

Mix of individually wrapped chocolate bars

Case study



Business challenge

The target of this counting & packaging challenge was the required output of 150 gift boxes containing a multi-flavoured mix of individually wrapped chocolate bars. The composition of the mix had to be 100% consistent, yet very easy to change by the use of predefined 'recipes'.

For all recipes, the gross weight of the candy mix as well as the net weight of the sealed final gift box had to be checked to adhere to the company's quality assurance processes.

The client, one of the world's largest producers of chocolates and biscuits, requested a turn-key solution and placed the whole project in the hands of Cremer, including the full integration of a food-grade cartoner machine that could operate at the required speed and deliver the same level of quality, efficiency and reliability.

It has become common practise for many industries to provide the manufacturer with a detailed URS (User Requirement Specification). This aided us in designing the counting and packaging system not only according to CE machine building regulations and the highest safety standards but also according to very specific customer design preferences regarding routine cleaning and maintenance.

Provided solution

Producing 150 boxes per minute on a 24/7 basis first of all demands for a seamless integration between the Cremer counting system and the vertical cartoning machine which is manufactured by Senzani and largely customized to our specifications.

Twelve different flavours of individually wrapped chocolates are delivered in bulk quantities into twelve product supply systems; a set of conveyor belts with infeed hoppers that transport the bulk product to the counting machines.

Twelve HQI-6100 counting machines are placed over a double track bucket conveyor. This typical HQ-model has a maximum output of 170 discharges per minute which is required to fill the gift boxes at a constant rated speed of 150 boxes per minute.

An integrated two-stage and on the fly weight verification system provides the additional assurance that not a single product mix is compromised during the process and that each gift box that leaves the cartoning machines complies with the net weight stated on the label.



For more information, please contact us at:

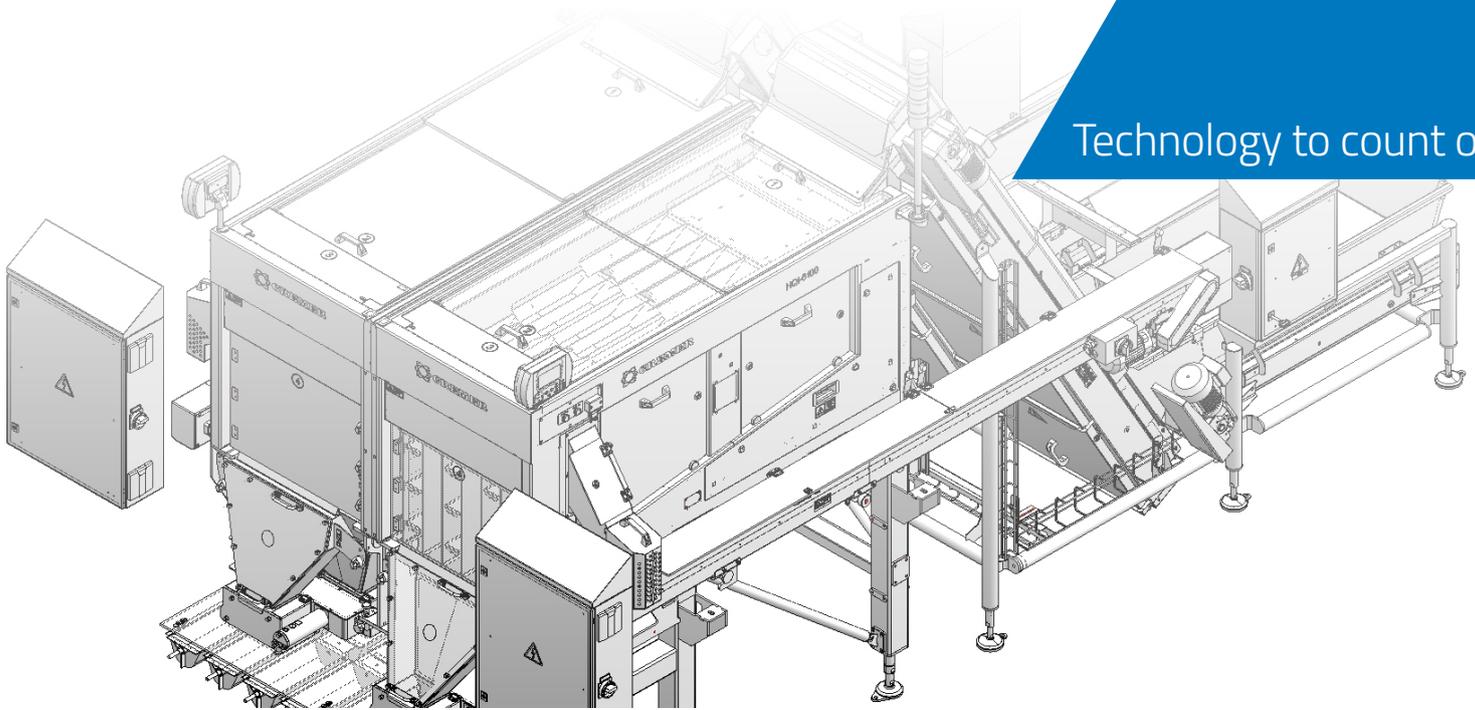
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System configuration

Six two-in-one product supply systems are used for delivering twelve different types of chocolate bars to the counting machines. Each of the twelve HQI-6100 counters processes one specific flavour and dispenses a preset quantity of its product into the passing buckets of the double track bucket conveyor.

When the last counting machine releases its product count into the bucket, it contains a mix of twelve different flavours with a predefined number of each flavour. Of course, the composition of the mix is fully customizable and can be easily changed according to different box formats or changing marketing trends.

The conveyor buckets are emptied into a series of timing hoppers that check the weight of each mix and release multiple mixes simultaneously into the high-speed rotary turret of the vertical cartoner. The chosen cartoning machine can handle multiple box formats with distinctive shapes, which also was an essential part of this challenge. A secondary check weigher and an ingenious box orientation system present the correctly filled and closed gift boxes read-to-go to a palletizer system.

The counting and packaging system comprises the following equipment:

- Six DE-600*2 product supply systems
- Twelve Cremer HQI-6100 product counting machines
- Z-type pendulum dual track bucket conveyor
- Discharge station with timing hoppers and check weighers
- Vertical cartoning machine

HQI-6100 product counting machine

The HQI-6100 is a 6-channel product counting machine that is typically used for counting all sorts of wrapped confectionery products and dispensing them in preset quantities into a bucket conveyor.

Four vibrating V-shaped plates are used for fast product transport and efficient product separation and singulation. Six separate infrared product detection channels "scan" and count each individual product with 100% accuracy, regardless if the product has a flow wrap, twist wrap or foil wrap. Three vertically stacked "memory flap units" with silent servo motors collect the counted products and dispense them in preset quantities into the passing buckets via an alternating discharge chute.

The HQI-6100 counter, either as a stand-alone machine or as part of a mix line, offers 100% accuracy, high speed and great versatility for all sorts of confectionery products, and more.

Applications

Typical applications for the HQI-6100 counter are;

- foil wrapped chocolates
- twist wrapped fudge
- flow wrapped candy bars
- fruit gums
- candy sachets
- seasoning and bouillon cubes
- wrapped lollipops
- beverage capsules

