

HIGH-PRECISION WEIGHING AND FILLING DELIVERS GREAT RESULTS FOR MOLKEREI BIEDERMANN

Case Study **Molkerei Biedermann**

Facts and figures

- » Upgrading its packing process presented a challenge, as there was only a small amount of space available.
- » This new weighing and filling solution has significantly reduced product breakages.
- » The standard deviation for a 25g weight, is just 0.165g.
- » The dairy can now process a diverse range of product mixtures and more easily implement new ideas from the marketing department.

Swiss dairy company Molkerei Biedermann AG, a member of the Emmi Group, has recently installed an Ishida multihead weigher for handling nuts and cereals, which are packed as separate portions to accompany yoghurts and desserts. Growing demand had led the company to urgently seek an automated and more accurate weighing and filling solution.

Challenge

At the same time, the new installation means the dairy can now process a diverse range of product mixtures and more easily implement new ideas from the marketing department.

Yoghurts and desserts with separate portions of additional ingredients are becoming increasingly popular with consumers. To keep the cereals or nuts crunchy and fresh until they are added to milk or yoghurt, they need to be packed separately from the main dairy product. Molkerei Biedermann's solution is a double-compartment arrangement involving two pots stacked on top of each other, with the smaller pot also acting as a lid.

Solution

These double-compartment packs have proved extremely popular. However, the company found that its existing volumetric dosing system for the cereal and nut mixtures was no longer able to keep up with the throughput necessary to meet rising demand. In particular, volumetric dosing resulted in very high product giveaway due to overfilling. "We were experiencing overfilling of up to 30%," explains operations manager Mario Dux. "We could cope with that when quantities were small, but our production volumes are getting bigger all the time."

To make sure that the company could weigh its high-value nuts and cereals with much greater accuracy, Molkerei Biedermann decided to invest in a multihead weigher. However, upgrading its packing process presented a challenge. The new multihead weigher had to be integrated with the existing rotary cup filler and there was only a small amount of space available.





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Biedermann made enquiries with several multihead suppliers before choosing a solution from Itech AG in Rotkreuz, which represents Ishida in Switzerland. Explaining the decision, Mario Dux says: “Itech AG had the excellent idea of positioning the multihead weigher one storey up in our warehouse and connecting it to the packing line through an opening in the floor. This solved the space problem, as well as providing only a short distance from our warehouse to the infeed of the weigher.”

Itech installed an Ishida CCW-SE 10-head weigher, an ideal entry-level solution for multihead weighing technology. The SE-range offers significant advances in speeds and accuracy compared with dosing machines, linear weighers or static weighing solutions.

The cereal and nut mixtures are delivered to the multihead weigher via a small vibratory feeder. A weight sensor in the dispersion table automatically calibrates the product feed rate and ensures that product flow to the radial feeders is both optimised and consistent. The vibration of each radial feeder trough can be adjusted to optimise the amount of product fed to the hoppers, which are opened and closed by stepper motors. It takes a fraction of a second for the weigher’s microprocessor to calculate the ideal combination of hoppers that comes closest to the required target weight. The selected weigh hoppers then release the product into a timing hopper before it is transferred through a funnel into the rotary pot filler.

Molkerei Biedermann is currently using the Ishida multihead to handle five different products at target weights from 14g to 25g and with pinpoint accuracy: the standard deviation for a 25g weight, for example, is just 0.165g. “The Ishida weigher has a sensational 99% efficiency rating,”

confirms Mario Dux. The rotary filler’s fill rate of 25 portions per minute currently dictates the speed of the line, which is well below the weigher’s capability of up to 70 weighments per minute.

The new weighing and packing solution offers a range of other benefits. While the old filling system led to many line stoppages, the Ishida multihead weigher has not caused a single fault. “What used to happen was that the different product mixtures would get blocked in the funnel during dosing, which interrupted the filling process,” says Mario Dux. Today, thanks to its Ishida multihead weigher, Molkerei Biedermann can process these tricky products without any hassle. Equally important, the flexibility that this has given the manufacturer has opened up opportunities to implement new product ideas from the marketing department.

Another benefit is the fact that this new weighing and filling solution has significantly reduced product breakages as the system is able to transfer the product more gently into the pots.

Molkerei Biedermann makes its double-compartment products in relatively small batches. To keep the product fresh for longer, the company aims to weigh and pack the product just before it is due for delivery to customers, meaning that product changeovers are frequent. With the Ishida weigher, changing products by calling up pre-sets at the touch of a button on the touch screen display has proved to be a valuable time-saver. To minimise downtime for cleaning, all contact parts can be removed and replaced without the use of tools. Something else that the customer found remarkable was the fact that no sooner had it been installed, the full weighing and filling system was already running smoothly. Overall, therefore, Mario Dux is very happy with the new installation, commenting that “the level of automation was a huge step forward for us.”

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