
TOMRA
Processed Potatoes
Sorting Solutions for processors

Content

Every Potato Counts™

TOMRA Food machines are equipped with the latest technologies and designed to process a variety of products based on your requirements. 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 potato 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.

Products

French fries
Chips
Diced potatoes
Slivers
...and many more

Benefits

Food Safety

The implementation of sorting technology can significantly reduce the risk of contamination from foreign material. Limiting product recalls and claims, our solutions help to protect your brand and company's reputation.

Yield Maximization

An increased product value not only creates a trustworthy relationship with your customer, but also boosts your company's yield. Through the effective removal of defects, the delivery of safe and pure food is guaranteed. In addition, the limitation of recalls surely increases the overall customer satisfaction and reinforces your corporate image towards the market and competitors.

Consistent Performance

Stable and reliable performance is key to keep your factory running and your business competitive. TOMRA's technologies offer you technological advantage and stability during operation. At the same time our solutions minimize energy usage and significantly reduce waste.

"We aimed at becoming a world-class enterprise the first day we started. TOMRA has always been one of the world's leading companies when it comes to peeling and sorting, which is highly aligned with SNOWVALLEY."

CWANG NAN, *CEO of Snowvalley Group*

"We will be able to access international markets thanks to the exclusive cutting-edge technology we have bought, such as the latest version of the TOMRA 5B. By using this sorting machine, we know we are offering the best product on the market"

Hilario Zapata,
Director of Operations at Benis Food

TOMRA's advanced sorting machines inspect billions of individual product pieces per hour, typically recovering 5-10% through higher yields and better utilization. That's equivalent to approximately 25,000 trucks of potatoes per year!

Technology

NIR Spectroscopy

NIR spectroscopy (NIR) allows the examination of produce using light beyond the visible spectrum, into the near-infrared region. The technology detects features of the produce which are impossible to see by humans with visible light. Thanks to TOMRA's NIR technology it is possible to identify certain chemical and molecular differences and changes on the surface and within the objects being inspected.

Pulsed LED

The combination of a number of different pulses inspecting objects in the RGB and IR spectrum enable the detection of the subtlest color differences. Benefits are numerous: calibration-free, stable, long life-time, high resolution, 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 machines sort based on color, structure, and biological characteristics. Laser scanning detects contaminants even when the product and the defects have the same color.

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 control module, as add-on system.

Furthermore, the TOMRA 5A has unrivaled potato quality sorting controls. This provides processors with the opportunity to recover product which is not good enough to accept, but at the same time not bad enough to send to waste. The leftover product can be sent to re-peel or trimming lines. It can even be made into alternative end products, such as potato flakes.

Sentinel II

An efficient and meticulous sort of washed and peeled potatoes is made possible thanks to the Sentinel II. Meeting the needs of the potato 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, blemishes and damage 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

The TOMRA 3A is specifically designed to sort unwashed potatoes directly from the field. With a robust, durable design, the TOMRA 3A is powerful enough to meet your high demands for removing foreign material at harvest. Equipped with multispectral NIR sensors to enable the detection of soil clods, stones, and foreign material at very high capacities. Newly integrated AI-driven classification improves the sorting of foreign material to help distinguish between soil-covered potatoes and dirt clods with precision. Additionally, color sensors enable the detection and removal of unwanted green potatoes.

The TOMRA 3A offers labor replacement solutions, reduced storage costs, and improved product quality to help maximize your yields and overall productivity. Installed with a highly intuitive user touchscreen, the TOMRA 3A ensures monitoring of the sort, empowering the grower with total control of the quality of the sort. The combination of advanced technology and extremely wear resistant finger ejectors make it a consistent long term sorting solution.

Our sorting solutions

TOMRA 5B

The innovative machine is a highly efficient, intuitive solution that has been designed to improve yields and product quality, with minimal product waste and maximum uptime. The sorter combines TOMRA's smart surround view technology with a 360-degree inspection. The technology features high resolution cameras, and high intensity LEDs for optimal product appearance. These features reduce false rejection rates and improve product quality by identifying each object, in turn improving color, shape and foreign material detection.

