



Clasimat Vertical Lift Module (VLM)



Clasimat

The vertical warehouse system

Clasimat is a new automated storage system which stores vertically. Product entry and output is done automatically through a shuttle elevator and extractor mechanism.

This system applies "product to operator" principle which enables:

- Optimising product routes
- Reducing times

System operation is very simple. The operator selects the required product on the control panel. Automatically, the shuttle moves vertically up to the level where the product is stored, extracts the corresponding tray and returns it to the picking area.



Selection of required orders from the control panel.



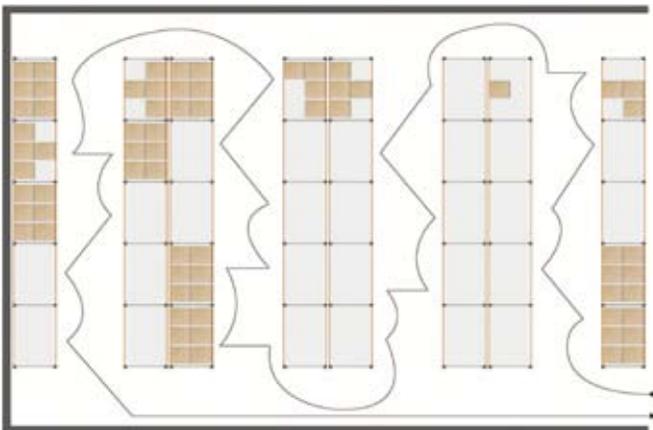
Extractor-elevator drive operation.



Picking the tray brought into the picking area.

Advantages

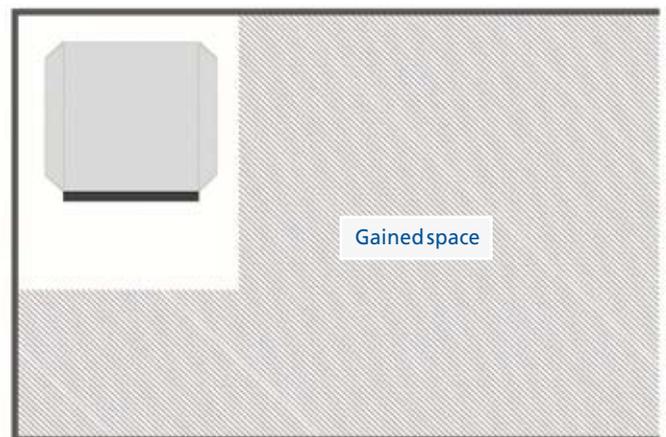
- Computer-managed warehouse.
- **Space-saving:** the overall height of the warehouse is taken up.
- **Time-saving:** the operator does not need to leave his place to prepare an order.
- **Products are stored safely.**



Conventional Warehouse

In conventional warehouses, racks are usually limited in height and they occupy a large surface.

Besides, to prepare an order broken down in various lines, the operator must go all over the warehouse.



Clasimat Warehouse

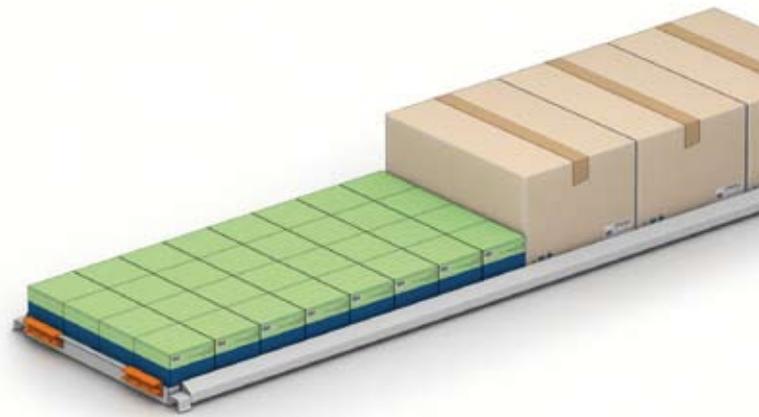
Area occupied by Clasimat is dramatically reduced, due to the fact that it grows in height. Thanks to the fact that the operator does not need to move around and also that his working position is ergonomic as well as fast and automatically equipped, order preparation time is considerably reduced.

Features

Clasimat features a fast, reliable and flexible system, which incorporates into the warehouse together with the other storage systems.

It is suitable when height of the warehouse needs to be optimised, the operations enhanced and the stored products be under control.

This system makes it easier for order preparation because it is ideal for storing all types of products stocked in boxes, such



as tools, electronic components, industrial replacements, pharmaceutical and lab products, perfume items, as well as jewellery, textile material and so on.

Its main features are as follows:

System of Trays

Products are stored in the same trays where they are shipped and also stored.

Height Optimization

System enables to locate trays in their proper place according to heights of products, thus optimising the available room.





High Speed

Automated operations reduce to the utmost orders' response times.

Weight Control

Shuttle controls weight in order to choose an ideal location and also to avoid trays overloading.

Software Control

A central computer with a software programme, designed for specifically controlling the automatic movements, diminishes the number of orders to be carried out.

Computer Management

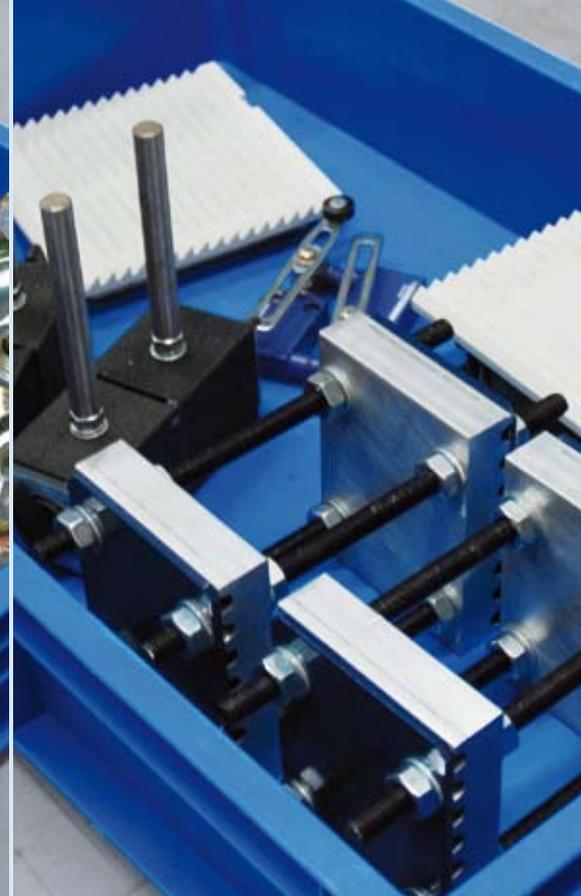
As every operation is registered in the computer, stocks are updated immediately; therefore, inventory management is improved.

