

VENTOMATIC®

CARICAMAT® UPGRADE SOLUTIONS

Restore your CARICAMAT® to the best performance



HEAD REPLACEMENT

THE MOST COMPLETE AND FASTEST WAY TO RENEW YOUR CARICAMAT®

Over time, the CARICAMAT® is subject to mechanical wear that can gradually affect its performance. As deterioration progresses, production capacity decreases and the likelihood of operational failure increases. These conditions lead to unscheduled downtime, compromising overall plant efficiency. To avoid such risks and restore optimal productivity, reliability, and performance, a complete CARICAMAT® head replacement is recommended. This solution ensures structural integrity and operational continuity through the replacement of all key components subject to wear.

KEY BENEFITS

**Renew the performance
of CARICAMAT®**

**Increase bag placement precision,
speed and efficiency**

**Reduced maintenance costs
and less downtime**

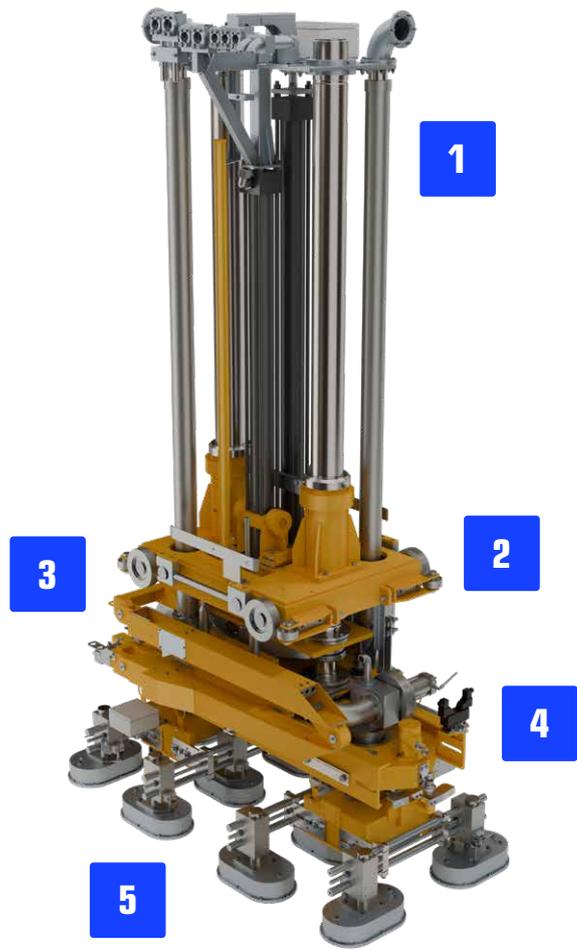
HEAD REPLACEMENT

EVERY BAG AFFECTS THE BOTTOM LINE

The CARICAMAT® has been the premier truck loading solution for bagged bulk materials since the 1960s. It is a robust piece of equipment, but most of the strain is put on the CARICAMAT® head, which moves on three axis and lifts heavy bags at rates up to 3000 bags per hour. Between the heavy lifting and the movement, the CARICAMAT® is subject to wear and tear over time, and if not properly maintained can lose performance and even become unsafe.

While it is possible to replace parts of the CARICAMAT® head with spares, patchy repair work can result in more downtime and higher costs over the long-term. By contrast, replacing the CARICAMAT® head in its entirety ensures high quality across the piece, plus only one pause in production, which reduces the overall cost.

The head replacement includes suction cup support, head support, pantograph, head carriage and head column.



