



case study

tna helps frozen seafood manufacturer to double packaging speed



Frozen seafood manufacturer, Whitby Seafoods Ltd has been able to double its packaging speed by installing a new packaging and distribution line from processing and packaging equipment provider, tna. The investment has enabled Whitby Seafoods to meet rising consumer demand by providing additional capacity and seamless integration between systems, helping to save time and increase efficiency.

background: portfolio expansion

Based in Whitby, a traditional fishing port in North Yorkshire, UK, Whitby Seafoods Ltd is a leading producer of frozen seafood products. A growing family company, Whitby Seafoods specialises in locally sourced langoustines – or scampi – that are breaded and sold in bitesize portions. A recent rebrand has meant that the company updated its packaging design to appeal to an even wider audience. New pack sizes range from between 200 and 300 grams in a standard pillow bag format. Whitby Seafoods therefore required a flexible packaging and distribution system that would allow it to expand its product portfolio and allow efficient product changes and integration with existing elements of the production line.

a tna case study

challenge 1: faster packaging speeds

As a growing manufacturer, Whitby Seafoods was looking to increase capacity with a third packaging line. It chose to install the **tna** robag[®] FX 3ci – a vertical, form, fill and seal (VFFS) packaging solution that would allow consistent high quality at a fast speed for a range of bag sizes.

Simon Hill, regional sales manager at **tna**, comments: “Packaging line speed is crucial to maintaining food safety with frozen foods like seafood. While the two existing production lines operate at 70 bags per minute (bpm), the new line works comfortably at 140 bpm, effectively doubling product throughput. This now helps Whitby Seafoods to ensure products are processed as quickly as possible.

With growing consumer demand for new and exciting products, Whitby Seafoods needed a flexible packaging system that would allow them to enhance production capacity. **tna**, renowned for delivering the fastest vertical form, fill and seal packaging speeds in the industry, enabled the company to double its production speeds, while also improving product quality. The installation exceeded the frozen seafood manufacturer’s initial objectives in terms of packaging speeds, which are integral to the company as it grows in the future.

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solution 1: high-speed packaging

tna's robag[®] FX 3ci was chosen thanks to its ability to deliver a high-quality finish to Whitby Seafoods' packaging. With a rotary jaw design that uses advanced sealing technology for improved seal integrity at high speeds, the new system helps to deliver a consistently appealing end product. The compact design, including a shorter bagging system height and small footprint, was ideal for the low ceiling in the Whitby Seafoods factory. With the ability to walk around upstairs, operators have better visibility of the line and therefore stricter quality assurance standards. The new equipment also has a user-friendly interface, making it simple and easy to operate. This will help Whitby Seafoods to save significant time regarding ongoing operation and training in the long-term.



Helping to realise further performance benefits, the packing system was fitted with the **tna** intelli-weigh® omega 314 multi-head weigher. With capabilities for a 2,200 kg per hour in-feed to the packaging system, it was imperative any upstream equipment could keep up with the fast speed of the bagger. The integration of the **tna** intelli-weigh® omega 314 allowed for high speed weighing with superior precision.

Due to the frozen nature of the Whitby Seafoods' product range, it is crucial to maintain a continuous production process and keep the product moving throughout the line to avoid thawing. Lengthy stoppage times for a film or product changeover can therefore compromise food quality and safety, as well as increase wastage. Quick changeovers save valuable time, and ultimately help to maintain high food safety standards. The **tna** robag®^{FX} 3ci and its simplified film system for easy film threading and high accuracy control has improved efficiencies at Whitby Foods by reducing film waste and cutting changeover procedures from two minutes to 30 seconds.

challenge 2: reducing production downtime

Key to improving efficiencies was achieving the smooth transfer of products from one part of the production line to the next. Whitby Seafoods was keen to improve product storage methods between different systems to minimise production downtime.

Previously, the company was faced with the time-consuming and costly process of transporting product from the production line to a freezer facility to prevent the product from thawing while on the production line.

solution 2: flexible distribution system

Installing the **tna** roflo®^{VM} 3 vibratory motion distribution system with integrated controls was found to be the perfect solution. Feeding into the **tna** robag®^{FX} 3ci, the distribution system has helped to increase product throughput, by providing an additional on-line storage facility. This is achieved by allowing product to accumulate on the conveyor for up to twelve minutes, without the need for additional storage space. Previously, dwell time was as low as two to three minutes. The result is an increased 'buffering' time, which allows for short, unplanned production outages.

Constructed from food-grade stainless-steel, the **tna** roflo®^{VM} 3 is also ideal for use in frozen food environments. Able to withstand the harsh cleaning agents and frequent high-pressure washdowns required when working with frozen food products, the conveyor can be easily cleaned to reduce product residue build-up and optimise hygiene levels. Similarly, the **tna** robag®^{FX} 3ci was customised with stainless steel parts and a parabolic throat metal detector to ensure the highest possible safety standards.

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Total project management from a single source

Working with just one supplier can make installation processes much simpler. **tna** implemented the additional packaging line within a short timeframe of five months, providing Whitby Seafoods with the high-performance solutions they were looking for, while also delivering full integration with existing equipment.

A key consideration for the installation was that operations between the new and existing lines would be seamless. To achieve full integration, **tna** trialed how the new installation would work in the factory as part of the wider production process. As part of this process, the team carried out extensive 3D modelling, to ensure the system was tailored to exact requirements. This also helped to ensure the system was up and running as quickly and efficiently as possible.

Hill also comments, "There are numerous benefits of having a single source supplier. Not only does it save Whitby Seafoods time by simplifying the implementation process, but ongoing customer service becomes much easier as there is one point of contact for everything, such as spare parts, after-market support and warranty services. We have provided Whitby Seafoods with optimum line efficiency that goes above and beyond their key requirements."



tna is a leading global supplier of integrated food processing and packaging solutions with over 14,000 systems installed across more than 120 countries. The company provides a comprehensive range of products including materials handling, processing, cooling and freezing, coating, distribution, seasoning, weighing, packaging, inserting and labelling, metal detection, verification and end of line solutions. **tna** also offers a variety of production line controls integration & SCADA reporting options, project management and training.

tna's unique combination of innovative technologies, extensive project management experience and 24/7 global support ensures customers achieve faster, more reliable and flexible food products at the lowest cost of ownership.