

CUSTOMISED WEIGHING AND FILLING SYSTEM FOR DICED MEAT IMPRESSES WITH HIGH PERFORMANCE AND SMALL FOOTPRINT

Case Study
Micarna

Facts and figures

- » The new packing system had to fit into a space of only 10.5 m x 2.2 m with a low ceiling height of just 2.8 m
- » The Ishida CCW-R2-112 multihead weighers in linear configuration were specifically developed for the high-performance handling of sticky products in compact spaces.
- » Heavy duty ribbed plastic hoppers with scraper gates prevent the sticky meat from clinging to the weighers' contact parts.
- » The setup achieves an impressive output of 112 trays per minute.

A sophisticated automated packing line for sticky diced meat, incorporating two Ishida 12-head Fresh Food Weighers that operate as four separate machines, has met the key challenge of managing the limited space available at Swiss meat processing company Micarna. Micarna had been asked by supermarket chain Migros to deliver a new product - fresh-cooked lardons, strips of ham and chicken (for adding to salads) - to a challenging deadline.

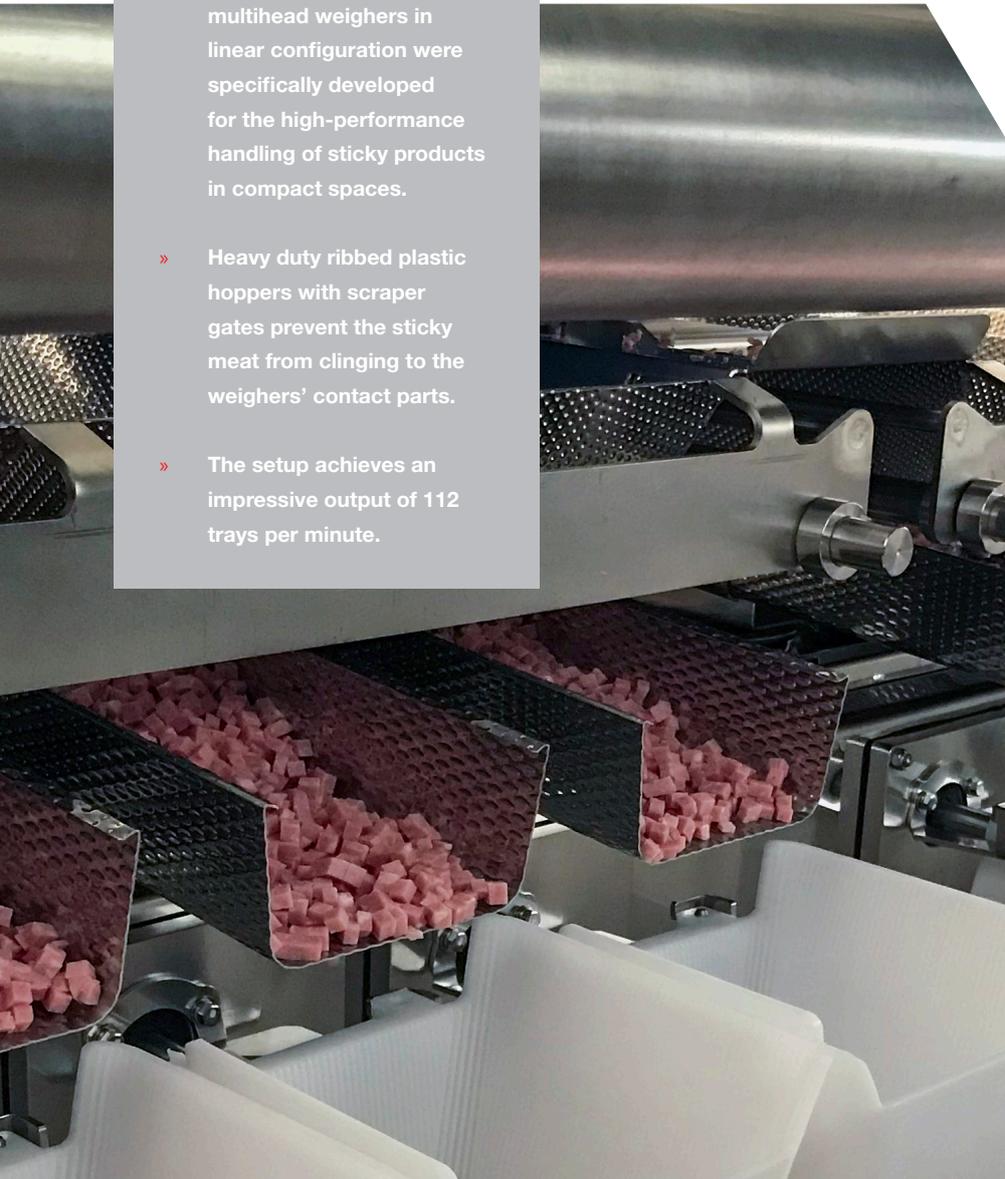
Challenge

To give the product a longer shelf life, the fresh diced meat is packed in sterile conditions in a cleanroom at Micarna's production facility in Bazenheid in the canton of St. Gallen. Cleanrooms are generally made as small as possible to reduce maintenance costs and floorspace, and to minimise the risk of contamination. As a result, the new packing system had to fit into a space of only 10.5 m x 2.2 m with a low ceiling height of just 2.8 m.

Solution

The filling process for the new packing system was of particular concern, as Micarna's technical project manager Patrick Nyffenegger explains: "The low headroom was a major issue, because it ruled out a standard circular weigher. There was very little room for product feed and distribution, and the cleaning processes also had to be taken into consideration."

The solution, devised by Itech AG which represents Ishida in Switzerland, involves the conveying of the fresh diced meat from the slicer to a crosshead feeder. When the system stops, the meat can be buffered in the feeder without the need to interrupt the cutting process. A mobile elevator is used for transferring the chunks of meat to a pivoting conveyor that supplies two crosshead feeders. From there, the meat is taken to another feeder that functions as a second buffer, which then transfers the lardons to the 12 vibratory feeders on each of the two 12-head Ishida Fresh Food Weighers.





“ The new system is so efficient that we are soon going to start diverting more orders within Micarna to the new production facility. ”