1

HEAD COLUMN

2

HEAD CARRIAGE

3

PANTOGRAPH

4

HEAD SUPPORT

5

SUCTION CUPS SUPPORT



6 HOURS ONLY

COMPLETE HEAD DISASSEMBLY AND REPLACEMENT

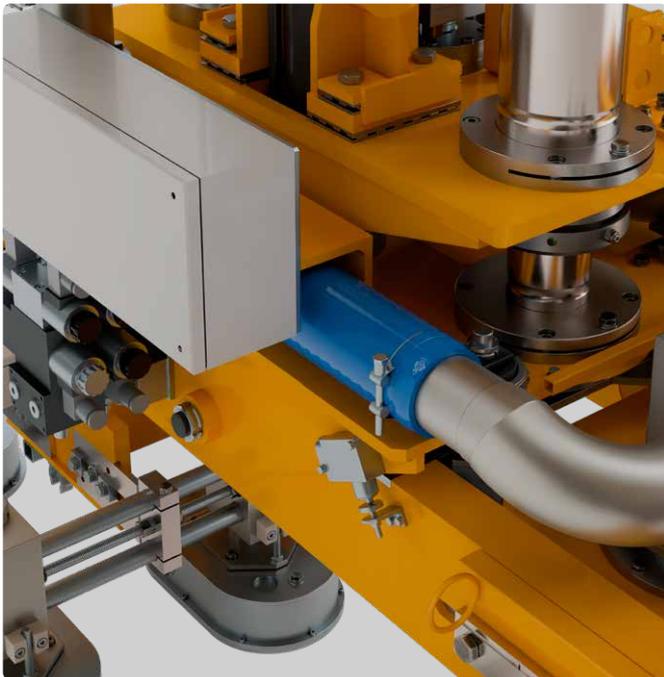
Safer handling

Lack of maintenance on the CARICAMAT® head—such as missing fasteners or insufficient lubrication—can compromise structural integrity and create unsafe working conditions.

Proactive maintenance is essential to prevent such scenarios. Where wear is advanced, replacing the complete head ensures the recovery of safe, reliable handling operations and restores full equipment functionality.



Example of a poorly maintained CARICAMAT®



New CARICAMAT® head with upgraded components



INCREASE BAG
PLACEMENT PRECISION,
SPEED AND EFFICIENCY



RENEW THE
PERFORMANCES



REDUCED
MAINTENANCE COSTS
AND LESS DOWNTIME

ROI FOR CUSTOMER



FIRST SCENARIO

From 1800 to 2300 bags/hour



Investment

NEW HEAD REPLACEMENT PRICE



Benefit

PRODUCTION INCREASE FROM 1,800 TO 2,300 BAGS/HOUR + SAVINGS ON MAINTENANCE



Payback Time

ABOUT 5 MONTHS

ROI 243%

investment recovered in 5 months



SECOND SCENARIO

From 1800 to 2600 bags/hour



Investment

NEW HEAD REPLACEMENT PRICE



Benefit

PRODUCTION INCREASE FROM 1,800 TO 2,600 BAGS/HOUR + SAVINGS ON MAINTENANCE

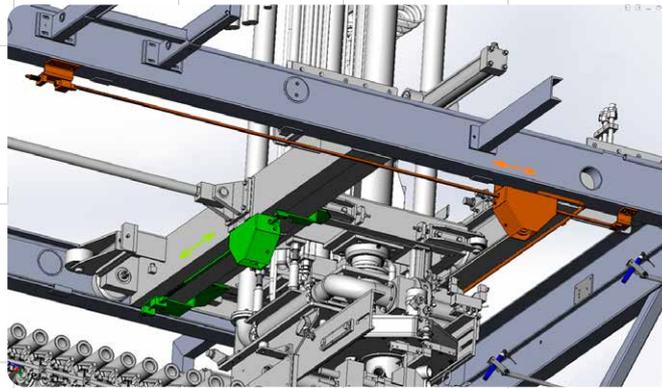


Payback Time

ABOUT 3 MONTHS

ROI 391%

investment recovered in 3 months



IMPROVED HYDRAULIC CONTROL

ENHANCE YOUR CARICAMAT® PERFORMANCE BY IMPROVING SPEED
TRANSITIONS AND REDUCING MECHANICAL STRESS

The high operating speeds of the CARICAMAT® generate significant mechanical stress on the main frame and lifting head. To minimise these effects, an optimised hydraulic control upgrade is available, ensuring smoother speed transitions and precise movement control, with seamless integration into existing machines.