Safety

Load stored in the inside is protected from any possible accidental impact, improper handling or removals.

Cleanliness

The outer panelling shuts the module, preventing the stored goods from dust.



Ironworks material and spare parts.

Applications

Applications of the automated vertical system may be diverse.

Tray sizes make it possible to store any type of product.

The flexibility in height enables the combination of different types of materials.



Fitted products.



Tooling products.



Work in process products.



Other articles.



Items

- 1. Safety bar
- 2. Product position display (optional)
- 3. Screen

Ease of Use

Clasimat is very easy to use:

- Working area is located at an ergonomic height which simplifies any work operation.
- It has a control console with display, placed at a suitable height, which includes the information and necessary functions.

- To identify the location, the screen shows the product to remove.
- Quantity to be extracted and reference are shown in the touch screen.
- Work space is wide and it is endowed with light.

- Able to store merchandise up to 70 cm high on the trays. When using two waiting bays (one superimposed work space), the maximum height for each tray is 30 cm.
- Maximum height control installed at work place shows automatically the height occupied by the tray so it can be placed properly.



For a single waiting bay (work space), the height of the merchandise can measure up to 70 cm. If there are two bays, the maximum height is 30 cm.



Load position indicator showing where the picking should be done.



Display that facilitates the operations.



Tray Configurations

Wide range of different sizes and models to meet a variety of requirements.

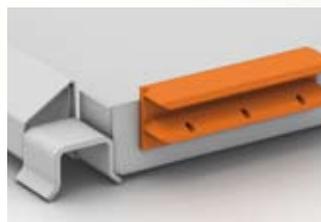
Four plastic guides at the sides guarantee smooth sliding over the storage levels and also minimise noise.

Tray's configuration may be:

- Open for a wide variety of medium to large size products.
- With dividers for small-sized articles.

Partitions are made of plastic dividers, which compose variable departments according to the size of the product.

Another option to divide trays can be through plastic boxes, which may also be divided on the inside through plastic dividers; this gives way to different combinations which may be adapted to numerous products.

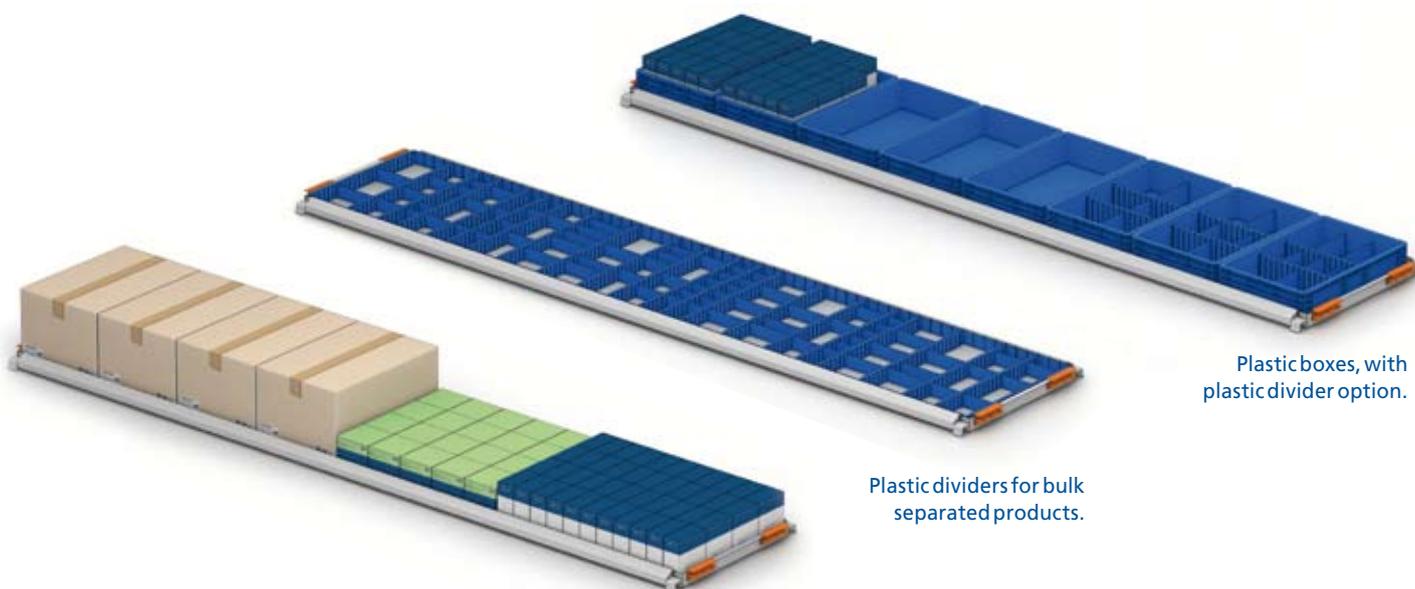


Detail of one of the four end (guides).

Available tray dimensions

Model	Nominal dimensions	Maximum load per tray
M 206	2,039x615	300 / 500
M 246	2,439x615	300 / 500
M 286	2,839x615	300 / 500
M 306	3,039x615	300 / 500
M 326	3,239x615	300 / 500
M 208	2,039x815	300 / 500
M 248	2,439x815	300 / 500
M 288	2,839x815	300 / 500
M 308	3,039x815	300 / 500
M 328	3,239x815	300 / 500

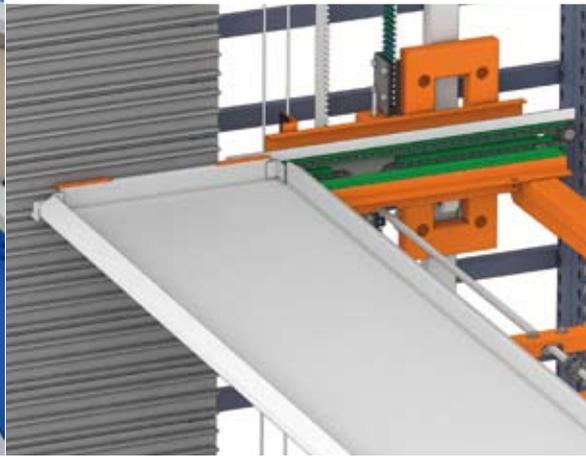
Nominal dimensions in mm. Maximum load per tray in kg.



Product boxes.

