



**CLASIMAT**  
Vertical Lift  
Module (VLM)



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 man” 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 or output table.



Selection of required orders from the control panel



Extractor-elevator drive operation

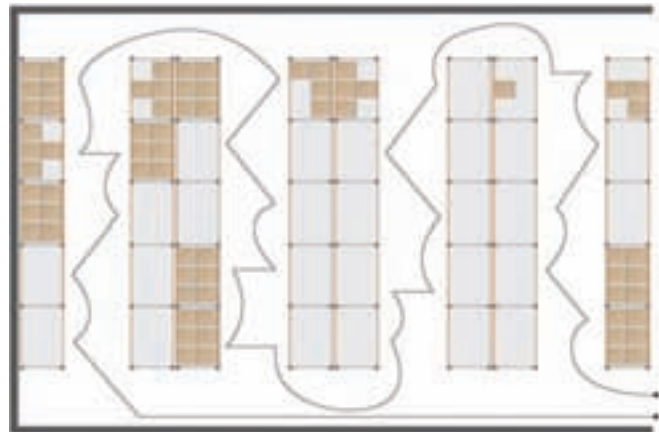


Picking from the tray placed on the output table

# The vertical warehouse system

## Advantages

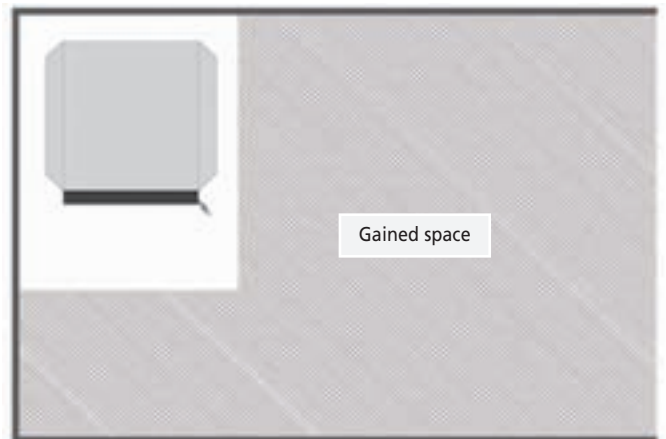
- **Computer-managed** warehouse.
- **Space-saving:** the overall height of the warehouse is taken up.
- **Time-saving:** the operator does not need to leave his place to prepare an order.
- **Products are stored safely.**



## 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.

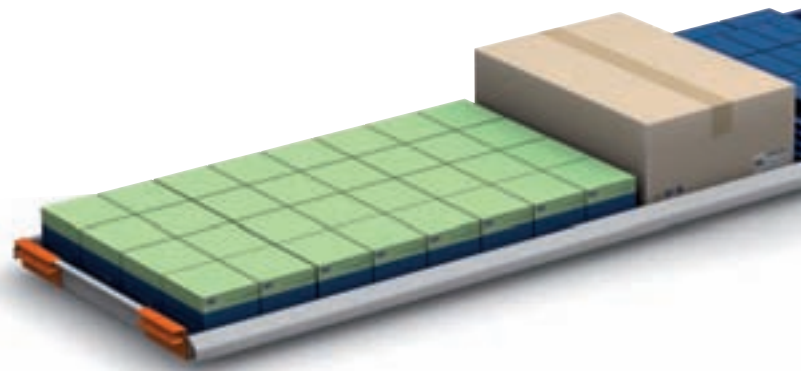
Thanks to the fact that the operator does not need to move around and also that his working position is ergonomic as well as fast and automatically equipped, order preparation time is considerably reduced.

## 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 easier order preparation because it is ideal for storing all type 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