KEY BENEFITS

**Reduced stress on
mechanics and frame**

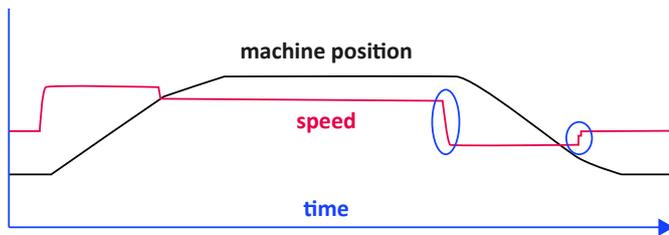
Increased equipment life

Lower maintenance

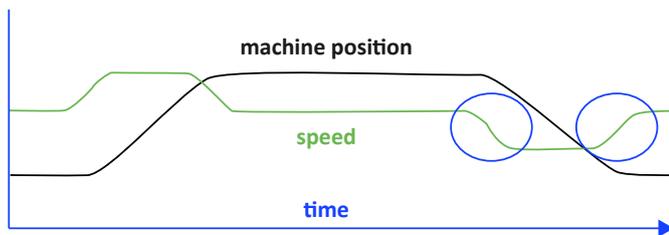
IMPROVED HYDRAULIC CONTROL

EVERY STROKE COUNTS TOWARD HIGHER OUTPUT

The addition of the hydraulic kit minimises shocks and vibrations by optimising speed transitions and enhancing movement control along both transverse and longitudinal axes. This leads to reduced mechanical stress across all critical components, lowering wear and tear and relieving stress on the structural frames. Despite being a relatively small upgrade, it significantly decreases the risk of cracks or structural failure.



WITHOUT KIT: sharp speed changes.
Generation of high mechanical stress.

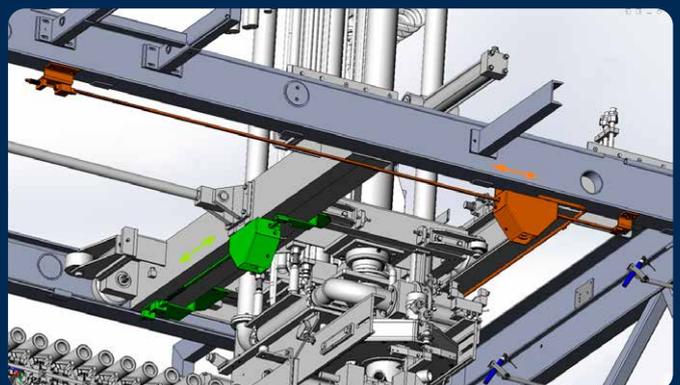


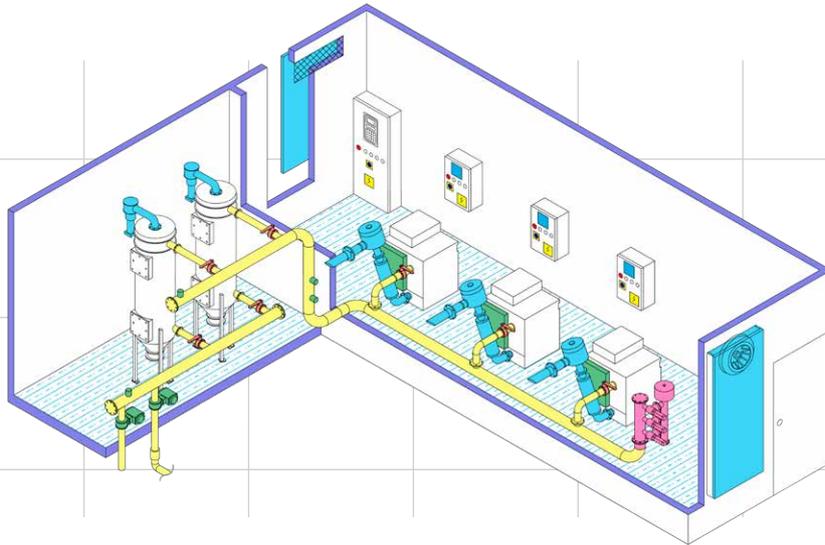
WITH KIT: smooth speed transitions.
Acceleration is reduced at minimum.