Plastic dividers for bulk separated products.

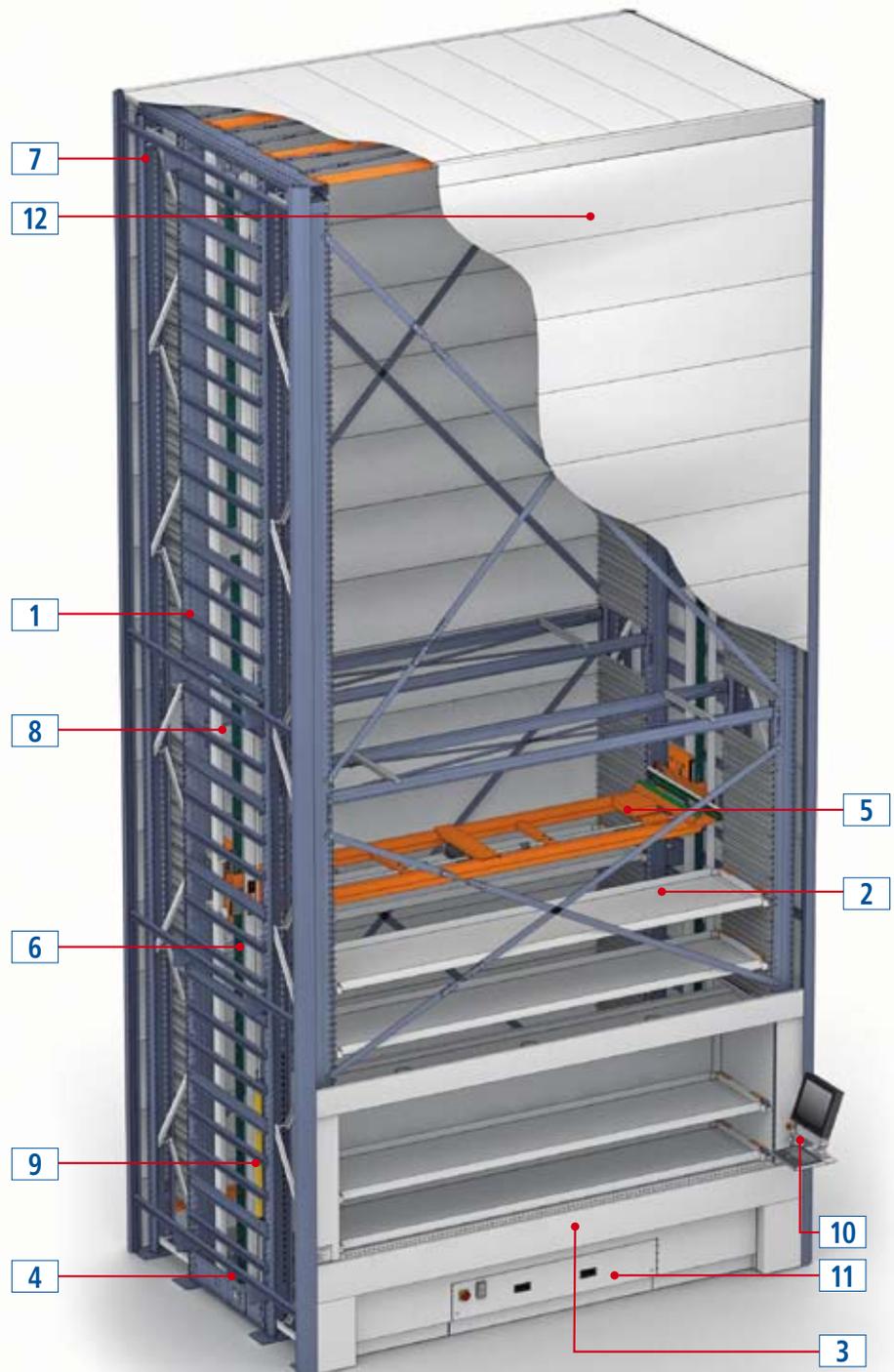
Plastic boxes, with plastic divider option.



Components

An extractor and lift shuttle mechanism collects the products in a quick and secure way up to the most proper available location in the rack or to the picking area.

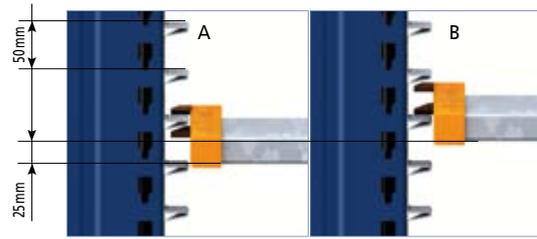
A robust structure, able to bear up to 60 t, receives the load from the tray. This tray rests on the lateral guides within the rack structure.



1. Lifting structure
2. Tray
3. Picking area
4. Elevator motor
5. Shuttle
6. Chain
7. Lifting pinions
8. Vertical guide
9. Inner security device
10. Control panel
11. Electrical control panel with frequency variator
12. Outer panelling

Height Selection

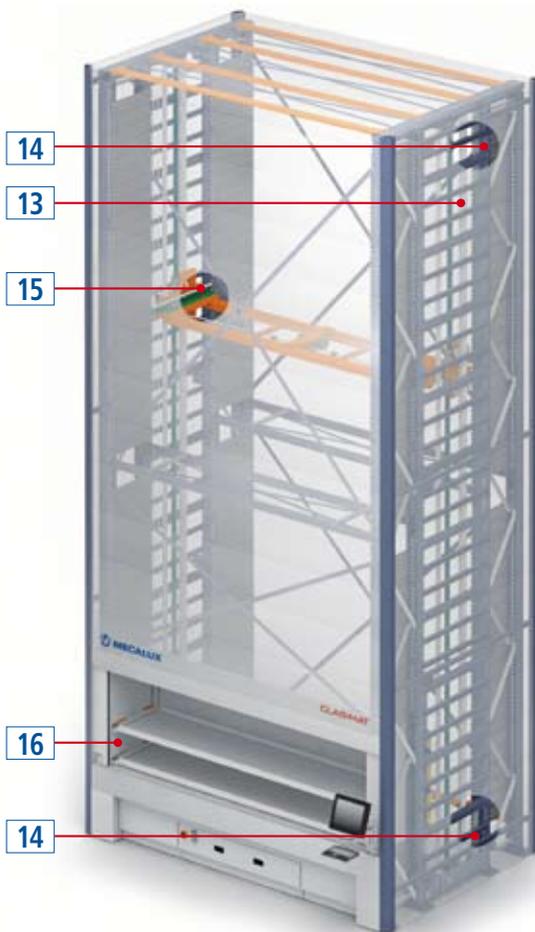
The particular design of the tray support guides enables a variation in height from a minimum of 100 mm with 25 mm increments. This means a maximum optimisation of the available storage space at all times.