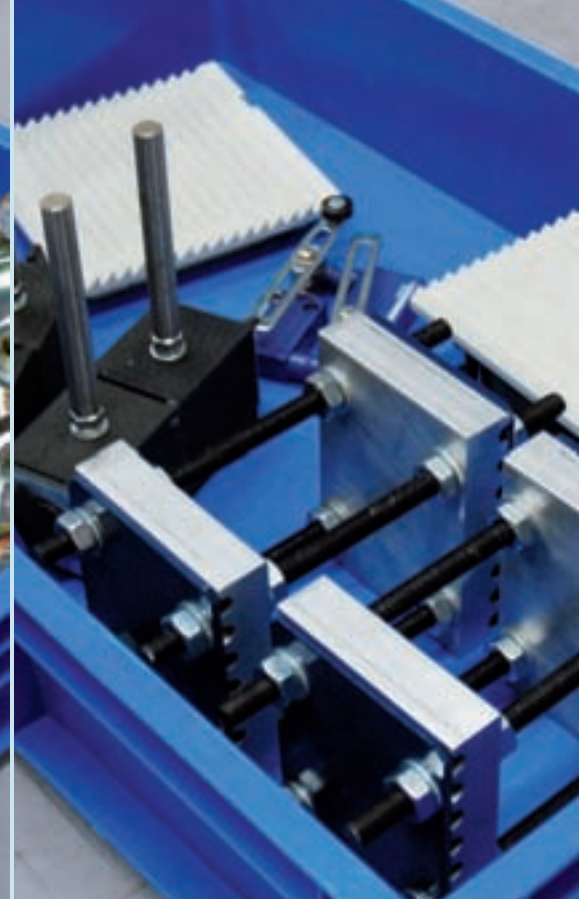
As every operation is registered in the computer, stocks are updated immediately; therefore, inventory management is improved.

### Safety

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

### Cleanliness

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



Ironworks material and spare parts.

## Applications

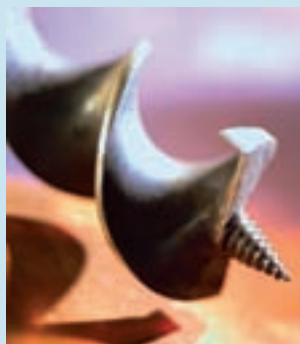
Applications of the automated vertical system may be diverse.

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.



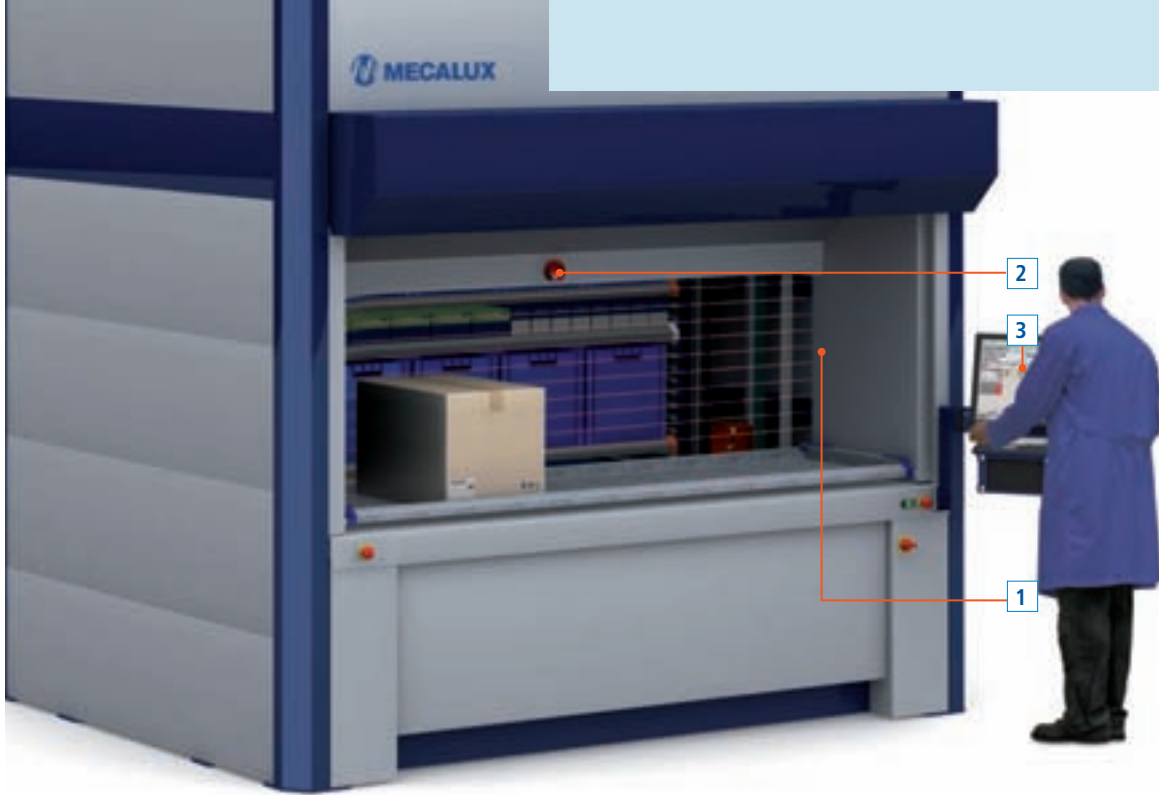
Tooling products.



