Coffee
Optical Sorting.

Innovations for a better world.
Optical Sorting from Bühler

Equipment and Solutions.

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Bühler is a leading global supplier of optical sorting solutions to the food and non-food processing industries and has been at the forefront of pioneering optical sorting technology for 70 years.

With a commitment to substantial investment in research and development, Bühler has developed state-of-the-art technology that empowers processors to meet stringent food safety and quality requirements to maximise their productivity and profitability.

Bühler’s comprehensive know-how in the field of coffee production combined with its innovative solutions offer coffee processors the most advanced technology solutions. Coffee processors can be confident of world-class performance when placing Bühler’s optical sorters in their processing line - from initial handling, through from green bean to roasted whether it’s for Arabica, Robusta or roasted coffee varieties.

**Why Bühler?**

- Helps processors meet stringent safety standards
- Maximises product value and yield
- For superior taste and quality
Flexible optical sorting solutions
For all stages of the process line.

Removing colour defects such as discoloured beans, immature and insect damaged (Broca) beans, SORTEX optical sorters work brilliantly in ordinary, speciality and sundried Arabica applications.

Optical sorting can remove foreign material which has been missed or can not be targeted by the mechanical cleaning process such as sticks, stones, glass, shell and others caused by fermentation process such as sour / vinegar beans.

Separating under-roasted (lighter, white and immature) and over-roasted beans through optical sorting provides for a better taste and quality.
Removal of foreign material such as sticks, stones and glass from roasted coffee which not only compromises the appearance of the final product but can also damage mechanical equipment such as grinders.
SORTEX® A.
Sophisticated Optical Sorters.

Available in three different frame sizes and four technology variants including the SORTEX A, SORTEX A DualVision™, SORTEX A ColorVision™ InGaAs and SORTEX A MultiVision™ inspection systems, the SORTEX A provides coffee processors with dedicated customised options to handle unique and challenging sorting requirements, regardless of processing size.

SORTEX® A.

Equipped with Bühler custom-built inspection and lighting systems, the SORTEX A removes a range of defects including discoloured beans, immature and insect damaged as well as various foreign materials such as glass, stones and plastic and foreign materials of the same colour like sticks.

Featuring Bühler proprietary technologies including Product Tracking, Auto-Calibration, High-Lumen LED Lighting and the new SORTEX ProSortX™ operating system, the SORTEX A offers ease of use, removing the need for manual intervention whilst delivering consistent high sorting performance.

- MultiVision™, ColorVision™, DualVision™ and standard inspection systems
- High capacity feeding with up to 5 chutes
- Custom-built colour cameras
- InGaAs cameras
- PROfile™ (shape, size & colour) technology
- SmartEject™ technology
- Broadband and High-Lumen LED lighting
- Re-sort capabilities
SORTEX® B.
Optimising Conventional Sorting.

Available in up to four frame sizes and four technology variants including the SORTEX B MultiVision™, SORTEX B DualVision™ and SORTEX B inspection systems, the SORTEX B is a dependable choice for coffee processors. Integrating superior feed and vision systems with processing capabilities, for those who seek the trusted performance of the SORTEX brand.

SORTEX® B.

Equipped with Bühler’s custom-built inspection and lighting systems, the SORTEX B removes a range of defects including discoloured, immature and insect damaged delivering high performance defect removal in everyday mainstream sorting as well as foreign materials.

A combination of proprietary technologies such as lighting, inspection and ejector systems offer processors a range of sorting solutions while superior feed systems deliver a high capacity performance and reliability in mainstream coffee sorting applications.

- MultiVision™, DualVision™ and standard inspection systems
- High capacity feeding with up to 7 chutes
- Custom-built colour cameras
- InGaAs cameras
- PPORize™ (sizing) technology
- SmartEject™ technology
- Broadband and High-Lumen LED lighting
- Re-sort capabilities
The Bühler advantage
Balanced, stable sorting.

Built into all Bühler optical sorting machines is the ethos of balanced and stable sorting. This is what provides Bühler customers with the competitive edge over other manufacturers’ machines. This guide explains how we achieve a balanced and stable sorting performance and the benefits it brings - increased revenue, reduced costs and consistent product quality.

Balanced and stable sorting is ideal for processors running a resort (secondary) and/or a third (tertiary) sort. Optimising the configurations of modules/chutes to perform in a balanced manner avoids unnecessary re-circulation of any accept or defect material whilst maintaining a consistent percentage of even lower reject concentration during re-sorting.

Balanced and stable sorting is also achieved through a combination of software and technologies pre-equipped in Bühler optical sorters notably; Auto-Calibration system and Product Tracking/Intelligent Automation. This removes the need for laborious manual set-ups and delivers consistent sorting performance - all day, every day.

Key Benefits

- **Consistent accept quality**
  The percentage of accept quality remains consistent throughout the day. Additionally, there is no unsorted product left in the optical sorter once a batch process is completed.

- **Product circulation avoided**
  During a balanced stable sorting performance, a Bühler optical sorter intelligently sorts a grain into the reject or accept stream, with no re-circulation of undecided grains stuck in the process loop. This feature reduces the consumption of compressed air, energy use, wear of optical sorter and ensures the optical sorter maximises its capacity.

