



AUTOSORT[®]

PRECISION THAT PAYS OFF



PROUD PIONEERS

Founded in **1972**, TOMRA is a renowned leader in the designing and manufacturing of sensor-based sorting systems for the global recycling and waste management industry.

In **1996**, we pioneered the world's first high capacity Near Infrared (NIR) sensor for waste sorting applications in a unit designed to sort and recover beverage containers.

Since then, the global recycling and waste management industry has progressed dramatically, with sensor-based sorting technologies playing a fundamental role in advancing resource recovery.

Today, close to 10,000 TOMRA systems have been sold in more than 100 countries worldwide, giving us a global market share of more than 60%. With more than 4,300 TOMRA employees worldwide, our dedicated team supports the major regional markets in which we operate.

1972
TOMRA is founded

1996
First sensor-based system to sort beverage containers

1998
First sensor-based sorter with a wide range of applications including PET, PE, PS and PP.

2002
First fully multifunctional sorting system

2012
Patentend FLYING BEAM® technology

TODAY
Nearly 10,000 TOMRA systems in more than 100 countries worldwide



TOMRA Recycling is owned by Norwegian company TOMRA Systems ASA, which is listed on the Oslo Stock Exchange (OSE) and has an annual turnover of around €985m.

EMBRACING DEVELOPMENT

Extracting high purity materials from waste streams that maximize both yield and profits remains at the heart of our business. During the last quarter-century, we have invested vast resources to enhancing our AUTOSORT® machines – embracing the latest technological developments and enabling solutions for increasingly complex sorting applications.

Our newest generation AUTOSORT® combines leading-edge technologies to achieve unparalleled throughput and purity levels. We remain committed to exploring opportunities to incorporate Artificial Intelligence (AI), Deep Learning, robotics and lasers into our systems to further enhance their sorting capabilities.

Our continued investment in AUTOSORT® ensures our customers have a future-proof solution that can adapt to meet the changing needs of their business and end markets.

THE TECHNOLOGY

AUTOSORT® combines leading-edge features and technologies in one sorting machine.

Compact and ultra-flexible in design, AUTOSORT® allows for seamless integration into existing and new plants. The multifunctional nature of the unit enables the combination of several different sensors to meet the bespoke needs of our customers. Highly sophisticated integrated and add-on technologies deliver commercial and operational benefits for our customers.

Designed with customer needs in mind

- Ultra-compact
- Flexible and future-proof
- Reduced operational risks
- Easy to install and maintain
- Fully upgradable
- High availability



FLYING BEAM® with SHARP EYE technology

- Integrated light source to protect it from dust and dirt, extending the lifetime
- Homogenous light distribution across the entire belt width for stable and constant detection
- Enhanced light efficiency ensures improved performance at low operating costs
- Real-time information about the unit's operating status by continuously monitoring the illumination and sensor response to ensure a high system availability
- Low power consumption



GAIN (OPTIONAL ADD-ON)

- Deep learning-based sensor to classify objects
- Sorts previously hard to sort objects
- Resolves complex sorting tasks and achieves high purity levels without compromising throughput speed
- Ensures adaptability to new waste streams, future-proofing customers' operations



DEEP LAISER® (OPTIONAL ADD-ON)

- Significantly increases the sorting sharpness of AUTOSORT®
- Sorts by shape and differentiates overlapping objects
- Detects previously undetectable objects, e.g., black polymers and glass
- Smart segmentation distinguishes between two overlapping objects, enabling object-based recognition even at high throughputs
- Can be configured and retrofitted as an additional sensor when required



See how
it works

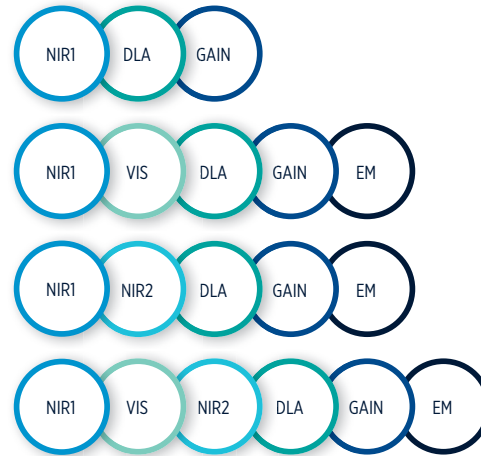
PERFORMANCE

Sophisticated sensors

All our sensors are developed in-house. We are proud that they rank among the most advanced sensors available on the market today.