Work in process products.



Other articles.



**Items**

- 1) Pattern for merchandise height
- 2) Indicator beacons
- 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.
- This system enables to store in trays products of up to 75 cm high.

- Work space is wide and it is endowed with light.
- Maximum height control installed at work place shows automatically the height occupied by the tray so it can be placed properly.



Merchandise height up to 75 cm.



Operation indicator beacon.



Display that facilitates the operations.

## Tray Configurations

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

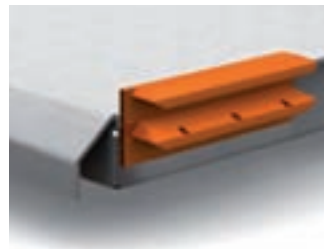
Four plastic guides at the sides guarantee a smooth sliding over the storage levels and also minimise noise.

Tray's configuration may be:

- Open for a wide variety of medium to large size products.
- With partitions suitable for very small products.

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 in 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 166	1,635 x 620	400
M 206	2,035 x 620	400
M 246	2,435 x 620	400
M 308	3,050 x 816	700
M 368	3,660 x 816	700
M 428	4,270 x 816	700

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

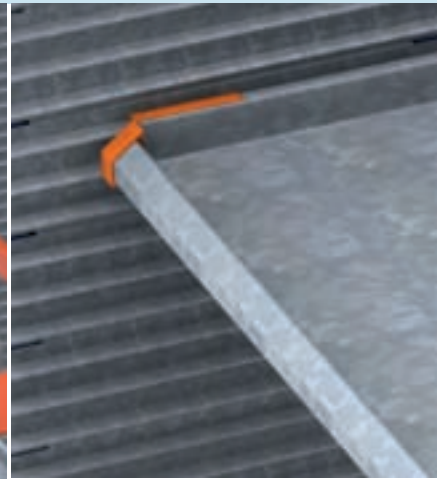
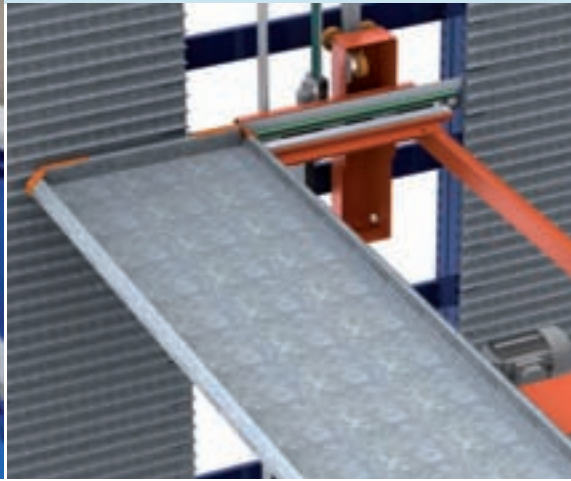


Plastic boxes, with plastic divider option.



Product boxes.

Plastic dividers for bulk separated products.

