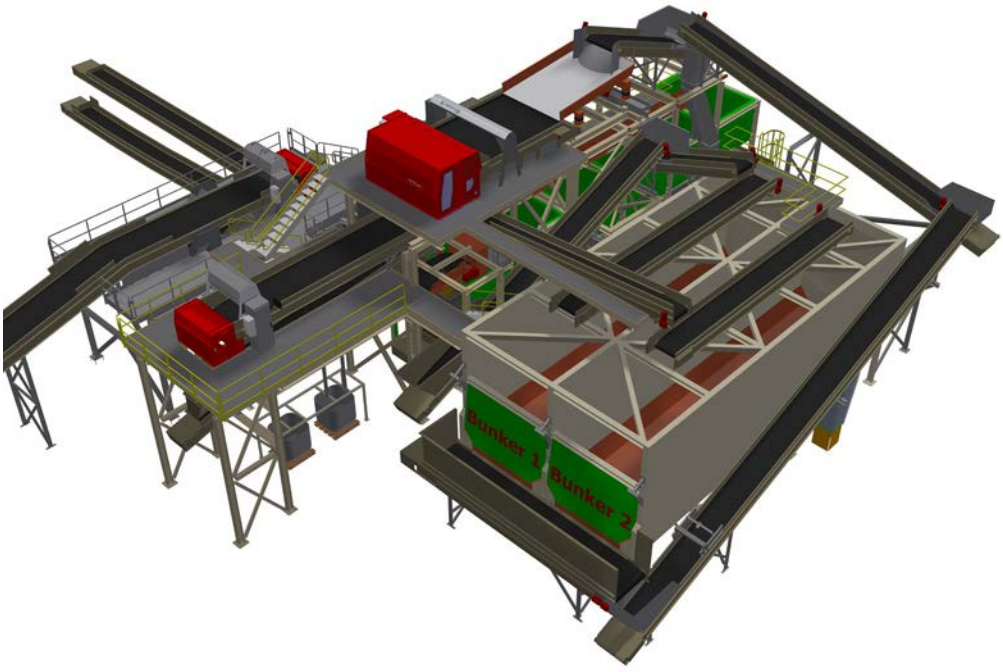
AUTONOMOUS SORTING LOOP

What's next.



BHS AUTONOMOUS SORTING LOOP

The patented Autonomous Sorting Loop is setting new industry standards for efficiency, cost-effectiveness, and material recovery. This advanced system leverages intelligent decision-making and real-time data to provide remarkable results. It not only significantly reduces capital expenditures (CAPEX) but also eliminates the need for labor-intensive manual sorting, while achieving high recovery rates with customizable purity levels.

BHS has been at the forefront of innovating recycling technology with a commitment to industrializing the process of sorting and purifying recyclables. The Autonomous Sorting Loop is the latest evolution in this journey.

THE BHS ADVANTAGE

- **Customizable Recovery:** Tailored recovery targets allow plant operators to define commodity-specific priorities and sequencing, ensuring maximum efficiency and material purity.
- **Reduced Human Intervention:** The system eliminates the need for manual labor, relying instead on autonomous technologies to handle sorting and material recovery.
- **Data-Driven Optimization:** Real-time data feeds into the Total Intelligence Platform, providing operators with key insights into system performance and enabling data-driven decisions for process optimization.

