

Case study: Elaborados Cárnicos Medina

30 million kg of beef a year in an automatic buffer

Country: Spain



Elaborados Cárnicos Medina of Grupo Medina (a leading company in Spain's beef market) has renovated the temporary storage area in its meat plant in Buñol to increase productivity. There, it has installed an automated warehouse for boxes where it will age its beef at a refrigerated temperature. The installation has more than 16,000 locations (32,000 boxes) in a surface area of merely 537 m². Connected automatically via conveyors to the other working areas in the meat plant, the new warehouse can manage up to 680 boxes/hour from the processing zone. To achieve maximum throughput and ensure the safety and traceability of the meat it produces, the firm has implemented the Easy WMS warehouse management system by Mecalux.

A leader in beef production

Founded in 1973, Grupo Medina is a meat company headquartered in Leganés (Madrid). It boasts modern meat-processing plants in Montellos (Galicia) and Buñol (Valencia). With a staff of over 1,500, it has become the leading beef producer in Spain and a benchmark in its sector in Europe.

In 2016, through the business Elaborados Cárnicos Medina, the group commissioned the plant in Buñol, where it currently produces a total of 70 million kg of beef a year in a surface area of 55,000 m².

Commitment to automation

Previously, the company would deposit the vacuum-packed meat into boxes that were then stacked on pallets and stored in an area next to the processing room. Years ago, Mecalux equipped this area with pallet racks.

Today, the zone continues to serve as a temporary buffer where meat from the processing room is aged for a period of time. The beef is subsequently sent to the cutting and packaging area to be filleted according to end-customer requirements.

José López Bejarano, Director of Operations at Elaborados Cárnicos Medina, explains, *"We work with large production runs, so every day, we were forced to store and move more than 300 pallets with manual handling equipment."* This process was quite tedious and slowed down goods flows between production and the beef-ageing warehouse. For that reason, it was clear to Bejarano that *"we needed an automated storage and transport system that would take all this manual work*

off our hands."

Additionally, to control the ageing time, it is essential to have a warehouse management system (WMS) to oversee the stock, provide total traceability, and supervise the various production batches, each containing multiple SKUs.

Grupo Medina stand out for its commitment to technology, in both its manufacturing processes and its installations, to remain competitive and ensure the utmost quality of the meat. Just before assembly began, Marino Medina, Chairman of Grupo Medina, observed, *"We've known Mecalux for many years and are familiar with the projects it's set up. We have every confidence in its technical capacity and expertise to take on our project."*

Automated warehouse for boxes: characteristics

The logistics solution chosen consists of an automated installation for boxes, a complete conveyor circuit, and the Easy WMS warehouse management system. Elaborados Cárnicos Medina can now store up to 680 boxes/hour from the processing area.

At a temperature of 2 °C, the installation comprises three 43-metre-long aisles with double-deep racking on each side. The racking, which stands 10 metres tall, has 18 storage levels and 16,416 locations. One of the peculiarities of this warehouse is that the locations are taller (388 mm) in order to deposit two 400 x 600 mm boxes per level, one on top of the other. This better leverages the space so as to accommodate a larger number of products in approximately 32,000 boxes.



The entire installation has been adapted to work with two 400 x 600 mm boxes, one on top of the other

With the growth prospects of Elaborados Cárnicos Medina in mind, there is room to incorporate an additional storage aisle in the installation if required.

Automation is key to this warehouse, as the automated handling equipment ensure safe, continuous product flows. In each aisle, a twin-mast stacker crane quickly inserts and removes boxes from their locations.

At the front of the installation, Mecalux has set up a platform (2.7 m from the floor) with a box conveyor circuit. At one end, goods are received from the processing area. The other dispatches boxes with duly aged meat that have to be moved to the next phase of the process: the cutting and packaging area in a protective atmosphere.

All the boxes that enter the automated warehouse need to go through a checkpoint where it is verified that their weight and measurements meet the requirements established for their placement in the installation. Boxes that do not pass this inspection are sent to a rejection circuit. There, operators recondition them according to instructions from the WMS, thus enabling them to enter the warehouse.

The Director of Operations at Elaborados Cárnicos Medina acknowledges, *"We're extremely satisfied with the automated installation because it covers our needs, which include connecting our centre's processing, ageing, cutting and packaging processes in a completely automatic way."*





Automation not only has boosted the throughput of the warehouse, but has also been key for maintaining the cold chain necessary for properly preserving the meat. As for the safety of the workers and of the facility in general, the installation was equipped with automatic fire doors. If activated, the warehouse would be hermetically sealed to prevent the spread of flames and to allow for rapid evacuation of personnel.

Control of operations

An installation such as that of Elaborados

Cárnicos Medina — which has fully automated operations and handles perishable products — requires a warehouse management system (WMS) to supervise all goods movements while providing full traceability. For that reason, the company implemented Easy WMS, the WMS from Mecalux, which has contributed toward making the supply chain of Elaborados Cárnicos Medina much more efficient.

Director of Operations José López Bejarano affirms that one of the main advantages of the deployment of Easy WMS

is the *“tight control of stock and of the time products remain in the automated warehouse to go through the meat-aging process.”*

The WMS is charged with organising the goods by batch and assigning a location to each box from the moment it arrives at the installation from the processing area.

The plastic boxes stored one on top of the other always belong to the same SKU and production batch. Goods inflows and outflows take place during the two shifts when processing is carried out (from 6.00 a.m. to 10.00 p.m.). The traceability provided by Easy WMS is indispensable for a food business such as Elaborados Cárnicos Medina; it helps it to identify and strictly monitor the characteristics of the products throughout all their phases until they are delivered to customers.

Easy WMS is tasked with controlling the time during which the meat is aged in the automated warehouse



José López Bejarano
Director of Operations at Elaborados Cárnicos Medina

“We’ve chosen Mecalux’s storage solutions because its technical and economic proposal was the one that best met our needs. Plus, we were convinced by its experience in the sector and its capacity to adapt to the particular features of our business. The automated warehouse for boxes has become a fundamental part of our production process; we couldn’t work without it.”

Automated logistics for quality meat

It is no wonder that Grupo Medina is one of Spain's leading beef producers. The company takes products of the highest quality and imbues them with its inherent care and dedication.

With an annual production of over 70 million kg of beef, its new meat plant in Buñol is

a clear reflection of each of Grupo Medina's values. Thanks to automation, the firm has markedly cut the time taken to complete each operation and sped up goods entries and exits, storing 680 boxes/hour.

Now, the business can better respond to changes in demand, maintaining the quality and flavour of the meat at all times.

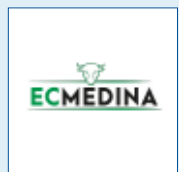
Mecalux's logistics solution is designed to meet existing requirements while also providing for Grupo Medina's future needs.

José López Bejarano says, "We're currently looking into expanding the warehouse by adding another stacker crane. This could cover the need to store empty boxes and address our future growth prospects."



Advantages for Elaborados Cárnicos Medina

- **Automated buffer:** automation allows for continuous flows of up to 680 boxes/hour from the processing area. Additionally, the buffer automatically connects the installation with the cutting and packaging area.
- **Goods safety:** automation ensures the safe transport of the meat, efficiently maintaining it at low temperatures and, thus, guaranteeing its flavour and quality.
- **Inventory management:** Easy WMS automatically controls the stock in the warehouse. In particular, it supervises compliance with the exact meat-ageing times stipulated.



Technical data

Number of locations	16,416
Storage capacity	32,000 boxes
Box size	400 x 600 mm
Max. box weight	25 kg
Racking height	10 m
Racking length	43 m
Storage levels	18