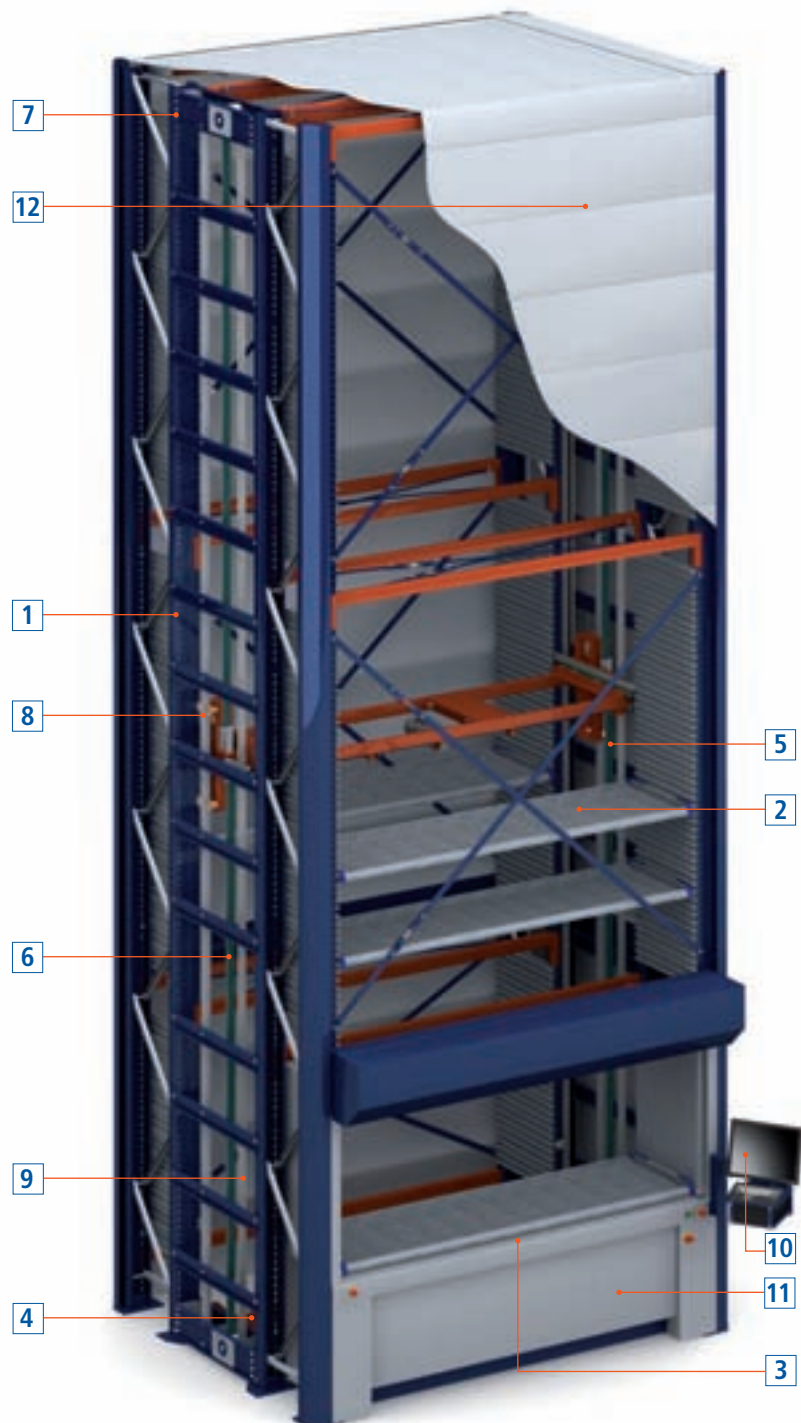


## Components

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 output table.

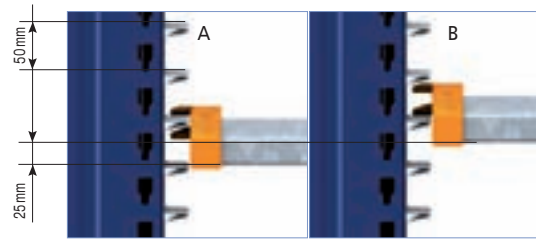
A robust structure, able to bear up to 60 t, receives the load from the tray. This tray rests on the lateral guides within the rack structure.

- 1) Lifting structure
- 2) Tray
- 3) Exit table
- 4) Elevator motor
- 5) Shuttle
- 6) Reinforced strap
- 7) Elevation pulley
- 8) Vertical guide
- 9) Inner security device
- 10) Control panel
- 11) Electrical control panel with frequency variator
- 12) Outer panelling

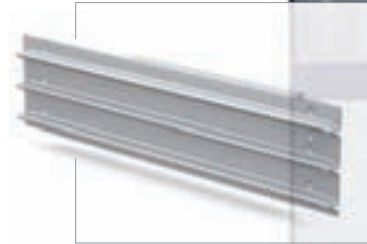


## Height Selection

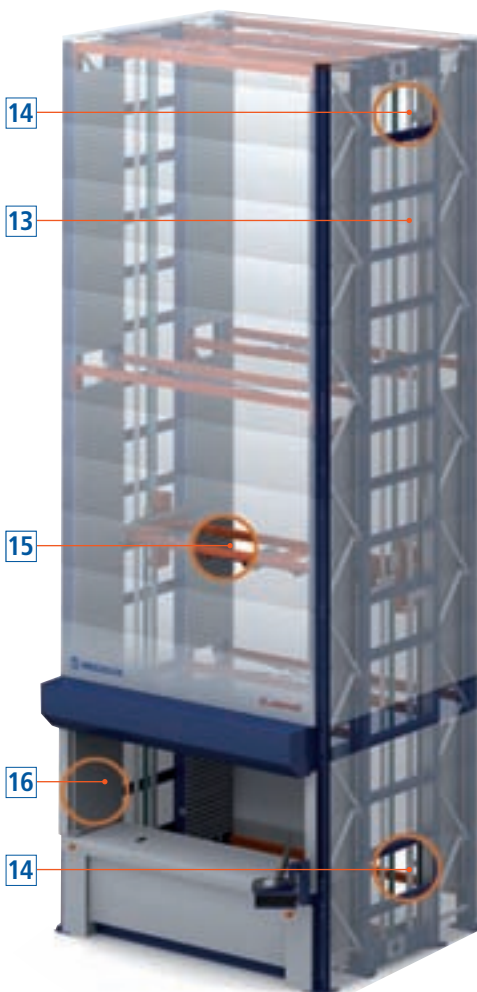
The particular design of the tray support guides enables a variation in height from a minimum of 100 mm with 25 mm increments. This means a maximum optimisation of the available storage space at all times.



