



Case story

A cobot-helping hand

Dutch premium ice cream and patisserie supplier Otelli uses a collaborative robot – a cobot – to fill ice cream tubs so that the staff can do more value-adding tasks.

Text: Lars Österlind. Photo: Erik Bakker, Otelli and Tetra Pak

Dream desserts for hotels and restaurants

Automation is transforming the food industry with robot applications. Collaborative robots – or cobots – become a helping hand in production when they take over physically demanding work, repetitive tasks or tiring and strenuous movements. That robotic helping hand is not only saving the staff's health but also giving them time for more value-adding tasks, without depriving them of their work.

A good example of a cobot application in practice in the food industry can be found at Otelli, a premium ice cream and patisserie supplier in Haarlem, in the western part of the Netherlands. Otelli sells its products to hotels, restaurants and catering firms. The company has 350 products in stock and its own delivery-truck fleet, which brings out the delicious desserts directly to some 1,500 customers who order products regularly.

Takes over repetitive tasks

The company uses the Tetra Pak® Ice Cream Robot Filler M1 for doing the monotonous work of filling hundreds of ice cream tubs of 2.5 to 4.5 litres every day. Before, the filling was done manually.





The robot is a compact solution developed specifically for ice cream filling by Tetra Pak in collaboration with Universal Robots. It is a collaborative robot that works side by side with the operator, who has no need for a safety cage. Sensors control the robot's forces and if the robot accidentally bumps into the operator, the robot immediately stops. To protect the operator, the nozzles are designed with round edges and the filling valve doesn't have any reachable pinch points.

“It’s easy to operate, very reliable and the consistency is better.”

The robot filler is connected to a continuous freezer and can do 12 units per minute or 2,400 litres of ice cream per hour. It fills every tub with the exact volume each time and it even simulates artisanal patterns.

“The machine is running well,” says Jaco de Vreugd, Managing Director of Otelli. “It’s easy to operate, very reliable and the consistency of the filling is better,” he says.

“The machine takes up little space and offers multiple options for filling.”

Popular ice cream macarons

Otelli is always striving for perfection with its delicate desserts. An attractive appearance is as important as a delicious taste. The ice cream macarons are among their most popular products – a dessert where tasty ice cream meets two crispy shells.

The contrast between the colourful world of special artisanal ice cream, exclusive patisseries and desserts of the highest quality, and an automated and effective production with a cobot couldn't be more striking. Yet, those two worlds meet at Otelli, which not only makes its own ice cream but also has its own bakery and chocolaterie. “No other company in the Netherlands does what we do,” de Vreugd says.

The Tetra Pak Robot Filler M1 is a game-changer, solving difficulties associated with the manual production of high-quality ice cream, not just in terms of product quality and production costs, but also ergonomics and operator safety. The main reason for the investment in the

cobot is to free up time for the employees, explains de Vreugd. The machine has taken over the short-cycled work of filling tubs with various flavours of ice cream. “It means fewer sick leaves and is better for the staff, who can do other things in the factory. We need more people in our bakery, for example,” he says.

Shortage of personnel

Finding skilled staff for Otelli's premium dessert production is a challenge, according to de Vreugd. The company has about 65 employees.

“Everybody needs people now. After two years of the covid pandemic, we're trying to catch up. With the robot, we have an alternative. The robot is not taking any jobs away. We have a lot of work,” he says.

Realising that there was a scarcity of skilled labour, de Vreugd, who has many years of experience of working with food-processing machines in the snack industry, started to look for companies who could help him automate certain process steps in production.



“No other company in the Netherlands does what we do.”



“I already had plans to make a robot of my own when I saw that Tetra Pak presented a new robot filler. So, I contacted Tetra Pak to get more information. Two months later, we ordered a robot,” he says.

Before placing the order, de Vreugd discussed the robot’s design and filling capabilities with the Tetra Pak team. “We had a very collaborative meeting,” says Bernard Kimpe, Account Manager of Tetra Pak. “He’s very knowledgeable about ice cream techniques and we added a sliding table so that he could water-cut ice cream figures.”

De Vreugd is very satisfied with the cooperation. “Tetra Pak is open to changes and adjustments,” he says. An advantage with a cobot such as the robot filler is that it is very compact, and you don’t need a lot of safety measures, such as a protective cage around it. “The machine takes up little space and offers multiple options for filling,” says de Vreugd. Several filling

nozzles are available for different finishes and decorations, and inclusion sizes of up to 16 mm are supported.

Reliable, high-quality products

Apart from the robot filler, Otelli has four continuous freezers and two ingredient dosers from Tetra Pak. “I have known the company for some time and their machines stand for high quality and are very reliable,” de Vreugd says.

Otelli has already taken the next step on its automation journey. The second robot filler is soon to be installed next to the first one in the factory. “We use the first one for filling ice cream buckets. We will use the second one to fill ice cream tubs and pastry desserts. It’s important to have continuous production.”

