

## High-speed manufacturing line with mobile robots ensures customisation in seconds

*The oral hygiene manufacturer TePe has installed a new manufacturing line to replace its manual handling and quality inspection at their factory in Malmö, Sweden. A high-speed line from Omron comprising of 5 industrial robots, 2 mobile robots and 10 vision systems now enables TePe to increase the throughput by 9 times and customise packaging for clients all over the world within seconds.*

### The Challenge

TePe develops and manufactures high quality, functional oral hygiene products. The company's interdental brushes, toothbrushes, special brushes and dental sticks are used daily by consumers and dental professionals across the globe. However, one of the manufacturing lines was still operated partially manually and to ensure the ability to meet the customer demands, TePe was in the search for a high-speed manufacturing line.

The Malmö-based company already worked with Omron equipment and support. TePe was looking for a solution to replace an older manufacturing line, to deliver higher speed and throughput along with other benefits of Omron's smart automation solutions.

"TePe had a basic idea of the line, but this time around we didn't have time to build this line ourselves. As TePe vision experts already used Omron vision equipment on other machines at the TePe factory for the vision system for quality control. To use Omron vision was therefore an easy choice due to its speed and advanced tools," says Technical Manager at TePe, Ronnie Sik.

### The solution: mobile robots improve logistics and safety

System integrator PMA AB, an official member of Omron's System Integrator Partner Program, was chosen to handle the project from start to finish. In close cooperation with TePe, PMA chose a system to meet the company's expectations. It includes 5 robots, comprising 1 Omron SCARA and 4 Codian robots, and 10 vision inspection systems in one production cell together with numerous accompanying parts - all under the control of a Sysmac Machine Controller.



Mobile robots transport items between various machines as well as from stock to the manufacturing line.

Since implementing and phasing-in the new line, TePe has so far added two Omron LD mobile robots in order to reduce logistics costs and increase safety in the factory. The mobile robots transport items between the various machines as well as from stock to the manufacturing line thus relieving employees from repetitive tasks while improving logistics, safety and efficiency. In the following 6 months, 8 additional mobile robots are to be implemented in TePe's production.

"The mobile robots bring a huge improvement regarding safety. Driving forklifts pose a potential risk of accidents that we wish to remove, and at the same time we can remove conveyors that are often in the way. The mobile robots also make the production more flexible as we don't need to move expensive conveyors around if we change the layout in the factory," says Ronnie Sik.

All these components combined ensure a complete, integrated and smart solution – an example of Omron's 'innovative-Automation' concept, which aims to provide customers with intelligent, integrated, and interactive solutions that support and accelerate adoption of the digital factory.

### The benefits: Flexibility is a key factor

The new line meets the primary specification of processing 300 toothbrush packs per minute – 9 times the throughput of the previous line. Each pack can contain up to 8 pieces, either all of one type of product or a mixture. Therefore, the pieces are delivered by 8 different feeders after which the robot follows 'recipes' to select the correct number of each piece to go into a pack. Recipes can easily be changed depending on the specific demand.

"The automated solution has replaced manual handling and quality inspection so flexibility was a key factor. With the new machine, TePe can supply customized packaging for our customers all around the world. The change in recipe takes seconds, and if a customer wants a special mix of products, TePe can now supply this much faster", says Ronnie Sik.

### One supplier, one solution

"One of the key takeaways from this project is how customers such as TePe appreciate our ability to provide them with complete systems," says Martin Brolin, Marketing Manager, Omron Sweden.



*A high-speed line with 5 industrial robots, 2 mobile robots and 10 vision systems enables TePe to increase the throughput by 9 times and customise packaging within seconds.*



*The mobile robots also make production more flexible.*

"One supplier, one solution. We are the only company to make every component for this type of solution. All our products are designed to work with each other, so integration is simple and comprehensive. The result is a complete solution that delivers assured interactivity and smart operation to help businesses approach the future with confidence," Brolin adds.

## ROI of 14 months

The Omron solution has now been in operation for one year, and it is thus time to evaluate. "Our TePe vision experts can improve the machine with more quality controls when we receive new demands from dental professionals. As the hardware and the software of the machine are so flexible, TePe will be able to use the machine for many years to come. The ROI was expected to be about 14 months, but the most important factor is that TePe can fulfil our existing and new customer demands very quickly, which has been a key factor for the annual growth of TePe," says Ronnie Sik.



*The new line meets the primary specification of processing 300 toothbrush packs per minute.*

### About TePe Oral Hygiene Products

TePe Oral Hygiene Products is a Swedish company founded in 1965. The TePe range of interdental brushes, toothbrushes, and dental sticks is developed in collaboration with dental experts with the aim of promoting good oral health. All design, development, and production take place at the headquarters in Malmö. The products are marketed by subsidiaries in eight countries and distributors in over 60 countries, and available primarily through dental practices, pharmacies, and retail. TePe has 340 employees and turnover of MSEK 750 (2018).

### About Omron

Omron Corporation is a leading industrial automation company that leverages its core sensing & control technologies to expand into businesses, such as control components, electronic components, automotive electronic components, social infrastructure, healthcare, and the environment. Omron was established in 1933, and has around 30,000 global employees, offering products and services in over 120 nations and regions. In the industrial automation business, Omron is contributing to making an affluent society by offering automation technologies which drive innovation in manufacturing as well as products and customer support. For more details visit: [industrial.omron.eu](http://industrial.omron.eu).