Regulation each 25mm (positions A and B).



Detail of tray support guides.



Security

Clasimat warehouses are manufactured according to EN 15095 Normative and guaranteed by CE.

Workers are protected from the mechanical fast movements thanks to optical security barriers, placed at a safe distance from any danger. Movement of these inner mechanisms is always under control due to the various types of position sensors. Due to the high speed of movement, the elevator shuttle has detectors to make sure that limits on the distances are not surpassed.

The PC arm includes an easily accessed emergency knob.

Door

Consisting of two downward sliding leaves, it prevents access to shuttle from the front. The door only opens when merchandise is picked or delivered.

- 13. Height position device
- 14. Aisle limits
- 15. Tray sensors
- 16. Merchandise height pattern barrier
- 17. Optical security barrier
- 18. Emergency stop button
- 19. Inner door (optional)





Maintenance

The electrical closet, containing all the electronic and control components, is removable, in order to provide direct and easier access to the inner mechanism of the system.

The electrical closet is accessed from the top of the table simply by removing the top cover.

If necessary, part of the outer panelling may be dismantled for maintenance purposes.



Detail of closed panel.



Detail of panel in the process of opening.

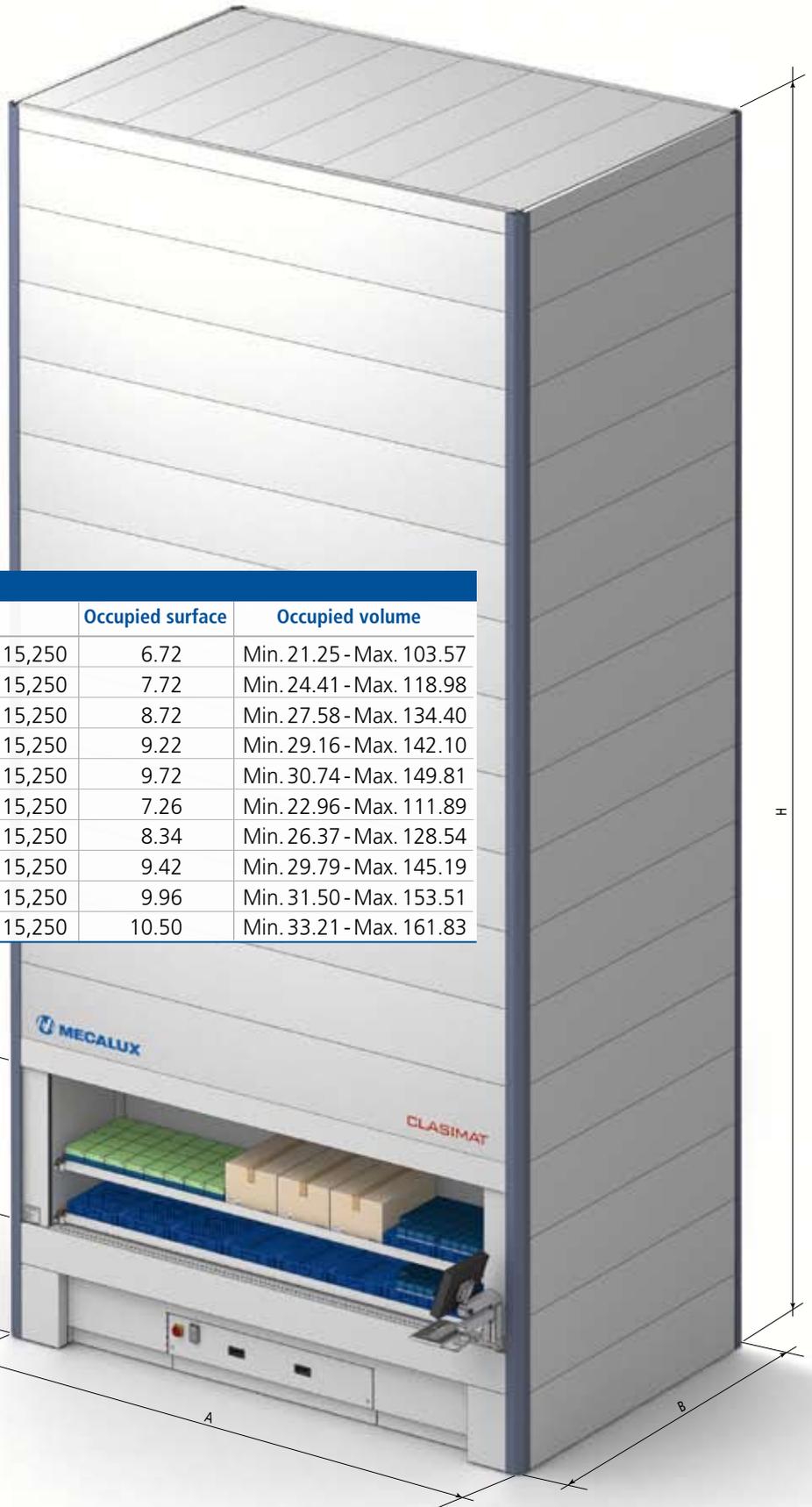


Detail of open panel.