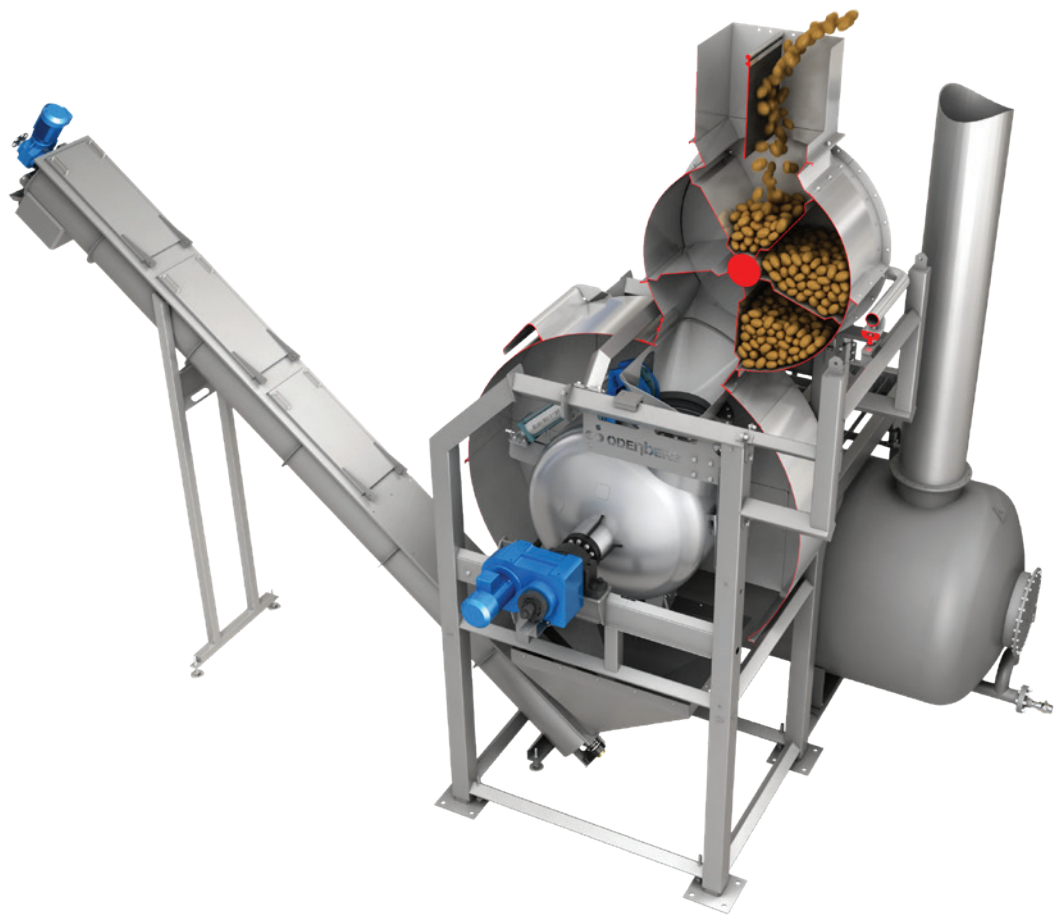
The machine's new customized high-speed, small-pitch TOMRA ejector valves allow for the precise removal of defective products, at a rate three times faster than previous valves. The functional machine design allows fast and efficient cleaning which results in fewer unreachable areas and a lower risk of waste material building up. Convenient for all users, the TOMRA 5B offers flexibility and allows processors to sort against their own specification criteria.

Our process solutions

Eco Steam Peeler

The reduction of steam times is as crucial today as it has ever been. To meet this need, TOMRA developed the Eco Steam Peeler. With an incredible peeling speed, uniform skin removal and low peel loss this peeler drastically increases your company's yield. Given the major reduction in steam usage and energy savings up to 25%, the steam peeler was granted the 'Eco' label.

The Eco technology changes the nature of the steam peeling process from fixed steam supply to a new controlled steam management system. The result is a substantial improvement in processing efficiency and major savings in steam. . The high pressure vessel includes an innovative product mixing design that enables rapid heat transfer from the steam to the surface of each individual product. The vessel is also equipped with a unique parallel motion door. A complete peeling line is equipped with a steam peeler, dry peel separator, product washer, peel scanner and an optical sorter. Within the steam peeler range TOMRA offers the Orbit, Odyssey and Eco Steam Peeler.