Regulation each 25mm (positions A and B).



Detail of tray support guides.



14

13

15

16

14

## Security

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

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

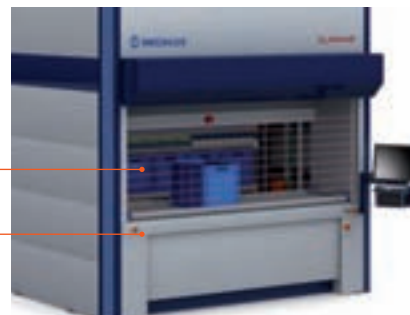
Workers are protected from the mechanical fast movements thanks to optical security barriers, placed at a safe distance from any danger. Movement of these inner mechanisms is always under control due to the various types of position sensors. Due to the high speed of movement, the elevator shuttle has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

Work area is provided with an emergency stop button at the front of the table.

A secure outer door denies access to non-authorized personnel, consisting of a rolled-up blind in the top lintel. The functioning is through an engine and controlled from the computer, which guarantees total security of the stored products.



19



17

18

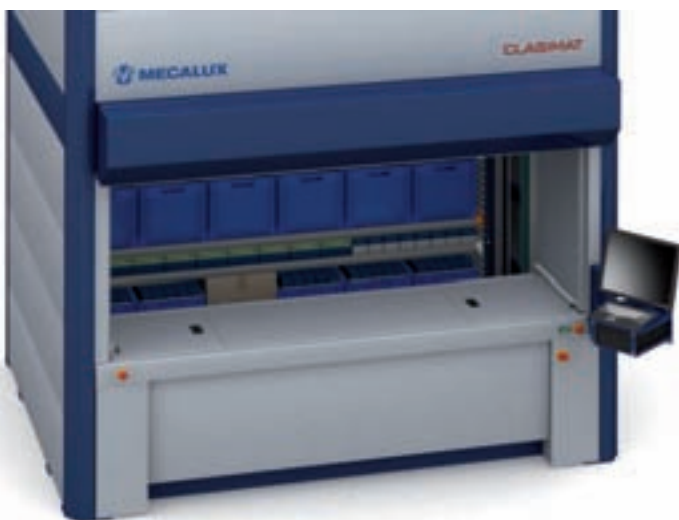


### Maintenance

Output tables, containing all the electronic and control components, are 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.



Electrical closet detail without cover.

### Clasimat Warehouse Outer Dimensions

Clasimat height may vary, considering 500 mm pitches, from a minimum height of 4,060 mm up to a maximum of 12,060 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

