

Automated fish filleting solution ensures quality and cost efficiency at Seafood Parlevliet

The fish manufacturer achieves 75% reduction in manual labour and up to five times the speed with the automated production line. The solution created by Innovotech BV, a local automation partner, includes control and vision systems from Omron, and enables the company to preserve competitive production in the Netherlands.

Raw brined herring is an acquired taste and holds a special place in many Dutch people's hearts. Combined with a sprinkling of raw onions, many say that taking a big bite of the herring vertically, holding onto the tail of the fish is the only right way to eat it. However, this poses special requirements during the filleting process, as the tail of the fish needs to be preserved, in addition to demanding quality requirements.

Seafood Parlevliet has produced packaged fish products since 1968 at their family-owned factory at the harbour of IJmuiden, in the Netherlands. Specializing in fish delicacies such as herring, mackerel and fried fish to the European market, they are a market leader in the retail sector and also supply to the wholesale trade and the healthcare and catering markets.

The Challenge

Filleting herring usually involves several manual steps, and for example skinning the fish could only be done by skilled and experienced workers. In Northern Europe, it is especially difficult to find the right people for the job. In addition, the seafood market in the Netherlands is very competitive.

To ensure efficient and competitive herring production for Seafood Parlevliet, Innovotech BV, a local automation partner, started developing a new prototype to automate the manual steps in the process, such as skinning and scraping the fish. In addition, the fish needed to be cut to the right size, while keeping the tail. High quality, safety and hygiene needed to be ensured throughout the entire process.



Automation has so far resulted in 75% reduction in manual labor.

The Solution

As the herring needs to be frozen for a minimum of 48 hours due to health regulations to ensure that no parasites are present, Seafood Parlevliet stores the fish in a frozen warehouse in bags of brine. This also ensures that the fish can be harvested at the best time in the summer, and prepared based for consumers on demand. Once thawed, the herrings go through the automated filleting process in several steps. The solution also includes adding the diced onions, as well as placing the fillets into their final packaging ready for consumers.

Since the introduction of the first prototype, and learning from the vast amount of data collected throughout the development process, the speed of fillets handled by one worker per hour has gone up from approximately 200 per hour during the manual process, to up to 1000 per hour with the latest version of the automated solution.

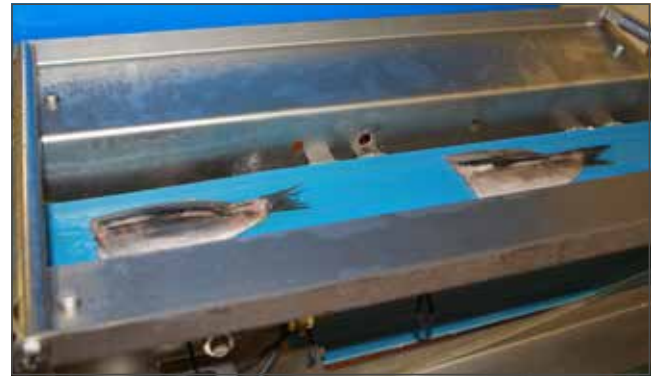
In March 2018, the factory went through a complete rebuild to automate the entire production line, with three lines now in operation. This has so far resulted in 75% reduction in manual labor for Seafood Parlevliet, with the pick and place of the fish to the production line now as the only manual step in the process.

The automated production line includes various Omron components, such as frequency regulators, servo drives, feeding solutions, safety blocks as well as the brain of the machine in the panel solution. The panel building for the electrical control of the system was carried out by A. Hagoort Besturings techniek, a specialist in machine control solutions.

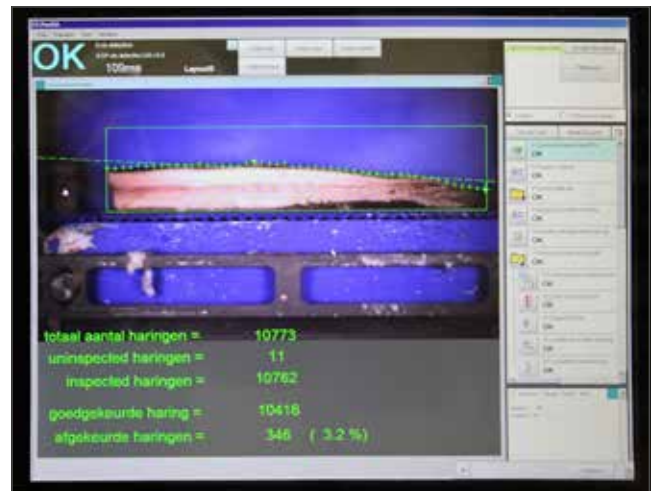
In addition, Omron FH vision system and cameras, paired with lighting and bespoke machine vision software, were implemented to carry out several vision checks during the process. The inspection ensures that the appearance of the fillets meets the high quality standards of the company, so that for example no traces of blood are present, and that the skin and fins of the fish consistently meet the customer requirements. Any fish that does not meet the requirements will be removed from the production line.

The Benefits

“We believe that finding the perfect technical solution using the best components available has resulted in the perfect solution also in terms of quality and economics,” said Rick



To ensure efficient and competitive herring production, Innovotech BV developed a new prototype to automate the manual steps in the process.



With machine vision, 100% quality of each fillet that goes through the production line can be ensured.

van den Berg, R&D Manager at Innovotech BV. “Thanks to continuous development, the high-quality components from a single source, and the vision expertise of Omron, we have been able to automate the filleting and packaging operation. The machine can now handle any type of herring with high precision and accuracy, while ensuring consistency for the customers,” Van den Berg concludes.

“With machine vision, we can help ensure 100% quality of each fillet that goes through the production line,” said Mark van den Hoek, Sales Engineer at Omron. “During the development process, we have actually supported Innovotech and Seafood Parlevliet in identifying potential quality issues with specialized machine vision.”

The Future

"With the experience gained from this project, we are now looking into new automation opportunities together with Seafood Parlevliet," Van den Berg comments. "I can assure that also the future projects will be fulfilled with Omron equipment. We have been very happy with the support from Omron, and the benefits that we have and will be able to realize together for Seafood Parlevliet. We look forward to working together, to ensure competitive local production at the highest quality."

About Seafood Parlevliet

Seafood Parlevliet has been producing packaged fish products such as herring, mackerel and fried fish since 1968. They are the market leader in the retail sector, serving the wholesale, healthcare and catering markets. They process the fish at their production locations in the Netherlands, Norway and Denmark. As a family business, they are invested in their products, employees as well as the working and living environment. www.seafoodparlevliet.nl

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 36,000 global employees, offering products and services in over 117 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.