- Spectroscopy sensors allow us to identify material colour, with the option to combine several consider deleting sensors to meet customers' bespoke needs
- DEEP LAISER® sensors can be added to the AUTOSORT® unit to significantly improve the performance of the sorting process
- High-sensitivity electromagnetic (EM) sensors allow for precise and reliable detection and recovery of metal fractions
- Optional GAIN AI-based camera sensors allow for the classification of previously inseparable objects

Multifunctionality



Valve Blocks

It's not just our sensors that can be optimized for and adapted to your material – our valve blocks can be too. We can identify the perfect valve block for any sorting task.

We now offer three different valve blocks for our AUTOSORT® units, giving you even greater flexibility. With our unique design, our valves are among the most powerful and precise available on the market today.

1. Standard

Our standard Valve block is now more powerful so that customers' operating costs can be reduced

2. Valve Block Comfort

Our Valve Block Comfort is positioned outside the sorting chamber allowing for easy access during maintenance

3. Ejection Module

Our Ejection Module valve blocks are designed for sorting very heavy materials, as well as tiny objects such as flakes, where extreme precision is required



MULTIPLE APPLICATIONS

AUTOSORT® has been designed for use across a wide variety of applications. Our experts closely monitor emerging trends in the global recycling market to quickly respond to changing requirements.

Current applications include:



Packaging

thermoplastics (tray sorting), beverage cartons (liquid carton board, mixed polymers – PET, PE, PP PS), paper (news and PAMS), mixed papers and mixed boards (white, grey, OCC)



Municipal Solid Waste (MSW)

thermoplastics, mixed paper, cardboard, metals and packaging e.g., plastic bottles



Thermoplastics

PET, PP, PVC, PS, LDPE, LLDPE, HDPE, trays, bottles, injection or blow molding qualities, PET bottles vs PET trays



Paper

cardboard, deinking and mixed paper



Commercial & Industrial (C&I) Waste

thermoplastics (LDPE, HDPE), paper and cardboard



Construction & Demolition (C&D) Waste

inert material, wood, thermoplastics, metals and rigid polymers



Wood

wood, wood chips and wood from automotive shredder residue



Refuse Derived Fuel (RDF)

sort to recover constant calorific value and low chlorine content



Bulky Waste

wood, paper, board and thermoplastics



Organic Waste

inert material, organic material and polymers



WEEE

PCBs and WEEE thermoplastics



PE

silicone cartridges vs PE-HD



"TOMRA's equipment has enabled us to increase plant capacity and throughput as well as upgrade our paper by reducing contamination. As a result, our paper is now among the cleanest in the country. What's more, thanks to the addition of a fifth TOMRA AUTOSORT® that recovers fibres from production waste, we've reduced our paper waste by 4%."

Liam Dunne, MRF General Manager
at Irish Packaging Recycling



CONNECT TO THE DIGITAL FUTURE OF SORTING

The global waste sector is embracing digitalization. Digital solutions will undoubtedly be a major enabler for the circular economy.

To support our customers on their journey towards digital transformation, we have developed **TOMRA Insight**, our secure, nearly real-time and on-demand cloud-based data monitoring platform. **TOMRA Insight** enables you to turn your sorters into connected devices and transform sorting from an operational process into a strategic management tool.

Through **TOMRA Insight**, we can generate high-value data, helping you to move towards a more profitable and sustainable digital future. **TOMRA Insight** helps maximize your plant throughput, boost your sorting performance and optimize your output quality.



“Previously, we were mainly using sorting data to help with maintenance and servicing matters. Now, with **TOMRA Insight**, the data also helps to analyze input materials and improve sorting efficiency.”

Jorrit Beetsma, Process Technician at Wellman International

Maximize the potential of your machines

- In-depth digital metrics and data about the status, performance and operation of your sorting equipment and the material it detects
- Remote support from TOMRA's service engineers, enabling quick and easy identification and resolution of any operational issues
- Fully customized monitoring and reporting for all of your connected machines in one place

Designed to put you in control

- Secure access from desktop and mobile devices – anywhere and at any time
- Identification of future maintenance requirements
- Simplified spare parts ordering and direct access to machine documentation
- 100% compatible with full TOMRA product range

Maintenance made easy

By monitoring operational hours, service intervals and machine condition, TOMRA Insight allows for:

- Proactive operational management of your equipment's maintenance and – where needed – of TOMRA CARE – see more on the following two pages
- Reduced equipment downtime and swift intervention by operators

Collaborative expertise

TOMRA Insight is a continually evolving solution. We work in close collaboration with our customers to develop and enhance the solution, with new software updates released every three weeks.

