



Integrated Sorting & Packing Solutions

Processed Vegetables

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Every Vegetable Counts™

TOMRA Food has everything in place to meet your needs in terms of a high quality output of processed vegetables. Offering high-value and safe products to your customers is our priority. We take pride in creating a high return on investment for our customers and limiting waste.

Sorting is Vital

It's your reputation on the line and just one mistake can damage it forever. No matter what part of the food industry you're in, sorting is vital. As trusted suppliers for more than forty years, TOMRA knows the challenges that growers, packers, and processors face. And that's why we provide you with the best and most comprehensive sensor-based sorting solutions available in the food industry today.



Applications

- Bell peppers
- Broccoli
- Carrots
- Cauliflower
- Corn
- Green beans
- Spinach
- Peas
- Potatoes
- Squash
- ...and more



Benefits

Food Safety

The implementation of sorting technology can significantly reduce the risk of contamination from foreign material and any other unwanted materials. Limiting product recalls and claims, our solutions help to increase the overall customer satisfaction, brand protection and reinforce your corporate image in the market.

Yield Maximization

An increased product value not only creates a trustworthy relationship with your customer, but also boosts your company's productivity. Providing smart solutions that sort your produce in the most efficient way, limiting product loss and maximising the amount of recovered produce is our goal. At the same time our solutions minimize energy usage and significantly reduce waste.

Consistent Performance

Stable and reliable performance is key to keep your factory running in the most efficient manner and your business competitive. Through the effective and consequent removal of unwanted material, the consistent delivery of safe and pure food is guaranteed. TOMRA is your technology partner optimizing your production flow while offering stability during operation.



“

We have an excellent working relationship with the local agent and TOMRA and this ensured that the installation process was seamless and well-managed.

*Jon Wetherell,
Project Engineer, Birds Eye*

“

The advanced and innovative technologies guarantee the highest level of reliability and increase our competitiveness in the market.

*Julien Dubois, Packing and Optical Sorting
Technologies Project Engineer, Ardo*

“

The solution from TOMRA Food has given us stability and flexibility in the running of our plant.

Guy Saint-Lo, Prim'Co

Technology

BSI+

BSI+ enables the examination of food products using light beyond the visible spectrum, into the near-infrared region. TOMRA's BSI technology inspects product characteristics and can identify certain chemicals, molecular differences and surface changes within the objects being inspected.

Pulsed LED

The combination of a number of different pulses (targeted frequency illumination) inspecting objects in RGB and IR spectrum enable the detection of the subtlest color differences and enhance foreign material detection. The benefits are numerous: calibration-free, stability, long life-time, high resolution and less heating.

Camera

Recognition of materials based on color, biological characteristics and shape is guaranteed thanks to the use of cameras. Their capabilities go beyond the visible spectrum and include infrared, ultraviolet and other spectra. TOMRA has developed exclusive high resolution cameras with an adapted spectrum, ideal for optical food sorting.

Laser

TOMRA's laser technology sorts based on color, structure, and biological characteristics. Laser scanning detects contaminants even when the product and the defects have the same color, or when unwanted materials are invisible for the human eye.

High pressure steam and Dry peel separation

Removing the skin and minor surface imperfections, releases the beauty of the high-quality vegetable flesh that enhances your vegetable attractiveness. Maximizing the quality and value is achieved by the combination of the high-pressure steam peeling and dry peel separation in the TOMRA peeling module. TOMRA developed simple, and easy-to-use touch screens that are included as standard. These enable the customer to create customized programs for each vegetable to ensure easy and efficient changeover from one vegetable to the next.

Our Sorting Solutions



TOMRA 5A

The TOMRA 5A sorter represents the latest innovation in whole product sorting technology. The machine has improved performance and added functionality to help customers address the increasing demands on the processor for food safety assurance, improved yields and lower running costs. A key feature of the TOMRA 5A is superior foreign material removal, the sorter effectively discards items such as corn cobs, wood, stems, plastics, glass and even stray golf balls. With food safety and quality being a top priority for consumers and processors alike, this innovative machine goes the extra mile to achieve optimum performance with the new Peel to Spec module, an add-on system.

