

Picomel looks to the future with a visionary production line

Vertical factory saves space and energy while reducing waste

Some companies lead the way in terms of being visionary and making use of the latest technology. One such organisation is Picomel Nutrition, based in Zeewolde, The Netherlands. Picomel develops and produces high quality, private label bottle food for babies, toddlers and pre-school children. It provides the packaging and also produces a unique private label formula for babies who need a special diet. Some 40% of Dutch infants are given nutrition developed by Picomel.

Jan Kees Verhage, founder of Picomel, envisioned and designed the company's 'vertical' factory. It's the only factory in the Netherlands to gain a 'BREEAM-NL Outstanding' sustainability certification. His creative vision meant that he also wanted to develop the machine of the

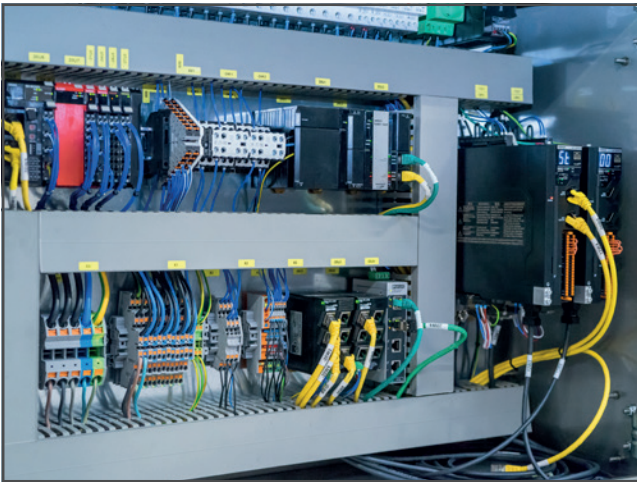
future – today. To achieve this, he enlisted the help of machine builder Van Mourik, along with automation technology from OMRON Industrial Automation.

Jan Kees comments: *"We were looking for a company that could help to provide a total solution for automation. We also needed strong technical support, from proof of concept until realisation of the project. Van Mourik recommended OMRON to us, and OMRON's solutions provided the answers needed for the challenges we faced."*

Setting the standards for the new machine

Picomel, Van Mourik and OMRON worked closely together to develop a new type of machine. To adapt to the challenges and issues in the market, Picomel devised a set of





requirements for the machine that he wanted to build. It needed to be high capacity but with a small footprint and fast changeovers. It had to be able to handle multi-format products and various can sizes. It also needed to be intuitive, so that operators wouldn't have to go through an intensive period of complex training. Finally, it needed to be scalable, with no waste and less noise than comparable machines.

Jan Kees explains the reasons behind the criteria he set: *"The market for private label infant nutrition in smaller batches is very demanding. Customers increasingly want products that are produced sustainably. Picomel is a vertical factory: no pneumatics are required and fewer machines for transporting items are needed, thanks to gravity. We start with the raw materials and end with a packed product. Less energy is required for production, as the heat from the process area is used to warm up the office area. And solar panels generate enough energy to operate the heat pump, so a natural gas connection isn't needed."*

"At the companies where I used to work, operators needed long, extensive training to change over machines. Changeover times were high (up to two days) and expensive, and highly qualified staff were required. My goal was to reduce the changeover time to minutes rather than days. By automating the total production process, only two operators are now needed in the production area. This guarantees maximum hygiene and the elimination of human errors."

Creating the new machine

He adds: *"Every extra metre square of footprint has its costs. We wanted to reduce space and costs by building a vertical factory. We also needed more compact machines. We therefore got together with machine builder Van Mourik and OMRON's*

technological experts. The result was a Servomatic machine. This is a fully integrated can powder filling and seaming machine that boasts the world's smallest footprint (6m²) whilst providing a high output. A traditional factory would need four to five times more space to achieve the same capacity."

OMRON was involved throughout the project, from the first meeting right through to after-sales support. The company enjoyed a strong working relationship with both Picomel and Van Mourik. OMRON's Project Manager, Ronald Mol, says: *"Picomel's vision perfectly matches OMRON's new long-term vision 'Shaping the Future 2030' and is in line with our i-Automation! manufacturing concept. This very creative project effectively represents a focus on the complete manufacturing ecosystem."*

Martin Dannenberg, Managing Director at Van Mourik Yeast & Packaging comments: *"After in-depth analysis, we discovered that we needed servo technology to properly control this process. Thanks to this control, and the fact that the machine is relative easy to convert to other formats, we can achieve vertical start-up. This means going from zero to full operational capacity in a very short period of time."*

The Servomatic is a compact, cost-efficient machine based around OMRON's servo technology. All the processes are intuitive and automated. It provides easy format changes with servo-controlled seaming recipes, as well as easy control over vacuuming and gassing curves through an intelligent valve design. There's no need for pre-gassing or the use of carbon dioxide, and no waste or reworking when the module or line stops. Weight controlled can filling ensures increased filling accuracy, and each individual seam is inspected for quality control. In addition, the integrated



SQL client in the OMRON PLCs enables direct communication with the database.

A more productive but also eco-friendly machine

The first Servomatic machine was installed by Picomel several years ago. Recently, the company has built another factory next to the first one, again equipped with a Servomatic machine. Picomel and Van Mourik are now open to selling Servomatic machines to help their peers in the market. A third and a fourth factory is planned for Picomel in the near future.

Jan Kees Verhage comments: *"With the Servomatic machines, we can move towards carbon neutrality as no CO2 is required: less energy is also required for the machine and the accurate packaging has significantly reduced food wastage. The Servomatic machine gives us more flexibility in production and*

creates a more employee-friendly workspace. It provides a higher throughput, more consistent quality and better cost-efficiency at a smaller footprint than comparable evacuation, gassing and seaming machines."

He concludes: *"This is a modular system and it's easy to configure up to 75 cans per minute. The machine is perfectly suited for small batches and specialities. Because of its modular construction, this will make life much easier when a factory needs to expand – the machine will grow instead of needing to be replaced. The Servomatic provides total control through OMRON's servo technology and helps improve flexibility in production while contributing to a energy conscience and employee-friendly workspace. Throughout this project, I've been impressed by OMRON's commitment to improving lives and contributing to a better society, together with the quality that OMRON provides."*

About Picomel Nutrition BV

For more information, please visit: www.picomel.nl

About Van Mourik Group

For more information, please visit vanmourik-group.com

About OMRON Corporation

OMRON Corporation is a global leader in the field of automation, based on its core technology of "Sensing & Control + Think." OMRON's business fields cover a broad spectrum, ranging from industrial automation and electronic components to social infrastructure systems, healthcare and environmental solutions. Established in 1933, OMRON has about 29,000 employees worldwide, providing products and services in some 120 countries and regions. In the field of industrial automation, OMRON supports manufacturing innovation by providing advanced automation technologies and products, as well as extensive customer support, to help to create a better society. For more information, visit OMRON's website at industrial.omron.eu.