
Oululainen
ARINALIMPPU
RÅGLIMPA
700 g

Fazer Bakeries Lahti streamlined – **benefits from volume and automation**

Fazer Bakeries' Lahti facility is their second largest bakery. Its 385 employees deliver bread all over Finland. The order picking and shipping functions of the giant distribution center were automated in March 2005. The benefits are clear, explains **Juhani Heinänen**, bakery manager.

Fazer Bakeries decided a couple of years ago to concentrate its production in Finland in two places, Vantaa and Lahti. Cost-efficiency was sought through large volumes, particularly in order picking and storage. The Vantaa distribution center had earlier been automated with Cimcorp systems. After their decision, Fazer asked Cimcorp to design and install a similar system for its bakery in Lahti.

Cimcorp responded to the challenge with an extensive pre-study and system simulation. The completed solution combines buffer storage and order picking systems into a single robot-based system, controlled by Cimcorp's WCS control system. Now the entire material flow from the production line to the loading dock is managed inside the same system. Cimcorp, responsible for the whole project from concept design up to customer training, is also taking care of the preventive maintenance of the system.

From production to order picking

Bakery products leave the bakery to the customer on pallets and in crate stacks. Bulk goods are delivered to other Fazer bakeries on pallets. Products may be either complete stacks of the same product or picked mixed stacks, where the smallest order unit is a crate of a certain product. In regard to products leaving for stores, they are delivered in crates – either automatically picked full crates or in manually picked mixed crates, so that several different products are sent to the customer in the same crate.

The journey for the products to the customer begins at the point where their data is

fed into the automated order picking system. Products from the facility in question are automatically transferred to the order picking system almost without exception, whereas products from other bakeries are registered by reading their bar code. Then products are picked for orders either automatically or manually.

Automated full-crate picking

MultiPick robots transfer full product-specific stacks from the picking position to the floor storage below the robot. The same robot heads carry out order picking of product stacks according to customer orders. The gripper can pick up one or more crates at a time. The robot continues the picking cycle until there is a full stack in the gripper or until the order is complete.

In addition to orders delivered in full crates, the robots also handle pre-picking of manually picked products. In fact this is their first task every morning. The robots collect products for manual order picking and leave them in product stacks on the conveyor, which transfers them to the manual picking replenishment cars. The replenishment car fills the manual picking shelves in the warehouse. When the manual picking shelves are full, manual picking and full crate picking are released at the same time, so that manual pickers and the MultiPicks can pick orders for the same customers at the same time. If the items run out on the manual picking shelves, the MultiPicks automatically receive a replenishment order and deliver the items to the manual picking area.

Manual picking

The replenishment car transfers the crates to the manual picking shelves. When the manual picking is released, the picker takes the first, so-called lead crate, to which a customer order label is attached. Thereafter, the crate leaves for the manual picking track where the pickers fill crates according to the orders shown by the pick-by-light system.

The customer order can include several crates. The bar code is read at the last station on the picking track and the amount and height of the stacks is calculated automatically to find out how many crates there are in total. The picked crates are transferred along the conveyor to the delivery note attaching point under the racks, where the crates are combined with the full robot picked crates to make up the customer order.

Combining customer orders

The picked crates for customer orders are combined in two steps. First, the robot picked full crates are put together. In the second step, the manually picked crates are combined with the robot picked full crates. The manually picked crates arrive in stacks at the delivery note printing station by conveyor. The operator prints out the delivery note and attaches it to the first stack. After the manually picked stacks, full product crates in mixed stacks from robot picking are sent after them along the same track. The delivery note includes data on the products contained in every order and the number of crates. Route-specific data is also printed out at the same point. The route data is attached to the last crate on the delivery route.

After this the stack of crates is moved to the stacker, where the crates are stacked and balanced ready for transport. If the last stack is incomplete, the stacker evens out the crates in the last four stacks to make stacks of equal height, so that the stacks stay together better during transportation. Each stack contains goods for only one customer.

From the stacker the stacks continue along the conveyor and are distributed to the loading doors according to the delivery route. The transfer car transfers the stack to the head of the track for the distribution route that the stack belongs to. The stacks are moved along the track to the loading doors. The trip to the customer can begin.

Efficiency, accuracy and improved ergonomics

Customer orders arrive at the bakery the afternoon before the delivery day. This places demands not only on production, but also on order picking. The automated system speeds the process by putting into motion the order picking of ready-baked products immediately after receiving the order. The freshly baked goods that are received directly from production are moved to the order picking area all the time.

”Products for local delivery in particular now go through the distribution center much faster than earlier,” says Juhani Heinänen, bakery manager.

Both speed and efficiency have been increased by the greater order picking capacity, improved logistics control and the accuracy of automated order picking.