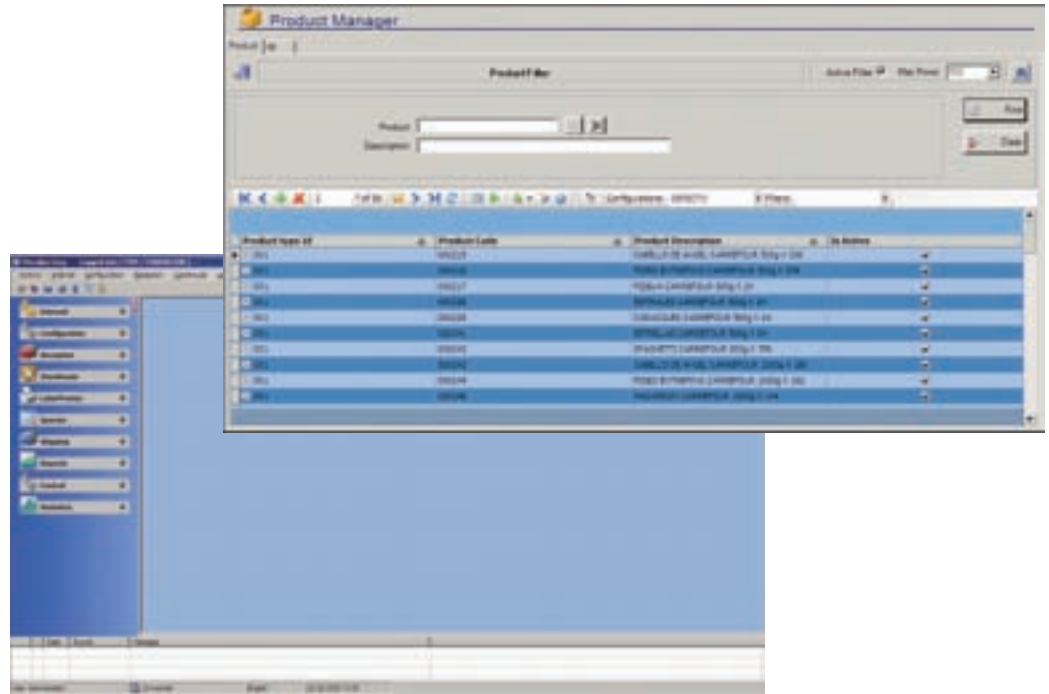
Model	A	B	H	Occupied surface	Occupied volume
M 166	2,145	2,366	Min. 4,060 - Max. 12,060	5.07	Min. 20.58 - Max. 61.20
M 206	2,545	2,366	Min. 4,060 - Max. 12,060	6.02	Min. 24.44 - Max. 72.62
M 246	2,945	2,366	Min. 4,060 - Max. 12,060	6.97	Min. 28.29 - Max. 84.03
M 308	3,630	3,126	Min. 4,060 - Max. 12,060	11.35	Min. 46.07 - Max. 136.85
M 368	4,240	3,126	Min. 4,060 - Max. 12,060	13.25	Min. 53.81 - Max. 159.85
M 428	4,850	3,126	Min. 4,060 - Max. 12,060	15.16	Min. 61.55 - Max. 182.84

Levels A, B and H in mm. Occupied surface in m<sup>2</sup>. Occupied volume in m<sup>3</sup>.

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

Designed taking into account the latest technological standards, using solid databases and programming languages of recognized international prestige.

Mecalux Holding Corporation, aware of the high degree of computer application demands employed in the industrial fields, has created a centre intended for the software development, responsible for Mecalux Easy programming, as well as for its maintenance and update.



## Software Functions

Mecalux Easy has been created with the aim of making Clasimat's use easier.

In the definition of the main software functions, screens arrangement, creation of reports and interaction with the operator, the operative and practical character necessary for a high efficient environment has always been considered.

With Mecalux Easy the following functions may be carried out easily:

- Product Management
- Input Management
- Output Management
- Data search and reports
- Compatibility

### Product Management

Products may be registered, removed or modified from the system, if required. They can also be classified by multiple criteria.

Besides, information may be managed according to priority (location, outputs and so on) or according to the most convenient criterion (rotation, expiry dates, kits and so on).

### Input Management

When registering materials into Clasimat system, Mecalux Easy will guide you accordingly to complete the whole process. Furthermore, multiple references per container may be used, and also trays may be divided in order to optimise storage up to the maximum. In the entry process you can apply any suitable priority to manage adequately the material.

### Output Management

In the output of materials, Mecalux Easy employs a useful system of order preparation, fulfilling output orders which follow automatically the established route. Therefore, order association as well as route automatic clearances are made easier, with the objective to carry out as little number of picking operation as possible.

## Data Search and Reports

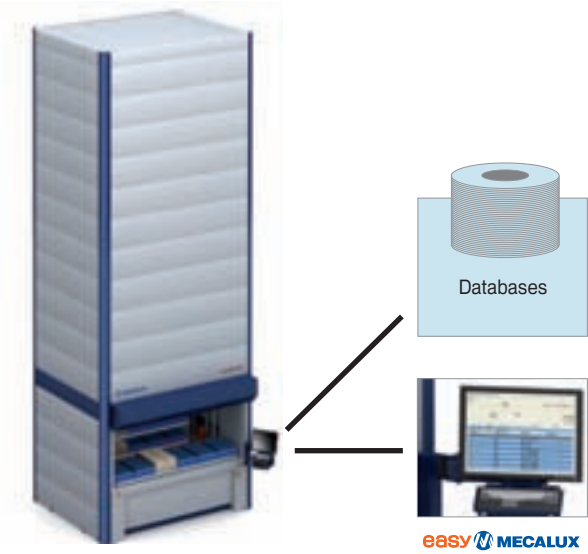
User may search for information about Clasimat's situation at all times. Information about inputs, outputs, records, breakdowns...

