

CONTINENTAL BARUM OTROKOVICE/CZECH REPUBLIC





THE CUSTOMER

Today’s Continental subsidiary was founded in 1945 as the result of a merger of the Czechoslovakian shoe and tire manufacturers *Bat’a*, *Rubena* and *Mitas*. In 1972, Barum was relocated from Zlín to a newly established factory in close-by Otrokovice.

In 1993, the company was taken over by Continental AG, today one of the largest automotive suppliers in the world with around 178,000 employees in 49 countries. Largest tire manufacturer in the German corporation measured on the production volume: Otrokovice. 4,771 employees manufacture more than 22 million tires annually. The largest share consists of tires for passenger cars for renowned brands such as Continental, Barum and Uniroyal.



The factory site in Otrokovice covers 738.552 m²; approx. half of which is used for buildings.

SUCCESSFUL PILOT PROJECT FOR HANDLING COMPLEXITY

A NEW HIGH-BAY WAREHOUSE FOR EFFICIENT SORTING

Although the growth at the Otrokovice factory has always been dynamic, its character has changed.

In the first two decades since its founding in 1972, the annual output increased tenfold to 20 million tires.

In turn, the complexity has also increased tenfold in the roughly two decades since the takeover by Continental: At present, Continental Barum produces approximately 1,300 different articles.

“Today, each automobile manufacturer expects us to tune our tires to their model,” explains Michael Štefka, Technical Manager at the Otrokovice factory. “In order to handle this com-



Michael Štefka, Continental Barum: “We provided the benchmark data: number of articles, output, peaks. LTW took care of the optimum implementation.”

plexity, you either need a lot of space – or an intelligent system.”

The specific challenge lies in the final production step: The blanks obtain their elasticity and their tire profile in the heating press. The most varied models are produced parallel in several hundred presses – which is why the tires are discharged without sorting.

Once the people in charge at the Otrokovice plant realized that sorting, palletizing and storage of the finished goods using stackers or portal robots had reached their limits, they started looking for a sustainable alternative.



The new palletizer robots used for delivery to resellers calculate the customer-specific pallet stack based on the individual dimensions of each tire model.



The two wings of the 10 m-high, uncovered high-bay warehouse with central interface to the conveyor system. On the left the discharge conveyors for order picking.

THE SOLUTION

After careful analysis and deliberations, a pioneer solution was adopted: a high-bay warehouse as an automatic sorting and buffer store, constructed in the existing hall and connected via complex conveyor systems to the production facility as well as to order picking, finished goods storage and quality control.

Each day, 16,000 tires are to be conveyed through the high-bay storage – tires are retrieved from storage as soon as the respective quantity of a tire model has been reached, meaning one pallet load.

In the tendering procedure, a tried and tested supplier made the race as general contractor for intralogistics: Since 2009, LTW has successfully implemented 28 projects for Continental, and installed several high-bay

warehouses at the Otrokovice location alone. Since 2010, LTW has been rated A-supplier every year.

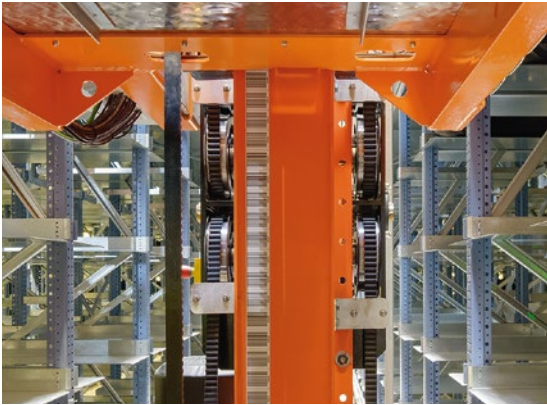
After nine months of construction time at running operation, the highly dynamic stacker cranes were com-



Scanning portal with five cameras working in parallel: Per tire, there are only a few milliseconds available to reliably detect the barcode.

missioned on schedule in September 2016.

Michael Štefka sums up: „We would gladly have more high-bay warehouses of this new type. But for the time being, other corporation locations will have their turn.“



The patented LTW belt technology enables high kinetic values of the lifting drive. Conveyors with a reduced width are applied due to the moderate load capacity.

PROJECT OUTLINE

YEAR OF CONSTRUCTION 2016



HIGH-BAY WAREHOUSE

- In-house construction
- Galvanized steel rack
- Single-deep single-lot storage for tires
- Temperature range: +5 °C to +40 °C



STACKER CRANES

- Aisle-bound design, two-mast structure
- Driving speed: 240 m/min
- Driving acceleration: 1.75 m/s²
- Lifting speed: 60 m/min
- Lifting acceleration: 1.0 m/s²



CONVEYOR SYSTEM

- Production-site storage conveyor
- Discharge conveyor for manual respectively for automatic palletizing
- Scanner for tire identification
- Palletizing robots for tire sizes from 16" to 24"



SOFTWARE

- Warehouse control and management system
- Visualization via WinCC
- Interface to MCAT (Continental's production planning system)
- Special storage and retrieval strategies for optimization of the storage performance