

Case studies

BIRRIFICIO BALADIN



Sector: Beverage

Place: Cuneo - Italy

Ferretto Group automation supporting controlled fermentation

To implement its storage, distribution and controlled fermentation processes, Baladin built an innovative automated storage system, designed not only to handle ordinary storage and retrieval operations for product distribution, but also to manage the secondary fermentation process, also called bottle conditioning, through accurate temperature and humidity control achieved by moving product lots between different cold rooms with specific temperature and humidity values.

Objectives:

- Improve the ordinary storage and retrieval operations for finish product.
- Improve the secondary fermentation process.

Solution:

- Automatic storage system managed by a steering stacker crane that operates in 2 isles.
- The pallets are placed in multi-depth storage using a special shuttle in three different –temperature cold rooms.
- Based on specific fermentation cycles, specialist software controls the times that the lots of bottles remain in each specific cold room, coordinating the movement of pallets automatically. This ensures a very high level of precision in managing product refermentation and stabilisation, bringing a considerable reduction in the duration of the bottle refermentation process.

Technical details:

- Large automated cold room, suitably divided into compartments based on the required temperature and humidity.
- Fully automatic movement of materials between cold rooms; this for example ensures the process curves are applied even at times when no operators are present to supervise the system (overnight, weekends and public holidays).
- No personnel needed in areas where working conditions may be difficult (cold, hot, high humidity).
- Energy saving due to optimised access control (opening and closing of doors) in the controlled areas.
- Precise control of the parameters using the sensors fitted in the cold room, which send the values of the controlled variables in real time to the heating/cooling and ventilation system.

Added value:

- Compliance with process parameters (Δ temperature and humidity) in terms of precision of the controlled values.
- Compliance of the storage time parameter in relation to the other process parameters.
- Fast return to required conditions following an external event (e.g. opening and closing a door inside the store).
- No sources of contamination inside the cold room (forklifts and operators).
- Efficient temperature and humidity control (energy savings).
- Increased storage density (lower volume of cooled/heated air than the storage volume).
- Ability to interface automatically with other automated devices (anthropomorphic robots, LGV-Laser Guided Vehicles).

Storage system facts and figures:

Total surface area	817 mq
Unit loads	1.100 kg euro pallet
Overall capacity	2.660 pallet spaces
Storage system height	20 m
Load levels	7
Type an number of stacker cranes	1 steering stacker crane