Ready to try it for yourself? Get connected!

Try our cloud-based **TOMRA Insight** service and test its value for your operations. For more information please visit tomra.com/insight.

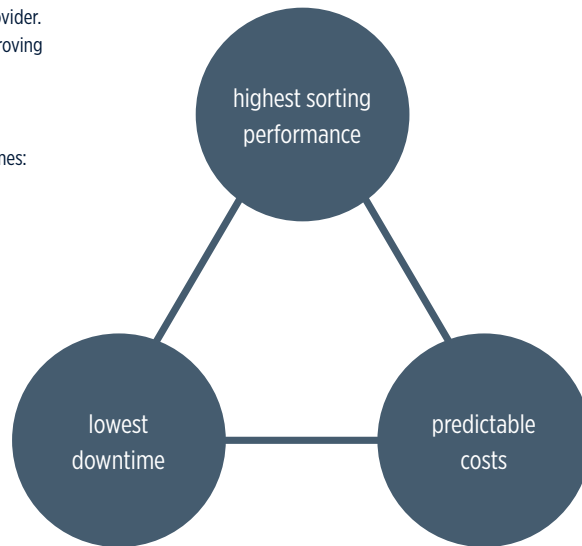
TOMRA Insight is a subscription-based service offered separate from our sorting equipment. In the first months, you can enjoy the full functionality of this service free of any risk or commitment.

Connect to
POSSIBILITIES

SERVICE THAT NEVER LETS YOU DOWN

TOMRA Recycling is much more than a technology provider. We are committed to continually investing in and improving our service and support offering.

Our service strategy is simple and entirely focused on ensuring three essential elements are in place at all times:



“Our technicians are very satisfied with both the professionalism and the intervention times of TOMRA’s technical experts. The support we’ve had from TOMRA in defining the customization of the installed units has been key to the success of our customized material recovery.”

Sebastiano Chizzali,
General Manager of MASOTINA S.p.A.

Preparation - Planning - Partnership

Achieving the **Magic Service Triangle** requires preparation, planning and a partnership approach between TOMRA and our customers.

By training our customers’ on-site maintenance teams when they are not under any time pressures; we can equip them with the knowledge and skills to ensure the optimal performance of their machines, and to undertake routine maintenance and troubleshooting themselves.

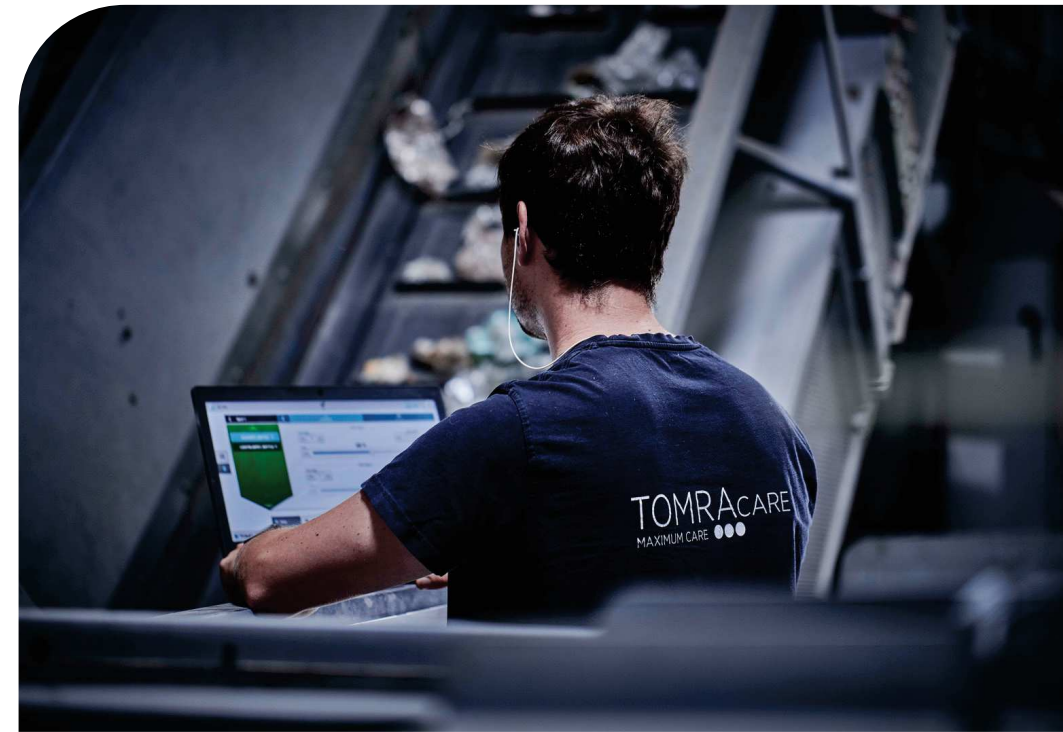
- Critical spare parts can be stored at customers’ sites or delivered as and when required
- 80-85% of maintenance cases resolved by phone or via remote connection with our field service engineers
- Finance options for insurance to minimize the impact of unforeseen and costly operational interruptions
- Plannable costs for your core components and spares avoids a lengthy budget approval process when new or replacement equipment is required

