

InVision²



Integrated Sorting & Technology

Cherries

Complete and Customizable Solution

TOMRA has years of experience, providing growers and packers around the globe with customized cherry sorting solutions.

We understand that every customer site is unique, and that's why TOMRA specialize in providing complete and customizable solutions to the cherry industry.

Our solutions maybe unique to your site, yet many of our customers share the same goal, increase efficiency across your cherry sorting line and to always ensure that the fruit is gently handled.

Our cherry lines ensure the fruit is immersed in water by manual or automatic unloading systems, all the way through to the optical sorter. This process helps maintain the integrity of each cherry, providing your customer with a superior product.

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I am very happy and grateful to have had the chance to use this optical grader. Even if there will always be problems since we are working with a “live” product that always throws up new challenges, I can say that this grader helps us much more than the competition to create a clean and homogenous final product.

Anna Giacobelli, Business Development Manager at Giacobelli - Italy



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TOMRA's technology advancements help us get better at what we do. TOMRA are our partner, we continuously try to get better, together.

Tim Sambado, President of Prima Frutta Packing - USA

Infeed Solutions - Manual and Automatic



From harvest to packhouse

Once freshly harvested product is received to the packhouse, extreme delicacy is required. Our solutions ensure your cherries are immersed in temperature-controlled water tanks using hydrocooling systems.

Automatic crates/totes dumper with submerged rotation.

Our automatic box emptying solution is designed for feeding cherry processing plants. The process of submerging and rotating in water ensures gentle emptying of the boxes. The complete automation of our solution speeds up the infeed phase, and ensures a high level of efficiency across the cherry line.

Pantograph Bins submerger

Pantograph bins submerger and pneumatic gripper for decatastating, immersion, rotation and staking. Suitable for processing various formats of bins, it is adjustable via touch screen panel. Its strong structure makes it compact, flexible and highly performing.

Modular plastic elevator belt

It eliminates undersized and waste, facilitating the subsequent sizing process. Equipped with motorised roll width adjustment torque, electrically controlled via touch screen for easy and intuitive operation.

Treatments

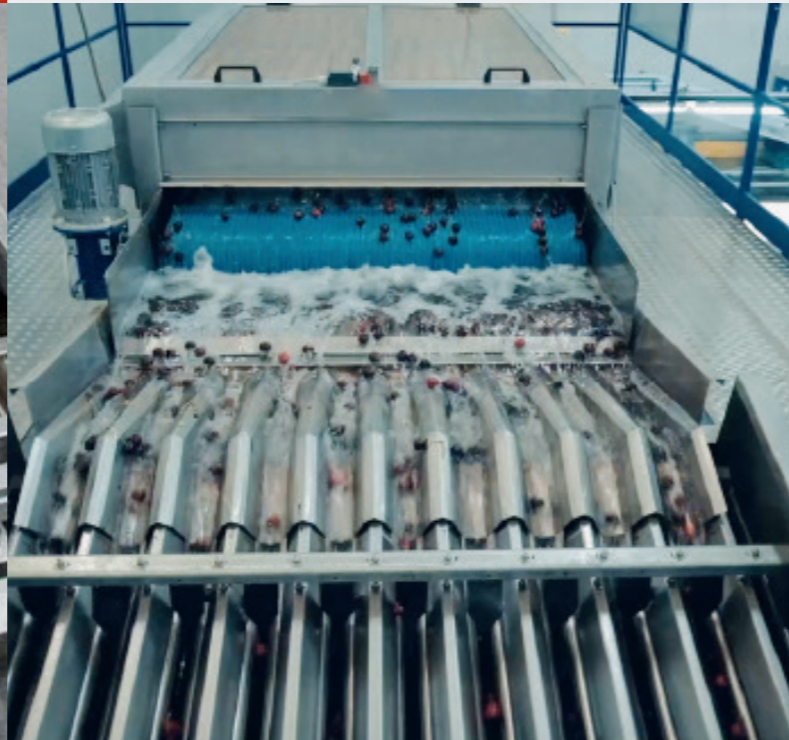


Cluster cutter

Used in high volume processing, it optimises the separation of bunches according to the length of the stalks. It favours the precision of the subsequent pre-calibration phase.

Small fruit eliminator

It eliminates undersize and waste, facilitating the subsequent sizing process. Equipped with motorised roll width adjustment torque, electrically controlled via touch screen for easy and intuitive operation.