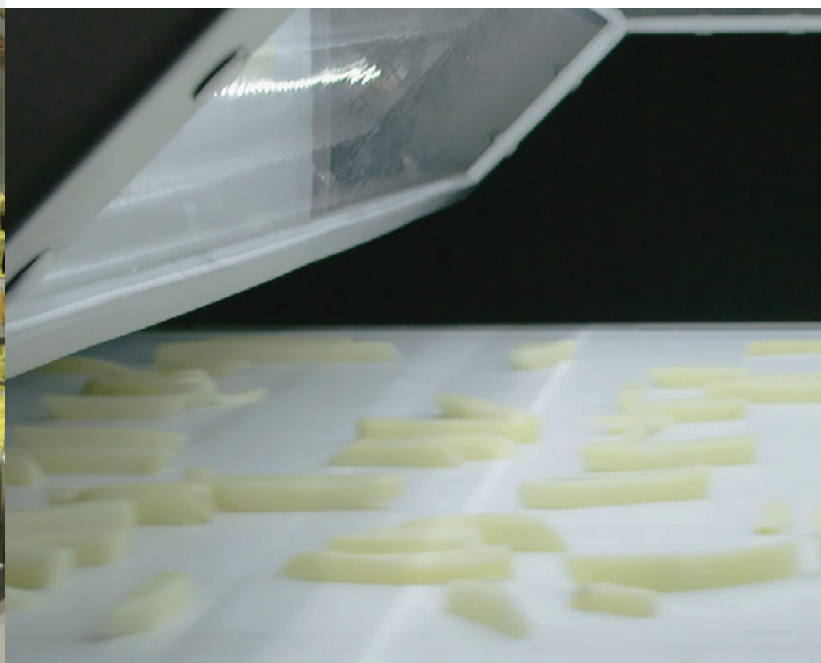
Pom/Dyn

The TOMRA Pom/Dyn is an important element within the quality program, ensuring that the length distribution of French fries, meets the specs of the end customer.

The vision system can either measure the length of the product ruler wise (straight length) or following the curvature (centre line) and this with an accuracy of +/- 1 mm. Specifically selected LED illumination makes the system insensitive to product colors and color variations. Measuring 2 kilo in one minute, the analyzer provides the operator with a fast result. Subsequently, quality control operators can make better informed decisions based on the provided length profiles.

The Pom/Dyn, size analyzer changes the way statistical quality control is carried out. Its purpose is to generate size specifications from French fries samples.

By using sophisticated shape recognition software the system will also measure curved products. Results can be stored locally or exported to the customer's network for future references.



Peel control module

Potato processors are often faced with changes in the raw material quality, resulting in the need to constantly monitor the peel quality after the peeling process and adjust the peeler's parameters to achieve optimum yields. In most cases operators will play safe by increasing the steam peeler's steam time leading to yield loss. Stable peel scanning, desired peel quality setting, and automated steam peeler control ensure optimal steam peeling times are used and maximum yield is assured, at all times.

TOMRA's Peel Control Module (PCM) is the latest in line of process inspection tools for the potato peeling industry. The module is an add-on for the TOMRA 5A sorter, using its multispectral imaging and super stable peel classifier to accurately track the peeling quality. If necessary, the PCM automatically calculates the optimum steam time and makes it available to execute by the peeler. The result is a continuous potato peel quality from the peeling line, with produce ready for cutting.

Users and line managers can make better informed decisions based on continuously displayed information on peel percentage, average size, and quality of the raw material.

The tool has been tested and validated in numerous French fry plants, with a 0.5% yield improvement measured. The PCM can be connected to multiple TOMRA 5A sorters and control the corresponding number of peelers.

Working principle

Once the product is loaded onto the belt, it is automatically transported to the measurement area. There is no need for the product to be directed lengthwise. A vision computer uses an ultrafast camera in combination with sophisticated image processing software to calculate the required parameters. The Pom/Dyn can also relate the measurement results to adjustable length specifications.

Our peeling solutions

Savings that can be achieved

Mechanical peeling, using knives or abrasive techniques, remove 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, 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 Line

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.

