ISHIDA

ISHIDA LINE DELIVERS HIGH PRODUCTION FLEXIBILITY AND QUALITY FOR MUSELI AND CEREALS

Case Study
Kölln

Facts and figures

» The line is capable of speeds of up to 140 packs per minute (70 weighments per minute per machine), with accuracy to within 0.5% of the target weight.

» The Ishida IX-GA-4075 X-ray inspection system detects stone, glass and metal, with a high degree of reliability.

» An Ishida DACS-G checkweigher rejects packs that do not meet the correct specifications.

In collaboration with its customer, the project team at Ishida Germany has devised a new high-performance packing line comprising fully automatic multihead weighers and inspection systems, currently enabling full production flexibility and enhancing quality control at leading German oat flakes and muesli producer Peter Kölln GmbH & Co. KGaA.
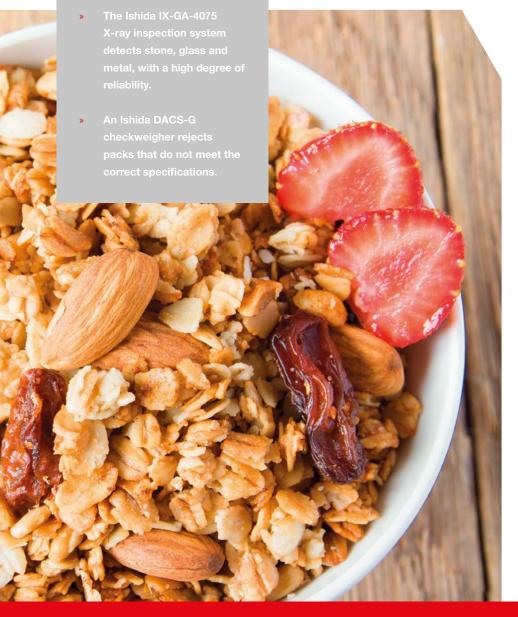
The easy-to-use Ishida IX-GA-4075 features an automatic set-up function and is ready within 90 seconds. Precision adjustments can be made during ongoing production. Up to 100 programmable pre-sets allow rapid product changeovers.

Challenge

In order to cope with high demand for its products, Peter Kölln required a packing solution that was able to process a wide range of pack formats and be equally suitable for muesli and extruded cereals, which the company markets under the name 'Fleks'. In addition, Peter Kölln was seeking a high-performance quality control system.

Solution

The Ishida solution – comprising two CCW-RS multihead weighers, an IX-GA-4075 X-ray inspection system and a DACS-G checkweigher – is able to handle a variety of different types of muesli and Fleks in different pack formats, with fill weights ranging from 325g to 1kg. The line is capable of speeds of up to 140 packs per minute (70 weighments per minute per machine), with accuracy to within 0.5% of the target weight. The only factor that prevents the weighers from achieving an even higher output is the low fall speed of the light products.

> ❝ As a manufacturer of product with a high brand value, we are very aware of quality and always aim to achieve the maximum we possibly can. ❞

The pre-mixed muesli and Fleks are fed via a bucket elevator onto the two weighers. The cereals pass through inlet chutes onto the dispersion tables, where the highly sensitive Ishida loadcell with feedback to the infeed ensures there is an even and consistent product flow to the radial feeders. All hoppers are equipped with anti-leak hopper doors to prevent fine product from leaking during the weighing process.

In a fraction of a second a microprocessor calculates the optimum combination of hoppers that comes closest to the target weight. These precisely-divided portions are then released directly into the packaging machine via a timing hopper. Aluminium-coated film is used for the Fleks, while muesli products are packed into clear plastic bags and later into cardboard boxes.

One particular challenge created by the fully automatic weighing of these cereal products is the amount of dust generated. To combat this, the design of the CCW-RS weighers ensures gentle product flow, and all contact parts are also electrostatically polished so that dust traps are minimised, preventing product residues suddenly coming loose and landing in a different pack as unwanted cereal clumps. To prevent dust pollution in the factory, the weighers are housed in a special dust enclosure with air extraction.

The foundation of Ishida's X-ray inspection system is the patented Genetic Algorithm (GA) technology. By analysing image data over a number of generations, the machine achieves an extremely high level of inspection accuracy.

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Peter Kölln is already benefitting significantly from its new high-performance packing line. Denise Stoldt says that the system is running "really smoothly" in three-shift mode and has reached a stable output. "The crucial factor is the enormous flexibility offered by the new line, which allows us to process a very wide range of products on one system at high speed." The technical upgrade has also enabled the company to add a new oat flake product to its range.

Contact

Ishida Europe Limited

Tel: +44 121 607 7700
info@ishidaeurope.com

Kettles Wood Drive
Woodgate Business Park
Birmingham B32 3D
United Kingdom

ISHIDA

www.ishidaeurope.com