Sentinel II

An efficient and meticulous sort of washed and peeled vegetables is made possible thanks to the Sentinel II. Meeting the needs of the industry, the Sentinel offers a solution for seasonal and year round processors.

The customized optical configuration and cost-effectiveness of the machine dramatically increases the already very attractive ROI.

Even at high capacities the sorting performance is guaranteed and all foreign material, discolorations and blemishes are removed from the stream of produce. The user interface provides the operator with live data, diagnostics and maintenance information. Sanitation is simplified and maintenance costs kept low, thanks to the open design.



TOMRA 3A

Time is precious during harvest and having the TOMRA 3A optical system mounted in a fully sealed enclosure is the perfect design to protect it from rain, wind, dust and heat as well as potential vibration from moving the sorter between storage cellars. The TOMRA 3A performs well when pushed to meet the tight deadlines of a short harvest season. The sorter boasts a 30% increased capacity over previous TOMRA models of similar size.

For ejection the TOMRA 3A sorter employs a highspeed finger-based ejection system. Designed for robustness and repeatability whether removing large or small objects, the ejection system features long life finger assemblies with a new 'quick change out' design.

Gentle product handling continues to be a priority and the new TOMRA 3A 'accept' conveyor captures and delivers bruise free 'accepted' products.





TOMRA 5B

Designed with broad capabilities, the 5B can successfully sort wet, small and sticky vegetables such as peas, sliced or diced vegetables or long, large objects such as green beans or spinach leaves. It can do all this while improving yields and product quality with minimum product waste and maximum uptime. To achieve unrivalled performance, the sorter combines 3 of TOMRA's leading technologies: smart detection, smart classification and smart ejection. Smart detection includes high resolution surround view with a 360 degree inspection, as well high intensity LEDs that optimize light intensity on a reflective belt and deliver the best possible image accuracy. The smart classification technology incorporates advanced color, shape and size and use an advanced form of AI to build accurate distinctions between good produce, unwanted defects and foreign material. The smart ejection technology includes object merging, cluster recognition and other advanced tools which maximize ejection accuracy and minimize waste.

The sorter is 'Industry 4.0 ready' and sends out a broad set of machine data and sorting performance data, including detections of defects, length distributions, individual valve activity, and many others, which allow for both basic and advanced system integration to SCADA, MES and other production automation systems.

The sorting machine's new customized high-speed, small-pitch TOMRA ejector valves, which are part of the innovative smart ejection system, allow for the precise removal of defective products, with minimal final product waste, at a rate three times faster than previous valves.

TOMRA 5C

The TOMRA 5C is the next generation of expectation-defying technology from TOMRA Food, built with the processor and operator in mind. Industry-leading sensors combined with big-data analysis deliver a clear picture of each and every vegetable and all foreign material; setting your team up to make real-time decisions to boost your chances of a better profit, higher quality yield and expeditious equipment payback.

This easy-to-use machine is designed to grow with your needs while handling increased capacity. You can trust TOMRA 5C's consistent performance and peace of mind 100% of the time. You can expect higher quality sorting output, simplified cleaning processes, greater accessibility and improved food safety marks due to the unparalleled build. TOMRA 5C isn't just an investment in the best technology on the market. It's an investment in the future of your operation's success.



Blizzard

Specifically designed for the IQF industry, the Blizzard free fall, pulsed LED sorter is the most cost-effective solution available on the market. The double sided inspection module efficiently inspects and removes all unwanted material, guaranteeing a high quality and safe product.

With its compact, open and sanitary design, the Blizzard makes an optimal solution for integration after IQF tunnels or in packaging lines. Reduced labor costs and the machine's low energy consumption reduce the overall costs and increase the return on investment.



Our Peeling Solutions

Savings that can be achieved

Mechanical peeling, using knives or abrasive techniques, removes high volumes of skin and flesh from the surface of potatoes, carrots and other root vegetables. The losses can be as high as 50%. Steam peeling provides customers with the opportunity to dramatically reduce peeling losses, to provide our customers with higher volumes of peeled product and to reduce waste and to increase their profits.

TOMRA's steam peeling line enables customers to manage the natural variations in the raw material to achieve the optimum yield for their process.