Clasimat Warehouse Outer Dimensions

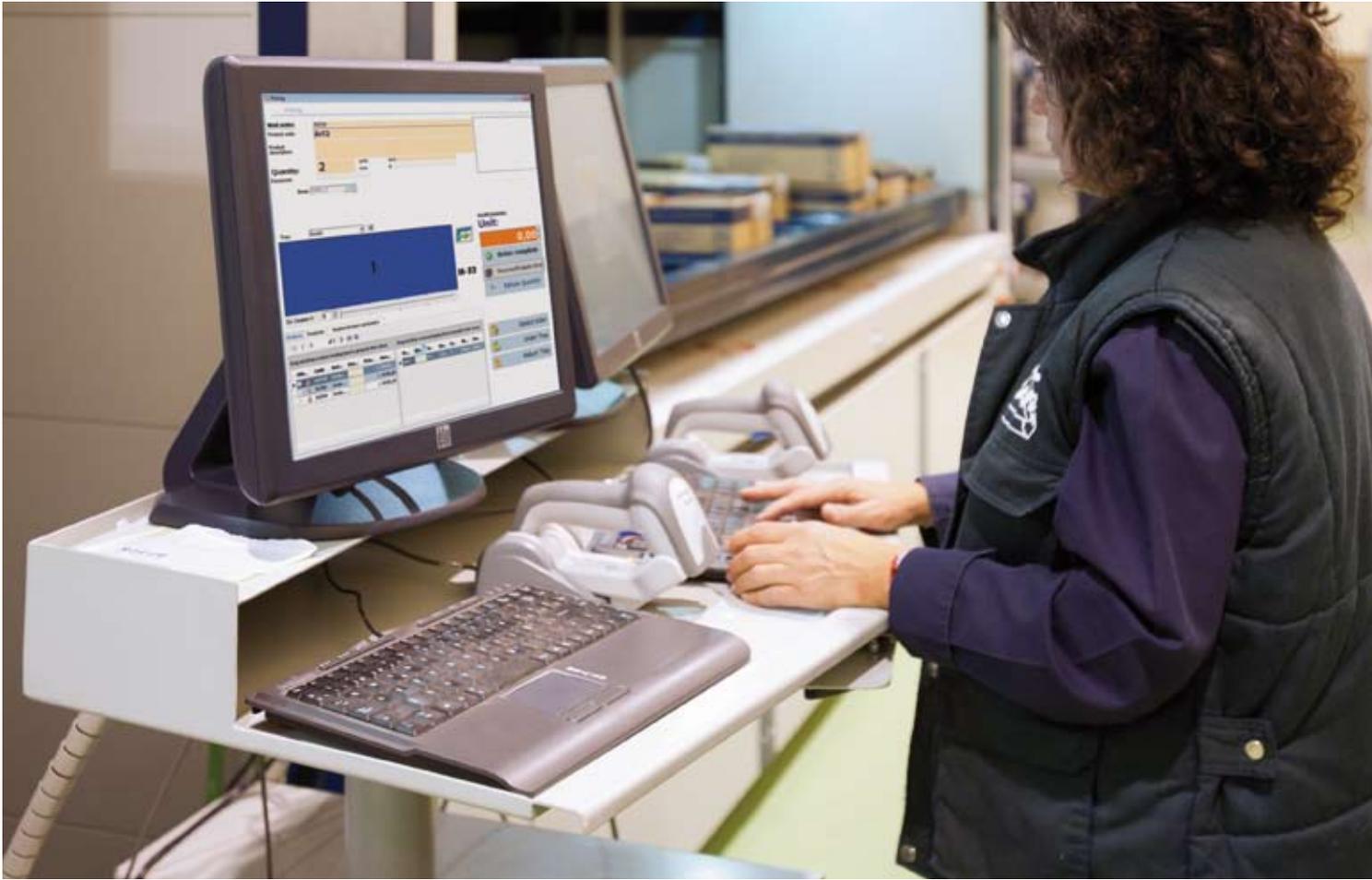
Clasimat height may vary, considering 250 mm pitches, from a minimum height of 2,500 mm up to a maximum of 15,250 mm.

This variable, together with the possibilities offered by the various types of trays, provides a wide range of 102 Clasimat combinations, which meet any operative requirement.



Matched dimensions					
Model	A	B	H	Occupied surface	Occupied volume
M 206	2,688	2,502	Min. 2,500 - Max. 15,250	6.72	Min. 21.25 - Max. 103.57
M 246	3,088	2,502	Min. 2,500 - Max. 15,250	7.72	Min. 24.41 - Max. 118.98
M 286	3,488	2,502	Min. 2,500 - Max. 15,250	8.72	Min. 27.58 - Max. 134.40
M 306	3,688	2,502	Min. 2,500 - Max. 15,250	9.22	Min. 29.16 - Max. 142.10
M 326	3,888	2,502	Min. 2,500 - Max. 15,250	9.72	Min. 30.74 - Max. 149.81
M 208	2,688	3,102	Min. 2,500 - Max. 15,250	7.26	Min. 22.96 - Max. 111.89
M 248	3,088	3,102	Min. 2,500 - Max. 15,250	8.34	Min. 26.37 - Max. 128.54
M 288	3,488	3,102	Min. 2,500 - Max. 15,250	9.42	Min. 29.79 - Max. 145.19
M 308	3,688	3,102	Min. 2,500 - Max. 15,250	9.96	Min. 31.50 - Max. 153.51
M 328	3,888	3,102	Min. 2,500 - Max. 15,250	10.50	Min. 33.21 - Max. 161.83

Levels A, B and H in mm. Occupied surface in m².
Occupied volume in m³.



Management System easywms

Mecalux has developed a powerful software called EasyWMS, in order to assist Clasimat management.

It has been designed taking into account the latest technological standards and using solid databases of internationally recognised reputation.

Mecalux Holding Corporation, aware of the high degree of computer application demands employed in the industrial fields, has created a centre entirely for the software development. This centre is responsible for EasyWMS programming, as well as for its maintenance and updates.

Software Functions

EasyWMS has been created with the aim of making the use of Clasimat easier.

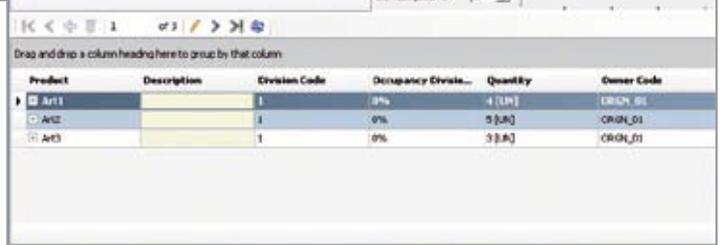
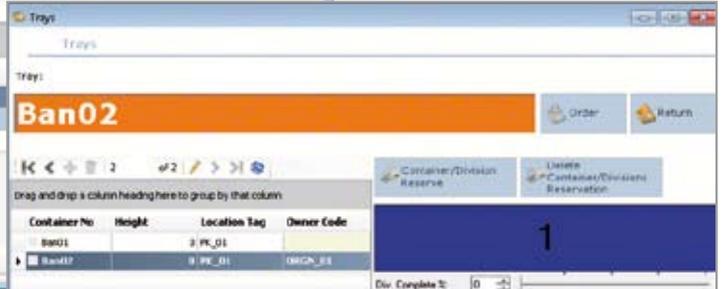
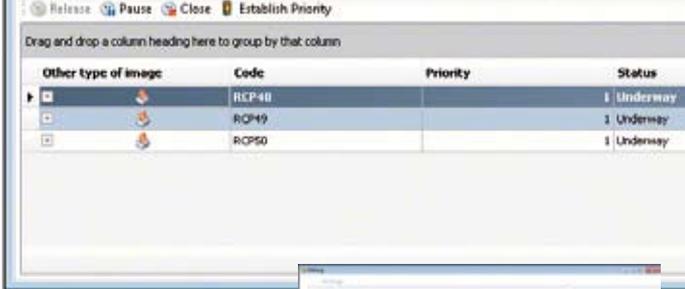
In order to achieve the efficiency and practicality for its use, the software functions, screen arrangement, creation of reports and its interactive nature with the operator have been carefully taken into account.

