GEOS SCHLANDERS/ITALY

INTRALOGISTICS

GEOS

Südtirol Vinschgau

THE CUSTOMER

With 310 farmers, 120 employees, and 960 ha of cultivated land, the "Genossenschaft der Obsterzeuger Schlanders" (GEOS), a fruit growers' cooperative founded in 1946, is one of the largest members of the "Vinschgauer Produzenten" (VI.P).

The cooperative organizes its working year around the optimal ripeness of their fruit: In carefully determined time slots, the farmers harvest 70,000 metric tons of apples and deliver them to the two GEOS locations in Schlanders. The fruit is stored in CA cells (Controlled Atmosphere), guaranteeing virtually no loss of freshness, until it is sorted, packaged, and shipped over the course of the following season – about half of it to other countries.

FRUITFUL COMPETITION

GEOS SCORES WITH NEW LTW BELT TECHNOLOGY AS THE FIRST VI.P MEMBER

Seven pomiculture cooperatives with a joint presence: Since the "Vinschgauer Produzenten" (VI.P) decided in 2007 to pool the sales effort for their crops – around two billion apples per year – the individual cooperatives have been able to focus even more on the quality and efficiency of their production.

"We want to set the benchmark in the VI.P association regarding the costs," GEOS managing director Dr. Hannes Spögler explains. "That motivates us to be innovative: We build on the experience of others, and then take it a step further. So that in the end everyone can learn from each other."

THE HIGH-BAY WAREHOUSE

When in 2013 the new logistic interface between storage, sorting, and packaging in Schlanders was in its first stages of planning, there were already two very convincing showcase objects close by: the automatic high-bay warehouses of the VI.P cooperatives MIVOR in Latsch (2011) and TEXEL in Naturns (2012), both realized by LTW.

Hannes Spögler: "We saw that the solution for which MIVOR and TEXEL had opted was a complete success: improved freshness, more room, better process safety – and a substantial reduction of energy consumption and weight loss of the stored goods."

The new high-bay warehouse serves as a buffer between CA cells, sorting, and packaging.

DI Johannes Thomann, technical manager at GEOS, and managing director Dr. Hannes Spögler: "Innovation secures the livelihood of our farmers."

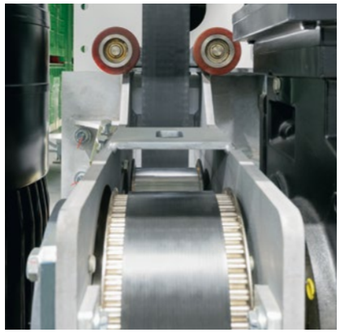
Five years warranty: The origins of the timing belt in the lifting drive of the stacker crane stem from an LTW-cooperation with the research partners ContiTech and SynchroTech.

So the decision was made in favor of automation, with high expectations for the performance: Every type of apple is sorted by quality, color, and size in the automatic sorting system, dividing them into about 50 different articles, and then stored in the new high-bay warehouse (HBW), awaiting the customers' orders. "Today, a typical order for tomorrow morning looks like this: 18-kg boxes of 135 fruits each. This complexity requires a high level of organization: The more accurately we work, the more our farmers yield."

THE INNOVATION

Together with the logistics consultants from KDL in Hamburg, GEOS submitted a tender for the high-bay warehouse project. Among the four contestants from three countries, LTW came out on top in a points-based selection process with weighted quality and price criteria.

LTW convinces not only with its renowned reliability, but above all with eight single-mast stacker cranes, which are among the most innovative on the market: The patented deflection belt drive of the lifting device is the first of its kind in South Tyrol.



The life span of the LTW drive belt, several times longer than that of a conventional cable drive, reduces the life cycle costs considerably.

Not only the 28 meter high stacker cranes are equipped with LTW belt technology, but also the two transfer cars in the pre-zone (image) and two vertical conveyors. The non-slip drive and the absolute length constancy of the belt allow high kinematic values and minimum settling times.

"LTW made the very plausible point that the higher price was more than justified by the better performance and long life span of the belt." DI Johannes Thomann, technical manager at GEOS, emphasizes the "fascination of the exact positioning and processing perfection" after several weeks of three-shift operation. The low-maintenance belt does not even require lubrication – a distinctive advantage in the hygiene-sensitive food industry.

THE IMPLEMENTATION

In November 2015, after 11 months of construction, LTW finished the third project for the VI.P association in due time and at the anticipated costs – despite the difficult conditions in a densely built-up area and without interrupting normal operations. A follow-up project is already booked: A conveyor system to connect the new sorting system, planned for 2016, to the high-bay warehouse.

A patented combination of two classics: The break-proof timing belt is deflected using the principle of a pulley, and can handle weights of several metric tons.

PROJECT OUTLINE

YEAR OF CONSTRUCTION 2015

HIGH-BAY WAREHOUSE

- Silo structure
- Galvanized steel rack
- L x W x H: 63 x 33 x 28 m
- 8 rack aisles
- Single-deep storage
- 17,046 storage positions for fruit bins
- Payload: 1.250 kg
- Temperature range: + 1 °C to + 3 °C

STACKER CRANES

- 8 aisle-bound stacker cranes with belt drive in lift
- Driving speed: 180 m/min
- Driving acceleration: 0.5 m/s^2
- Lifting speed: 60 m/min
- Lifting acceleration: 0.4 m/s^2
- Load-handling device: Telescopic fork single-deep

CONVEYOR SYSTEM

over 2 levels with storage and retrieval stations including

- 2 double transfer cars with belt drive
- 2 vertical conveyors with belt drive

SOFTWARE

- Warehouse management system consisting of warehouse control and warehouse management incl. visualization
- Interface to the superior PPS (production planning system)

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