
PROCESSED POTATOES

SAFE FOOD, CONSISTENT QUALITY

TOMRA Sorting 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

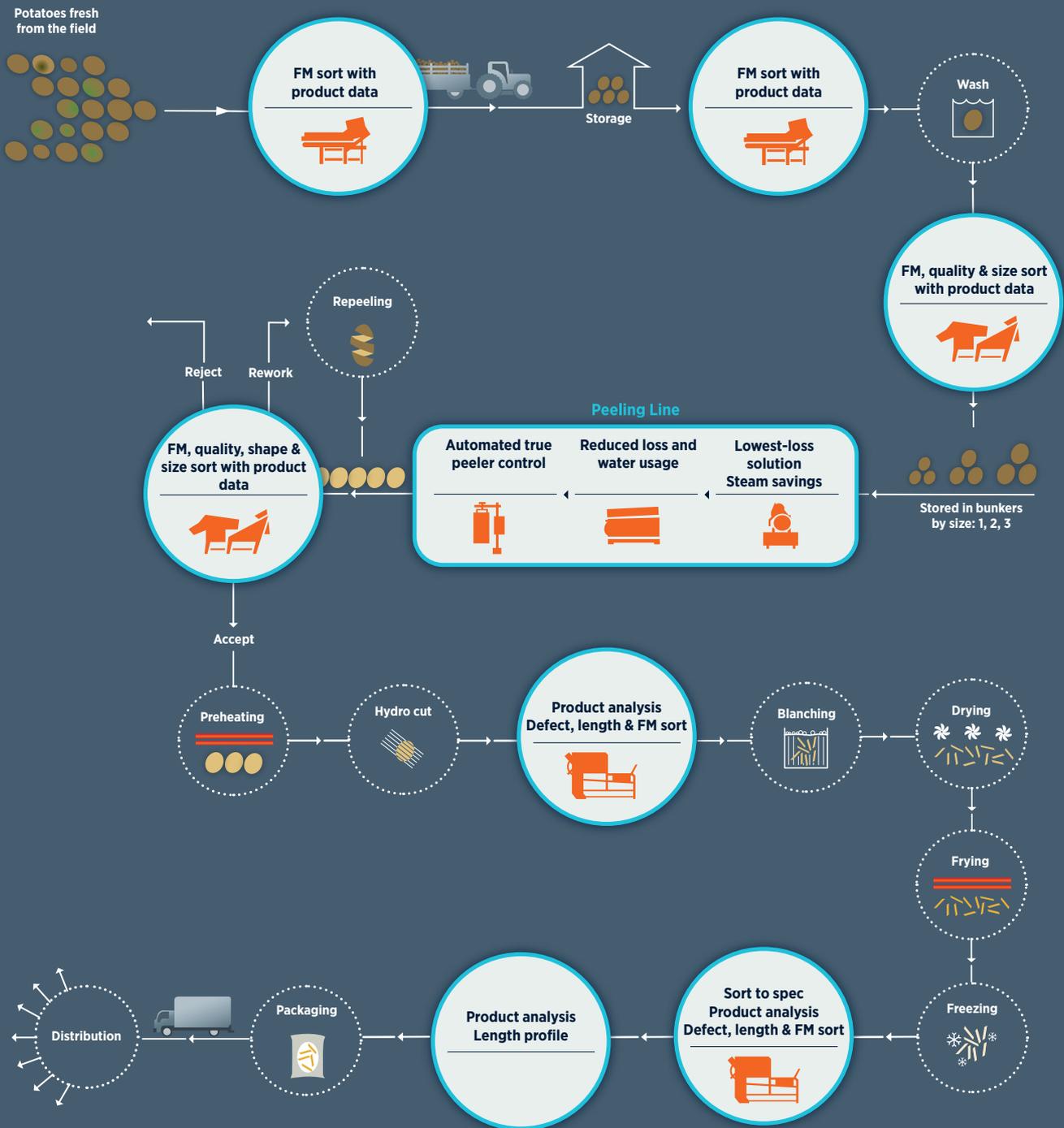
that growers, packers and processors face. And that's why we provide you with the best and most comprehensive sensor-based sorting solutions available in the food industry today.



Applications:
French fries, chips,
diced potatoes, slivers,
and many more

SENSOR-BASED SOLUTIONS, FROM FARM TO FORK

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.



TOMRA offers a wide variety of machines for every stage in the processing line and every budget.



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 MAXIMISATION

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.

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.



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!

“The installation of a special optical configuration for French fries, used to inspect potatoes from different angles, is quite innovative and an important performance improvement.”

