

Safety lancets & pen needles for insulin injection

Case study



Business challenge

Cremer has been serving medical device companies for over twenty years. These are world-leading companies that develop, manufacture and sell safety lancets, personal lancets and pen needles for insulin injection.

These types of medical devices are usually packaged and sold in retail boxes containing a specific number of units. For those companies, quality management and quality assurance are key pillars. This means that each and every aspect of their products meets the highest quality standards. This not only concerns hygienic and sterility standards but even extends to the quality of their packages. These companies cannot afford it to sell any box -not even one in a million- that contains one single unit too few or too many. This would inevitably undermine their credibility and reputation.

As a provider of counting and packaging solutions that guarantees 100% accuracy, this challenge gave us the opportunity to give substance and proof to our claim.

For this particular case study, a counting system was required that can process a broad range of different types of lancets and needles and, preferably, without any dedicated changeover parts for each type of needle.

Provided solution

The HQ-1250 is the typical counting machine best suited for dispensing relatively large numbers of products or, large 'batches' into a cartoner or other packaging machine. Medical devices such as safety lancets and pen needles are mostly sold in boxes containing 50 or 100 units, but also in multiples of 50. This requires a timing hopper that can easily collect and dispense large batches.

Safety lancets and pen needles are usually short and oblong objects that -once neatly aligned by the machine's vibratory plates- only require a narrow detection channel. A 12-channel counting machine turned out to be the perfect solution in regard of speed and compactness of the machine. With its twelve detection channels the HQ-1250 can process 2200 units per minute, which comes down to 3 lancets or needles per channel per second. As in many similar cases, the HQ counter has a substantial overcapacity with regards to most third-party packaging or cartoner machines.

The easy-to-clean design of the HQ series counting machine makes it the perfect solution for medical applications in which hygiene and sanitary conditions are essential and mandatory.

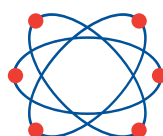


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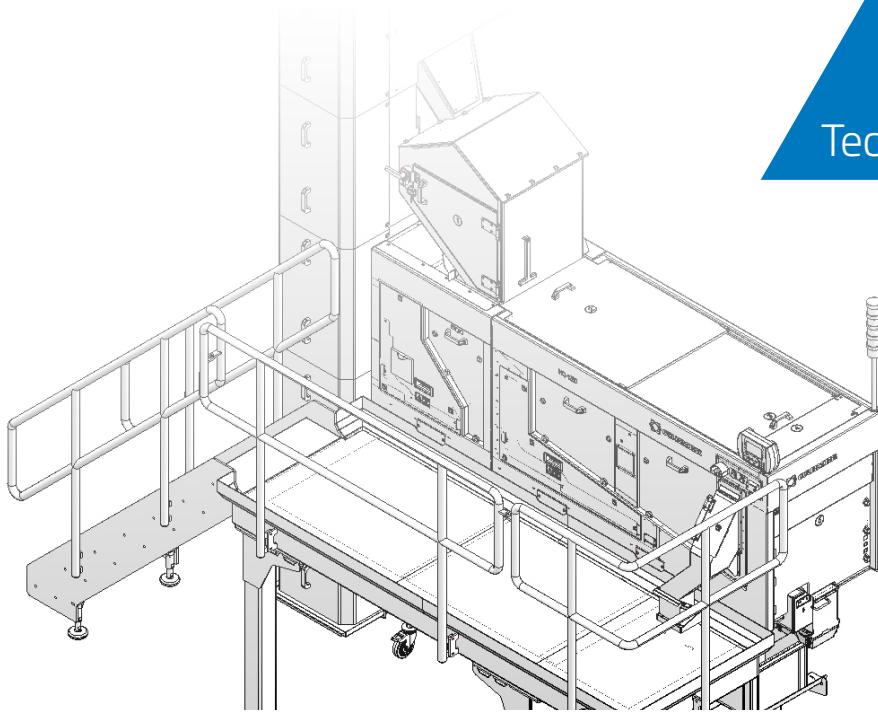
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System configuration

The counting machine is placed on an overhead platform to accommodate a third-party carton erecting and filling system. As a factory standard, all Cremer machines are equipped with synchronisation options (electronic inputs and outputs) that are common in the packaging industry.

The bulk product is loaded into a vertical scoop conveyor with vibratory hopper that transports the bulk product to a second hopper on top of the counting machine. This large volume buffer hopper uses servo driven dosing slides to provide a constant and optimal product flow onto the counting machine's vibratory plates.

The preset product counts are dispensed into the cartoner machine by a servo driven timing hopper that also incorporates a means of automatically rejecting product counts that are suspected of being compromised by whatever reason. This ensures that only 100% correct product counts are packed.

The counting and packaging system comprised the following equipment:

- Cremer HQ-1250 product counting machine
- Vertical scoop conveyor with vibratory feeder
- Large buffer hopper with product dosing slides
- Discharge/reject unit
- Overhead platform

The counting and packaging system is designed and constructed in accordance with Machine Directive 2006/42/EC and the design of each piece of machinery complies with all existing health and safety legislation.

HQ-1250 product counting machine

The HQ-1250 is a 12-channel product counting machine that is typically used for counting small products and dispensing them in relatively large quantities for retail or wholesale packages.

Four vibrating V-shaped plates are used for fast product transport and efficient product separation and singulation. Twelve separate infrared product detection channels "scan" and count each individual product with 100% accuracy, based on its shape and size.

Servo-driven "memory flaps" and timing hopper collect the counted products and discharge them in preset quantities into an external cartoner of any other packaging machine. The HQ-1250 combines speed and accuracy with ease of cleaning and low maintenance; the perfect counting solution for numerous applications.

Applications

Typical applications for the HQ-1250 counter are;

- safety lancets
- pen needles
- personal lancets
- syringes
- aluminium vial caps
- rubber vial seals
- lollipops
- bouillon and seasoning cubes

