

# WEIGHERS INCREASE SPEED AND PRODUCTIVITY FOR CHICKEN NUGGETS

CaseStudy  
**G+G Convenience**

## Facts and figures

- » Two new Ishida CCW-RV multihead weighers are capable of delivering up to 90 weighments per minute of chicken nuggets, increasing the hourly output from 1t to 2.6t.
- » All parts of the weigher are protected against water ingress during high-pressure and steam jet cleaning.
- » Ishida's unique force limiter dislocation (FLD) protection function on Ishida checkweighers automatically disconnects the weigh sensor from the weigh conveyor when excessive load or sudden weight impacts are applied.
- » The Ishida Data Capture System (IDCS) software provides information such as downtime, product loss, performance and quality, which G+G Convenience is able to use to boost productivity.

Ishida multihead weighing technology has enabled a leading German ready meals manufacturer to increase output of its chicken nugget products by almost threefold, while the advanced Ishida IDCS II checkweigher software is further helping the company to boost productivity.

## Challenge

G+G Convenience, based in Garrel in the state of Lower Saxony, produces own-label chicken nuggets for various retail chains. A growing number of orders prompted the manufacturer to upgrade its packing technology and replace a line that had reached capacity.

## Solution

The two new high-performance systems feature two Ishida CCW-RV multihead weighers that are capable of delivering up to 90 weighments per minute, depending on the product which can be frozen or chilled. For quality assurance purposes, G+G Convenience has also installed four Ishida DACS-G checkweighers, which check the target weight against a particular part of the process at two different production points on the lines.

The 14-head weighers are alternately fed from the processing lines at 30-second intervals. A dispersion table loadcell regulates the product feed to the radial feeders to ensure an even flow of nuggets. The feeders convey the product to the pool hoppers, which hold it for a short time to stabilise the product, before releasing it to the weigh hoppers directly underneath. A microprocessor then calculates in a fraction of a second the best combination







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of weigh hoppers that comes closest to the target weight, and the selected hoppers discharge the chicken nuggets via a timing hopper into the bagmaker below.

Each pack contains between 10 and 20 pieces with fill weights from 250g to 500g. The target weight calculation process takes into account the piece weight of a single nugget (19.5g) to ensure that the pre-set quantity is always met. In rare cases, a pack may contain one extra chicken nugget, but is never one short. If a pack is found to have the incorrect weight, a signal is sent to the bagmaker, which produces a double bag that is rejected.

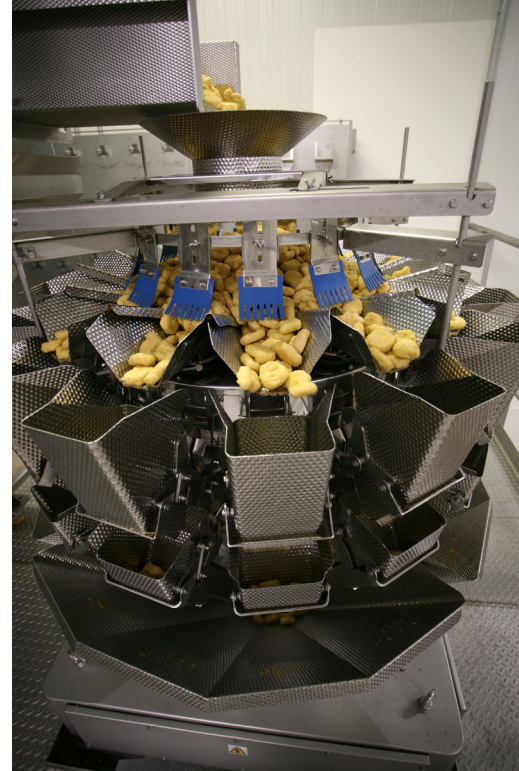
The introduction of the two Ishida CCW-RV weighers has enabled G+G Convenience to achieve an output of 2.6 tonnes per hour compared to 1 tonne previously. “The settings for the weigher sections can be configured separately to ensure consistent weights are made,” said Martin Warzukowski, head of the convenience department. “Ensuring consistently high performance is very important. We run a three-shift operation and cannot afford any downtime.”

As well as high performance, G+G Convenience required robustness from its new multihead weighers. To meet the demands of handling frozen chicken nuggets, sturdy embossed stainless steel was chosen for the contact surfaces. Another important factor is moisture protection. The IP69K-certified, sloped-surface and hygiene-friendly construction means all parts of the weigher, including the drive units, are highly protected against water ingress during high-pressure and steam jet cleaning. “Water resistance is an important factor in how we use the multihead weighers,” confirmed Martin Warzukowski.

A conveyor transports the filled and sealed bags of chicken nuggets to an Ishida DACS-G checkweigher, where every pack is checked to make sure that it meets the correct weight and any out-of-specification packs are rejected. The checkweighers are equipped with a high-speed loadcell with an accuracy of 0.2 grams and a special system that compensates for floor vibrations. The operator can switch between two settings at the touch of a button, which means that the checkweigher can be used for a wider range of products. A robust system that also incorporates Ishida's unique force limiter dislocation (FLD) protection function, which automatically disconnects the weigh sensor from the weigh conveyor when excessive load or sudden weight impacts are applied. The machine then immediately resumes operation without the need for maintenance or third-party intervention.







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The bags of chicken nuggets are subsequently packed into cartons and an accompanying dip added. Another DACS-G checkweigher then checks the target weights of the sealed cartons to make sure they all contain the dips. An integrated metal detector completes the quality control for foreign body detection.

Equally important, checkweighers collect a wealth of data from every single pack on the production line, with the IDCS II (Ishida Data Capture System) the web based software can provide information such as downtime, product loss, performance and quality, which G+G Convenience is able to use to boost productivity. Real-time analyses can be carried out based on production batches, shifts, operators, products, machines or lines. Graphical displays and reports are user-defined and can be customised, with parameters accessed online during production so that instant corrections can be made.

“If the figures produced do not match the targets, the operator can immediately make the appropriate adjustments,” said Martin Warzukowski. He believes the software is also useful for his colleagues in quality assurance. “With IDCS II, we can log every pack of chicken nuggets and pass these logs onto our customers where required,” he explained.

For G+G Convenience, the investment in the new Ishida multiheads and checkweighers for chicken nuggets has been a resounding success.

“All performance targets are being met and the system efficiency is over 90%. We have also received fantastic service from Ishida during installation and continue to do so,” concluded Martin Warzukowski.

G+G Convenience Produkte GmbH & Co. KG is a specialist in high-quality ready meals. The family-run company operates a state-of-the-art production facility for frozen and chilled food and its impeccable production processes have earned it numerous quality seals and certificates. The products are supplied to food retailers in Germany and abroad and are sold exclusively under retailer own brands. G+G Convenience has around 550 employees.

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