With EasyWMS the following functions may be carried out easily:

- Product management
- Input management
- Output management
- Data search and reports
- Integration with ERP Systems

Product Management

Products may be registered, removed or modified from the system and, if required, imported from the ERP system. Besides, information may be managed according to multiple criteria (product type, rotation, measurement units and etc.) and this can also have other properties such as kits, expiry dates, weight, serial number, etc. which allows for the tracibility of entry and exit of the product in the Clasimat.



Input Management

The entry of product in the Clasimat uses EasyWMS to guide you to make this process easily and correctly. Furthermore, multiple references per container may be used and the trays can be divided in order to optimize the storage space. In the entry process you can apply any rule and strategy to adequately manage the material.

Output Management

In the exit of materials, EasyWMS employs a useful system of order preparation, which follows a user-prepared or automatic route for its output. Therefore, order association as well as automatic or manual clearances are made easier with the objective to make the picking process as little as possible.

Data Search and Reports

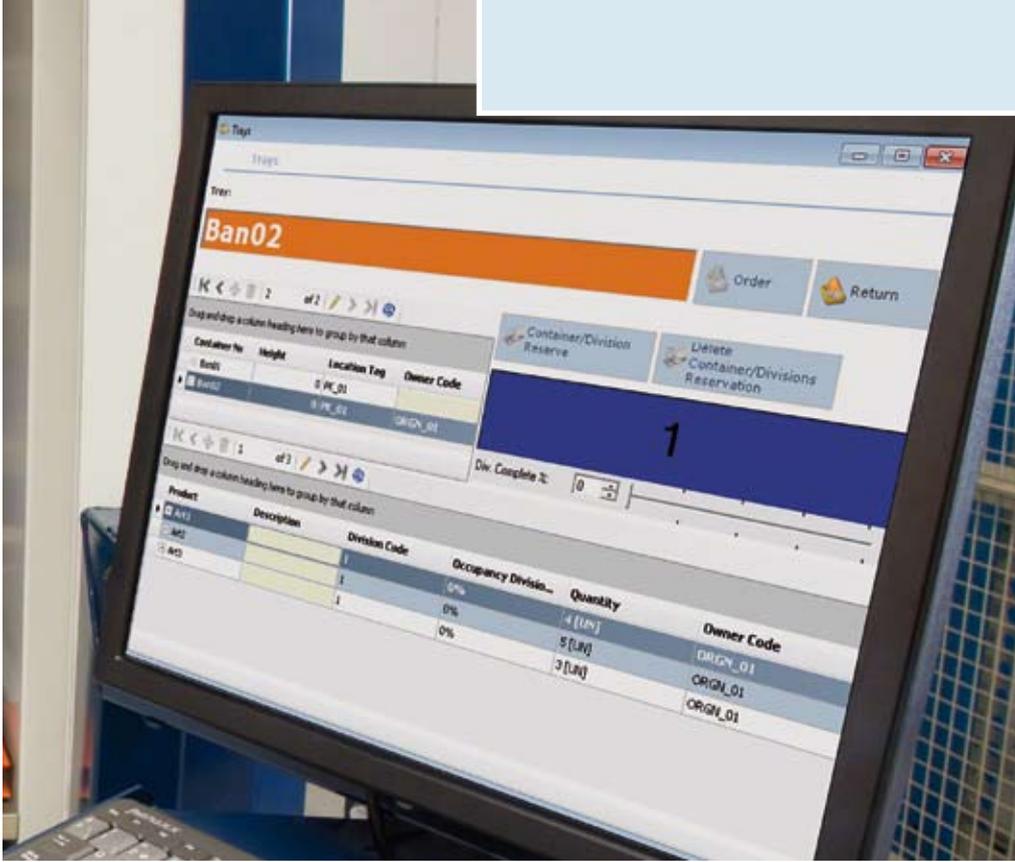
User may search for information about Clasimat's situation at all times. Information about inputs, outputs, records, breakdowns...

You can always get information concerning the Clasimat and the condition of the goods stored in the containers. The information which is most habitually used is the percentage of occupation space, available areas in the Clasimat and the list of products which are most important for the client.

Integration

Clasimat can work as independent computer system from any other management software, but it can also be integrated into others as an ERP system. The integration may be into one or more Clasimat warehouse which has a complex operative.

EasyWMS offers solutions to both situations without the need for changing any software or the technological platform. We only have to select the precise level of complexity.



Control Panel

This is a PC endowed with a 17" TFT screen, which enables to clearly view all the information required by the operator and also interact in a safe and guided way. Furthermore, it makes the work easier and increases the supplied equipment potential up to the maximum.