Jan Janssen,
Technical Manager,
Aviko Group

“We have a smaller peel waste, higher availability and a better working environment.”

Frank Skybak,
Technical Manager,
Hoff Norske Potetindustrier

“Having local people who you can talk to and who go that extra mile for you is part of the excellent customer service TOMRA provides.”

Jorn Remmem,
Principal Project Manager,
Old Dutch

OUR SORTING SOLUTIONS



●●●●● FUNCTIONALITY
 ●●●●● THROUGHPUT
 ●●●●● FLEXIBILITY

FPS

Ensuring food safety starts at the beginning of the processing cycle. TOMRA therefore specifically designed the Field Potato Sorter for the sort of unwashed potatoes. The robust machine is equipped with multispectral NIR sensors enabling the detection of soil clods, stones and foreign material at very high capacities.

Labor reduction, reduced storage costs and improved produce quality all result in a maximization of yield and productivity for the grower. The machine is easy to install and can be fitted to your needs. The combination of the advanced technology and extreme wear resistant finger ejectors make it a consistent long life accurate sorting solution.



●●●●● FUNCTIONALITY
 ●●●●● THROUGHPUT
 ●●●●● FLEXIBILITY

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.



●●●●● FUNCTIONALITY
 ●●●●● THROUGHPUT
 ●●●●● FLEXIBILITY

HALO

The Halo provides a quality, shape and size sort of potatoes, both before and after peeling. Before peeling the machine sorts out foreign material, big defects and shape differences. When installed after the peeler, the technology enhances the food safety and further increases the overall product quality, while maximising product recovery. Pulsed VIS/ NIR LED and high resolution sensor technology efficiently separates foreign material, discolorations, blemishes

and shape differences from the good product, creating three output lanes of different produce grades. The reliable, long life and compact sorter is equipped with wear resistant ejectors and full option user interface providing the operator with live data and statistics. Low operational and maintenance costs, in combination with limited operator interaction, make it a perfect sorter for all potato processors.

OUR SORTING SOLUTIONS



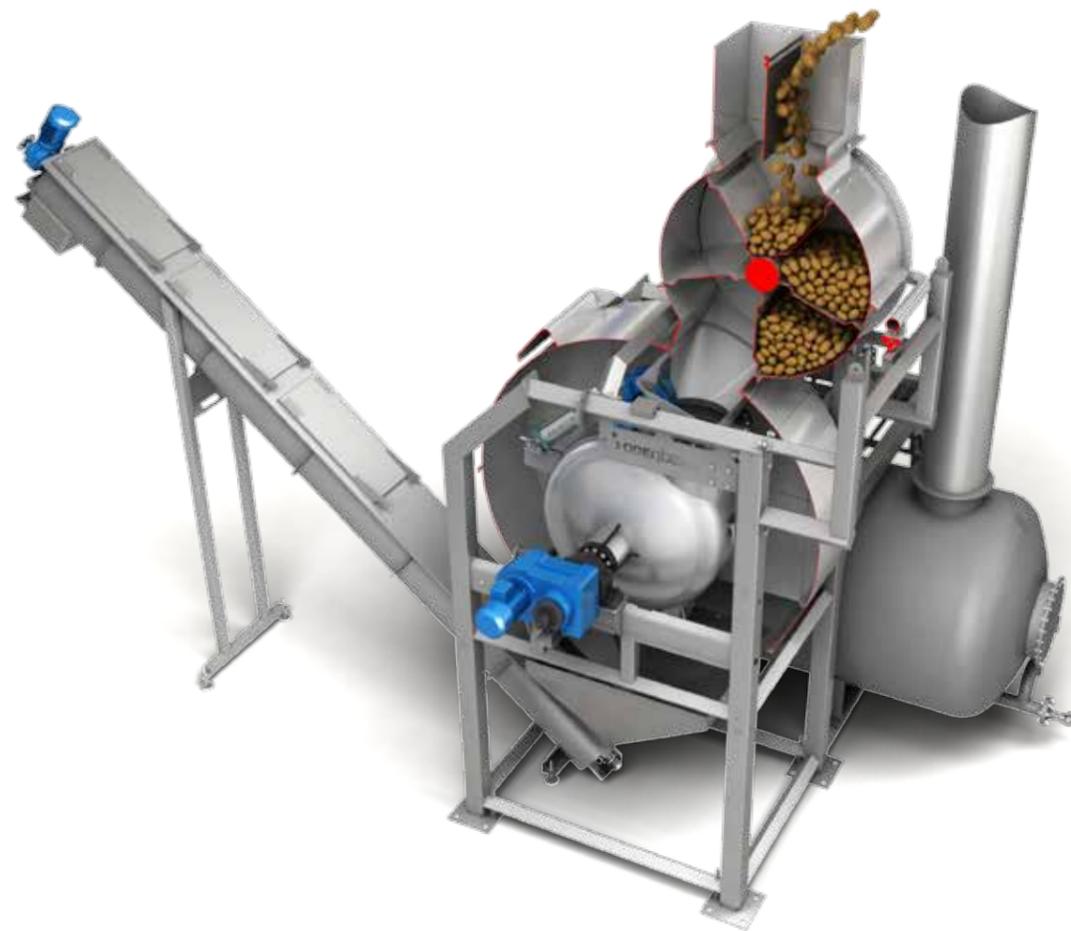
- FUNCTIONALITY
- THROUGHPUT
- FLEXIBILITY