The Ishida CCW-R2-112 multihead weighers in linear configuration were specifically developed for the high-performance handling of sticky products in compact spaces. At Micarna, the two weighers are facing each other, working in tandem to pack the diced meat into thermoformed packs. Heavy duty ribbed plastic hoppers with scraper gates prevent the sticky meat from clinging to the weighers' contact parts.

The two Ishida multihead weighers have been configured as if they were four single machines, discharging the required target weights into four separate collection chutes. These chutes are positioned so that the automated 2 x 8 distribution system only needs to make small lateral movements. Patrick Nyffenegger describes the innovative solution from Itech and Ishida as "an inspiring concept."

The two weighers simultaneously fill 16 hoppers in the distribution system. A collector conveyor has replaced conventional swivel chutes, which reduces the distribution system's overall height. To further minimise space, the project planners opted for a mobile support platform. For cleaning, the two machines are moved apart and all contact parts can be removed and re-attached without the need for tools. The machine components are transferred to the washing facility on custom-made trolleys, designed to suit the confined space at the production facility.

Micarna is currently using its new packing line to weigh and pack six products with fill weights ranging from 65g to 90g. "Precision is essential for us, and with these pack sizes, overfilling amounts to less than 1g

per pack on average," says Patrick Nyffenegger. The setup achieves an impressive output of 112 trays per minute, although even this speed is well below the capabilities of the two Ishida weighers.

Product changeovers can be carried out very quickly by simply calling up pre-sets on the weighers' touch screen displays.

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Despite the ingenious solution proposed, Patrick Nyffenegger was initially sceptical "because it made us rather worried when three alternative high-profile suppliers told us that it couldn't be done." However, the positive experience with Itech installations gave Micarna the confidence to award the contract to Ishida and Itech. The ten-month project that followed also involved "a great working relationship and coordination with the other suppliers"

As a result, Micarna is very happy with the new automated weighing and filling solution and Patrick Nyffenegger is now looking to the future: "The new system is so efficient that we are soon going to start diverting more orders within Micarna to the new production facility in Bazenheid."

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