- The kit consists of:**
- A hydraulic part for handling movements
 - A mechanical part for feedback control of movements
 - A control unit, installed inside the main board
 - New software



BETTER SPEED TRANSITIONS,
IMPROVED EFFICIENCY





VACUUM UNIT REPLACEMENT

BOOST YOUR CARICAMAT® PRODUCTIVITY AND REDUCE MAINTENANCE
WITH AN EFFICIENT VACUUM UNIT

Productivity can be restored and maintenance reduced through the replacement of the vacuum unit. Older 65-sized vacuum pumps require higher motor speeds to generate sufficient suction, leading to greater wear, higher energy consumption, and increased maintenance. To address these issues, an upgrade to more powerful and efficient 85-sized pumps is now available. This retrofit significantly lowers motor RPM, enhancing vacuum performance while reducing maintenance frequency and spare parts consumption.

KEY BENEFITS

Improved reliability

Easier maintenance

Reduced equipment stress

**Increased productivity
and equipment life**

VACUUM UNITS REPLACEMENT

INCREASING THE PUMP SIZE TO INCREASE PERFORMANCE

Vacuum operation is essential to the functionality and safety of the CARICAMAT® system. Without it, the equipment cannot operate, and any failure in the vacuum unit disrupts dispatch operations, causing process bottlenecks. Upgrading to a high-performance dry vacuum unit offers a reliable solution to reduce unplanned downtime while enhancing overall efficiency and operational continuity.

Resizing the system

Older dry vacuum systems may use multiple small pumps all running at maximum capacity to achieve the necessary performance. Replacing these with larger pumps increases the power and performance of the vacuum, but also reduces stress and maintenance, as the bigger pumps don't have to run at maximum speed.

As part of the dry vacuum system upgrade, new dedusting filters are included to ensure high filtration efficiency and reliable operation.