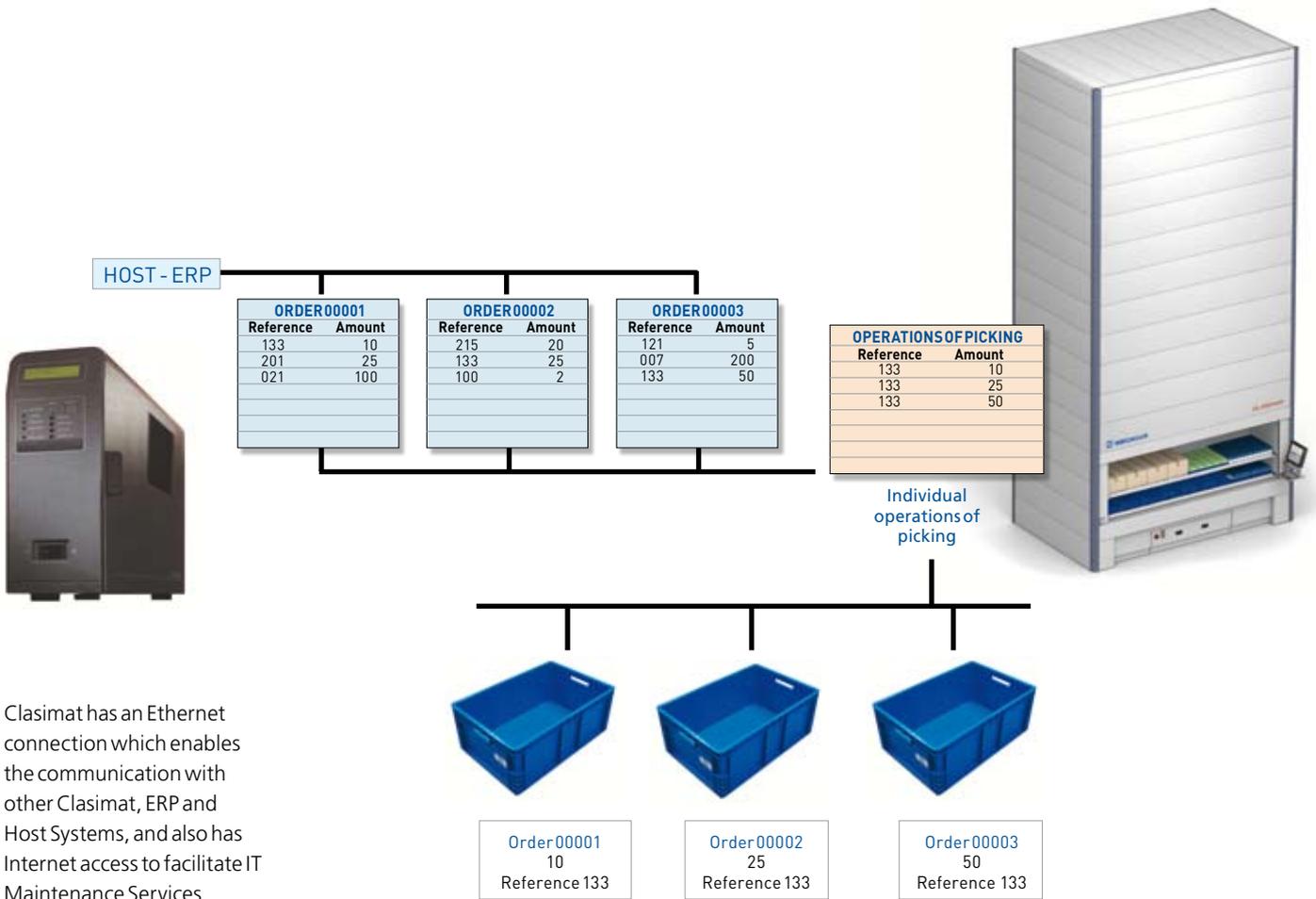
The PC arm, which is optional, can be placed on either the left or right of the Clasimat. There is also the option of placing the PC on a desk.



Peripheral

Clasimat is mass produced in order to incorporate different peripheral equipments, such as outer keyboard, bar code scanner, or PTL (Pick to Light) devices.





Clasimat has an Ethernet connection which enables the communication with other Clasimat, ERP and Host Systems, and also has Internet access to facilitate IT Maintenance Services.



Aftersales Service

Mecalux offers you a wide customer service network to always provide you with a quick answer, added value to product quality which guarantees you a proper functioning and future customer assistance.

In addition to that, after sales service offers you a 24 hours on-line and telephone maintenance service.

Diagnosis software and also the assistance from after-sales service makes it easier to sort out any difficulty that may arise.



Clasimat Basic

Universal vertical lift module

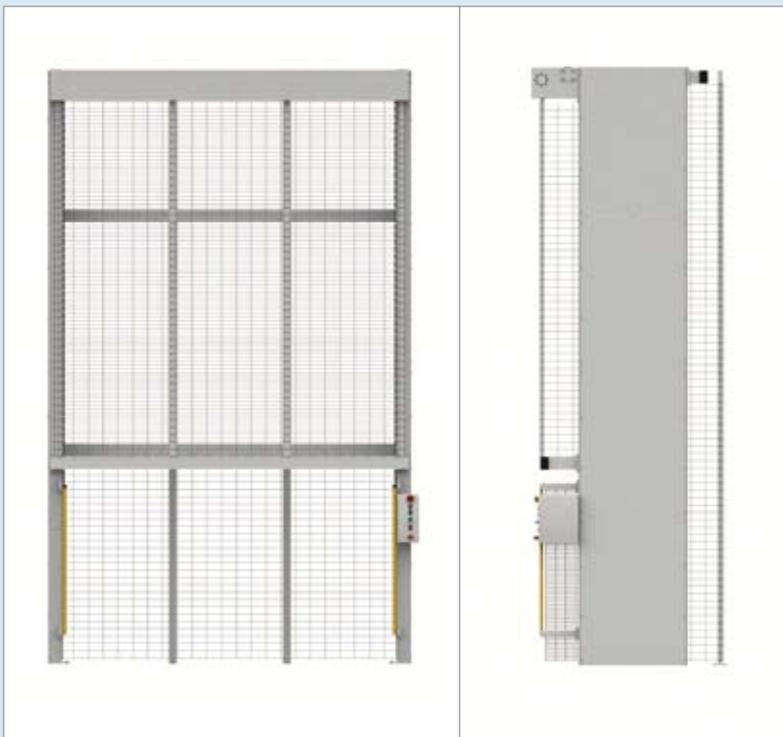
The Clasimat Basic is a vertical lift module that can be used for several different applications and adapt to any type of product (tires, film, garments, rolls, boxes...).

The module is particularly useful when having to store items with different types, sizes or weights, even those which are hard to arrange, stack, access or handle. What is more,

it presents a significant space savings of over 70%.

This is a system whose installation does not need a large amount of storage area or any forklifts or other loading and unloading equipment. Nor does it require the use of ladders or additional loading equipment, which means physical barriers are eliminated.

Front and side elevation of the Clasimat Basic system. Fasteners can be added to the structure as necessary.



