

ANTICA MACELLERIA CECCHINI



CAREL

Success story

Antica Macelleria Cecchini

Respecting meat and preserving its quality

Synergy between Merenti Refrigerazione and CAREL for Antica Macelleria Cecchini.
How refrigeration technology has revolutionised meat preservation, while
respecting traditional processing methods



MERENTI
refrigerazione

Where

Antica Macelleria Cecchini

What

- nine cold rooms designed for complete meat processing;
- two curing chambers are the heart of the system, where the whole sides are stored for at least 20 days;
- the system monitors and controls temperature and humidity to preserve the quality and freshness of the meat.

Why

- precise control of temperature and humidity, to optimise curing;
- remote monitoring of the entire system, for a prompt response and more efficient maintenance efficiency;
- “zero waste” philosophy and artisan quality of Cecchini’s meats guaranteed.

Merenti Refrigerazione

Refrigeration installation business. A CAREL partner, the company has been using our products and solutions for two generations, recognising their technological value.

Antica Macelleria Cecchini

A butcher’s shop in the Chianti area for eight generations, it is recognised globally for quality cuisine and meat, just like its owner, Dario Cecchini. In addition to running the famous historic shop, which has been in business for over 250 years, Dario has opened numerous restaurants around the world where his meat is served.

The problem

During the first weeks of the lockdown in 2020, the Cecchini butcher’s shop had a cold room full of meat, at the risk of spoilage. They therefore decided to go back to traditional preservation techniques, so as to maintain the quality of the sides longer, without forcing the curing process. To do this, they adopted a solution to extend the refrigeration control logic to include control of humidity and thus the moisture content of the meat: the result was that the meat could be preserved longer, staying fresh and improving quality. This innovative curing method made it possible to enhance the value of the sides, reducing waste in line with the philosophy of the famous butcher of **using all the parts of the animal, “from head to tail”**.



Fig. 1.a - Dario Cecchini in the Antica Macelleria butcher’s shop

The curing chambers

The Antica Macelleria Cecchini processing plant is located in Panzano in Chianti, Florence province, and features **nine cold rooms where the meat is handled from start to finish**, from when it arrives as beef sides, through curing and cutting and finally in the packaging of the finished products before delivery to restaurants or sale in the butcher’s shop.

The process begins with the sides being taken from the refrigerated truck and placed in the first curing chamber, where it is stored at controlled temperature and humidity. Once the curing process is complete, processing continues in a different cold room, after which the product is ready to be delivered.

The facilities are spread across two sites, located on opposite sides of the same street, both of which can handle all the processing phases. In an adjacent building there is a production facility for ready-to-cook products (such as meat sauce or canned lard), with an additional cold room for product storage.

The two curing chambers however represent the true heart of the entire plant. There, the sides are cured whole for at least twenty days, at controlled temperature and humidity. The aim is to **slowly and gradually remove moisture from the meat**, following traditional preservation methods that Antica Macelleria Cecchini has brought back to life and now promotes around the world. This type of processing not only makes it possible to achieve a higher product quality, but also avoids the formation of an external film that blocks the removal of moisture from the core and makes the end result less uniform. To achieve this goal, the technical solution adopted is a reheating coil that, when working in close sync with the evaporator, promotes a natural dehumidifying effect.



Fig. 1.b - The “dream chamber”, as Dario Cecchini has nicknamed it

The CAREL solution

All this has been made possible thanks to Ultracella technology, CAREL's most advanced solution for cold room control. The humidity management logic on **Ultracella** in fact allows combined control of both the temperature and the humidity inside the cold room.

Humidity and temperature probes send signals via analogue inputs to Ultracella, which, using the incorporated CAREL logic, synchronises the cooling and reheating requests.

Complete management of the refrigerant circuit is guaranteed through control of the defrosting heater and evaporator fan. Furthermore, by connecting the condensing unit alarms via digital input, warnings sent to Ultracella can be used monitor the entire refrigeration system directly from front door of the cold room.



To improve loading of the curing chamber, a **system of probes** has been installed to measure the temperature of the sides when they enter the cold room. Ultracella reads these probes signals and adjust the set point so as to adapt the control logic based on the temperature increase due to the entry of new goods, meaning both humidity and temperature can be kept under control and stable.