You can always look up information with regards to the warehouse or containers condition and also about the stored goods. The most usual information is the one referent to percentage of occupation, the clear or taken up areas, list of products showing the most relevant data and so on.

## Compatibility

Clasimat can work as independent storage system from any other warehouse management software, but it can also be integrated into other Clasimats or within a more complex operative warehouse.

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



Basic level scheme.

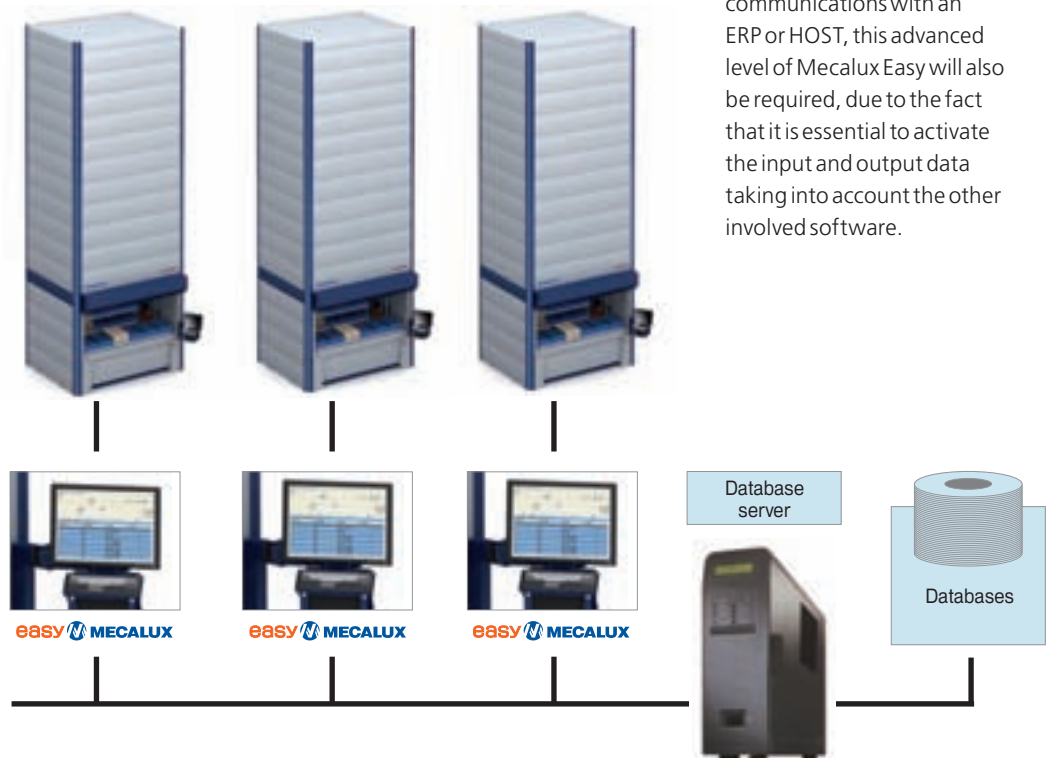
### Basic level

When neither the communication nor the exchange is required, that is to say, when Clasimat works independently.

### Advanced level

When various Clasimats work together or Clasimat belongs to a storage system integrated into other systems with which it exchanges information or orders. In this case, it is convenient to install higher-performance software, able to develop the required logistics operative.

Advanced level scheme.



Should Clasimat have communications with an ERP or HOST, this advanced level of Mecalux Easy will also be required, due to the fact that it is essential to activate the input and output data taking into account the other involved software.