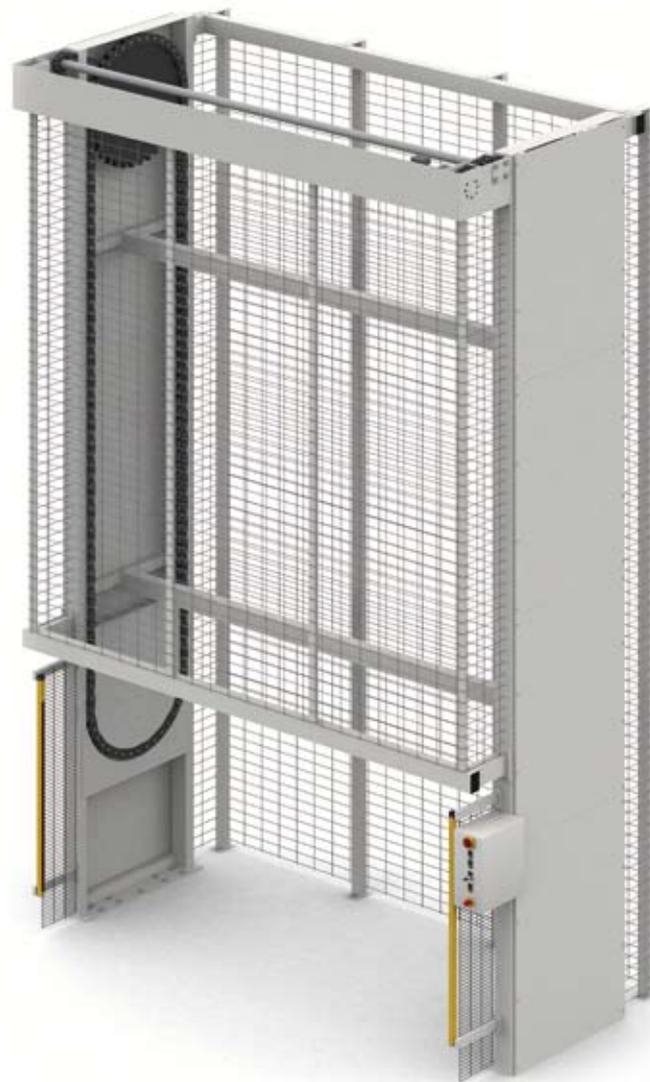


Diagram and detail of the Clasimat Basic construction system.

The module has a very simple universal structure that is composed of two side frames equipped with guided chains which pull vertically. Product holding systems can also be fitted to the unit, making it easy for them to vertically rotate or even be handled at the work station.

A three-phase connection is needed for the operation of its AC (alternative Current) motor. The motor uses a toothed crown wheel that moves its two lateral chain loops, which in turn transmit their rotation to the elements supporting the products.

Its simplicity allows personnel to use it without having to

provide specific information. Operators merely have to enter a code, and with a single push of a button, the Clasimat starts bringing the requested item to the removal area or picking level.

The system has all the basic safety features necessary.

The system can also be automated by connecting the Clasimat Basic to our EasyWMS management software

There are six different Clasimat Basic models according to the products being stored:

- **CB-POLE:** most fabrics, carpets...
- **CB-WIRES:** cables and reels.
- **CB-TIRES:** wheels and tyres.
- **CB-SLING:** cylinders, press rollers...
- **CB-GARMENTS:** clothes, items on hangars...
- **CB-TRAY:** various loose products, in boxes or containers

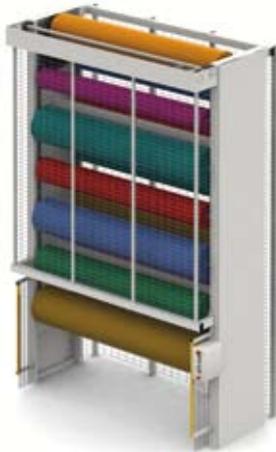


Electrical panel: The Clasimat Basic starts up simply by pressing the button.

General characteristics

Minimum height of the machine	2,616 mm
Maximum height of the machine	7,264 mm
Maximum width of the CB-Tires machine	2,162 mm
Other models	1,929 mm
Maximum weight (including modules)	5,443 kg

Models by Application and Product Type



CB-POLE Vertical lift module for rolls

Ideal for rolled products, rollers, large format rolls...

If necessary, the system can also measure and cut the product thanks to certain accessories added to the Clasimat Basic (CB).

The lift module comes with different diameter roller axles.

This is the ideal lift module for wholesale fabric or linen stores and for adding a shearing table, and also in cut-and-confection workshops as the delivery table can convert into a pattern table with an automatic shearer.

Clasimat Basic CB-POLE

Width	Maximum product weight (per module)	Axle diameter	Maximum roll diameter
1,829	635	25.4	711
3,658		38.1	
4,572		76.2	
6,096			

Width and diameter in mm. Product weight in kg.

CB-WIRES Vertical lift module for wires

Specially designed to concentrate the highest number of cable reels with different gauges and lengths in the least amount of space. Option of measuring and reeling up every cable pull executed.

Suitable for storing cable reels and preparing orders as auxiliary winding accessories can be added to count meters.

Clasimat Basic CB-WIRES

Width	Maximum product weight (per module)
1,829	340
3,658	453

Width in mm. Product weight in kg.



CB-TIRES Vertical lift module for tires

Suitable for small workshops which need to store several tire models.

In these warehouses, accessibility is immediate and does not require additional means to pick up or set down items. The same rotary system can be used to approach requested items.

This is the perfect system for car repair shops where there must be quick and easy access to the wheels without the need for additional equipment or ladders.

Clasimat Basic CB-TIRES

Width	Tire outside diameter	Maximum product weight (per module)
1,829	355.6 - 558.8	295
3,658	355.6 - 558.8	284
4,572	355.6 - 558.8	250

Width and diameter in mm. Product weight in kg.



CB-SLING
Vertical lift module for tubes
 Excellent for storing long tubes of any kind.

The lift module has belts, slings or suspension devices, normally weighted, fitted to the rotating axes where the tubes hang from.

Through the use of an additional frame, where the tubes are unloaded from and their lowering is activated, the system not only makes the items themselves easier to store, but also easier to load and unload.

Clasimat Basic CB-SLING	
Width	Maximum product weight (per module)
1,829	680
3,658	680
4,572	680

Width in mm. Product weight in kg.

CB-GARMENTS
Vertical lift module for clothing items

This is the perfect model when the problem is not for the lack of overhead space, but because the

items being stored cannot be stacked, like clothes.

Features high storage capacity, easy access and great product visibility.

Well-suited for shops having direct contact with customers where the time needed to access an item must be kept to a minimum and these items must be stored in perfect conditions.



Clasimat Basic CB-GARMENTS		
Width	Maximum product weight	Garment types
1,829	340	All types of hanging garments (813 mm for shirts and 1,194 mm for trousers)
3,658	340	
4,572	340	
6,096	340	

Width in mm. Product weight in kg.

CB-TRAY
Vertical lift module for trays
 Optimal for products of any size which are packaged in boxes or baskets, or are loose or bunched.

This system can handle trays of different sizes and capacities, which in turn allow for quick and easy access to the selected product.



Clasimat Basic CB-TRAY				
Width	No. of trays (per module)	Maximum product weight (per module)	Tray depth	Product height
1,829	1	306	305/457/610	to 610
3,658		272		
1,829	2	272	305/407/508	to 305
3,658		204		
1,829	3	238	305/407	to 229
3,658		136		

Width, depth and height in mm. Product weight in kg.



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