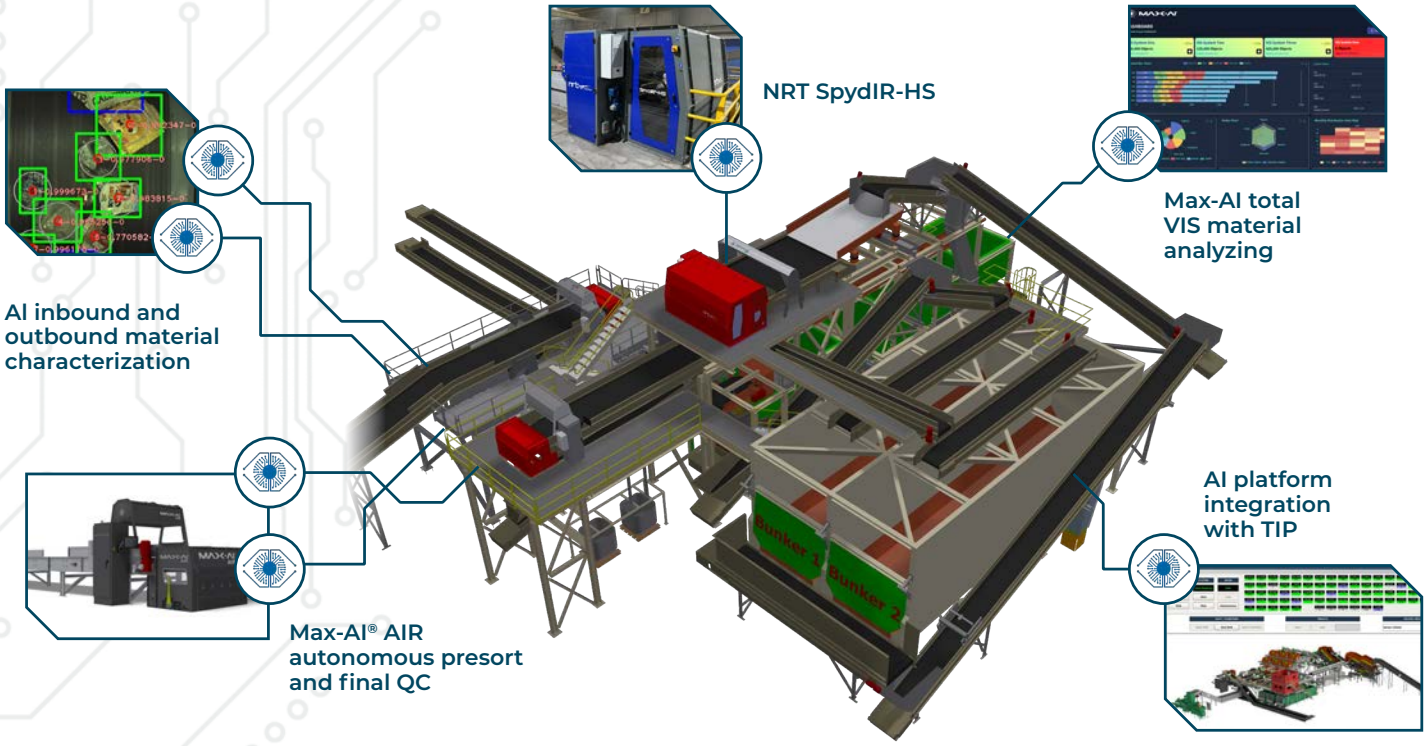
TRANSFORMING RECYCLING WITH BHS

BHS's Automated Processing System represents a leap forward in recycling technology, reducing costs, increasing recovery rates, and enhancing overall operational efficiency. With its ability to process a wide variety of materials with minimal human intervention, this system is transforming how recyclables are sorted, purified, and ultimately processed.

By adopting BHS's cutting-edge solutions, recycling facilities can optimize their operations, reduce capital and maintenance costs, and contribute to a more sustainable future.

KEY FEATURES OF THE AUTOMATED PROCESSING SYSTEM

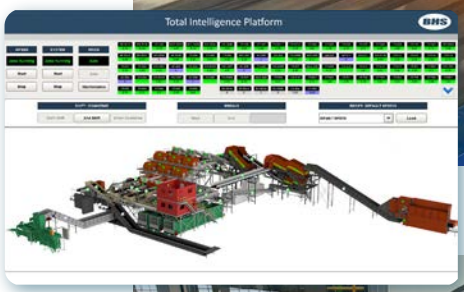
- **Max-AI® Visual Identification System (VIS):** At the heart of the system is the Max-AI® VIS, which captures detailed data about the material stream's composition as it enters the first sorting stage. This critical data is shared with the BHS Total Intelligence Platform to enable seamless, real-time decision-making.
- **Intelligent Sorting Technology:** The system features multiple automatic sorters, including the Max-AI® AIR and the NRT SpydIR® HS optical sorter, both equipped with Max-AI® VIS and NRT MetalDirector™. These technologies help in identifying and sorting materials based on shape, color, and molecular composition, allowing for precise and efficient recovery.
- **Autonomous Operation:** The system functions as a fully autonomous sub-system within the Material Recovery Facility (MRF), operating independently 24/7. With real-time monitoring via the BHS Total Intelligence Platform, plant operators gain full visibility into material composition, recovery rates, and operational efficiency.
- **Reduced CAPEX & Maintenance:** By processing a broad range of materials through a single, high-performance separation line, the system reduces the number of required magnets, optical sorters, and identification cameras, cutting both initial capital costs and ongoing maintenance expenses.



HOW IT WORKS: SEAMLESS MATERIAL RECOVERY

The process begins when the material stream enters the first sorting stage. Here, the Max-AI® AIR applies Max-AI's deep learning visual identification combined with high-speed air ejection to remove targeted contaminants with high accuracy and consistency. The Max-AI® AIR is an advanced AI-powered sorting solution which combines Max-AI's deep-learning visual identification with the high-speed capacity of air ejection. The Max-AI® VIS captures data on the stream's composition and shares it with the BHS Total Intelligence Platform to guide further sorting decisions. A magnet then separates ferrous materials from the stream.

As the material moves through the system, it is directed to large material bunkers, where it is stored until there is enough material to begin processing. The stream is then conveyed to the NRT SpydIR® HS optical sorter with Max-AI® VIS for sorting of each targeted commodity. Here, materials are identified and ejected based on defined priorities. After passing through an additional Max-AI® AIR unit for quality control, the sorted materials are deposited into their respective commodity bunkers. The process continues in a continuous loop, as each targeted commodity is recovered. Once the cycle is complete, a recovery loop is run ensuring efficient and effective recovery of all targeted commodities. When the commodity bunkers are full, the materials are ready for baling, completing the recycling cycle. The Automated Sorting Loop footprint is compact allowing for easy integration into new or existing Material Recovery Facilities, while customizable thresholds give operators precise control over purity and recovery targets.



sales@bhsequip.com

BHS NIHOT® nrt ZEROWASTE MAX·AI®

www.max-ai.com
www.nrtsorters.com
www.bulkhandlingsystems.com