- **Greater product control**
  The reject and accept quality is the true representation of what a Bühler optical sorter can achieve during a batch process as no undecided grain is recirculated. This means that a processor can confidently adjust the accept quality/reject ratio to meet their requirements. This is supported by Product Tracking/Intelligent Automation, a technology unique to Bühler, that maintains the consistency of the performance.
Cutting-edge technologies.
Leading the way through innovation.

Reliable and consistent machine performance for a uniform, premium quality end product. Bühler proprietary technologies minimise loss of good product while maximising profitability. Innovative technology to remove subtle colour variations and challenging foreign materials, meeting the needs of all processors.

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**Inspection system with broadband LED lighting**

Bühler's high-resolution cameras are designed and built in-house to deliver the colour contrast needed to detect defects and foreign material. Engineered to the highest standards, when combined with broadband LED lighting, Bühler optical sorters can target defects within the entire visible spectrum.

Developed and optimised over many years, SORTEX cameras and lighting systems utilise the very latest in optical registration technology.

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**InGaAs detection technology**

Derived from a product originally designed for military satellite application, InGaAs technology can detect defects which cannot be seen in the visible spectrum. By utilising infrared technology, the system reads light reflection as well as colour registration to offer precise, authoritative detection.

InGaAs provides much better separation of good product from foreign material of the same colour for safe, reliable product.

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**SmartEject™ technology**

Precision built for high speed ejection, SmartEject™ fires precisely at the whole defective bean, efficiently and effectively removing unwanted product to maximise accept quality.

Yields are also improved due to the accuracy taking out less good grains when the defect is ejected.
PROfile™ Technology
Three powerful proprietary analysis systems.

A combination of three dynamic technologies enable Bühler optical sorters to perform even the most complex sorting tasks. Designed with multiple levels of shape, size and colour detection to deliver consistent, uniform product quality at the highest capacity possible. This unique double detection system analyses produce from both sides to offer processors total quality assurance.

PROshape™
Designed by SORTEX experts, PROshape™ is an intelligent detection technology which inspects product based on shape criteria when the defective product is the same colour as good product.

- Remove foreign material matching the colour of good produce to maximise product safety
- Shell and sticks are removed with ease

PROsize™
Bühler’s PROsize™ technology is a detection solution which sorts objects based on size characteristics to maximise product uniformity and value.

Far advanced from traditional grading solutions, PROsize™ can be employed in situations where product is too delicate or difficult to be sorted using conventional mechanical graders, maximising profitability by distinguishing the premium product.

- Separate under sized produce
- Separate over sized produce*
- Remove broken produce

PROcolor™
PROcolor™ is a breakthrough technology completely unique to Bühler. The state-of-the-art process works by analysing product based on multiple colour variations, as well as by the area of the individual blemishes.

Processors can define the maximum percentage of surface blemish based on retail or customer specifications, enabling them to grade products on their physical appearance.

- Maximise commodity value by defining multiple grades of quality product
- Removes small defects such as insect bites
- Adds greater value to product by setting higher limits of quality

*Only available on SORTEX A
Bühler’s worldwide Customer Care organisation delivers the highest quality local support ensuring optical sorters perform at maximum possible efficiency, deliver optimum productivity and make the best return on investment.

The SORTEX Spare Parts promise.

Customer satisfaction is our priority. This is why we strive to deliver spare and wear parts within 48 hours, doing our best to limit your downtime and maximise your profitability.

For customers who require spare parts available on site, Bühler’s technologists have created appropriate spares kits for the different machinery available.
TotalCare™ allows customers to create their own service package, composed of individual service features that best suit their needs. Customers can create a tailored programme from a variety of packages. Contract options vary from basic to fully comprehensive cover. This way, investments can remain fully protected.

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<th>TotalCare Protect</th>
<th>Customers can tailor their individual package from the following options</th>
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| Minimise Downtime | **TotalCare Anyware**  
| Based on an agreed number of annual visits, Bühler engineers will replace key wear parts, provide consultation and advise on future maintenance requirements. Protecting Investment. | Supervised Functionality  
| | Provides a working record of operational information as well as reports that enable machine health to be monitored and preventative maintenance scheduled. Maintain Optimised Performance. |
| | **TotalCare AnywarePRO**  
| | Remote Access and Assistance  
| | Sorter performance can be viewed remotely by customers and Bühler engineers. Faults can be diagnosed and performance optimised in any location using a laptop, tablet or smartphone. Ultimate control. |
| | **Ejector Refurbishment**  
| | Making certain that sorters are running at peak performance, ejectors are replaced when the stipulated life-cycle is reached. Performance is maintained for the future. Maximum Capacity and Quality. | |

**SORTEX upgrade kits.**

Suitable for those who are seeking to upgrade sorters with an additional module, new features or software updates.

New technologies and innovations are continuously in development. Upgrade kits allow customers with existing machinery to enhance their production line with the very latest proprietary optical sorting technology.
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