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FERROUS GIANTS

NORTH AMERICA'S LARGEST FERROUS SCRAP PROCESSORS HELP TO SUPPLY CONSUMERS AT HOME AND ABROAD.

DANIELI CENTRO RECYCLING

The innovative team that integrates the know-how of Henschel, Lynxs and Riverside Products brands to optimize scrap processing plants.

DANIELI AND MAX-AI®: ELEVATING METAL RECYCLING PERFORMANCE

Danieli Centro Recycling reinforces its mission to deliver safer, cleaner and more efficient recycling operations through a strategic collaboration with Max-AI®, the AI-powered robotic solution developed by Bulk Handling Systems (BHS). This partnership brings cutting-edge autonomous sorting technologies to metal and WEEE processing lines, enabling higher productivity and superior material purity while reducing manual handling.

The Max-AI® Vision Identification System (VIS) is at the core of the solution. This proprietary combination of computer vision and neural networks is designed to analyze and recognize all material streams in real time.

When integrated into Danieli's shredding and processing lines, the system continuously identifies objects, classifies contaminants and directs robotic pickers with speed and accuracy. The result is a significant improvement in recovery rates and consistent, high-quality output—key requirements in today's increasingly demanding recycling market.

One of the flagship technologies made available through the partnership is the Max-AI® AQC-Flex, an autonomous quality control module designed specifically for challenging material streams such as metal scrap, vehicle shredder residue and WEEE. The AQC-Flex combines the VIS with two high-speed robotic arms capable of

lifting objects up to 5 kilograms (11 pounds), making it ideal for handling heavy, irregular or potentially hazardous items often present in complex material streams.

Thanks to its advanced detection capabilities, the system can identify even black materials—such as rubber and rigid plastics—and sort hazardous items including batteries, gas tanks, sharp metals, vapes and hand tools. In metal industry applications, the AQC-Flex efficiently removes meatballs, bird nests and other contaminants that negatively affect downstream processes and final product quality.

The technology also offers strong operational flexibility. Each robot can make up to three separate sorts, and sorting priorities can be adjusted easily according to market conditions. Neural networks can be retrained as waste streams evolve, ensuring long-term adaptability and performance stability. With installation requiring minimal downtime, the solution is suitable for both new plants and upgrades of existing facilities.

From a technical perspective, the AQC-Flex operates at speeds of up to 25 picks per minute per robotic arm and supports conveyor widths up to 1,500 millimeters (60 inches). The system is engineered for indoor environments and features mechanical grippers optimized for mixed scrap conditions. With low energy consumption, efficient air usage and compact dimensions, it integrates seamlessly into Danieli Centro Recycling's engineered lines.

By eliminating the need for operators to manually remove heavy or hazardous items, the technology enhances workplace safety—an essential priority for Danieli. Automated decision-making ensures consistency and reliability, while Danieli's expertise in turnkey recycling systems guarantees robust integration and long-term operational support.

Danieli Centro Recycling's partnership with BHS, featuring Max-AI®, marks a decisive step in the evolution of intelligent scrap sorting solutions. By combining Danieli's process know-how with advanced AI-driven robotics, metal recyclers can achieve higher efficiency, better product quality and safer working conditions—shaping a new standard for sustainable, high-performance recycling plants.

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