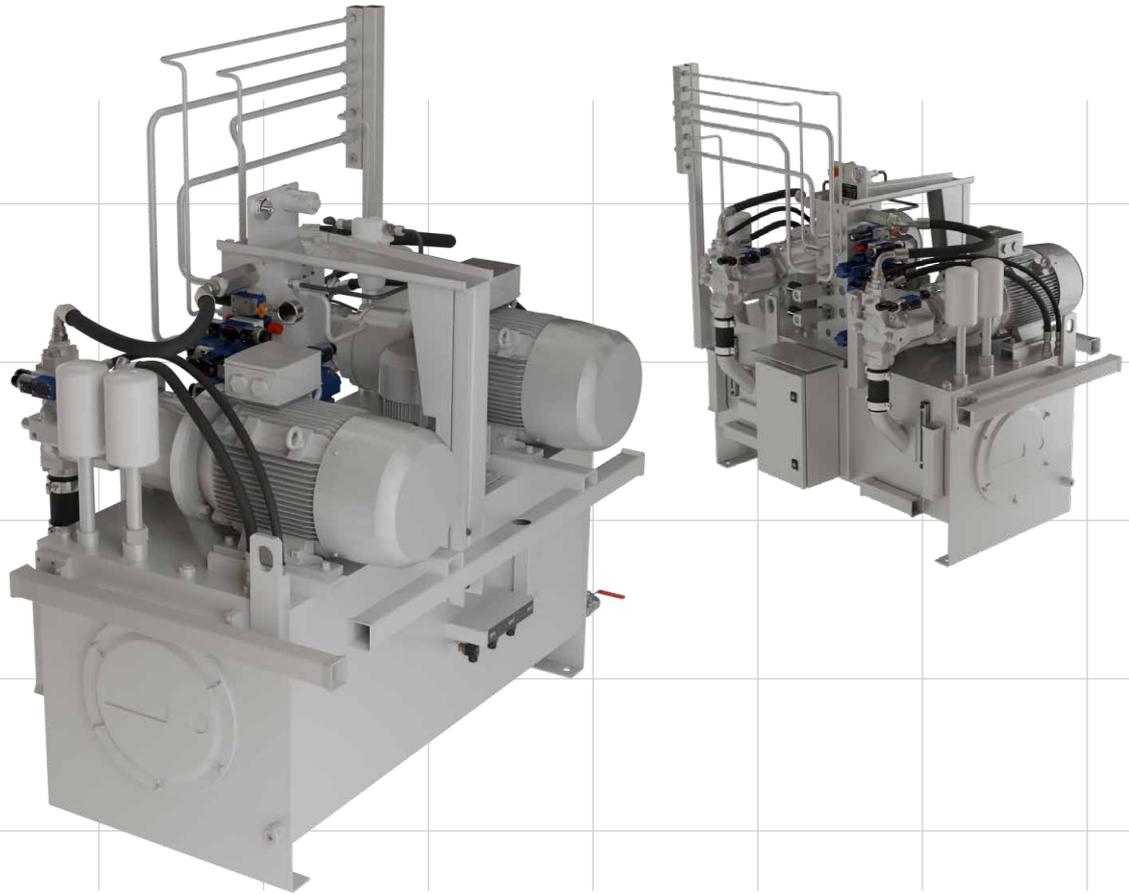
Digital upgrade

A new electric panel board is included in the upgrade to connect the rotary blowers and dedusting filters. A dedicated HMI operator panel enables optimisation of the vacuum system separate from the CARICAMAT® control.



The upgrade package include:

- the pump
- dedusting filters
- piping
- automatic and manual butterfly valves
- new electrical control panel
- HMI operator panel



HYDRAULIC UNIT REPLACEMENT

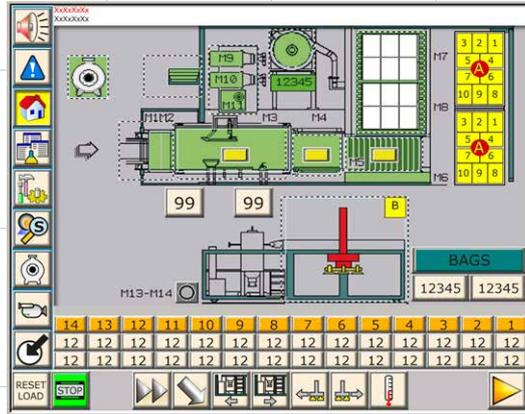
RESTORE OPTIMAL OPERATION AND ENSURE LONG-TERM EFFICIENCY
BY REPLACING YOUR HYDRAULIC UNIT

Over time, contaminants such as fine dust may accumulate on hydraulic rod surfaces, and oil leaks can progressively develop. These conditions often lead to valve leakage, resulting in increased oil temperature and internal pressure within the hydraulic unit. The outcome is a gradual decline in system performance, reduced reliability, and a higher risk of failure. Replacing the hydraulic unit at the first signs of wear or contamination is essential to restore optimal operation and maintain long-term efficiency.

KEY BENEFITS

**Ensures consistent performance
over time**

Performance restoration



HMI AND PLC UPGRADE

ELIMINATE OBSOLESCENCE AND GAIN IMPROVED MACHINE PERFORMANCE WITH A MODERN USER INTERFACE

As electronic and control components age, the risk of obsolescence increases — making spare parts harder or even impossible to source. Upgrading the HMI and PLC eliminates this risk by replacing outdated hardware with the latest technology. In addition to long-term component availability, the new system brings improved machine performance, enhanced usability, and access to updated software features that ensure greater efficiency and control.

KEY BENEFITS

Elimination of electronic component obsolescence

Improved machine performance and responsiveness

Modern user interface with upgraded software



VENTOMATIC GROUND LOADING SYSTEM

ADD PALLETIZING CAPABILITIES TO YOUR CARICAMAT®, TRANSFORMING IT INTO A DUAL-MODE LOADER FOR TRUCK DISPATCH AND WAREHOUSE HANDLING

Some operations need more than just truck loading. For customers with export potential or storage needs, the Ground Loading System adds palletizing capability to the CARICAMAT®. This optional add-on transforms the machine into a dual-mode loader — ready for both truck dispatch and warehouse handling.