Tailored service packages

We guarantee first-class care and assistance at every stage in your partnership with TOMRA Recycling. TOMRA Care is a suite of service packages to ensure your units perform at the highest level of efficiency for their entire lifespan.

Your business is unique, and our service package is too! We work with you to develop a tailored TOMRA Care package that meets your bespoke needs. Service packages will be costed up based on your requirements and include:

- **Insure to Plan:** minimize the risk of unexpected and costly operational interruptions
- **Experts @ Perform:** up to 12 maintenance and optimization visits annually from a dedicated TOMRA engineer and regular refresher training
- **Learn and practise:** tailored training courses to maximize uptime and optimize profits
- **Parts Depot:** reliable supplies of spare parts
- **Service Plus:** quick and reliable access to TOMRA field service engineers
- **TOMRA Care Visual Assist:** a remote assistance tool
- **TOMRA Insight:** a cloud-based advanced data monitoring tool that transforms your sorters into connected devices and turns sorting from an operational process into a strategic management tool





TECHNICAL DATA

	1000 [Belt]	1400 [Belt]	2000 [Belt]	2800 [Belt]
Power Consumption* kWh	1.2	1.5	2.4	2.7
Weight Control Unit [kg/lbs]	90/198	90/198	90/198	90/198
Weight AUTOSORT® low [kg/lbs]	109/239	113/248	134/294	225/547
Weight AUTOSORT® high [kg/lbs]	72/158	72/158	108/238	129/265

*Power consumption may vary depending on AUTOSORT® configuration and the valve block used. The values above refer to an AUTOSORT® with HR resolution and an SVB TS200/25 at a medium flow rate.



