

Quiet and efficient robotics solution enables flexible production

At bottle manufacturer

Ganahl, Swiss manufacturer of bottles for the cosmetics, food and pharmaceutical industries opts for eCobra robots, feeding solution, vision technology as well as NX1 controller for holistic robotics support from Omron.

In a competitive environment, providing reliable quality is more important than ever. This applies to producing high-quality products as well as high-quality packaging. Swiss-based Ganahl AG is specialized in the production of bottles, containers and jars with a capacity of 1.5 ml to 250 ml in all conventional thermoplastic resins, while ensuring the highest possible quality. To achieve this, they use injection blow molding machines (IBM) and blow moulding tools that are developed and manufactured in-house, as well as the eCobra Scara robots from Omron. Omron's integration partner JKS Engineering AG, a full-service provider from design to production of production facilities, provided expert advice for the implementation.



As a member of the Heinz Plastics Group, Ganahl produces more than 300 million bottles, containers and jars each year, for anything from yoghurt drinks to nasal drops. The containers produced by Ganahl AG are sometimes hot-stamped, and used for example in the cosmetics industry for high-quality make-up and personal care products. Other applications are in the dietary supplement and pharmaceutical industry. The company's products are manufactured on 24 IBMs around the clock. There are 160 tools that can be used flexibly on 27 machines, allowing a high degree of adaptability in machine allocation. „When implementing complex jobs, we count on reliable machines and tools combined with comprehensive process knowledge. Our customers benefit from high process reliability and quality. „Parts feeding during hot stamping is usually loud and inflexible. We have been able to greatly improve this with the solution from Omron and JKS, „says Ralph-Christian Frank, CEO of Ganahl AG.

The universal robotic cells based on Omron technology can be used over and over again.

Fast and adept response to the challenge

Contact with Omron was made at Hannover Messe in 2018: „This was the first time that we became aware of Omron’s equipment and technologies. We described our requirements and received an answer within a few hours. At the same time, JKS was recommended as a partner. Both the technology and the speed of support have really impressed us,” explains Mr. Frank. The differently sized hollow-bodies work pieces, which are part of Ganahl AG’s day-to-day business, have so far been fed through in a vibratory or bowl feeder. This is to ensure that the bottles are in the right orientation for reliable and correct printing. The loud bowl feeders vibrate continuously and are designed separately for each article.

Excellent cooperation for a unique robotic solution

Omron quickly realized that the automation and project goals were very ambitious. In just five months, a new robot cell needed to be in action. „Such a project can only be carried out with a well-functioning team. We are delighted that Ganahl, Omron and our integration partner JKS have succeeded in jointly developing the unique robotic cell within a very short time and implementing it in record time. Partner choice and such projects are very much a matter of trust. We therefore thank Ganahl and Omron for their confidence in us,” says Jürg Schulthess, CEO and owner of JKS Engineering AG and Neuma AG.

In the selection process, the project managers at Ganahl compared four system providers and five robot manufacturers. „The willingness and flexibility to address our needs and desires was clearly the greatest at Omron,” says Mr. Frank. In addition, other systems turned out to be too cumbersome, inappropriate or too expensive. „We conducted feasibility studies with around ten Ganahl products to test and show how Omron can best support them. With Omron, Ganahl benefits from a complete camera technology solution paired with robotics and software, as well as solid support,” said Bruno Meister, Field Sales Engineer Automation and Drives at Omron.

The benefits of gentle robot power for flexible production

Ganahl opted for Omron’s eCobra robot, which is set to gradually replace the noisy and inflexible vibratory feeders. The new solution allows products to be easily changed several times a day. In addition, the device is equipped with a camera that automatically detects the position of

the parts and feeds them correctly one-by-one to the machine. Compared to the old situation, Ganahl does not need to do manual resetting anymore, which cost a lot of time and effort for each new part. The old solution also required a lot of space and hardware since each bottle required its own bowl feeder. Furthermore, the devices that Ganahl used prior to Omron technology were much more prone to errors, the reject rate was higher and the process less stable. The eCobra robot feeds the machine up to 2,500 bottles per hour. Its working radius is 600 mm. Omron’s NX1 modular machine controller provides flow, motion and information control. It combines the operation technology from the areas of production with IT, and reduces the development and maintenance costs, making middleware unnecessary.

Thanks to the Omron system, Ganahl can operate much faster and more flexibly than before. Different bottles can be fed more efficiently to the machine. Changeovers are easy, no matter which bottle size is needed. In the new process, only the recipe needs to be adjusted when a new bottle is to be fed. The precision with which the Omron robot grips the individual parts and feeds them to the machine is impressive. „The surface of the bottles is delicate. A vibratory feeder or an unsuitable robot arm can quickly cause scratches or other damage. Of course, this should be avoided. The single picking with the robot is much gentler than a bowl feeder,” explains Mr. Meister. Using a simple gripper, every single Ganahl item is picked out of a variety of items, and placed on the conveyor immediately and gently.

Universal cell design provides a robotic solution for various applications

„We have developed a design for universal robotic cells, based on Omron technology, that can be used over and over again. Within a few months, the first system was delivered to the customer,” adds Jürg Schulthess, CEO of JKS Engineering AG. Ganahl was able to rely on an experienced contact person for all matters relating to the overall solution, both in terms of the robotics as well as operation, drive technology and safety.

Omron’s eCobra robot is currently in operation in a pilot project at Ganahl. Due to the positive experience, the project managers plan to extend the use of the device in the future, so that the system will run 24 hours a day. In the coming years, the company would like to use even

more Omron systems. „We had very high demands on quality and execution. That’s why we’re glad they were implemented so well. Other customers that have seen this system are also very interested,“ Mr. Frank sums up. „Especially in terms of efficiency and the gentle parts handling, the new technology at Ganahl scored points, and our pricing is also interesting. A thoroughly successful project.“



About Ganahl

Ganahl AG was founded in 1988 and is based in Volketswil, Switzerland. The company employs 48 people. With its self-developed and manufactured injection blow molding machines (IBM) and blow moulding tools, Ganahl produces bottles, containers and vessels with a capacity of 1.5 milliliters up to 250 milliliters from all common thermoplastic resins in excellent quality. Ganahl produces around 40 molds per year and about 300 million bottles, which are delivered to Switzerland, as well as across Europe, Asia and America. For more information, visit www.ganahl.ch.

About JKS

“Transforming your good idea into great solutions“. This is the motto of the rapidly growing Swiss engineering company JKS with branches in Nänikon and Wetzikon in Switzerland. As a PTC distribution partner, JKS offers Augmented Reality, IoT and Industry 4.0 solutions. Hundreds of special machine and automation solutions have been successfully realized with the JKS subsidiary Neuma AG over the past 25 years. Further information at: www.jkse.ch, www.neuma.ch or www.jks.swiss.

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 39,000 global employees, offering products and services in over 110 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 detail, industrial.omron.eu.