Peeling Module

With over 35 years' experience TOMRA has focused on continuously improving the efficiency, yield and quality of the steam peeling process through the development of steam peelers and innovative peel separation solutions.

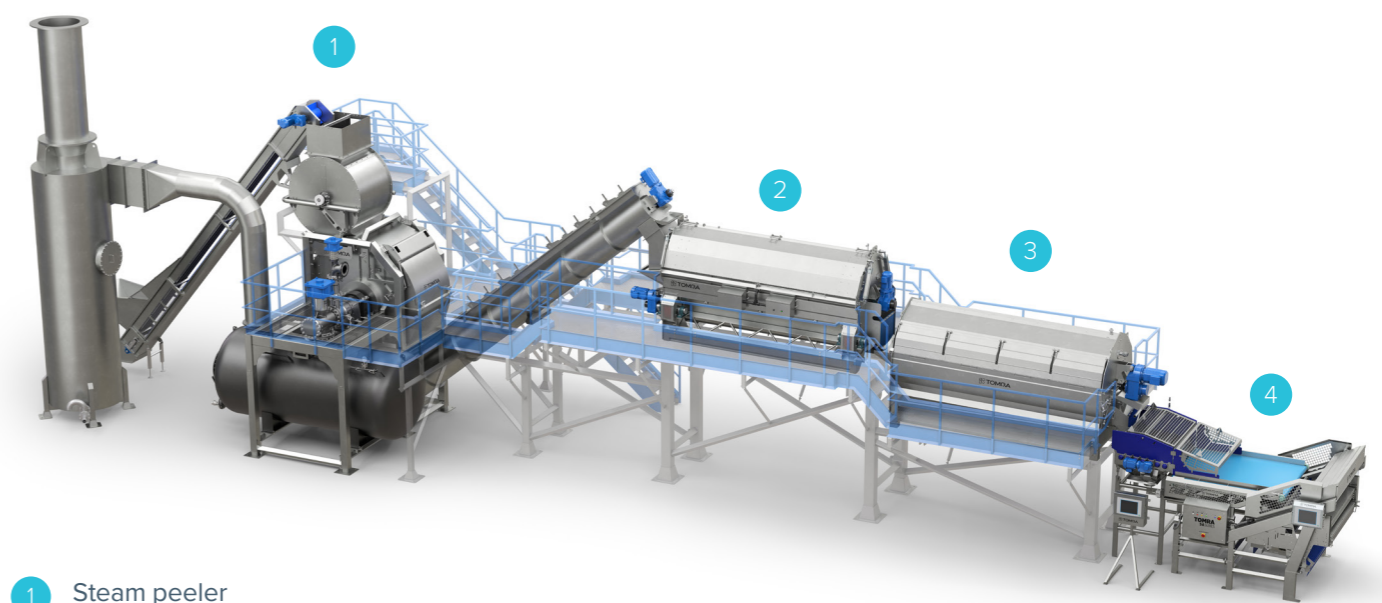
Mechanical peeling is an abrasive approach which unnecessarily removes high volumes of usable material from root vegetables such as carrots or potatoes. This can result in up to a 50% loss of usable material.

Providing customers with a higher volume of peeled produce, significantly reducing peeling losses, other waste, and energy consumption, our machinery is the best investment to maximize your yield.

Our equipment also manages natural variations in raw material and requires little maintenance. All of which results in a substantial profit increase.

Benefits of Steam Peeling

- + Lowest peel loss
- + High efficiency
- + Reliability
- + Low operating costs
- + Limited maintenance
- + Scalability
- + High capacities