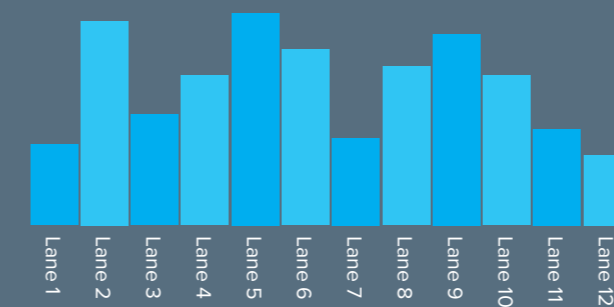


Gentle Handling and Fruit Transfer

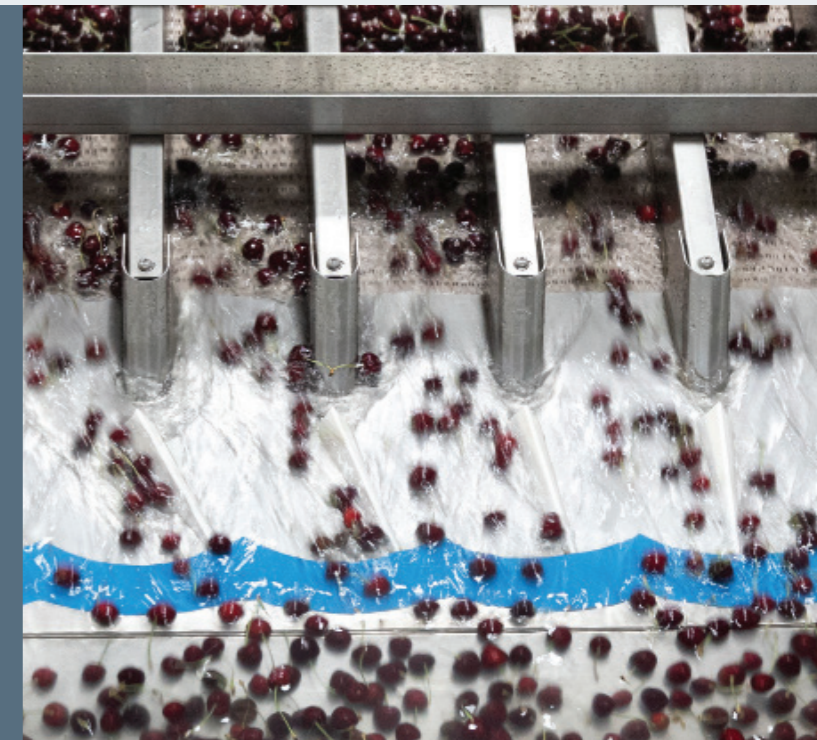
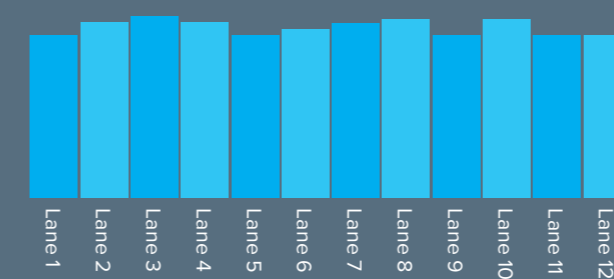
Dynamic Lane Balancer

Dynamic line balancing prevents over and under fill. Automatic diverters adjust to evenly distribute the load balance between lanes. The performance of these diverters is improved by a deep water bath and ballast tanks to create a highly controlled flow of water over the diverters.

Without DLB



With DLB



Water Transfer

The dewatering belt, prior to the hydro-cushion isolates cherries from turbulent water and creates an evenly spaced flow of cherries onto the hydro-cushion and singulating flumes and belts. This allows the flow of cherries onto the sorter to be easily controlled in response to the sorting and packing solutions.

Hydro-cushion

TOMRA's patented Hydro-cushion transfer technology, gently re-waters cherries in a controlled way. This helps reduce damage to your harvest. The controlled reintroduction of water creates an evenly spaced flow of cherries into the V-Flume for singulation. The consistent supply of water to the hydro-cushions allows the flow of water to be fine tuned to suit your needs.

Sorting

The heart of a line is the sorter machine, which carefully selects the cherries according to colour, shape, size and defects.

With TOMRA FOOD technology you're able to sort premium product for new markets bringing further profitability to your business. Experience the power of certainty across internal and external defects, including size, colour, softness, bruising, decay, splits, peeling, rots, moulds, bird and insect damage, scarring, stem and bottom cracks.