Main benefits with this solution

- Automates small-scale manual ice cream filling
- Better consistency of product and ensures continuous production
- Smart, flexible and ergonomic
- Reliable and easy to operate
- Frees up time for employees
- Eliminates repetitive manual tasks

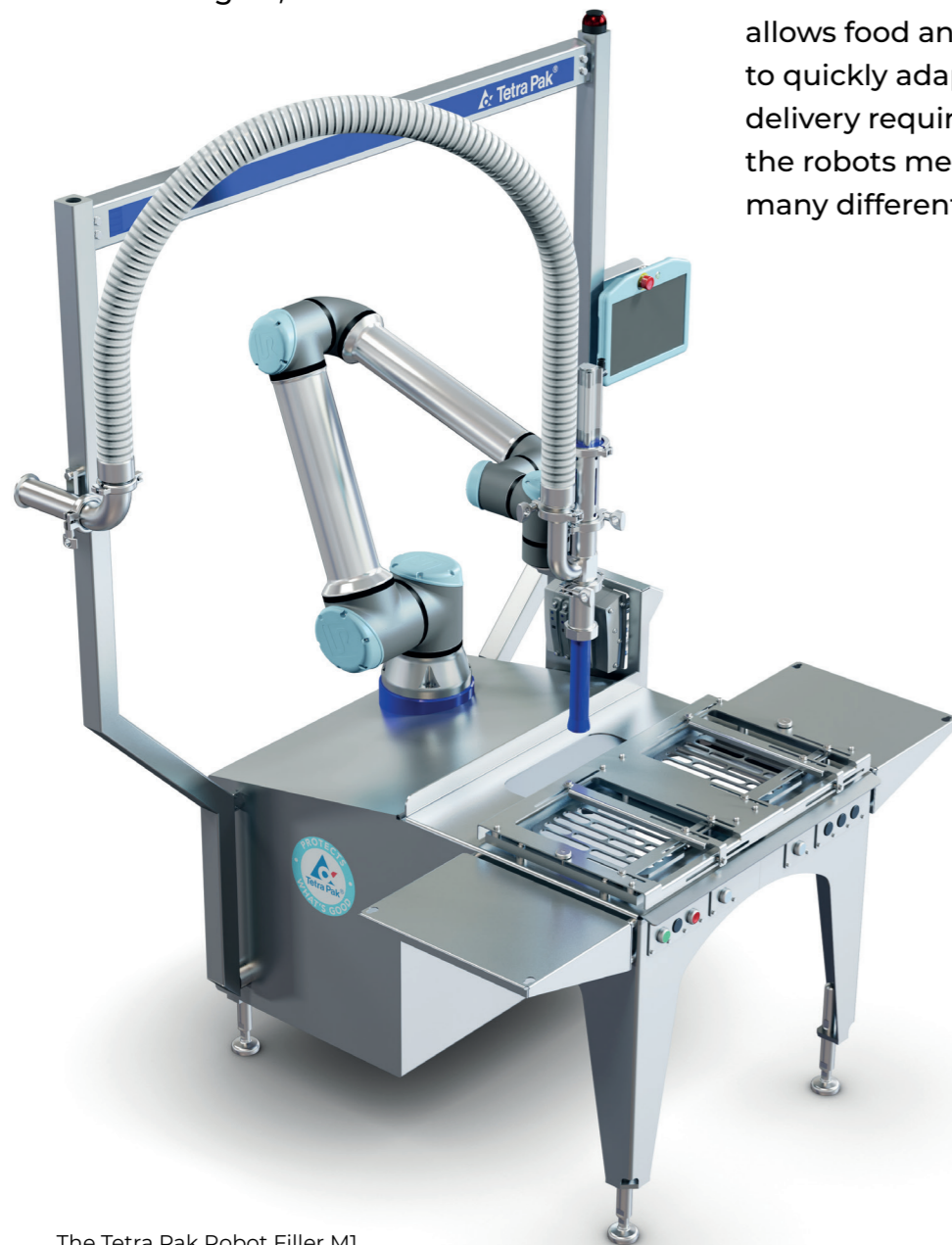
What is a collaborative robot?

A cobot, or collaborative robot, is a small user-friendly robot intended to interact with humans. They work physically close to people and perform tasks together with people. To do so, they are ergonomically designed with rounded edges and lightweight materials, and are often limited in speed and force. Robots are good at repetitive, monotonous tasks, such as loading a machine time and again, which

can lead to occupational injuries for an operator.

Automation with cobots is an innovation which especially benefits small and medium-sized companies. In industry in general, and particularly in the food and beverage industry, the need for flexibility and running smaller series is increasing.

Cobots are easy to program, which allows food and beverage producers to quickly adapt to new products and delivery requirements. The small size of the robots means they can be used for many different applications.



The Tetra Pak Robot Filler M1.



A best practice ice cream robot filling line for 2,400 litres per hour.

More info:

[Otelli website](#)

[Tetra Pak - Ice cream](#)

[TetraPak - Ice Cream Robot Filler M1](#)

[Contact TetraPak](#)



“I have known Tetra Pak for some time and their machines stand for high quality and are very reliable.”



Jaco de Vreugd, Managing Director of Otelli

This is Otelli

Otelli was founded in 1989 and is a premium ice cream and patisserie supplier in Haarlem, the Netherlands. The company has 65 employees and a turnover of 10 million euros. Otelli sells its products mainly to hotels, restaurants and catering firms nationwide. The company has 350 products in stock, and it manages its deliveries with its own trucks, delivering delicious desserts directly to some 1,500 customers.