- 1 Steam peeler
- 2 Dry peel separation
- 3 Product washing
- 4 Optical sorter

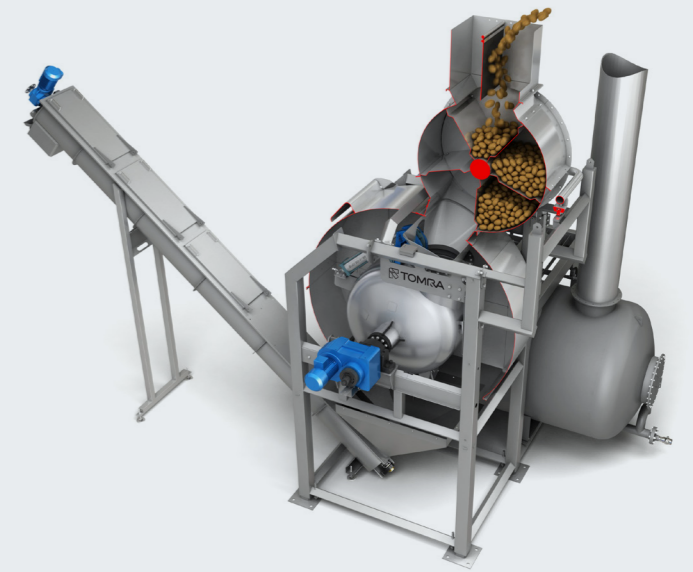


Eco

The TOMRA steam peeler is the industry's leading steam peeling system. Incorporating TOMRA XPT valve exhaust technology and AutoBatch process automation, the TOMRA steam peeling system offers fast cycle times, gentle product handling while operating at a range of different steam pressures (low or high).

TOMRA's process automation achieves intelligent control of the complete peeling process. Sensor based technology is used to monitor and provide feedback to the control system which processes the information to ensure the lowest steam times and peel loss.

The user interface enables the operator to easily see the process and adjust production volumes. The result is a unique design that enables customers to achieve the maximum efficiency for their processing requirements.



Odyssey

The Odyssey high quality steam peeler is specifically designed for seasonal processors of vegetables such as red beets, pumpkins, celeriac, kohlrabi, potatoes, squash, and chilies.

It incorporates TOMRA's control software, an enlarged steam peeling vessel and a weigh hopper to enable customers to process a wide range of vegetables efficiently. The vessel is bottle-shaped to enable a range of large volume vegetables to be peeled.

Using a simple steam supply and exhaust arrangement, the Odyssey steam peeler is low maintenance and has low operating costs whilst delivering highly efficient steam peeling performance; making it the most cost-effective steam peeling solution available on the market. The Odyssey steam peeler comes in a range of vessel sizes to achieve efficient processing production.



Orbit

The TOMRA Orbit is the industry leading steam peeler which incorporates patent protected technology to deliver optimum performance in steam peeling. Utilising a unique vessel design and exhaust system the Orbit achieves the lowest peeling losses in the industry, highest reliability and optimum efficiency for the world's leading producers.