SFS

The TOMRA Small Fruit Sorter (SFS) is the most advanced cherry sorter available, providing gentle handling from infeed to pack, industry leading size, shape, color and defect sorting, and high throughput.

Designed for the most sensitive cherry varieties, including Rainiers, the SFS improves packhouse throughput and consistency of pack, while providing significant labor savings for all varieties of Cherry.

The SFS is scalable and can be configured from a small sorter to a high-volume, along with software options allowing traceability, data analytics and ERP integration.

Benefits

- Available for small as well as medium-large sizes of grading and packing needs
- Ability to expand to meet the capacity of the largest scale cherry Packhouse's
- Multiple configurations to allow side-by-side sorters controlled by the same operational system
- No dry transfers, except onto the carriers
- Patented singulating V-flume singulates the fruit in water preventing damage and spill
- Line balancing prevents overfull lanes, reducing fruit recycle and re-run
- Patented flumes and Low Drop Heights prevent cherry damage
- High-flow deep water baths prevent cherries impacting the bottom

Vision Systems

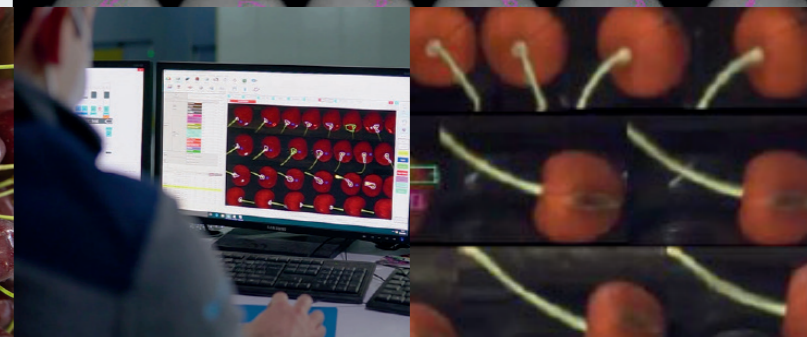
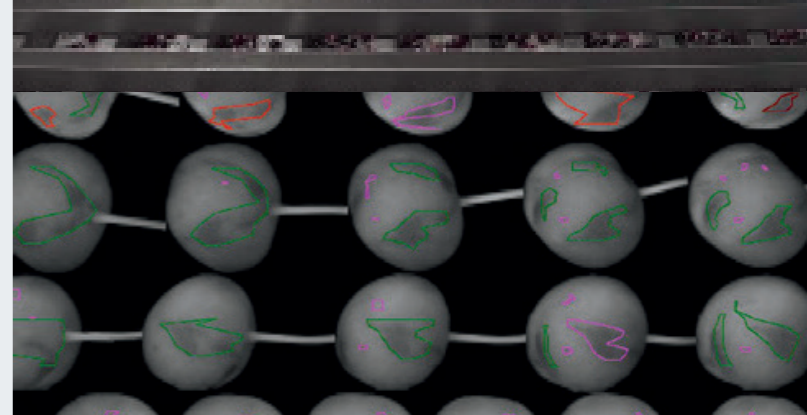
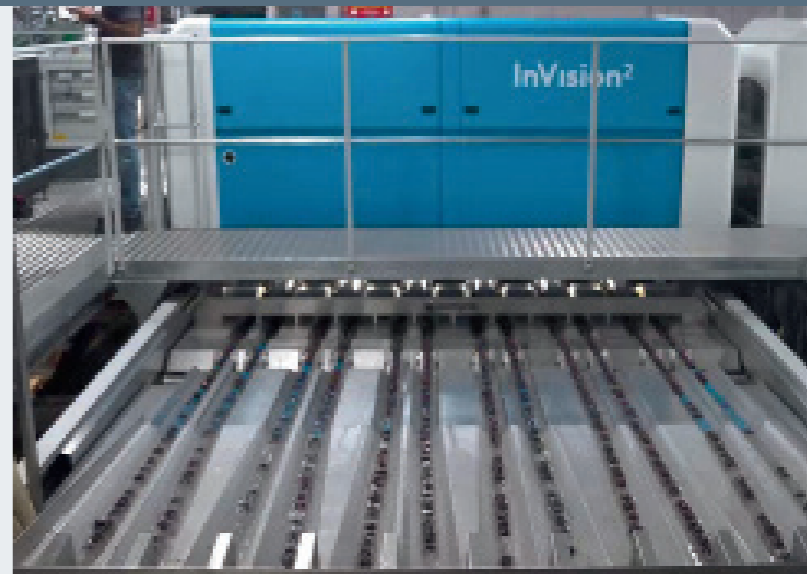
TOMRA's product sorting uses state-of-the-art systems, equipped with colour and infrared cameras controlled by intuitive software.

