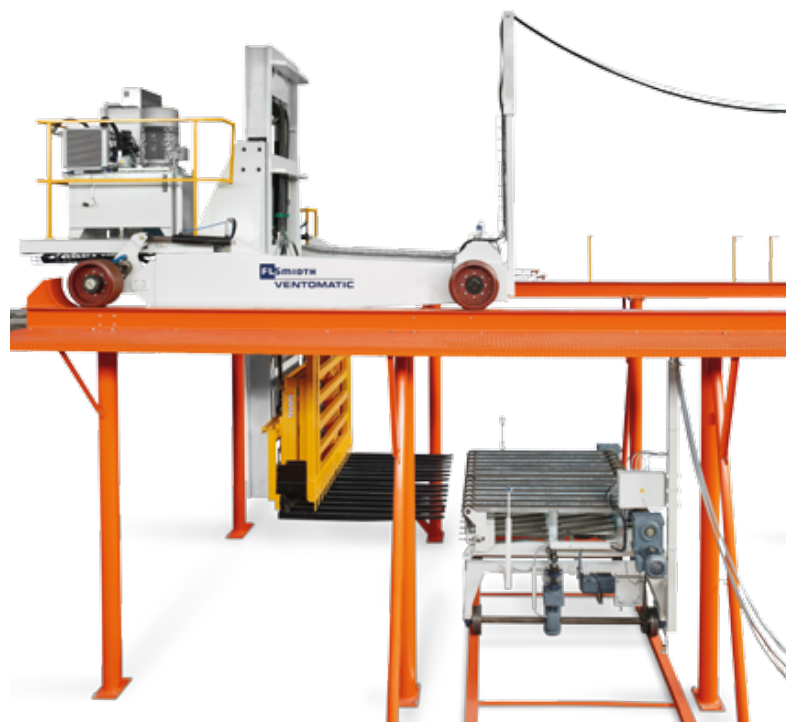
Improves workplace safety by eliminating the need for personnel to be in close proximity to loading vehicles.

SIMPLIFIED INTEGRATION

Integrates easily with existing customer supervision and data collection systems to improve plant workflow.

RAPID DEPLOYMENT

Minimizes downtime with short erection and commissioning times due to pre-wired, pre-assembled, and pre-tested components.



VENTOMATIC® FFL

**Automatic loader for open-top trucks,
with or without lateral sides**

Operative phases:

- The truck enters the loading bay and stops in the loading position.
- The dimensions of the truck are scanned automatically.
- Loading parameters are selected (number of bags/ton in terms of amount of stacks and number of layers per stack).
- Stacks are picked up, transferred, and released.
- The FFL truck loader returns to the stand-by position.
- The loaded truck leaves the loading bay, and the next truck moves into the loading position.

**VENTOMATIC® FFL-4C**

**Automatic loader for containers or closed
trucks**

The loading cycle of the Ventomatic® FFL-4C is both fast and simple:

- Truck positions itself in front of the machine.
- The system verifies the correct positioning and absence of possible obstacles inside the container / closed truck.
- The operator starts the loading sequence based on the dispatch requirements from the user-friendly HMI.

A 40-foot container is typically loaded in 20 minutes only.



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