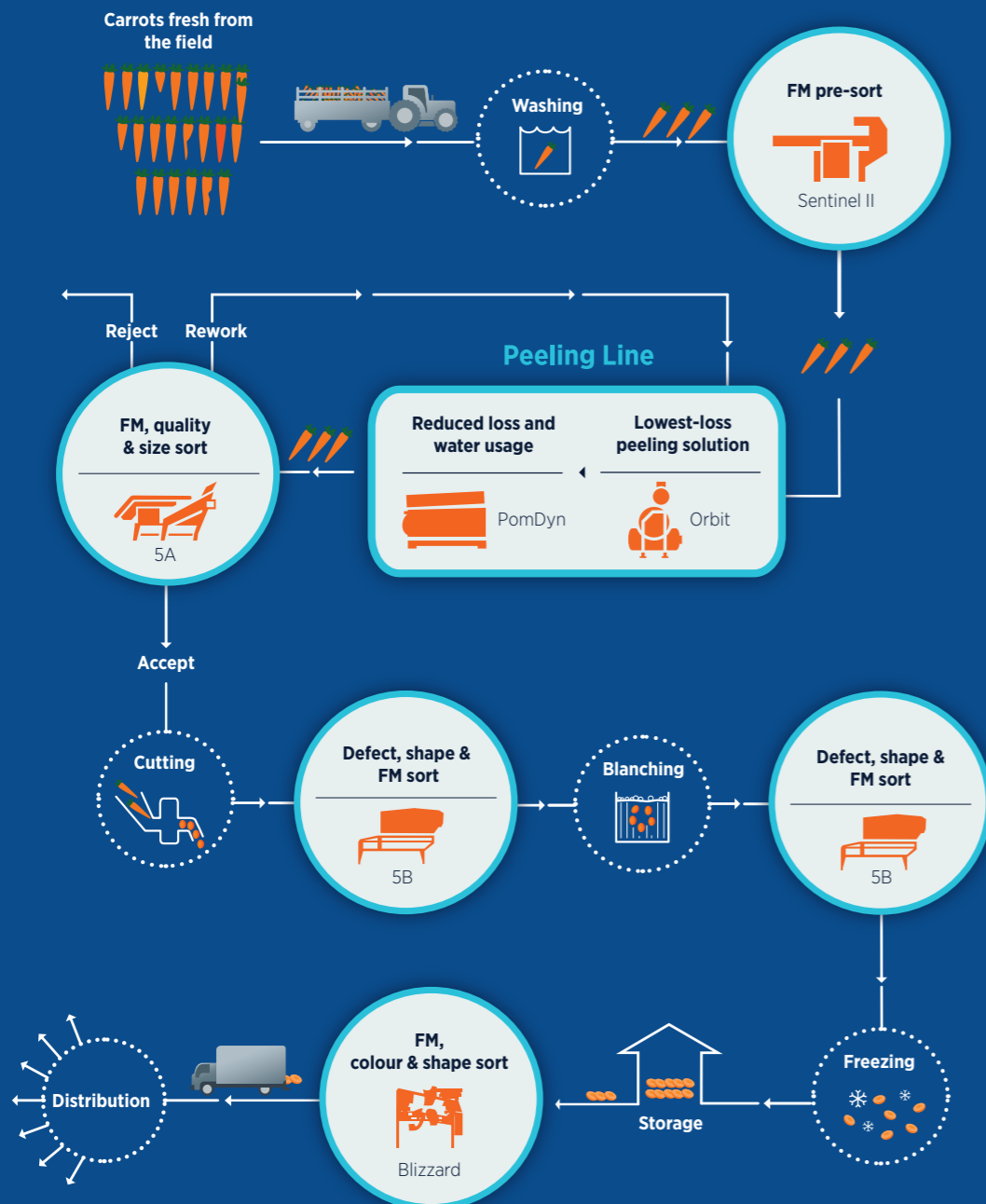
Using TOMRA XPT valve technology the steam supply and steam exhaust system achieves higher steam flow, while achieving significantly lower maintenance and longer wear life than competing technology.

TOMRA's process automation achieves intelligent control of the complete peeling process. Sensor based technology is used to monitor and provide feedback to the control system which processes the information to ensure the lowest steam times and peel loss. The user interface enables the user to read data, adjust process parameters and control the complete peeling line.



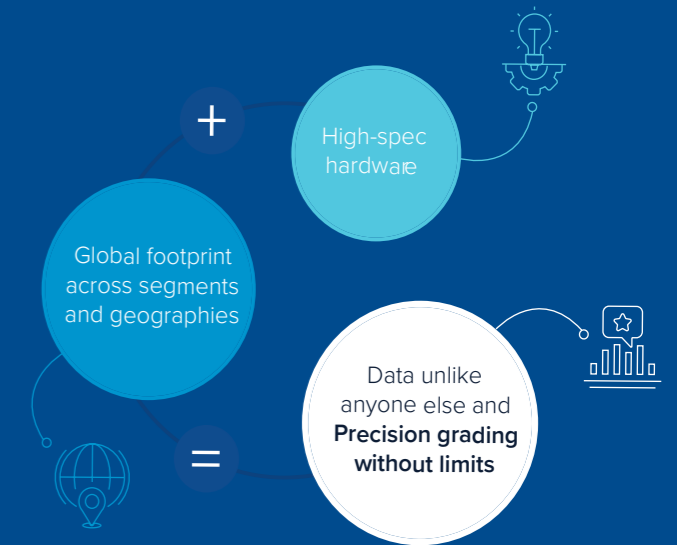
Processing Line Example

Depending on the production environment, throughput and other specific needs, we design the most efficient line lay-out. The actual machine configuration is defined based on TOMRA's experience with similar processors and after extensive testing.



Why TOMRA?