These systems allow for 100% surface inspection, with lower inspection angles resulting in superior image quality and improved identification of the most challenging defects.

In Vision² & Total View

Available with 5 views (inspects 76% of the cherry surface) or 7 views (inspects 100% of the cherry surface). The Total View camera pairs are positioned at lower inspection angles and closer to the fruit, providing superior image quality and better identification of defects such as softness, bruising, rot and double stems.

The management software has an easy-to-use interface and uses the latest features such as machine learning, SmartMap™ and SmartSkin™ to optimise the defect detection process.



LUCAi[®] Deep Learning

New deep learning models, pre-trained on massive datasets, accurately detect and classify even the most complex defects across multiple products and varieties. Provides improved defect sorting for Pacman cherries, edge cracks, open sutures and cracks, spurs and stem pulls.

The technology uses end-to-end learning to increase the productivity and profitability of packaging operations, offering greater automation within a comprehensive grading platform.

LUCAi[®] makes it easy to adapt the severity of grading parameters to seasonal dynamics and market preferences. In addition, the pre-trained intelligence of this upgrade is adaptable to the needs of individual growers.

Benefits

- Enhance pack quality and consistency, minimizing waste;
- Increase efficiencies by preventing accidental downgrades of good fruit;
- Maintain consistency across seasons, batches, varieties, and operators due to advanced software intelligence;
- Enhanced user-friendly interface ensures operators of all levels will maintain complete control of each model and maximize the value of each and every cherry.



Packing Solution

Our filling solutions complete the cherry line, designed to quickly and accurately fill a wide range of packaging options.



CURO

The CURO is versatile, with the ability to easily switch between packaging types such as clamshells, punnets and cups. Gentle on produce, the CURO has a small drop from conveyor belt to hopper, ensuring your product isn't damaged during sorting and packing.

Minimal elevation transitions coupled with anti-bruise surfaces ensure that fruit integrity is kept intact. The CURO system has a variety of functional options, including moving fill, twin fill automatic sensor line stop and connectivity to downstream options such as heat sealers and packing tables.

The CURO filling system is capable of consistently packing at speeds of up to 240 clamshells per minute (dependent on reliable quality clamshells and quality fruit).

CURO 2



CURO 2

Our CURO2 is easily integrated with our solutions, thereby providing our customers with the ability to use multiple CURO2's in one turnkey line to simultaneously pack different grades of fruit.

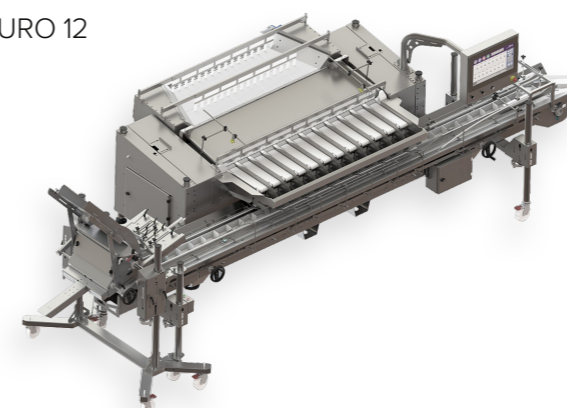
CURO8, CURO12

These versions come with the flexibility to switch between a wide range of packing options. These machines are all highly suited to packers with demanding filling requirements.

