Plastics Processing.

Bottle and flake optical sorting.

Innovations for a better world.
Optical Sorting Recycling.

Equipment and Solutions.

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A collaborative solution.

**Bringing together plastics recycling know-how.**

Introducing you to Bühler Sortex and NRT - an innovative alliance bringing together over 100 years optical sorting know-how to the plastics recycling industry.

Combining our comprehensive range of proven bottle and flake sorting machines to provide one, complete optical sorting solution with absolutely no compromise on quality for PET and HDPE recycling. SORTEX and NRT sorters feature a range of innovative, state-of-the-art technologies including In-Flight Sorting®, PET Boost™, SORTEX PolyVision™ and high resolution colour cameras for optical sorting results that are second-to-none, focusing on high capacity and high recovery to achieve maximum profitability. Recyclers can be confident of PET and HDPE recyclate which meets the highest standards of quality and purity for a higher return on investment. Strategically placed in Europe and North America, with a presence in the key plastics recycling markets, our collaborative solution provides you with unparalleled access to a wide range of capabilities including a dedicated servicing network with first-class service teams, consultation, project management and installation expertise.

- One-stop optical sorting recycling solution
- Maximising recovery and profitability
- First-class service and support
Applications.

One complete optical sorting solution.

PET Bottles

NRT sorters use fast processing NIR detection, featuring In-Flight Sorting® technology, to accurately identify unique polymer signatures for a higher recovery of PET bottles from polymer streams including PVC, PS, PETG, PLA, PC, PE and PP. High purity clear and light blue PET bottles are recovered in a single sort whilst patent-pending PET Boost™ improves detection of thin wall PET, wet PET and full-sleeve labelled PET bottles maximising the recovery and profitability for the recycler.

PET Flakes

Bühler’s market leading range of optical sorters are equipped with the latest in technological advances including breakthrough SORTEX PolyVision™ technology and high resolution colour cameras for the efficient removal of challenging polymers such as PVC, PS, PA and reduction of other polymers including PS, PA, POM and silicon. The end result being PET flakes of the very highest standard and purity with near-pure resin streams, resulting in higher value PET product for the recycler.

HDPE Bottles

Proprietary RGB Line scan cameras feature powerful, high-speed processors for outstanding separation of HDPE bottles from natural HDPE bottles whilst advanced NIR technology separates HDPE bottles from other plastics for higher recovery and purity levels. The advanced colour cameras also group HDPE bottles by colour, further increasing the value of the recycled product.
HDPE Flakes

Advanced flake sorting technology from Bühler removes PE, PP, packaging labels, aluminium, wood and other challenging foreign materials from a range of HDPE packaging flakes including milk bottles, bottle caps, detergent and shampoo bottles. The final accept product meets the very highest demands in the recycling industry, generating higher quality food grade product free from contaminants.
2 Bottle sorting.
Performance by design.

SpydIR®

The SpydIR® range, available in two variants for transmissive or reflective light, is an advanced infrared sorting system that separates numerous selected polymers from a mixed stream. It uses proprietary technology and fast, highly sensitive algorithms to rapidly identify unique polymer ‘signatures’ from their infrared spectra.

SpydIR® is the only technology that uses PET Boost™ (patent pending) that improves detection of thin wall PET, wet PET and full sleeve labelled PET. While other optical sorters detect material over the belt and eject some time later, NRT offers In-Flight Sorting®, which detects and ejects material in flight. In-Flight Sorting® enables the use of transmissive detection for the highest detection strength available and eliminates motion-related error and belt interference, increasing purity levels and hit rates.

- Sorts 1-7 plastics in any combination
- Single sort high purity clear and light blue PET directly from container stream
- Remove polymer contaminants including PVS, PS, PETG, PLA, PC, PE and PP
- Recover clean PET product from polymer residue streams for return to main PET stream
- Sort Tetra Pak®, aseptic and PE coated gabled products
- Remove cardboard, paper and other fibres
- Available with MetalDirector™ to remove ferrous and non-ferrous metals.

ColorPlus™

The NRT ColorPlus™ Imaging System is an advanced image processing sorting system designed to target and sort materials based on precision colour analysis and sophisticated form factor recognition.

The ColorPlus™ Imaging System utilises a network of powerful high-speed processors and intelligent recognition algorithms to analyse colour, transparency, opacity, and physical form factors including opaque analysis and label recognition for errorless object targeting.

NRT has upgraded its ColorPlus™ technology, enabling the cameras to scan 5,000 times per second with up to 2048 pixel resolution. High resolution sorting, combined with NRT’s In-Flight Sorting® technology, allows the ColorPlus™ to distinguish the correct bottle colour or opaqueness (such as clear PET) when only 1% of the material is visible.