KEY BENEFITS

Dual loading capability: direct truck loading and pallet loading

Two machines combined in one

VENTOMATIC GROUND LOADING SYSTEM

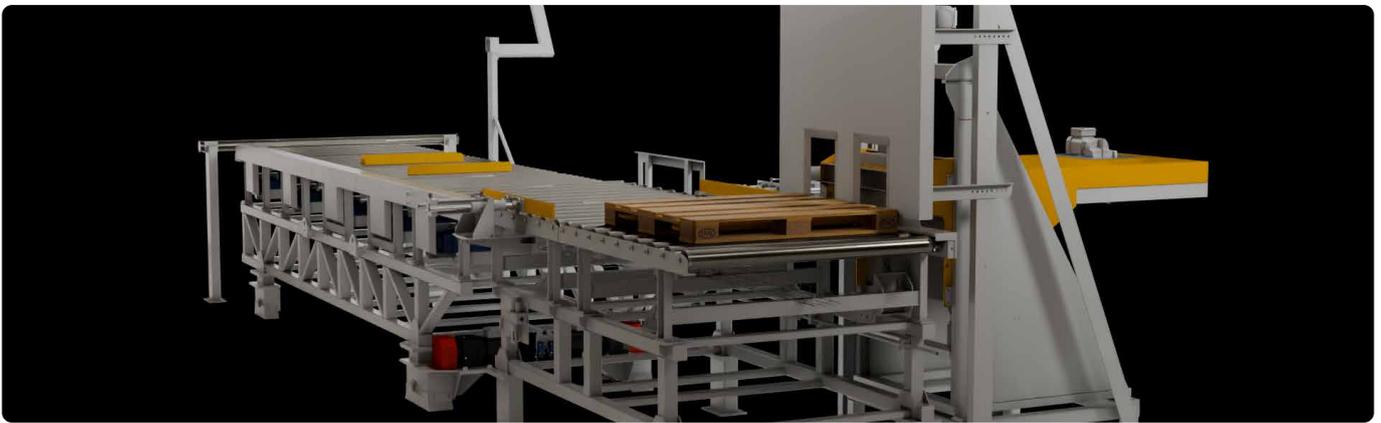
ADAPT YOUR CARICAMAT® TO STORAGE AND EXPORT BAGS

Increased Flexibility in Loading Operations

Adding the Ventomatic® ground loading system in a plant allows the use of the automatic loader even when there is no truck available to be loaded. This ensures continuous operation and increased flexibility in the overall production flow.

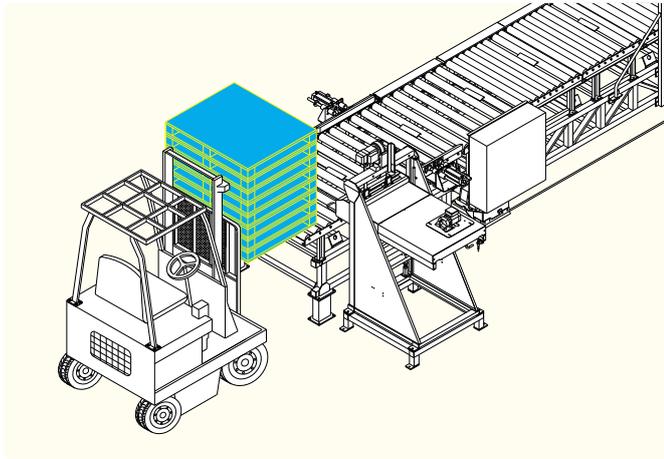
Automated Pallet Handling Process

The system includes an empty pallet feeder with roller way and a mobile roller way for the palletization operation. The feeder deposits empty pallets, which are conveyed by the motorized roller ways to the loading area. Once positioned, the automatic loader begins depositing layers of bags according to the programmed loading patterns. After loading is complete, the full pallets are transferred to the take-up area, where they are collected by an operator using a forklift and moved to the pallet stock area.