INNOVATION



PASSION



RESPONSIBILITY

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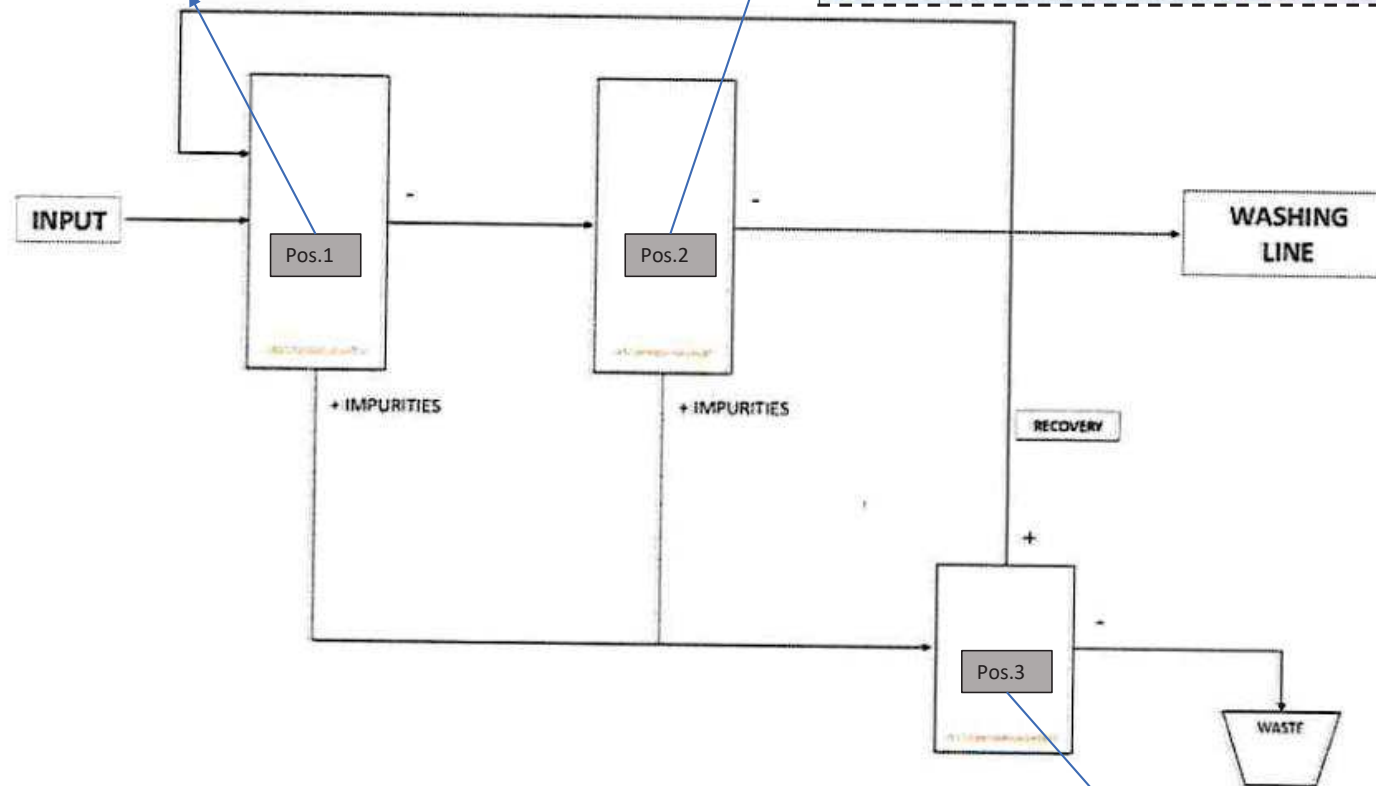
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www.tomra.com/recycling

Dati sulle prestazioni	Pos. 1
Granulometria del materiale in ingresso	50-400 mm
Composizione del materiale in ingresso	90% PET Bottle Blue 1% PET Trays 7% PET Bottle Other colors 1% Black impurities 1% Metal impurities
Attività di selezione	Impurities (including PET Trays, PET other colors, black impurities)
Tasso di successo del target di frazionamento	80% Esclusi metalli
Purezza della frazione selezionata	50%
Ad un rendimento di (molto dipendente dal materiale)	5000 kg/h (+ 700/800 kg recovery)

Dati sulle prestazioni	Pos. 2
Granulometria del materiale in ingresso	50-400 mm
Composizione del materiale in ingresso	97% PET Bottle Blue <1% PET Trays <2% PET Bottle Other colors <1% Black impurities 1% Metal impurities
Attività di selezione	Impurities (including PET Trays, PET other colors, metal impurities)
Tasso di successo del target di frazionamento	80% Esclusi metalli
Purezza della frazione selezionata	50%
Ad un rendimento di (molto dipendente dal materiale)	5000 kg/h



Pos. 1 AUTOSORT [NIR1-VIS1B-DLA][T3][HR-2000][X-L][SVT-VBC-TS400/12.5]

Pos. 2 AUTOSORT [NIR1-VIS1B-EM3][T3][HR-2000][X-L][SVT-VBC-TS400/12.5]

Pos. 3 AUTOSORT [NIR1-VIS1B-EM3][T3][HR-1400][X-L][SVB-VBC[PACK]-TS400/25]

Dati sulle prestazioni	Pos. 3
Granulometria del materiale in ingresso	50-400 mm
Composizione del materiale in ingresso	PET Blue 60% PET Trays 7% PET Other colors 26% Black objects 4% Metal impurities 3%
Attività di selezione	PET Blue
Tasso di successo del target di frazionamento	80-85%
Purezza della frazione selezionata	90%
Ad un rendimento di (molto dipendente dal materiale)	1500 kg/h