



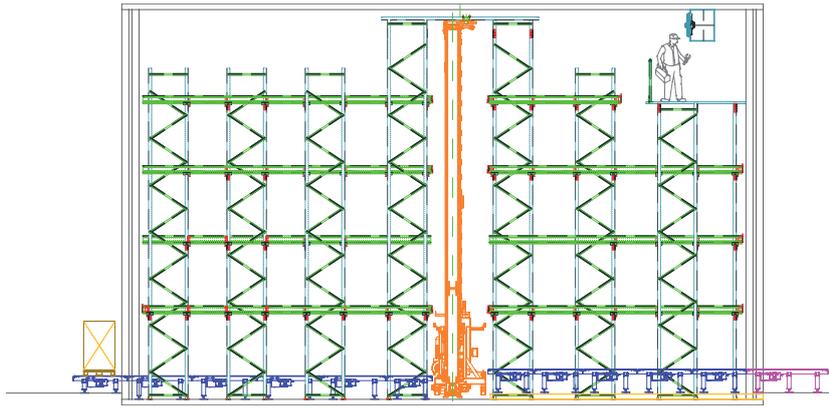
Case study: Hemosa

Mecalux installs different storage systems in Hemosa's preparation centre located in Madrid

Location: Spain



Hemosa, a company specialized in the supply of fresh meats and pork-based products, has entrusted Mecalux to fit out its new warehouse with the latest technologies as far as automation and computerization of its manufacturing processes. For this reason, and with the objective of offering maximum quality products, they have installed various storage systems ranging from an automated warehouse with Pallet Shuttle and stacker cranes to drive-in and live pallet rackings.



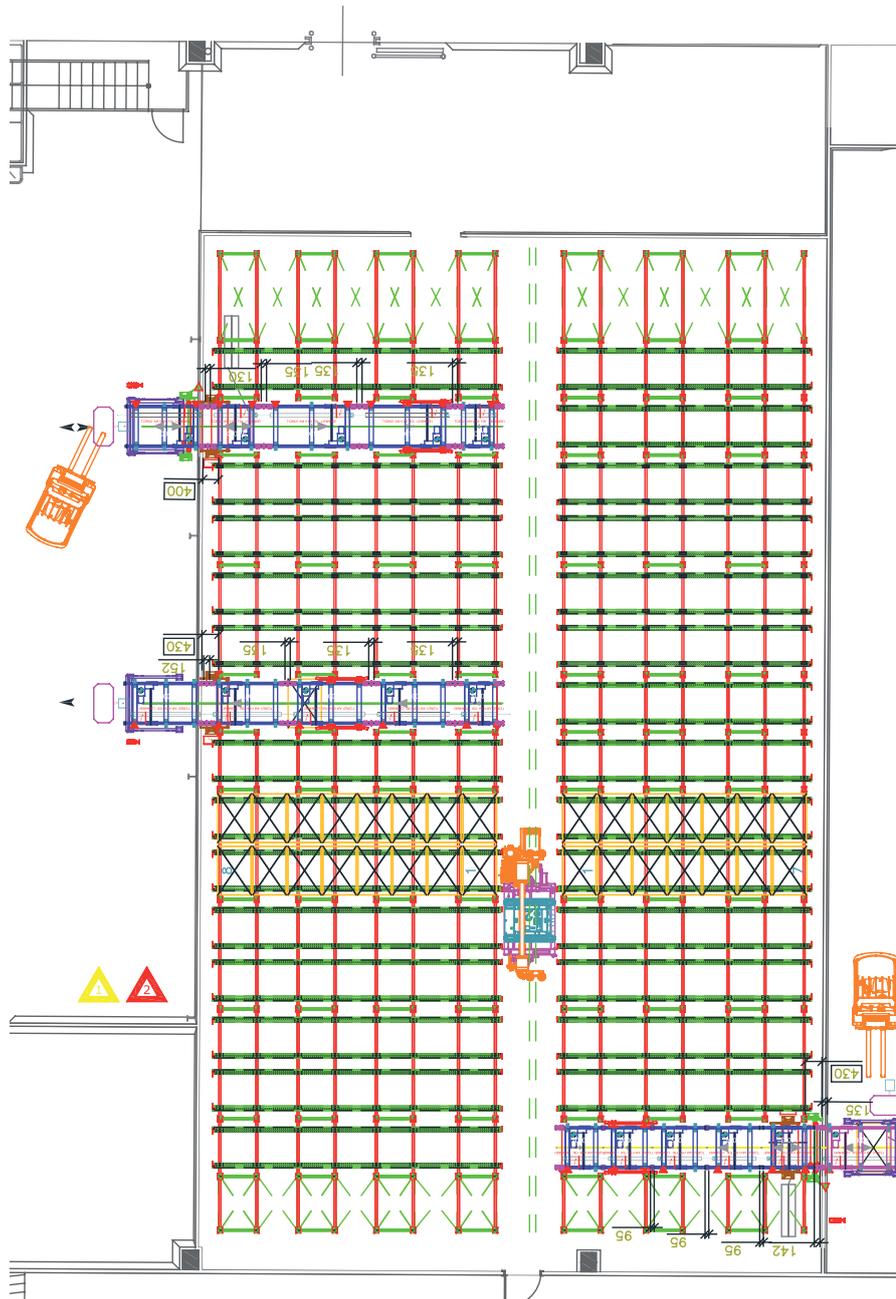
A totally automated version of Pallet Shuttle has been installed which uses a stacker crane as its transport equipment that lends to great speed and efficient stock control

