



a **TNA** case study

100% increase in packaging speeds

TNA helped a leading biscuit manufacturer double packaging speeds and assure quality. A new installation at Burton's Biscuits enabled the company to improve production efficiency, increase output, and reduce waste, all while maintaining the highest levels of product quality.



**BURTON'S
BISCUIT CO**

mini cookies

Burton's Biscuit Company is a leading manufacturer of a wide range of sweet and savoury biscuit types, including some of the UK's best loved biscuit brands.

background

meeting consumer demand for portion-controlled snacks

Growing health-consciousness amongst consumers has driven increased demand for small bags of portion-controlled snacks, a trend that has steadily increased in the last few years. To meet this demand, Burton's recently introduced a range of under 100 calorie portion-controlled pack sizes. The new single portion pillow bags, which contain Burton's popular mini Maryland Cookies weigh a tiny 20 grams, meaning

Burton's required a high-performance packaging solution to match the oven output rates on the small target weight bags.

To optimise production capacity, maximising packaging speeds and up-time were also key requirements. In addition, the new equipment had to easily integrate into Burton's existing production line.

challenge 1.

increase output

Today's health-conscious consumers, often with busy lifestyles, are increasingly seeking smaller bags for their snacks to control portion sizes and eat easily on the go. Burton's needed a high-performance packaging solution that could substantially increase packaging speeds to

optimise production capacity and stay competitive in this fast-growing market. In addition, the system needed to be easily integrated alongside existing systems for a smoother distribution process.

solution 1.

ultra-high-speed packaging

TNA, renowned for delivering the fastest vertical, form, fill and seal (VFFS) packaging speeds in the industry, enabled Burton's to double its production speeds, while also improving overall pack quality. The leading biscuit manufacturer chose to install three tna robag® high speed VFFS packaging machines – a packaging solution that would deliver consistent high quality at a

fast speed. The packaging systems offer unmatched throughput rates and are each capable of producing 200 bags per minute, with wastage as low as 0.1%, making them ideal for high volume packaging. Each system is fully integrated, customised and built to maximise uptime, reducing the number of machines required to give the same production output.

“Because consumer trends keep pushing companies to make smaller portioned packs, snack producers are having to consider either using more packaging machines to match the output of the oven or fryer, or to slow down the entire production line. The tna robag® can maximise throughput, delivering optimised packing speeds and allowing manufacturers to streamline their packaging process in a single piece of equipment.”

– Simon Hill, TNA packaging specialist



challenge 2.

assuring end product quality

Burton's needed a solution that could effectively combine high-speed production with consistent accuracy and reliability to achieve high packaging speeds while maintaining low reject rates. With the 20g pack sizes marketed as an under 100 calorie portion-

controlled snack it was critical for the end product to meet the targeted weight of six mini cookies per bag, and therefore crucial for the weigher to function to the utmost precision, and the transfer of product from the weigher to the bagmaker to remain consistent.

solution 2.

fully integrated packaging system

TNA's fully integrated weighing and packaging system combines weighing, product transfer, quality control and packaging. To ensure accurate weighing, a tna intelli-weigh® 120 omega multihead weigher, achieves high-performance weighing accuracy with a standard deviation as low as 0.2g. This has enabled Burton's to deliver extreme precision and accuracy for this challenging application, with as little waste or giveaway as possible. The multihead weigher also maximises up-time with modular actuators, easy-to-use operator interfaces, and self-diagnostics. To detect contaminants, the ultra-sensitive tna hyper-detect® 5 metal detector system sits within the system between the multihead weigher and the bagmaker, helping to significantly increase packaging speed without compromising food safety, and therefore ensuring quality each time.

Part of the robag's innovative jaw system, stripper tube closers guarantee a fast and consistent seal with minimum waste by ensuring no products are lost by

falling through the seal area. Additionally, product-in-seal-detection (PISD) software monitors any cookie fragments in the seal and jaw area, rejects the bag if it falls outside of pre-set tolerances, and alerts the operator to any changes within the system that may be causing the rejects – all without stopping production. This has helped Burton's ensure that each bag meets the highest quality standards and waste is kept to an absolute minimum.

The robag's single serrated jaws also help create high-quality pillow-like bags with a smaller seal area - making the system more efficient than the box motion technology Burton's previously had in place. This has helped Burton's to realise a number of efficiency savings as well as bringing sustainability benefits. The system can also be set to reduce film from 12mm to 7mm on the top and bottom of each bag, potentially enabling Burton's to save 10mm of film in total per bag (which could add up to saving kilometers of film per week).

“Installing three new packaging lines is challenging. We took the time to extensively trial how the TNA equipment would integrate alongside our existing systems over a 6-month period. With no breakdowns or errors within that period, the technology also ensured a low rejection rate and efficient sealing. It has doubled the packaging speed of previous machines and has provided the ideal solution to improve our production capabilities.”

– Dean Donovan, Burton's Biscuits



challenge 3.

utilising limited floorspace

To maximise production within a fixed factory floorplan, the new installation needed to accommodate limited floorspace.

solution 3.

compact VFFS system

VFFS equipment typically requires less plant space than horizontal packaging systems. With a small footprint due to its compact design, the tna robag® requires minimal floor space to maximise productivity. The high-speed packaging machine also features the world's shortest vertical product transfer from the scale to the pack. The new setup has enabled Burton's to maximise packaging performance and meant they could consider multiple packaging lines in a limited space.

This means the company can increase packaging yield as demand grows, without expanding plants and incurring the additional costs of extra machines or floorspace. With the world's smallest VFFS footprint and using 20% less energy than other systems, each tna robag® also helps significantly reduce the plant's environmental impact. The net result is what manufacturers strive for – greater output with less waste.



“We already knew of the many successful installations of TNA machines in our sister sites and TNA’s reputation for delivering the fastest vertical form, fill and seal packaging speeds in the industry. The system fits perfectly with our existing production line and has enabled us to increase our packaging line speeds which are now running 135% faster than the old equipment. Overall TNA has helped us realise much higher output per square meter from fewer machines.”

– Dean Donovan, Burton’s Biscuits

“Overall, we’re delighted with the installation. We’re achieving 200bpm on what is quite a difficult product to run at these speeds due to crumbs and swirling. We’ve also reduced waste and achieved better control over product losses.”

– Dean Donovan, Burton’s Biscuits

[view product video here](#)

TNA is a leading global supplier of integrated food packaging and processing 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 and verification 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.