- Remove opaque PET, metal cans and other opaque objects from PET stream
- Sort operator selected PET bottles from clear PET
- Sort blue bottles from clear bottles without label error
- Sort labelled bottles from non-labelled bottles
- Separate HDPE from natural HDPE
- Group HDPE by colour
**Flake sorting.**

**Effortless contaminants removal.**

**SORTEX A**

Available in four variants, the SORTEX A range demonstrates a commitment to providing plastic recyclers with dedicated customised options to handle the most unique and challenging sorting requirements.

Showcasing Bühler innovation with new advanced inspection and lighting systems, tiered chute and Label Reduction Kit, this state-of-the-art technology provides the ultimate PET and HDPE flake sorting solution, whatever the difficulty of the application, with the highest throughput in the market. Process engineered with flexibility to handle small to large capacities, the SORTEX A range is available in one to five module versions, in three different frame sizes.

- Remove contaminants including PVC, PS, PA, PE and PC from clear, blue and multi-coloured PET flakes
- Remove challenging foreign materials including aluminium, metal, paper, cardboard and wood
- Sort clear PET flakes from coloured PET flakes
- Sort clear PET flakes from opaque flakes
- Sort coloured PE and PP from HDPE

**SORTEX E PolyVision™**

Bühler’s brand-new optical sorter for effortless polymer removal. Equipped with ground-breaking SORTEX PolyVision™ detection technology and patent pending unique lighting system to provide PET recyclers with the ultimate polymer sort.

Using trans-reflective sorting and single sided detection, traditionally challenging polymeric contaminants such as PVC, PP and PE, are removed whilst other polymers including PS, PA, POM, PETG and silicon are reduced with pinpoint precision and ease. SORTEX E PolyVision™ can also remove unwanted colours in transparent and opaque form.

- Clear, blue, green and Jazz PET applications
- Removes PVC, PP and PE
- Reduces PS, PA, POM, PETG and silicon
- Removes clear polymers from clear PET
Innovative Technologies.
The best of both brands.

In-Flight Sorting®

NRT units detect and eject material while it is in flight after it has left the belt. Others typically detect over the belt and then eject material some time later. This pioneering technology reduces motion-related error and belt interference, increasing purity levels and hit rates.

PET Boost™

Patent-pending PET Boost™, only available on the SpydIR® range of bottle sorters, improves detection of thin wall PET, wet PET and full sleeved PET by using proprietary algorithms to boost weaker detection signals.

SORTEX PolyVision™ detection technology

Bühler’s ground-breaking SORTEX PolyVision™ detection technology combined with new patent-pending unique lighting system detects invisible polymer contaminants from PET flakes by identifying their unique chemical composition.
High definition, colour cameras

Bühler’s high definition colour cameras are designed and built in-house to detect contaminants up to 50% smaller than other industry solutions. When combined with broadband LED lighting, Bühler optical sorters can target defects on the most minute PET and HDPE flakes within the entire visible spectrum.
Global coverage.
In all major recycling markets.

Together, Bühler and NRT operate in all major plastic recycling markets. So, wherever you are in the world, our collaborative solution provides you with a window to our comprehensive global PET and HDPE recycling capabilities.
We provide a range of solutions and support to ensure that your optical sorter performs to maximum efficiency, delivering maximum productivity and making a maximum return on investment. Efficient, expert and expedient solutions for your operations are crucial. Our all-encompassing maintenance and support programs improve production speed, efficiency, increase throughput, lower contamination levels and increase recovery rates by making sure your equipment continues to run at optimal levels.
About Bühler Sortex and NRT. 
The companies behind the solution.

National Recovery Technologies

Headquartered in Nashville, Tennessee, NRT is a global leader in the design, manufacture and installation of optical sorting solutions. NRT is a member of the Bulk Handling Systems (BHS) Family of Companies, a worldwide leading provider of automated sorting systems to the waste processing and recycling industries. Since its inception in 1981, NRT has been recognised as an industry thought-leader and innovator, and currently holds more than 35 U.S. and international patents. Today, NRT remains focused on technology innovation and offers industry-leading bottle sorting recovery and purity rates, thanks in part to In-Flight Sorting® and PET Boost technologies. NRT holds strong commitments to equipment excellence and first-class customer service and support.
UK based Bühler Sortex, is a leading global supplier of optical sorting solutions to the food and non-food processing industries and has been pioneering optical sorting technology for nearly 70 years. Committed to substantial investment in research and development, it has developed state-of-the-art technology including SmartEject™, PROFile™ and Label Reduction Kit to provide solutions for the most challenging applications in the packaging, construction, electronic waste, end-of-life vehicles, construction and petrochemical recycling industries. This award winning company has completed over 20,000 installations for customers, in over 100 countries. It has sales and services offices in over 80 countries to provide expert customer support globally.