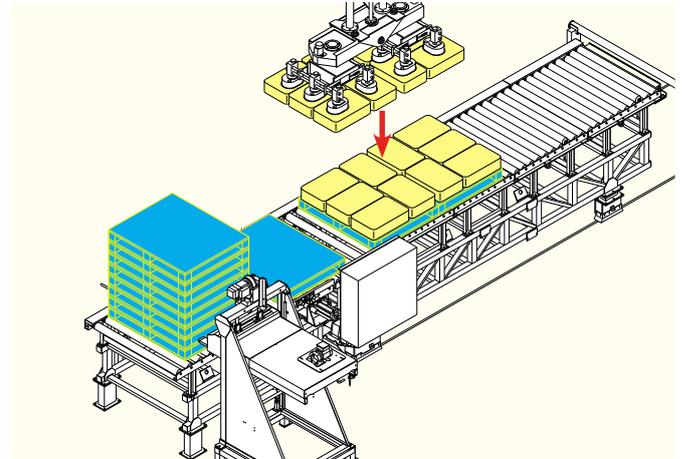
- The ground loading system includes:**
- Pallet Feeder
 - Pallet Centering System
 - Palletizing Roller Ways
 - Safety Equipment
 - Electrical panel board
 - HMI operator panel

Operating cycle



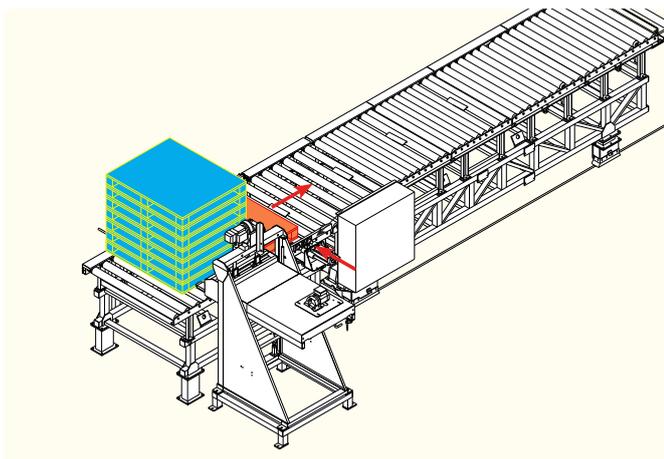
1

A forklift truck positions a stack of empty pallets on the roller way.



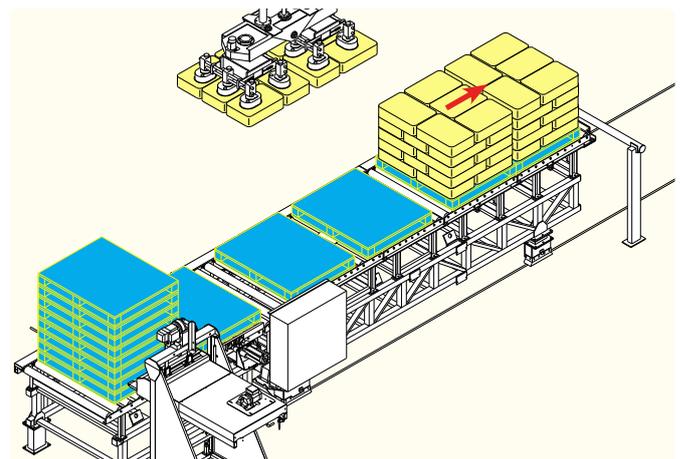
4

The automatic loader deposits the layers of bags on the pallets until the stack has been completed.



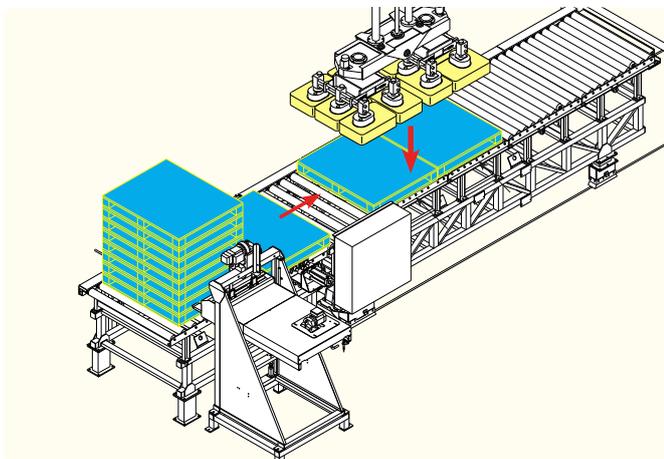
2

The pallet feeder lifts the stack of pallets and deposits the first empty pallet on the roller way. The pallet conveyed by the roller ways is positioned by the centering blades.