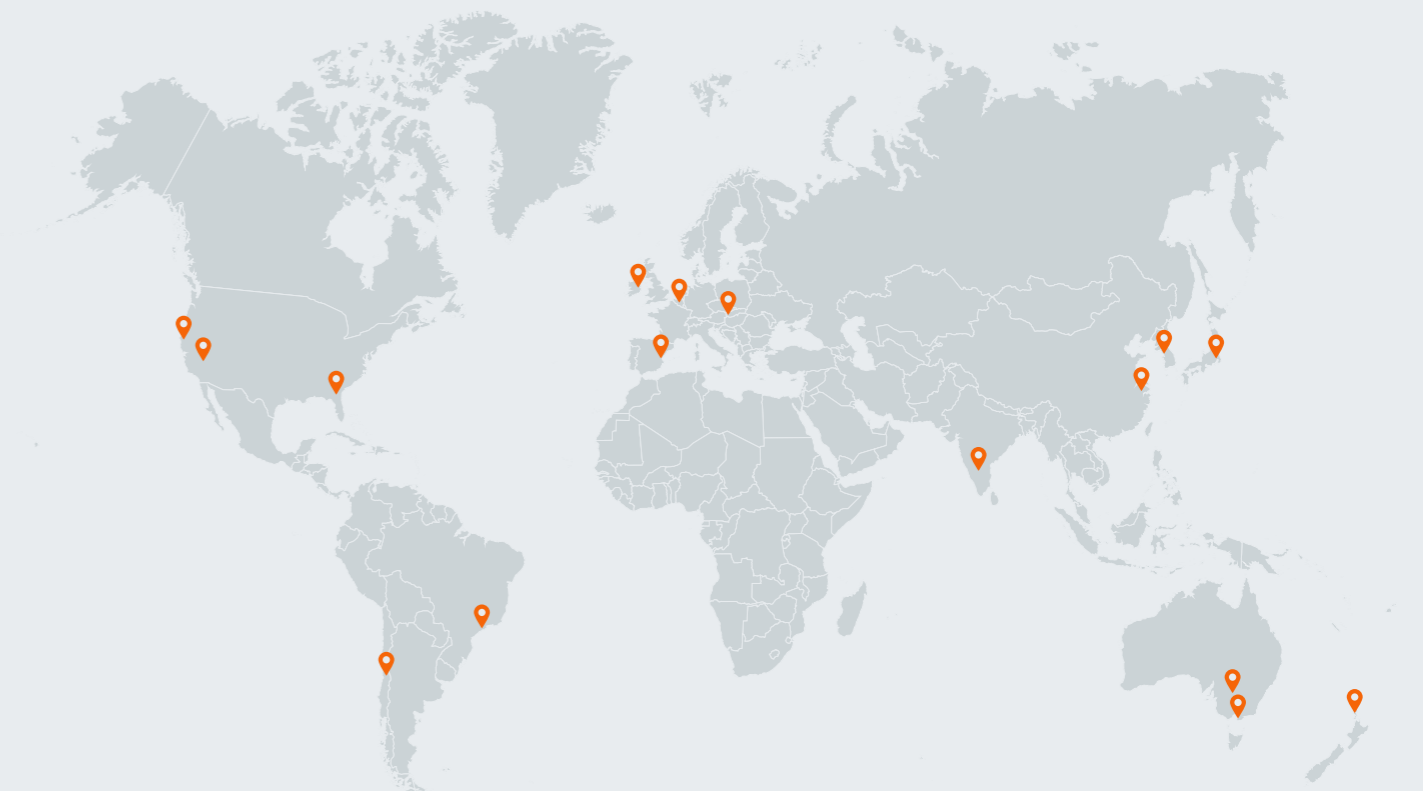
We lead the industry because:



Food Solutions

Our vision is to be the **innovative, world leader in sorting, packing, and optimization** of citrus fruit. TOMRA Food solutions are equipped with the **latest technologies** and designed to **process a variety** of products based on your **unique requirements**. Our solutions can help you **quickly sort, grade and pack quality product for your customers, maximize your own profit** and support you with your **growth aspirations**.

TOMRA Food Locations



● TOMRA Food Offices



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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