Completing the CAREL integrated cold room proposal, in addition to the control solution, **ExV system technology** was also adopted on the systems in the Antica Macelleria Cecchini facilities: the electronic valve and EVD EVO driver guarantee tighter control and therefore better preservation of the goods.



While Ultracella meets the specific control needs of the application, thus guaranteeing the product quality demanded by Dario Cecchini, boss mini provides continuous monitoring of the system, allowing Merenti Refrigerazione to make maintenance much more efficient.

boss mini is CAREL's solution for monitoring medium-sized systems (up to 50 connected devices). It communicates with field devices over an RS485 serial line via ModBus or CAREL communication protocols, representing a single access point to the entire system. **boss mini provides both local supervision and remote monitoring via email or Telegram, as well as complete remote monitoring via OpenVPN.**



The first problem to solve for installation of this system was to coordinate operation of the devices already installed in the company's historical site with those in its new site, opened following expansion in 2021. The solution adopted was to exploit boss mini's double serial line, configuring one line with the CAREL protocol for the older part of the system, and the other with the ModBus protocol and WiFi gateway for the newer part, located on the opposite side of the street. Using the boss mini reporting and alarm functions, a Telegram group was created that promptly reports any malfunctions and problems to all personnel involved in management of the system. This solution **guarantees two levels of supervision**: local, by the Antica Macelleria Cecchini logistics managers, who can respond directly in the event of minor problems; remote, managed by Merenti Refrigerazione, which can access all the information in real time. Thanks to boss mini, Merenti Refrigerazione, based in Vicenza province, can **plan maintenance efficiently, even from hundreds of kilometres away.**



Fig. 1.c - Merenti shows the CAREL control system that manages the curing chambers

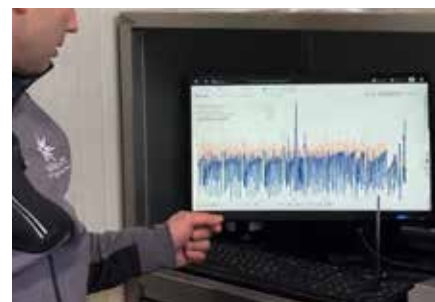


Fig. 1.d - Monitoring is carried out both on-site and remotely, thanks to boss mini

"As an artisan, I hope to leave this trade a little better than I found it. I respect other butchers; I believe that they too, as artisans, hope to improve what they do in their work. As I always say: it's like buying a ready-to-wear garment, it might be good in quality, but it's like a thousand others on the market... or you can have one tailor made.

The "Merenti chamber" is a like tailor-made suit, tailor-made for Dario Cecchini."



Conclusions

CAREL, in synergy with Merenti Refrigerazione, has demonstrated how technological innovation in control systems can be the tool for achieving the highest quality even in artisan processes, helping achieve a product that Antica Macelleria Cecchini is famous for throughout the world. At the same time, the principle of **"zero food waste"** united and guided all three companies throughout the project, as Dario Cecchini underlined:

*"To possess the art, to become an expert at what you do. This is the spirit of the artisan, who strives for quality at all times. We are clearly artisans, having adopted solutions based on the choice to cure the meat much longer, even while recognising that this does not bring short-term profit. We have therefore chosen to **store the meat as sides for at least 20 days**, gradually reducing the moisture content. This means that weight - and thus revenue - are already lost in this stage.*

*But despite this loss, I can say that the result in terms of quality is beyond expectations, which is why after the first "trials" we decided to build a second chamber, with the same significant improvement in quality. **In fact, these chambers feature perfect humidity and temperature control.***

What I wanted from Merenti and CAREL was to be able to have stable humidity and temperature, which I was unable to find in other chambers, as they were equipped with controllers that only measured the "reduction" in humidity, and led to the meat curing too quickly. Now, however, we can have stable conditions, applying a system that is already used to cure other products, such as cold meats and cheese.

*At an organoleptic level, what has changed is that **the meat is simply... better! It's quality is higher.***

In conclusion, what I liked about this project, about this partnership, is the synergy between artisan and technology. When people say (and you hear it all the time) that "my grandmother did it this way" it's not true, it's a false claim: tradition is in continuous evolution. It is no coincidence that Oscar Wilde said that tradition is nothing but a successful innovation."

Dario Cecchini

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