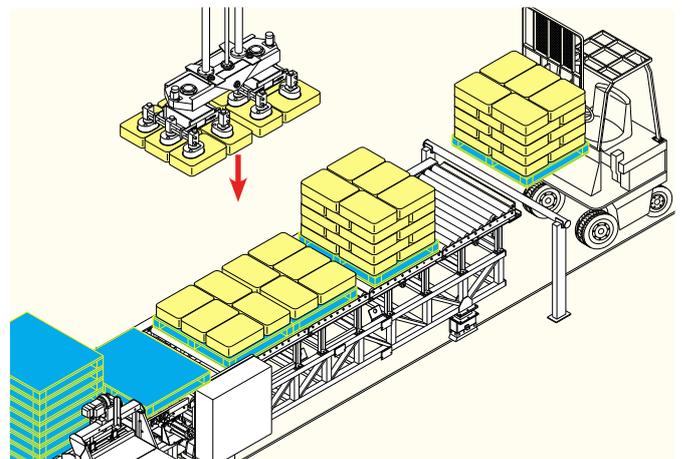
5

The full pallets move onto the unloading roller way.



3

The empty pallets move onto the bag-loading roller ways.



6

A forklift truck takes the full pallets from the roller way and deposits them in the pallet stock area.

Restore your CARICAMAT® to the best performance



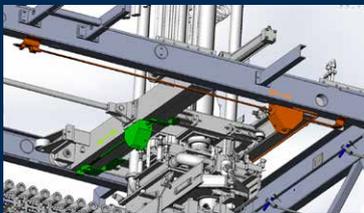
Head replacement

THE MOST COMPLETE AND FASTEST WAY TO RENEW YOUR CARICAMAT®



Hydraulic unit replacement

RESTORE OPTIMAL OPERATION AND ENSURE LONG-TERM EFFICIENCY BY REPLACING YOUR HYDRAULIC UNIT



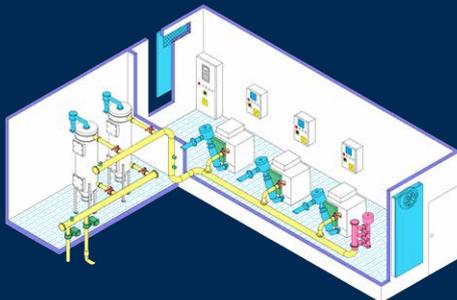
Improved hydraulic control

ENHANCE YOUR CARICAMAT® PERFORMANCE BY IMPROVING SPEED TRANSITIONS AND REDUCING MECHANICAL STRESS



HMI and PLC upgrade

ELIMINATE OBSOLESCENCE AND GAIN IMPROVED MACHINE PERFORMANCE WITH A MODERN USER INTERFACE



Vacuum unit replacement

BOOST YOUR CARICAMAT® PRODUCTIVITY AND REDUCE MAINTENANCE WITH AN EFFICIENT VACUUM UNIT



Ventomatic ground loading system

ADD PALLETIZING CAPABILITIES TO YOUR CARICAMAT®, TRANSFORMING IT INTO A DUAL-MODE LOADER FOR TRUCK DISPATCH AND WAREHOUSE HANDLING

FLSMIDTH CEMENT

www.flsmidth-cement.com

Copyright © 2024 FLSmidth Cement. All Rights Reserved. FLSmidth is a (registered) trademark of FLSmidth A/S, and FLSmidth Cement is authorized to use the trademark under a license agreement. This brochure makes no offers, representations or warranties (express or implied), and information and data contained in this brochure are for general reference only and may change at any time