### Control Panel

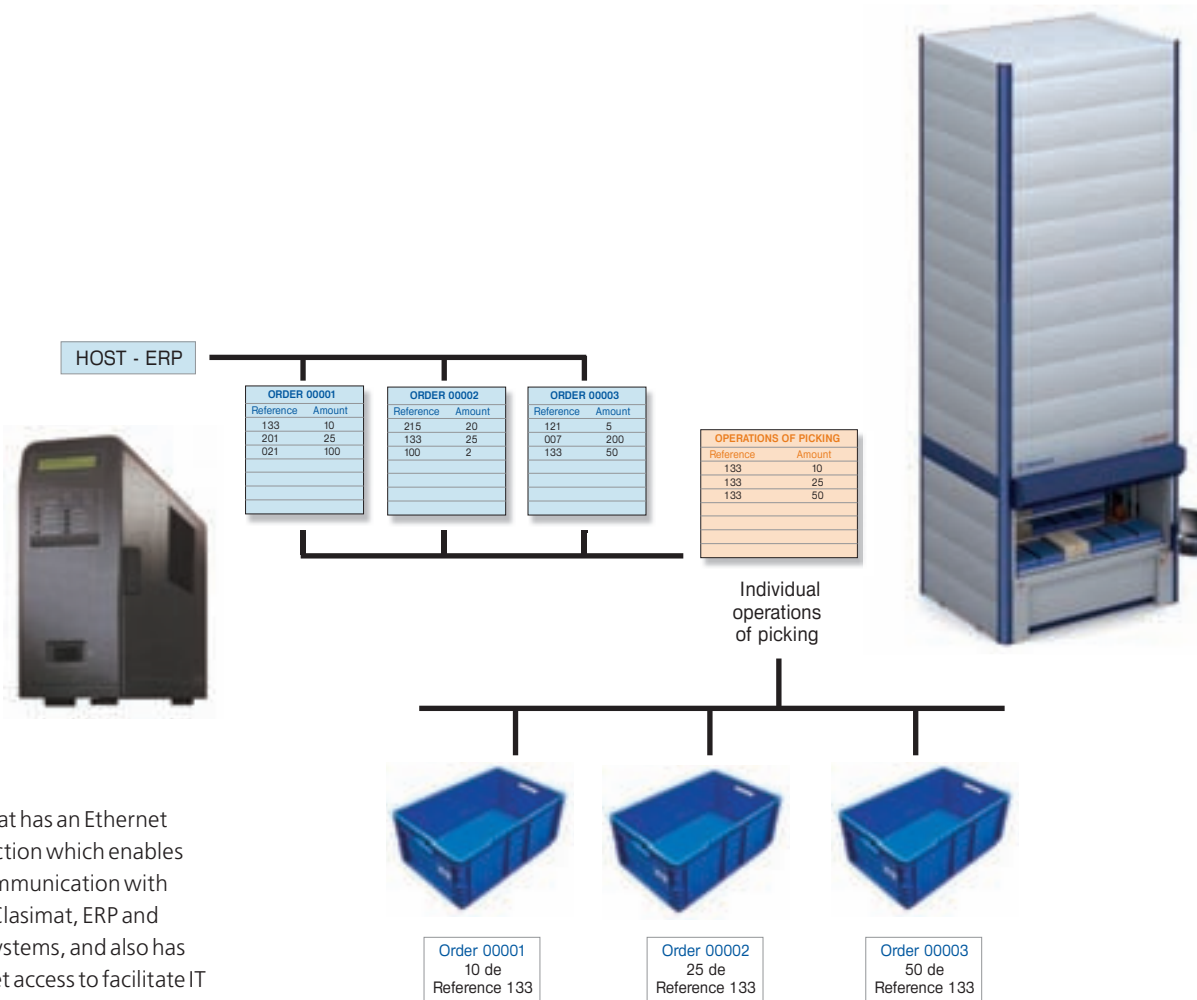
This is a PC endowed with a 17" TFT screen, which enables to clearly view all the information required by the operator and also interact in a safe and guided way. Furthermore, it makes the work easier and increases the supplied equipment potential up to the maximum.



### 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.



**LONDON - MECALUX UK Ltd.**  
 Unit 39, Halifax Road  
 The Metropolitan Park,  
 Greenford Middlesex UB6 8XU  
 Tel. 020 8575 1007 - Fax 020 8575 0705

**BIRMINGHAM - MECALUX UK Ltd.**  
 Unit 9, Network Park Industrial Estate  
 Duddleston Mill Road  
 Saltley, Birmingham B8 1 AU  
 Tel. 020 8575 1007 - Fax 020 8575 0705

**HEAD OFFICE - MECALUX, SA**  
 Silici, 1  
 08940 Cornellà de Llobregat  
 Barcelona (SPAIN)  
 Tel. + 34 932 616 913 - Fax + 34 932 632 682

Argentina, Belgium, Brazil, Chile, Czech Republic, France, Germany, Italy, Mexico, Poland, Portugal, Spain, United Kingdom, Singapore, USA

e-mail: [info@mecalux.com](mailto:info@mecalux.com) / [www.mecalux.com](http://www.mecalux.com)

