



The company

CALEFFI SpA is a world-wide leading company in the production of components for heating, air-conditioning and sanitary plants for civil and industrial utilities, and in the supply of state-of-the-art engineering plant solutions. It has commercial branches and representative offices in Europe, America, China and boasts the competence of about 1.000 employees with a turnover, between Italy and abroad, of almost Euro 300 million. Always careful to satisfy clients and to comply with the motto **“innovation is growth, of product and corporate culture”**, it has always searched for and used the best technologies to fulfil the corporate mission.

Once completed the realisation of a new research centre of latest conception for the study and experimenting of innovative products (including components for thermal and geothermal solar plants) for maximum quality and energy saving, Caleffi SpA felt the need to invest in logistics choosing System Logistics as partner for the realisation of a highly automated system for the storing of semi-worked and finished products, and for the preparing of orders.

The task

In view of a constant turnover increase, doubled in five years, the peculiar requirements in the realisation of the new storage and order preparation centre are:

- double number of movements compared to the historical peaks realised
- introduction of new boxes for the storing of finished products destined to the market
- building of a new automatic storing unit for over 50.000 UDC
- storing and moving of 15.000 pallets of different sizes for the production of the larger orders
- realisation of ergonomic and highly performing picking stations, able to allow operators the simultaneous pick-up from box and from pallet, with halved times compared to the existing RF solution
- important automated interface with the production and shipment departments, in order to manage the moving phases of the semi-worked and finished products
- integration with corporate management system that guarantees traceability of every moving phase.

The solution and the result

Two self-holding storages for pallet and for plastic boxes are installed to reach the objectives; the pallets coming from the input lines are sorted through an 8 loop shuttle SVL system to the 4 rack feeders in single height of 31 m. The boxes coming from the production lines on pallets are fed individually to the box storage (equipped with 4 rack feeders with 4 benches) by means of an anthropomorphic robot with integrated visual system. All new generation rack feeders are designed taking into consideration the energy saving that can be obtained during the deceleration phases of the axes with network regeneration.

The plant is complete of 6 picking bays technically provided with every equipment necessary for the operators to simplify the order preparation work like weighers, piece counters, PC, monitor, elevator platforms. Every operator, managed by the Systore management system connected to corporate SAP, is guided during every work phase, in order to avoid possible errors, despite maintaining high efficiency.

The plant is also equipped with intelligent separating systems of the automatic moving phases of the transfer elevators from those of the operators; 86 buffer stations are used for the pallet and the Synchron for the boxes. These very important technical solutions allow the plant to function to the fullest of machines' abilities, independently of the picking times, that are necessarily different from row to row of the same order. The empty and full pallet flow towards the shipping area is also automated, intelligently managed by the SWL system. The empty cases are also re-palletised by the same Robot and sent on pallets to the production areas. An interface system for automation of material receiving input process, complete with printing and labelling, weighing and shape controls automatic units, and a motorised unit for the storage of the ready for shipment UDC, are installed as integration of the logistic cycle.

Result:

- Improvement of the efficiency level towards the market



and greater rationality and speed in the order processing

- Increase of the storage capacity
- Integration of the quality system in the managing process
- Traceability of the products and certainty of stock
- Automation of the logistic flow management of the semi-worked materials
- Elimination of the paper documentation
- Availability of correct information in real time

TECHNICAL DATA

Box storage

UDC: metal box capacity Kg. 50

dimensions: 600x400xh320 mm

N. 1 Self-holding scaffolding h=20 m with 43 floors

N. 4 Rack feeders with four benches h=20 m with energy saving system

N. 6 Picking bays with Synchron device and double work station

N. 1 Input unit in acceptance area with depalletising anthropomorphic Robot

N. 1 Output unit for palletising area Robot

N. 2 Box sorting back positioned on platform at elevated bed

Rack feeders moving ability:

N. 430 UDC in input/time

N. 430 UDC in output/time

Number order rows per operator average 55/hour

Pallets storage

UDC: Pallet Kg. 1.000

dimensions: 800/1000x1.200xh1.000 mm

N. 4 Rack feeders h=31m with 22 floors

N. 2 Input in goods arrival area

N. 8 SWL loop shuttles with 86 storage buffers

N. 6 Picking bays for shipping orders preparation

N. 3 Empty pallets storages

N. 2 Output lines for shipments

Rack feeders moving ability:

N. 120 UDC in input/time

N. 120 UDC in output/time

Number UDC moved by the SWL system 320/hour

Number order rows per operator average 11/hour