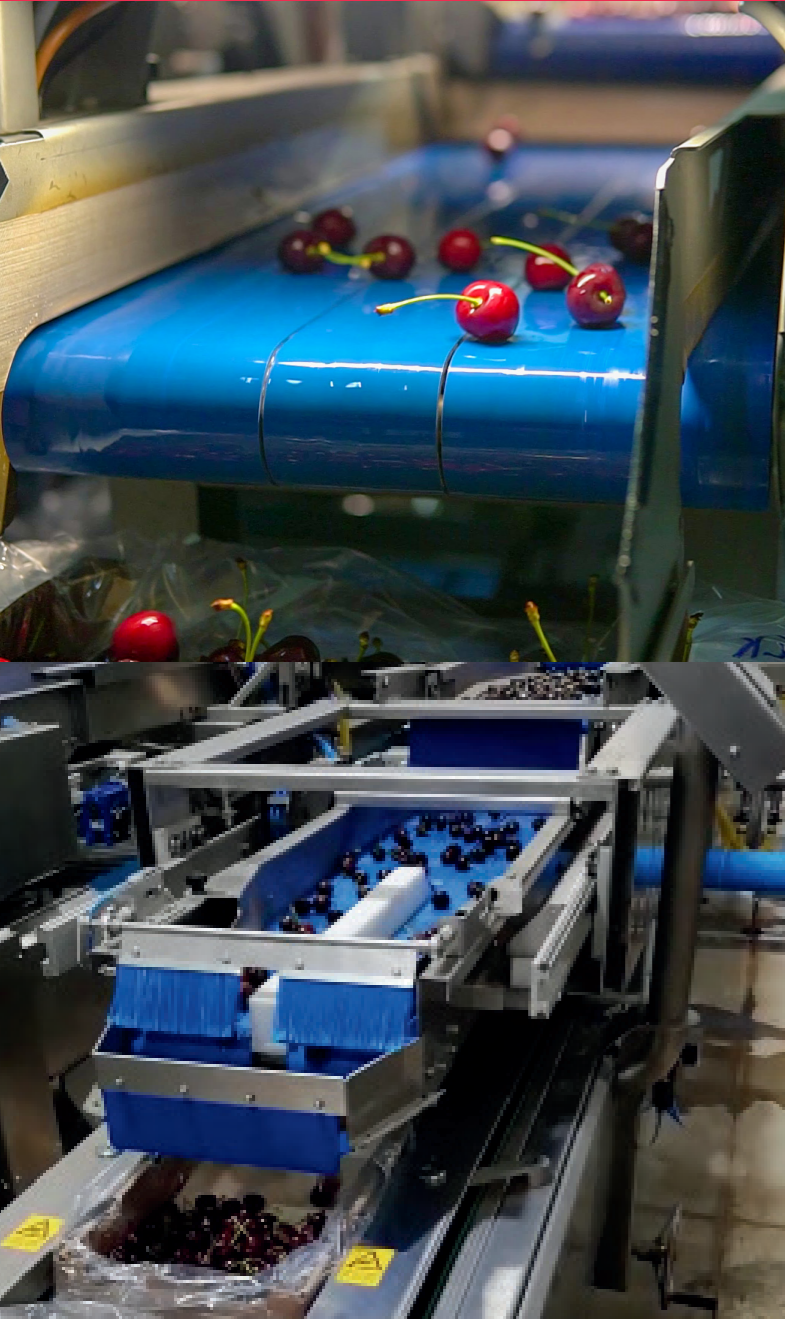
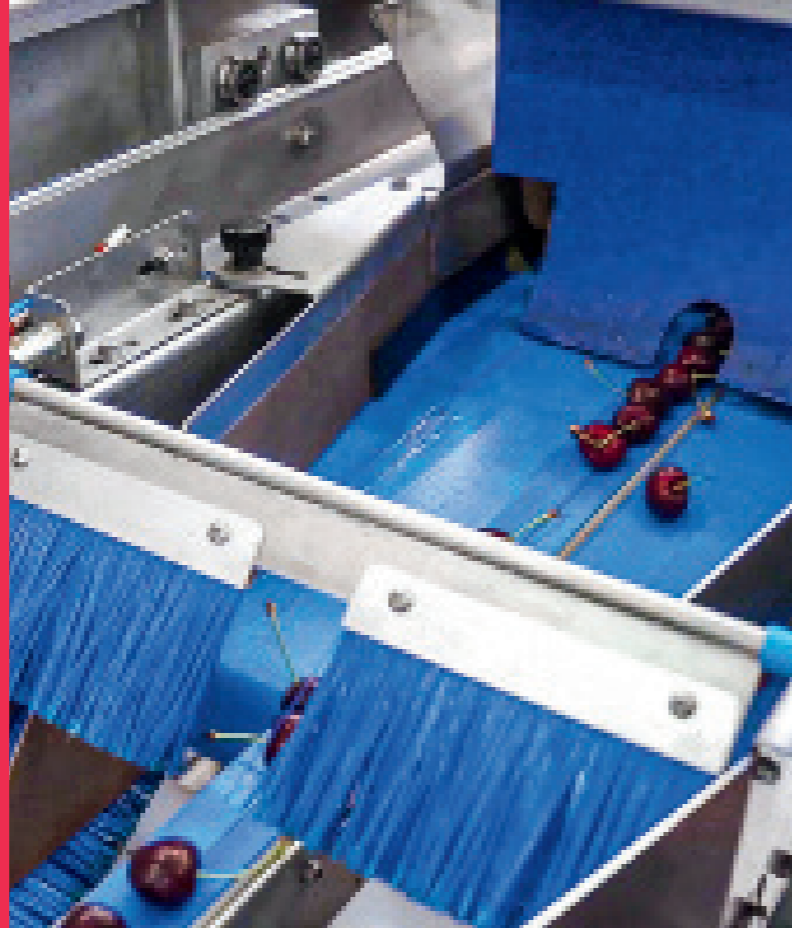
Benefits