GENIUS

This modular sorter drastically improves the quality of processed potato products through the removal of foreign material, discolorations and size, shape and biological differences. By combining market specific high resolution cameras and lasers in different inspection zones the Genius can be fitted to every processor's needs.

The sorter inspects product in flight, on or off belt, and sorts it into two or three outputs. Custom made air valves guarantee the optimal removal of defects. Feedback on the sorting performance and result is provided through the user-friendly graphical user interface. Its low maintenance and upgradeability increase the machine's payback on investment.

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 Eco peeler also includes a new peeling vessel design with patented design features. 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 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.

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.



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.



PEEL SCANNER2

The Peel Scanner2 is the latest in the line of process inspection machines for the potato peeling industry. The scanner uses sensor-based technology to accurately inspect your produce in order to provide essential data for control of the peeling process.

Peel scanning is an important aspect of the control program to ensure that minor changes in the raw material's quality are detected and the peeling process is adjusted accordingly.

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

Customers who currently use the technology receive up to 8% reduction on steam times and enjoy higher product yields. Using an innovative image capture system and sophisticated analysis software, the Peel Scanner2 achieves an image resolution of 0.3 mm. This enables the device to accurately detect the peel percentage, surface defects and dimensional data to control the peeling process with much higher precision than is possible with human operators. A unique touchscreen allows production personnel to see live images and data from processing lines. Control parameters, quality settings and set points can be adjusted from the interface panel using password protected access screens.



ADVANCED SORTING PARAMETERS

	Function FPS	Function SENTINEL II	High performance HALO	High performance GENIUS
● Gross ●● Good ●●● Excellent				
Technology	NIR	PULSED LED	PULSED LED	CAMERA & LASER
Rejection	2 way	2-3 way	2-3 way	2-3 way
⊗ Detailed size/ geometry		●	●●●	●●●
⊕ Detailed shape			●●●	●●●
○ Subtle color		●●	●●●	●●●
⊕ Subtle blemish		●●	●●●	●●●
○ Defect	●●	●●	●●●	●●●
○ Damage		●●	●●●	
💧 Moisture				●●●
✖ Biological characteristics				●●●
🍋 Peel		●●	●●●	●●●
🗑 Foreign material	●●●	●●●	●●●	●●●
🗑 Advanced Foreign Material Detection			●●●	●●●
🍈 Stones	●●●	●●●	●●●	
🌱 Soil	●●●	●●●	●●●	
ρ Density				●●●
📄 Data		Yes	Yes	Yes

Machine brochures available on www.tomra.com/food or on request.



You are a Resource Revolutionary.

TOMRA Sorting Solutions Food is the leading provider of sensor based sorting, peeling and processing technology for the fresh- and processed food industries.

Turning yield into usage, profits into progress, TOMRA transforms the way the world obtains, uses, and reuses its resources.

If you are interested in a free demonstration with your own product or if you need more information, please contact us directly.



TOMRA Sorting Food EMEA

Research Park Haasrode 1622
Romeinse straat, 20
3001 Leuven
BELGIUM

Tel: +32 16 396 396
Fax: +32 16 396 390

W: tomra.com/food
E: food-sorting@tomra.com

TOMRA Sorting Food AMERICAS

875 Embarcadero Drive
West Sacramento
California 95605
U.S.A.

Tel: +1 916 388 3900
Fax: +1 916 388 3901

W: tomra.com/food
E: food-sorting-us@tomra.com

TOMRA Sorting Food ASIA

1A/E, Rihua Building, No.8, Xinfeng 2nd Road
Huli District, Xiamen, Fujian, P.R.C
361006 Xiamen
CHINA

Tel: +86 571 8893 5895
Fax: +86 571 8893 5897

W: tomra.com/food
E: food-sorting-asia@tomra.com