Automated warehouse with Pallet Shuttle: finished products

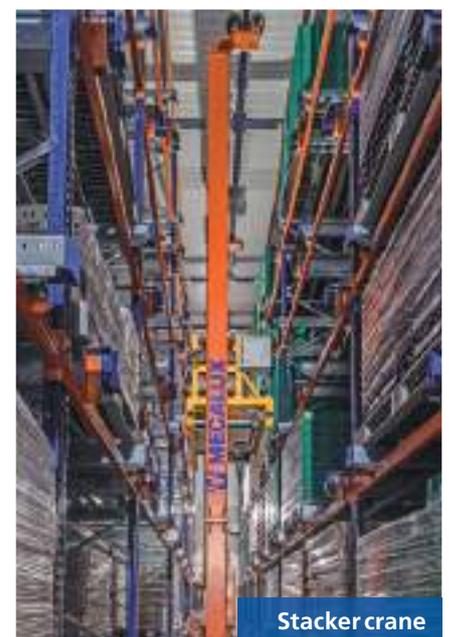
The Pallet Shuttle system is a version of compact solutions that offers maximum storage capacity, with the added advantage of having load channels with variable depths. Pallets are transported internally through the channels using autonomous shuttles, hence the system name.

The version installed in the Hemosa warehouse is totally automatic and uses stacker cranes as its primary transport equipment between warehouse entry/exits and channel locations, lending to great speed and efficient control of both stock and operations done. The total capacity of this warehouse is 1,050 pallets, 1,200 x 1,200 mm in size with a maximum weight of 700 kg.

The Mecalux Easy WMS is a system which manages all operational basis in a warehouse; starting with entry, next placement based on parametrizable criteria and ending with subsequent dispatch.