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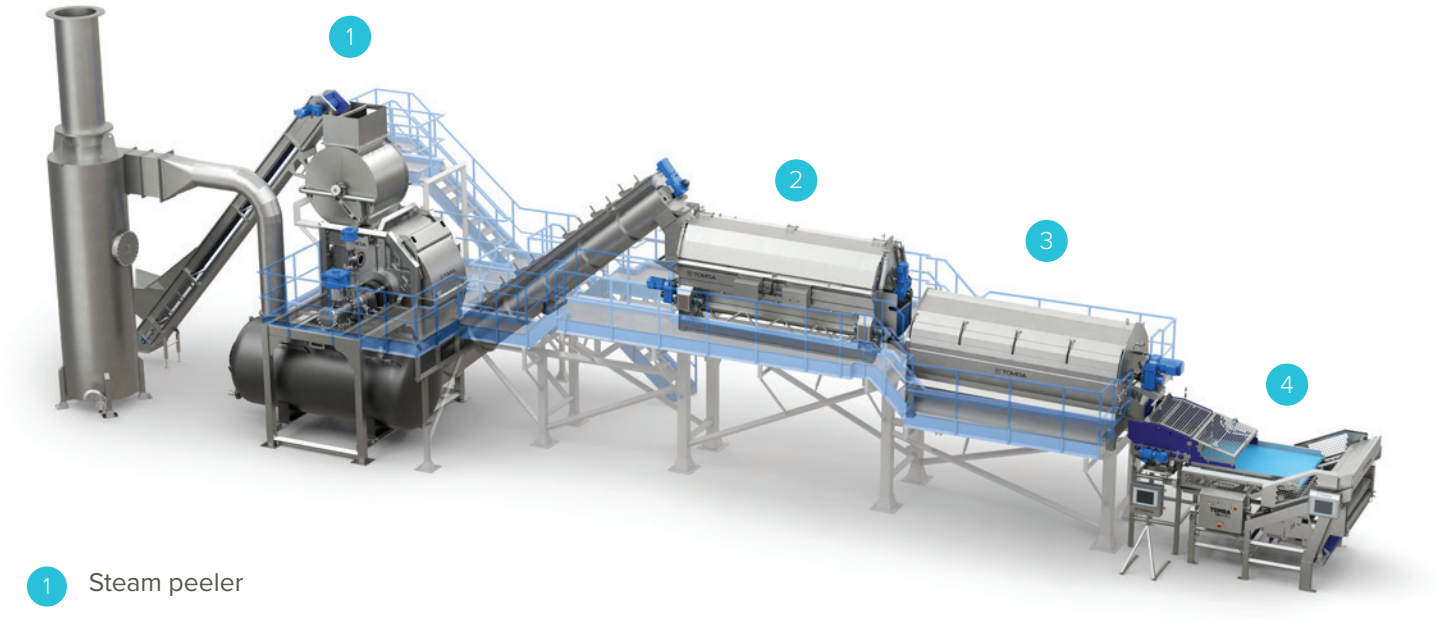
Providing customers with a higher volume of peeled produce, significantly reducing peeling losses, other waste, and energy consumption, our machinery is the best investment to maximize your yield.