”The growth in capacity is a benefit which has impacted on all our operations in Finland.

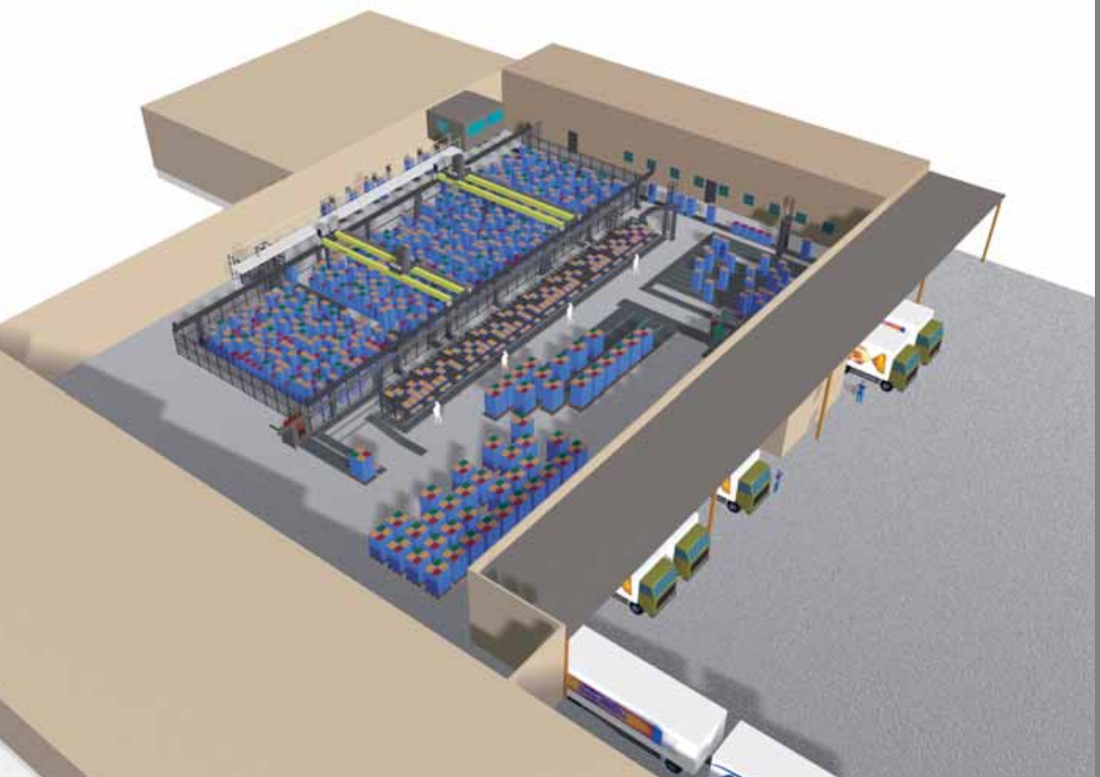
Better logistics control can be seen for instance in the reduced amount of product wastage. New solutions have also been found through automation for distribution to various customer groups. For us, accuracy means above all improved customer satisfaction."

According to Heinänen, order picking errors have been minimal. Rectifying other possible errors in the distribution center is also easier in this era of automation. For example, the system includes a function whereby the products can be removed from the floor storage as necessary if the wrong goods have gone into the order picking. With this function partially filled crates, which are sometimes generated at the end of a production batch, can also be moved to the side.

The automation of the distribution center operations has also reduced the need for human resources and significantly improved ergonomics.

"There are huge benefits particularly in bulk order picking, where very heavy products used to be collected manually. A lot of positive feedback has also been received from those who carry out the local order picking."

TEXT: CARINA BERG
PHOTO: HARRI PÄLVIRANTA AND FAZER BAKERIES



Fazer Bakeries is the market leader in the bakery business in the entire Baltic region. The group employs over 5 500 people in Finland, Sweden, Russia, Estonia, Latvia and Lithuania. The Fazer Bakeries group, consisting of 19 bakeries and one flour mill, which not only acts as a raw material supplier but also as a center of raw material management, research and development.

Fazer Bakeries belongs to a beloved Finnish institution – the Fazer Group. Oy Karl Fazer Ab, which operates in nine countries, includes Fazer Amica, a contract caterer and the candy plant, Candyking.

The business, founded by Karl Fazer in 1891 in Helsinki, has grown from a French-Russian café into an international group but remains a family concern. The cornerstones of Fazer's success continue to be exceptional quality and strong brand names.

Key figures of the Lahti distribution center (2005):

- Delivery fleet: about 20 delivery vehicles
- Deliveries per day: 1 000
- Order lines per day: 13 000
- SKUs per day: approx 30 000–35 000