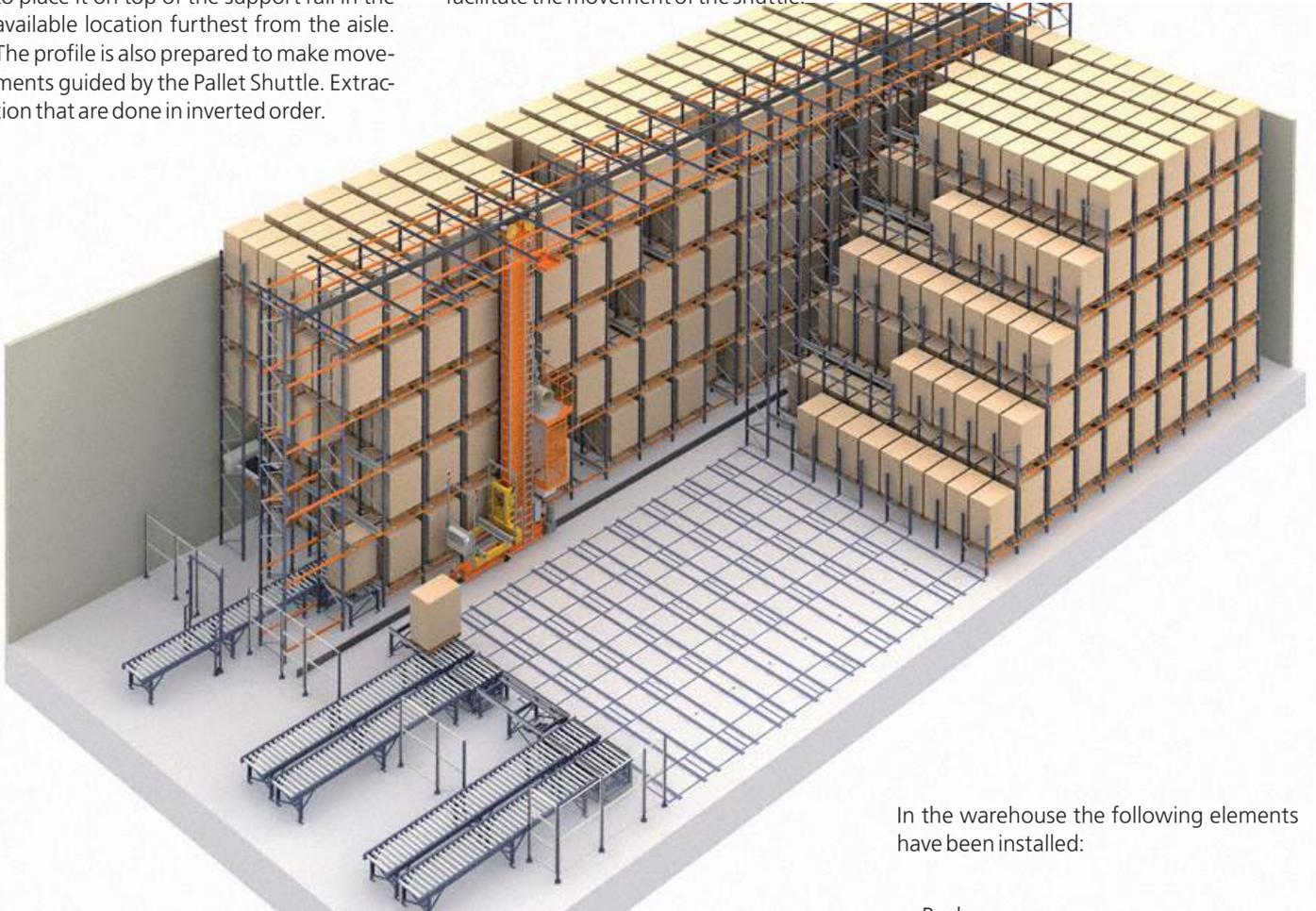
Pallet Shuttle



Stacker crane

The Pallet Shuttle is housed on the cradle of the stacker crane in a position, slightly inferior to the pallet support level; said level is made up of two motorized chains which pick up and drop off the pallet in the entry/exit positions. When the stacker crane is positioned in front of the assigned location, the shuttle raises with the pallet on it and introduces it into the channel to place it on top of the support rail in the available location furthest from the aisle. The profile is also prepared to make movements guided by the Pallet Shuttle. Extractions that are done in inverted order.

The Pallet Shuttle is autonomous and charges its battery in the cradle of the stacker crane in an automatic and straightforward manner. Each shuttle has eight wheels which provide the correct distribution of the weight upon the profile and which help it move smoothly from the stacker crane into the channels. On each side of the aisle, rails allow centering elements to facilitate the movement of the shuttle.



In the warehouse the following elements have been installed:

- Racks
- Stacker cranes
- Pallet Shuttles
- Entry conveyors
- Exit conveyors

This image represents a solution similar to the one used in the Hemosá installation





Pallet entry and exit

Two entry and one exit doors have been enabled. In each of these, a conveyor is entrusted to pick up and drop off pallets in the position which coincides with the aisle in which the stacker crane circulates. Moreover, the doors are protected by rapid action vertical curtains that only open before signal sent by the Easy WMS when the pallet passes through, avoiding changes in the internal temperature of the cold storage chamber.

When the stacker crane is positioned in front of the conveyor, it sends a signal both to the corresponding conveyor, as well as to the one it carries in the cradle, in order