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

Benefits of steam peeling

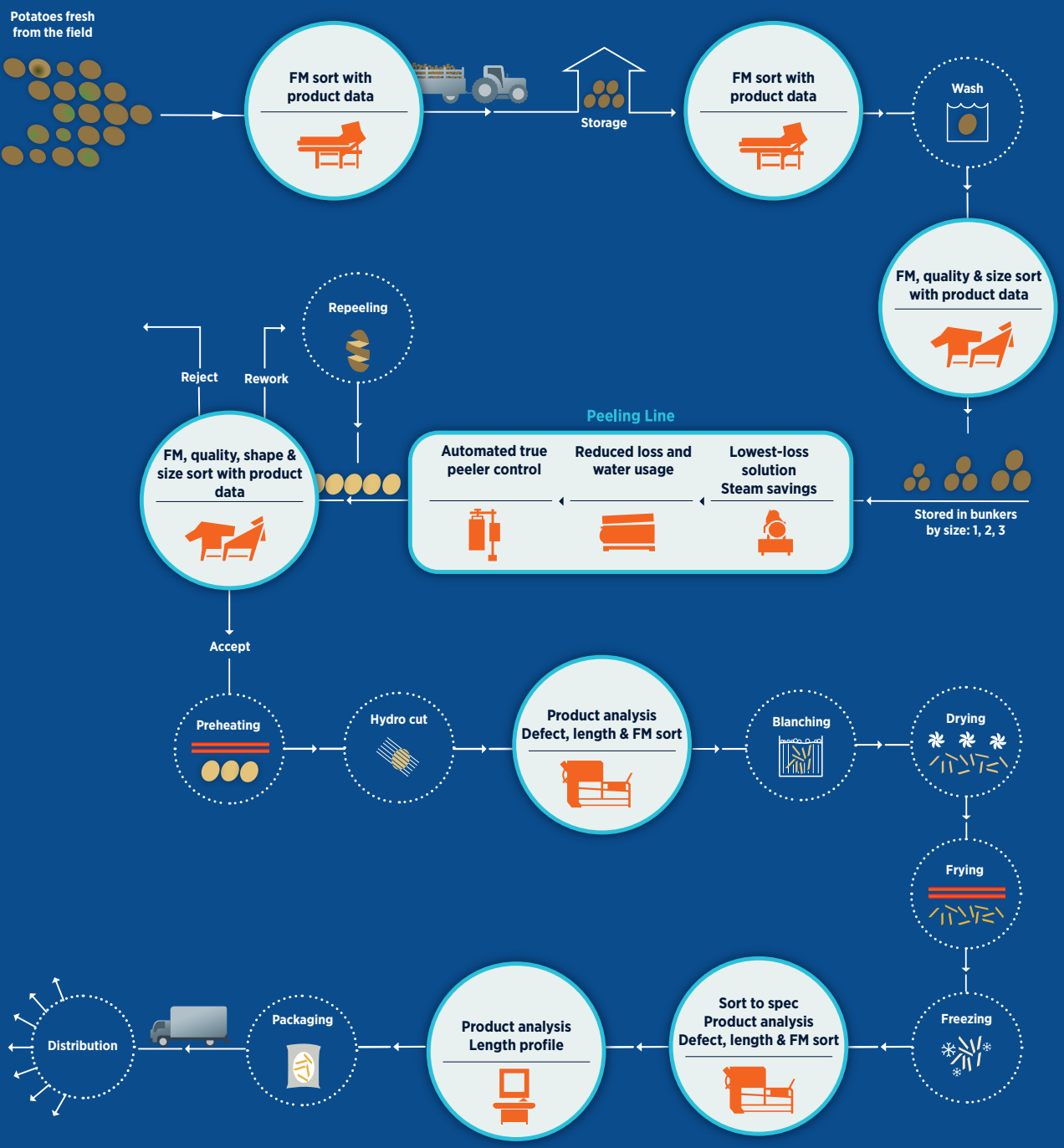
+ High efficiency
+ Reliability
+ Low operating costs
+ Limited maintenance
+ Scalability
+ Lowest peel loss
+ High capacities



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

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.



About us

TOMRA Food designs and manufactures sensor-based sorting machines and integrated post-harvest solutions transforming global food production to maximize food safety and minimize food loss, by making sure Every Resource CountsTM.

The company has more than 12,800 units installed at food growers, packers and processors around the world for Confectionery, Fruit, Dried fruit, Grains and Seeds, Potatoes, Proteins, Nuts, and Vegetables.

These solutions include advanced grading, sorting, peeling and analytical technology to help businesses improve returns, gain operational efficiencies, and ensure a safe food supply.

TOMRA Food operates centers of excellence, regional offices and manufacturing locations within the United States, Europe, South America, Asia, Africa and Australasia.

For further information about TOMRA, visit www.tomra.com/food.

TOMRA Food locations

TOMRA

Transforming global food production to maximize food safety and minimize food loss by making sure Every Resource Counts.™

Food. Recycling. Mining. Collection.

Interested in a free demonstration with your own product or require more information?
Please contact us directly. www.tomra.com/food