



Omron helps oral hygiene product manufacturer develop complete robotic solution to improve quality, flexibility and safety

TePe Oral Hygiene Products is a Swedish company founded in 1965 and located in the city of Malmö. As a leading supplier of a broad range of dental products – including toothbrushes, dental floss, implant care kits and more – as well as packaging for oral hygiene, the company is known for its commitment to high quality.

TePe produces everything in Malmö and sells its products throughout the world, reaching a total of 65 countries. Since the company wants to keep all production in Sweden while selling globally, automation is very important. In 2019, TePe decided to develop a high-speed manufacturing line to better keep up with production requirements.

The company chose Omron to develop a full robotic automation solution. TePe already used Omron's vision equipment at other machines in the Malmö factory, and the decision to use Omron's full automation solution was an easy choice thanks to the easy integration of the full automation platform. TePe also valued the support for flexible manufacturing and the ability to get everything from one source.

The new line includes industrial robots, mobile robots and vision systems and has contributed to significant improvements in quality, safety and efficiency. TePe is planning to use Omron's equipment as the basis for a brand-new factory in the near future.

Business need

A Swedish manufacturer of oral hygiene products needed a new high-speed production line in order to keep up with production demands while remaining flexible enough to respond quickly to market changes.

Unique solution

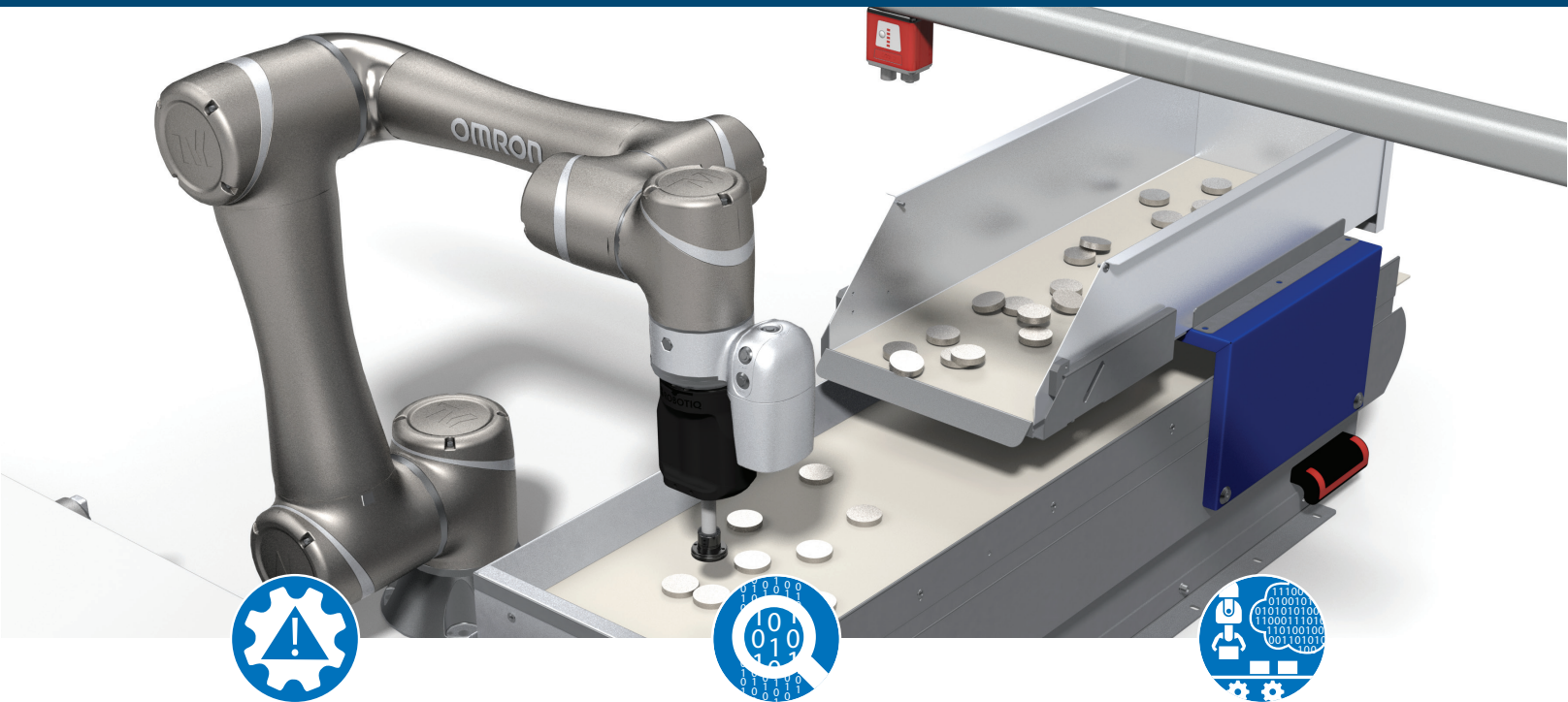
Omron built a complete solution using a variety of robotic and vision technologies – with a spotlight on mobile robots – that operates 24/7 and follows programmed recipes that can be customized in a matter of seconds.

Customer benefits

Thanks to major improvements in quality, safety and efficiency, the company saw a return on investment in just 14 months and was able to achieve a level of factory flexibility that had previously been impossible.

The solution

Omron flexible manufacturing application



The need

TePe wanted a new manufacturing line to deliver higher speed and throughput compared to the old manufacturing line. In order to keep all production in Sweden, the company needed to replace manual processes with automation. However, it was also important that the automated solution be flexible enough to accommodate rapid changes in production requirements.

In addition, the company also wanted the new system to enhance the safety of its team. By automating cumbersome manual activities, like transporting boxes to a palletizer, TePe could significantly reduce potential hazards to employees.

Ease of integration was a major requirement. TePe sought a complete automation solution from a single supplier in order to eliminate the need for complex handshaking between equipment coming from different OEMs. For this reason, Omron's ability to provide a fully integrated, end-to-end solution was a strong selling point.

The technology

Using robotic and vision technologies, Omron put together a complete flexible manufacturing application that produces toothbrushes and dental sticks and operates 24/7. The robots – both industrial and mobile – follow programmed recipes that can be easily changed, so TePe can customize packaging in seconds.

Omron's AnyFeeder device flexibly feeds products to the SCARA robot, which then picks and places them on a conveyor. Parallel robots use integrated vision to sort the dental sticks based on color and type. LD-90 mobile robots move product boxes to different locations and transport secondary packaged products up and down elevators to a conveyor at the shipping dock.

Since Omron's mobile robots can self-navigate throughout dynamic and peopled environments without predefined pathways, many of TePe's conveyors could be removed. The LD robots enhance flexibility by making it easy to change transport requirements on the fly.

The outcome

With the new solution, TePe saw a return on investment in just 14 months, along with major improvements in quality, safety and efficiency. The company has achieved a new level of factory flexibility that had previously been impossible. TePe can easily reprogram machines to add more quality controls and can process 300 toothbrush packs per minute, increasing throughput 10x versus previous manual line. This allows the company to fulfill new and existing customer demands very quickly and boost its annual growth.

In particular, the mobile robots have worked wonders on the factory floor. By eliminating the need for conveyors, these robots dramatically bolstered the flexibility of TePe's materials transport system. In addition, the mobile robots improved plant safety by taking over tasks that once required the use of manual forklifts. TePe's goal is to eventually get rid of its manual forklifts completely and just use mobile robots.

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