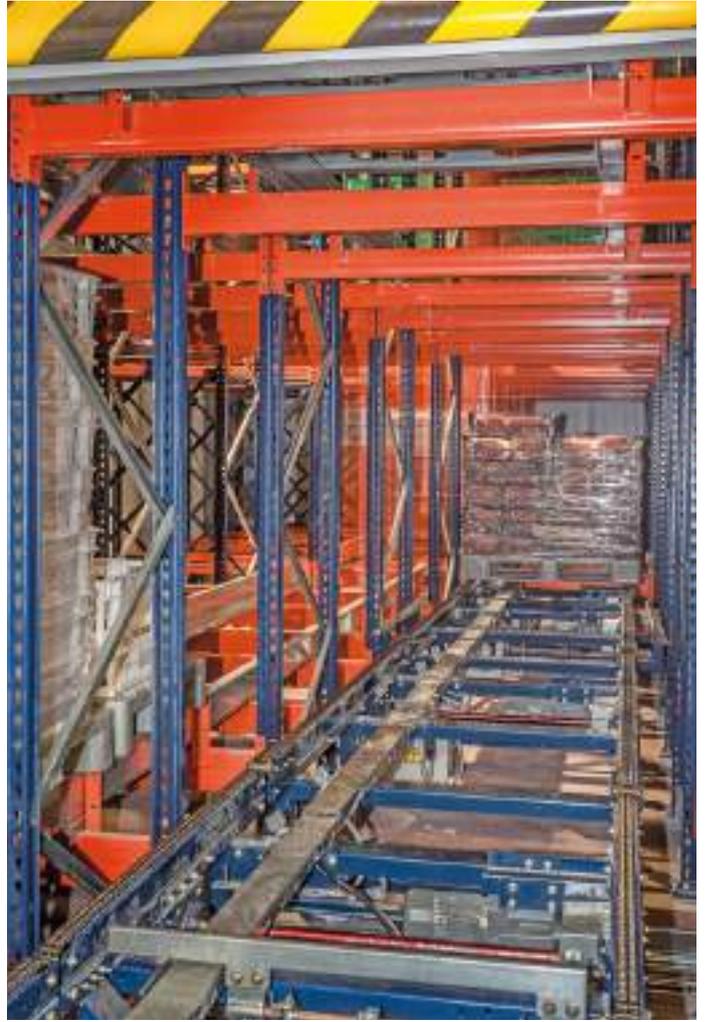
to act in unison and move the pallet from one to another. It also emits a signal to the same Pallet Shuttle when it is positioned in front of the channel where it must perform, ordering its displacement and the operation to be done.

The two located profiles on both sides of the channel are shaped to allow for double supporting functions both to the pallets and the guide rail, ensuring that the shuttle moves along safely.

From the moment the operator drops off the pallet in one of the entry points and the system is indicated which reference it contains, Easy WMS takes over control of it and its internal management.

The warehouse is a cold storage unit with temperatures kept slightly above 0 °C, which conserves products deposited there in optimal condition







Live Pallet Racking:
semi-prepared fresh products

This type of racking, as well as the Pallet Shuttle, is incorporated within the compact storage systems and also maximizes space. The peculiarity of this warehouse is that it is composed of storage channels with a slight incline. Each channel has rollers on which the pallet, introduced into the more inclined side, moves along via gravity until the first position on the con-

trary side. The velocity of pallet movements is controlled via roller brakes.

Choosing said storage solution has to do with the type of products stored. Racks used for pallets with semi-prepared fresh products that need a perfect product turnover (FIFO). In order to achieve efficient turnover, live pallet racking is ideal because the first pallet to enter the channel is the first to leave.

Live pallet racking, which is 5.5 m in height, has the capacity to store 188 pallets, 800 x 1,200 mm in size and weighing a maximum of 600 kg





The system installed in Hemosa is meant to store pallets of semi-prepared frozen products and large volume consumables, like packaging

Drive-in system: semi-prepared frozen products

Racks are put together having internal lanes of variable depth, in which forklifts enter with pallets raised to the corresponding height. At each level and on both sides, profiles are ready to support the pallets.

Moreover, conventional pallet racking has been supplied to store other products of small volume for internal consumption.



Easy WMS

This is a powerful, tried and true warehouse management system developed by Mecalux. It controls all internal operational basis in any warehouse, from reception to verification and location assigned within the warehouse, picking functions and final dispatch based on rules and parametrizable criteria.

trol module. This software takes charge of controlling all actions which must be done by each moving device.

The connection with ERP SAP or the general management system of Hemosa is permanent and bi-directional, exchanging information and instructions that permit the total control of all operations done.

In the case of Hemosa and in regards to the automated warehouse, the execution of movements is ordered via the Galileo con-





Advantages for Hemosa

- **High-density storage:** the storage capacity demanded by Hemosa has been achieved thanks to a combination of distinct systems installed.
- **A place for each product:** a storage solution has been enabled which best adapts to the characteristics and needs of each product that Hemosa works with, attaining perfect turnover and increased productivity.
- **Total control of the automated warehouse:** Easy WMS from Mecalux controls all processes and operations that happen within a warehouse, from the moment the product leaves the packaging line, up until dispatch.



Technical data

Automated warehouse

Storage capacity	1,050 pallets
Maximum pallet weight	700 kg
Warehouse height	10 m
Number of stacker cranes	1
Type of stacker crane	single mast + Pallet Shuttle
Constructive system	Pallet Shuttle – traditional construction

Live pallet racking

Storage capacity	188 pallets
Maximum pallet weight	600 kg
Channel depth	6.2 m
Maximum height	5.5 m
Drive-in pallet racking	
Storage capacity	426 pallets
Maximum pallet weight	1,000 kg
Maximum lane depth	5 m
Maximum height	6.8 m