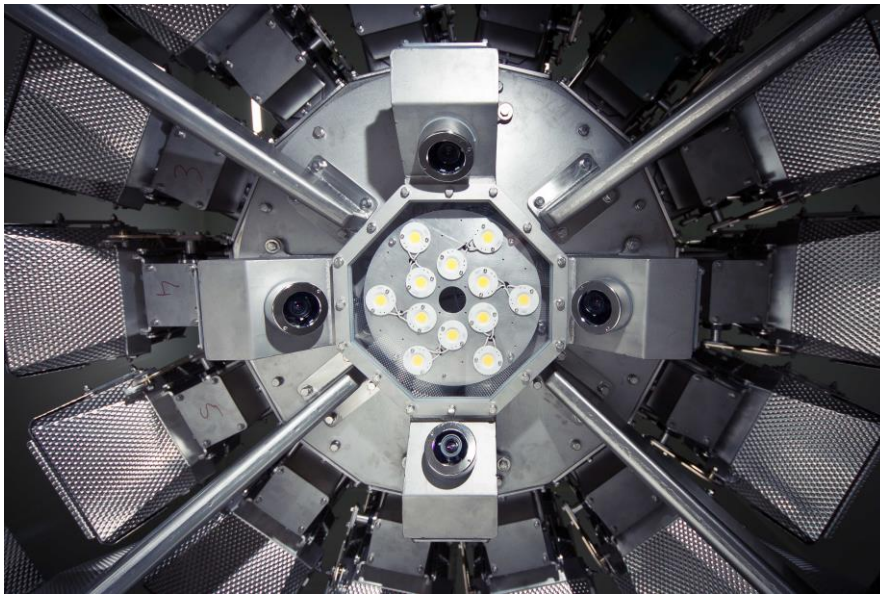


Digital foreign object control in product flow - CLK offers systems for multihead scales

Foreign bodies such as blue plastic splinters must not get into food. To ensure that only flawless products are sold, manufacturers must check every single packaged product. CLK has developed the MultiCheck for this purpose, which is used in multihead scales to check the product flow. Unlike X-ray and metal detection methods, the optical camera system uses image processing to detect contaminants by colour.

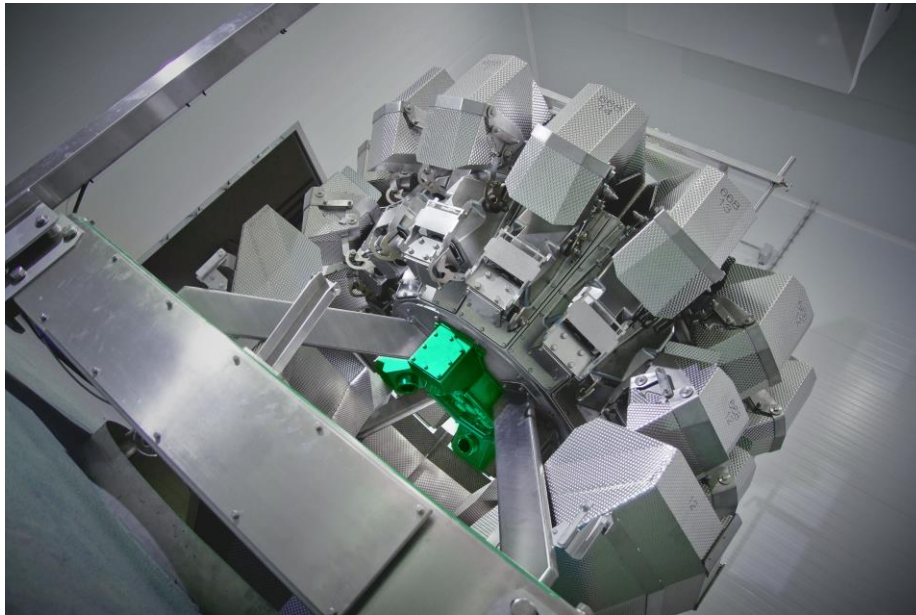


The MultiCheck reliably identifies foreign bodies made of plastic and other materials with a detection rate of almost 100 percent. (Photo: © CLK GmbH)

Detect foreign objects early and avoid recalls

CLK sees intelligent image processing as an optimal solution for food producers to avoid expensive recalls. "No system alone, and certainly not a visual inspection by employees, can offer one-hundred percent security," explains Katja Opitz, responsible for internal sales and marketing at CLK.

The technology functions as follows: As soon as the multihead scales drops a quantity of product, the MultiCheck receives a signal that triggers the recording of an image sequence. Four cameras take pictures simultaneously from different positions. If the system finds a foreign body made of plastic and other materials in the product stream based on its colour, it generates a signal to stop the system or optionally eject the affected portions. "The MultiCheck thereby also contributes to improving the competitiveness of the companies," says Opitz. "A patent has meanwhile been granted on the system."



The MultiCheck detects the foreign objects when the product stream drops off. Several cameras take pictures simultaneously from different positions. (Photo: © CLK GmbH)

Compact system enables easy retrofitting

As long as the foreign object stands out in colour from the product and the background, it is reliably detected by the MultiCheck. The multiple recording of an ejection sequence in free fall of the products also ensures that foreign objects lying in the middle of the product flow are detected. "With foreign object inspection as the last step before packaging, a higher level of safety is achieved," says Opitz. "The system can be integrated into common multihead scales and is then fully functional with minimal operator input."

The compact camera system is placed inside the multihead scales (green in the picture). Attached to the top of the drop hopper, it allows the best possible and longest view of the falling product without coming into contact with it. The system can be retrofitted on existing scales with little effort.

All-round view without blind spots

The cameras provide a 360-degree all-round view without blind spots. In addition, taking multiple images of a drop ensures that the risk of the foreign object being obscured by the product is minimised - "unlike testing on a conveyor belt," explains Opitz. If a foreign object is detected, the system marks it with a coloured frame and, if necessary, stops the packaging line so that the affected packaging can be safely discharged. "The MultiCheck was awarded the SEIFRIZ 2022 for its innovative operating principle. The prize honours cooperation between the trades and science," says the CLK saleswoman.

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