- Increased Speed
- Accurate
- Gentle handling

CURO 12



Packing Solution



Manual filling system

For small productions, the packaging of the selected product is done manually: The products exiting the sorter are transported to packaging benches equipped with opening doors to facilitate the manual filling of the packages.

Semi-automatic filling system

Suitable for high volume production. Its precision is guaranteed by a weighing system with load cells and a third belt for accurate weight correction. The system is very versatile and customisable, as well as accurate, thanks to its link with the sorter's control software, which facilitates the management of different recipes by allowing automated and rapid changes.

Automatic filling system

System designed for high production volumes, it allows the packing of a wide range of packaging formats large boxes with automatic box change.

Waiting times are reduced thanks to the simultaneous processing of 2 boxes by means of 3 conveyors and a double loading station: loading station with a pair of conveyors and finishing station with a third conveyor.

The system is very versatile and quickly adapts to the selected box format, thanks to its easy management via touch-screen panel and connection with the sorter management software.

The solution offers two variants: front loading and rear loading of the boxes, in order to fully adapt to the customer's design needs and layout options the customer's structural characteristics.

Traceability Systems

Our Traceability System makes it possible to trace processed products internally, through a network of devices and systems for storing incoming information, collecting and cataloguing all the information on the product chain being processed, from harvesting to packaging.

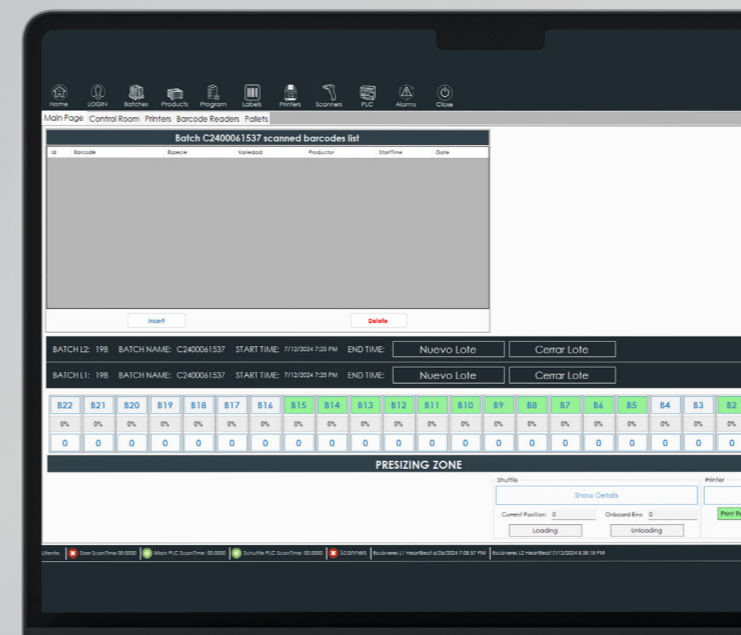


The system, based on barcode scanning, is autonomous and versatile. It works in constant connection with the sorter software, sending and receiving all the information on the processes in progress, scanning the labels applied to the incoming batch and automatically filling in the outgoing labels.

The versatility of the system lies in its ability to adapt the information that can be entered and its layout, adding the possibility of customising the labels by customer or by point of sale.

Benefits

- Create and edit customised labels;
- Scan, print and automatically apply labels to packages;
- Define custom rules to manage the feed process and automatically fill in label fields;
- Diversify labels for different points of sale;
- Obtain product information and pack filling history through barcode scanning;
- Real-time monitoring of machine status;
- Export data to customer servers;
- Record alarms in chronological order.





TOMRA

Interested in a free demonstration with your own product or require more information?

Please contact us directly

www.tomra.com/food



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