case study

tna helps premium crisp manufacturer double packaging speeds and reduce waste

Gourmet crisp manufacturer, Pipers Crisps Ltd, has doubled its packaging capacity and reduced waste thanks to the installation of high speed packaging solutions from tna. The new installation has enabled Pipers Crisps to increase productivity, while maintaining the highest level of product quality through enhanced seal integrity.

background: meeting increased demand

Based in Brigg, Lincolnshire, UK, Pipers Crisps was established in 2004 by three farmers who joined forces to produce great tasting, quality crisps using local potatoes. Today, its award-winning products, recognised nationally for their unique and bright packaging design, are distributed throughout the UK, as well as exported to Europe and the US. Following a period of impressive growth in the past two years and rising popularity of its products, Pipers Crisps needed to add new packaging lines to its existing packaging fleet to cope with the additional demand.

challenge 1: maximising throughput

With existing equipment achieving throughput speeds of only 80 bags per minute (bpm) for its smaller bags, Pipers Crisps needed to substantially increase bagging speed. In addition, the crisp manufacturer needed a packaging solution that could switch between two different pack sizes – 40 and 150 grams – of high quality pillow bags, without lengthy changeover times that would slow down or even stop production.

solution 1: high-speed packaging with superior flexibility

The premium crisp manufacturer opted for two **tna** robag® FX 3ci vertical, form, fill and seal (VFFS) packaging solutions. These high speed baggers feature the world's shortest vertical product transfer from the scale to the pack, helping to maximise packaging performance. With its lightweight formers, unload assist and twin film spindle, the flexibility of the **tna** robag FX 3ci makes changeovers fast and easy, enabling operators to easily switch from one bag size to another on the same packaging line. The new setup allows Pipers Crisps to package a variety of bag sizes at speeds of up to 140 bpm, resulting in a 75% increase, in line with the company's capacity uplift.

challenge 2: assuring quality with superior seal integrity

The Pipers Crisps brand is renowned for its premium positioning. In such a highly competitive market, quality is crucial to help differentiate brands on retail shelves. It was therefore important that the chosen packaging solution could maintain seal integrity and reliably produce high-quality bags that do not compromise the shelf life of the product within it.

"During the packaging process, pieces of crisps can get caught in the bag seal, compromising seal integrity and reducing the shelf life of the product. When this occurs, it can often lead to product rejects and waste," explains Simon Hill, regional sales manager at **tna**.

"Before the installation, we experienced 3% wastage at 80 bpm, as we had to manually detect and remove any bags with compromised end seals or pleats before they entered the packaging area. Now, our wastage is down to 1% at 140 bpm – which has surpassed our expectations. As a result, it has helped us gain better control over product losses and achieve operational cost savings, while contributing to quality assurance."

solution 2: integrated seal detection technology

With its innovative rotary jaw design and advanced sealing technology that offers improved seal performance at high speeds, the **tna** robag FX 3ci proved to be the perfect solution. Featuring patented stripper tube closures, the completely integrated packaging system allows for better control of the product through the packaging and filling cycle, therefore helping to control dust generation and minimising crumbs in the end seal of the bag.

The **tna** robag FX 3ci was also customised with product-in-seal-detection (PISD) software that monitors product in the seal and jaw area. If seal integrity is compromised, the system immediately alerts the operator so that bags can be quickly removed from the line for further inspection. That way Pipers Crips is able to ensure that each bag meets the highest quality standards while keeping waste to an absolute minimum.

Richard Mottram, factory manager at Pipers Crisps, comments: "Before the installation, we experienced 3% wastage at 80 bpm, as we had to manually detect and remove any bags with compromised end seals or pleats before they entered the packaging area. Now, our wastage is down to 1% at 140 bpm – which has surpassed our expectations. As a result, it has helped us gain better control over product losses and achieve operational cost savings, while contributing to quality assurance."

complete customer service

"When we first started looking for a VFFS packaging solution to expand our existing fleet, **tna** was the first name that came to mind," explains Mottram. "We were initially attracted to the high speed capability and unparalleled product quality. During the project, we were impressed with **tna**'s forward-thinking attitude and level of support – from specification and project scoping, to trial and implementation."

"Installing two new packaging lines into an existing fleet can be challenging. Taking the time to extensively trial how the **tna** equipment would integrate alongside existing systems was therefore crucial. Once we fully understood Pipers Crisps' needs, we were able to tailor our systems to fit specific requirements, providing them with flexible, high performance solutions that would meet their long-term production needs," adds Hill.

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He continues: "The **tna** robag tends to be shorter and more compact than other systems, making it ideal for factories that are limited in floor space. In comparison to other plants, however, Pipers Crisps had a significant amount of ceiling height available, which meant we had to tailor the equipment to fit. We therefore installed the system on 500mm stainless steel plinths to work with the existing distribution and weigher gantry configuration. The solution allowed a smooth transfer of products, delivering full integration with existing equipment."

tna is a leading global supplier of integrated food processing and packaging solutions with over 35 years of industry experience and 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.